THE VERACITY OF SELF-REPORTED CRIMINAL RECORDS AMONG NDSU

STUDENTS

A Thesis
Submitted to the Graduate Faculty
of the
North Dakota State University
of Agriculture and Applied Science

By

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In Partial Fulfillment
for the Degree of
MASTER OF SCIENCE

Major Department:
Criminal Justice and Political Science

November 2013

Fargo, North Dakota

North Dakota State University
Graduate School

Title

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The Supervisory Committee certifies that this ***disquisition*** complies with North Dakota State

University's regulations and meets the accepted standards for the degree of

MASTER OF SCIENCE

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November 13, 2013

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ABSTRACT

Campus safety and security are important concerns for colleges and universities. One way security is addressed is through utilization of self-report questions about criminal backgrounds during the admissions process. The current study evaluates this admissions policy by using a systematic random sample of 1,400 students to compare self-reported criminal backgrounds with criminal records listed in four online databases. Results indicate that two individuals within the sample failed to report their criminal backgrounds which included simple assault, burglary, theft, possession of controlled substance, and drug paraphernalia. While the failed reporting rate appears low, caution should be taken interpreting the results. A number of policy implications and directions for future research are discussed.

ACKNOWLEDGEMENTS

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INTRODUCTION

Violence in educational institutions has resulted in much media attention in recent decades. College campuses are no exception to this increased violence coverage (Hughes & Wolf, 2008). High profile shooting events such as that at Virginia Tech, as well as the discovery of violent criminal backgrounds among students, including the Gina Grant and Richie Parker cases have stoked interest in safety and security cases surrounding campus students (Fox & Savage, 2009; Stokes & Groves, 1996).[1]

Campus unrest first emerged as a major issue for college and university administrators during the 1960's and 1970's. Riots and rebellions on campuses during the 1960's were not unique as campuses experienced a number of these events. The unrest among colleges and universities during that time resulted in a need to address safety and security issues (Gusfield, 1971). The riots of the 1960's were characterized by a much larger focus on national politics (Gusfield, 1971). The issues which received attention from student protestors during these riots included civil rights, black power, and the Vietnam War (Gusfield, 1971). Although campus unrest was initially exclusive to large, prestigious institutions, by 1968 it had spread to all types of colleges and universities (Astin, Astin, Bayer & Bisconti, 1997).

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[1] Gina Grant received an offer of early admission to Harvard in 1994; however after being admitted it was released in the news that Gina had bludgeoned her mother to death in 1990. When Harvard learned of Grant's criminal background her admissions offer was immediately rescinded (Stokes & Groves, 1996). Richie Parker was a high school basketball player who had received scholarship offers from multiple universities. He accepted an offer from Seton Hall University. This offer was withdrawn by the university when it became public several months later that Parker and a friend had sexually assaulted a girl in a stairwell at their high school (Stokes & Groves, 1996).

In response to increased unrest, state governments and educational institutions evaluated and eventually enacted new policies. In 1969, the American Council on Education developed the Committee on Campus Tensions in order to analyze the current unrest problem and develop policy recommendations for campus administrators (Astin et al., 1997). By the mid-1970's over half of the states had passed new laws specific to campus unrest (Astin et al., 1997). Decades after the surge in campus unrest and riots, safety and security continue to remain important issues, although the issue has been refocused toward individual criminal behaviors.

College campuses may be opportunistic environments for criminal and violent incidents for several reasons. Nichols (1995) alludes that the concentration of young adults, particularly between the ages of eighteen and twenty-two is unique to the college environment. These age groups are still responsible for a disproportionate amount of crime (Rowe & Tittle, 1977). Second, the social life of students plays an important role during the college years resulting in frequent parties, athletic events, and concerts. Each of these social environments also provides a venue for alcohol and drug use thereby facilitating criminal activity (Nichols, 1995). Finally, the idea of the open college campus allows for relatively unmonitored movement between the college and the community, both for students as well as community members (Nichols, 1995). Unlike school environments contained within a single building, universities represent geographic communities where students, faculty, staff, and community members have the ability to enter and leave the campus freely.

In 1989, Congress passed The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (commonly referred to simply as The Clery Act) requiring colleges to publish information about campus crime for the purpose of providing parents and applicants with safety information about campuses (Pierce & Runyan, 2010). Despite the passage of the

Clery Act, recent events have raised red flags surrounding campus security (Fox & Savage, 2009). Consequently, policy changes have been implemented in order to address safety concerns (Rasmussen & Johnson, 2008). Individual campuses also addressed these threats in a number of ways, including the implementation or expansion of campus police departments, limited access to campus buildings, restricted residence hall visitation hours, expanded escort services during late hours, utilization of emergency notification systems, and the development of screening processes within admissions to monitor criminal backgrounds of potential students (Dickerson, 2008; Gips, 1995; Hughes & Wolf, 2008; Nichols, 1995; Pierce & Runyan, 2010; Sattler, Larpenteur & Shipley, 2011). Recently discussions have even been brought forth about the possibility of allowing the carrying of concealed weapons on campuses (Lipka, 2008).

One vehicle for increasing campus safety has involved modifying the college admissions process (Dickerson, 2008; Hughes & Wolf, 2008). In recent years, many institutions have implemented policies where they ask applicants questions about their criminal histories (Dickerson, 2008; Hughes & Wolf, 2008). In addition, institutions have conducted post-matriculation checks in connection with specific programs and state licensing requirements (Pierce & Runyan, 2010). Background checks on all students or selective background checks on certain populations such as transfer athletes, dorm residents, older applicants, or those seeking to enter certain programs such as nursing, pharmacy, social work, medicine, counseling or law enforcement have also been proposed, and in some cases, implemented (Dickerson, 2008; Hughes & White, 2006; Hughes & Wolf, 2008).

The application process asks applicants to self-report information about their criminal histories within the admissions application. These questions can vary from asking about violent misdemeanors or felonies to asking about all records including juvenile records and those which

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have been expunged. After being accepted at the institution, a background check may also be conducted for certain internships or to obtain licensure. These post-matriculation checks only involve certain departments and programs (Dickerson, 2008; Hughes & White, 2006; Hughes & Wolf, 2008).

Some background checks on prospective students involve the use of an independent background check; some campuses utilize this form of screening on *all* students while others only investigate certain categories of applicants such as older applicants or athlete transfers (Dickerson, 2008). Universities may also contract with a private company to conduct background checks (Hughes & White, 2006).

Policies vary by campus on the consequences of a criminal record. Special committees are often used to determine the admissions statuses of students who endorse one of the criminal items in the application process (Stokes & Groves, 1996). Denial of admission is a possibility; however admission with stipulations is also utilized and each case is handled independently in order to examine the unique circumstances surrounding each case (Hughes & Wolf, 2008; Peterkin, 2012; Stokes & Groves, 1996). Conditional admissions, such as admission with the stipulation of off-campus living or monthly meetings with a campus official are one way for colleges and universities to monitor safety while still allowing those with criminal backgrounds to pursue an education (Dickerson, 2008).

The purpose of the current study is to examine the veracity of student self-reports of criminal backgrounds within the admissions application. This particular admissions policy is popular because it screens for criminal histories among prospective students and it does not include the cost or labor of implementing background checks on all applicants. While the self-report process is more cost-effective than all encompassing criminal background checks, it is

only effective in terms of safety if prospective students are accurately and honestly reporting their criminal histories (Pierce & Runyan, 2010). One recent study utilized an ex-post-facto methodology to evaluate the subsequent disciplinary records for admitted applicants with prior felony convictions (Custer, 2013). Criminal records were not available and the outcome measures were based on descriptive statistics that were collected from student conduct files. Information collected included policy violations, demographic information, and felony convictions. Results indicated that none of the prior felony conviction students were found responsible for violating the code of student conduct. Academic records indicated that the average GPA for those with prior felony convictions was 1.94; this GPA was one full point lower than the general student population average (Custer, 2013). While this recent study provides important insight into the behaviors of admitted prior felony students, no studies to date have evaluated the self-disclosure portion of the policy.

Empirical validation of such policies is important and useful for several reasons. In addition to increased safety, colleges and universities may benefit from the evaluation of screening policies in terms of both enrollment and liability. Increased safety procedures may increase applications and subsequently, enrollment. Parents who wish to send their children to a safe college or university may encourage enrollment at institutions which screen students on criminal histories during the application procedure. However, the self-disclosure method may also attract those students who have criminal records and wish to avoid institutions which investigate the criminal backgrounds on all students during the application process.

One of the reasons why criminal background checks have been initiated is to reduce liability for institutions. In terms of campus safety it is possible that in the event of victimization, the injured party may use an argument of negligent admission in a lawsuit against the college or

university (Dickerson, 2008; Hughes & White, 2006; Hughes & Wolf, 2008; Stokes & Groves, 1996). Similar to negligent hiring in the employment context, negligent admission may be utilized through the argument that the injury could have been prevented had the college more thoroughly researched the students' backgrounds (Dickerson, 2008; Stokes & Groves, 1996). Conversely, a college or university that knows a student's criminal background and yet admits the student may be liable in the event that a crime is committed against a member of the campus community (Hughes & White; 2006; Hughes & Wolf, 2008; Peterkin, 2012).

The self-report literature in a number of academic disciplines has generally concluded that self-report methodologies are valid methods of conduct reporting (Hardt & Peterson-Hardt, 1977). Other studies have questioned the veracity of self-reported behavior when contrasted with objective measures (Tourangeau & Yan, 2007). The criminology literature has reported mixed findings when assessing the self-report veracity with official criminal records (Crisanti, Laygo & Junginger, 2005; Hardt & Peterson-Hardt, 1977; Kirk, 2006).

Despite the potential penalties of withholding information about one's criminal background, there are a number of reasons a prospective student may fail to report. The first reason addresses simple failure to recall the incident or failure to recall an incident accurately. It is possible that some may fail to report if they forget a conviction. This error might occur among older applicants as the time between the criminal conviction and the application process widens. In a study examining adult addicts with criminal records, Wyner (1980) found that six percent of the response error variance was due to recall issues. Subjects were significantly more likely to fail to report earlier arrests than later arrests (Wyner, 1980). It is also possible that inaccuracies in reporting may arise due to a lack of understanding of the conviction a prospective student

received. Some students may overreport by disclosing an initial charge that was dropped to a lower level prior to conviction. Others may underreport their records for a similar reason.

Secondly, one may fail to report due to the stigmatizing nature of a criminal history (Wyner, 1980). Social desirability refers to the concept that people may provide inaccurate answers or fail to provide any response to certain questions due to the belief that an accurate or truthful response reflects a behavior which is socially unacceptable. The social desirability literature has found that a number of behaviors which are considered undesirable or embarrassing are often underreported, while those behaviors that are considered normative and desirable are overreported (Tourangeau & Yan, 2007). Sensitive issues such as drug use, abortion, and sexual behaviors are all examples of behaviors that have been characterized by underreporting in survey research (Tourangeau & Yan, 2007). Behaviors motivated by social desirability may occur without any consideration toward the consequence of a record on admission status.

Finally, a failure to report may reflect a deceptive behavior utilized specifically in order to gain admission. If applicants perceive that a record will result in a denial of admission, they may be more likely to lie in order to ensure acceptance. This may become more pervasive as additional colleges and universities begin conducting background checks during the admissions process; those with more egregious records may be funneled toward institutions that utilize the self-disclosure approach to monitor student backgrounds (Hughes & Wolf, 2008).

The current study will evaluate the self-disclosure admissions application criminal questions by examining a random sample of students at a public university and collecting criminal records through the utilization of a series of public record databases. Those subjects with violent misdemeanors or felonies will be cross-checked with a list of students who disclosed

criminal backgrounds in their admissions applications in order to calculate the rate of underreporting within the campus population.

This research topic is important because campus administrators need to know whether this application methodology effectively screens for violent offenders. Beyond the scope of the effect that violence has on victims, violent crimes may disrupt the classroom or learning processes both for faculty and students as well as result in increased psychiatric symptoms (Baker & Boland, 2011; Fallahi, Shaw Austad, Fallon & Leishman, 2009). These consequences provide clear motivations for campus administrators to reduce campus violence and pursue an environment of increased safety and security.

LITERATURE REVIEW

Research in a number of different fields has compared self-reports with objective measures in order to evaluate the veracity of self-reported behaviors. One reason these comparisons are important is due to heavy reliance on self-reports in social science research (Clark & Tifft, 1966; Hardt & Peterson-Hardt, 1977; Nederhof, 1985). Within the field of criminology and criminal justice, self-report research has been popular since the 1950's and has had a large impact on both criminological theory and research (Hindelang, Hirschi & Weis, 1979; Krohn, Thornberry, Gibson & Baldwin, 2010; Nieves, Draine & Solomon, 2000). This popularity emerged in part due to the limitations of official crime records (Hindelang et al., 1979; Nieves et al., 2000).

The self-report methodology is not without its own limitations (Farrall, 2005; Kirk, 2006). The accuracy of self-reported behaviors is often challenged, despite the many methodology debates about how to improve the survey or interview process and the individual questions (Crisanti et al., 2005; Hardt & Peterson-Hardt, 1977; Udry & Morris, 1967). Basic challenges in survey research include concealing or exaggerating behaviors, testing and panel effects, systematic bias, memory problems, and sampling biases (Farrall, 2005; Kirk, 2006; Krohn et al., 2010).

The self-report literature is also affected by social desirability. Social desirability refers to the practice in which people may provide inaccurate answers or fail to provide any response to certain questions due to the belief that an accurate or truthful response reflects a behavior which is socially unacceptable (Crowne & Marlowe, 1960; Tourangeau & Yan, 2007). Social desirability relates closely with a need for social approval; research has indicated that social desirability trends correlate with social trends such as low divorce rates, low crime rates and low

unemployment (Twenge & Im, 2007). In the research setting, providing false information allows the participant to avoid embarrassment or a potential negative consequence from another party outside of the research setting (Johnson, Taylor & Golub, 2005; Tourangeau & Yan, 2007).

The basic assertion among researchers is that self-report accuracy is inversely related to the sensitivity of the research subject matter being examined (Udry & Morris, 1967). Literature comparing self-reports to objective behavioral measures have found that a number of behaviors considered desirable are overreported, while those which are viewed as undesirable or stigmatized are underreported (Crisanti et al., 2005; Tourangeau & Yan, 2007). Desirable behaviors that have been overreported include church attendance, charitable giving, healthy eating habits and exercise, environmentally-conscious behaviors such as recycling and energy conservation, seatbelt use, GPA, and voting. Undesirable behaviors include tobacco use and smoking, abortion, drug use, tax evasion, contact with law enforcement, and criminal records.

Techniques have been developed in order to detect and reduce the risk of social desirability in research. These techniques include: social desirability scales, forced-choice items, measures of internal consistency, randomized response techniques, the bogus pipeline, self-administration of the survey, the selection of interviewers, proxy subjects, and checking self-reports with another measure of the behavior (Hardt & Peterson-Hardt, 1977; Nederhof, 1985).

Social desirability scales have been developed as a way to detect rather than reduce the risk of social desirability. Crowne and Marlowe (1960) developed a scale which measures the tendency to respond in a culturally-appropriate manner. The Marlow-Crowne Social Desirability Scale consists of thirty-three statements of personal attitudes and traits. For example, "I never hesitate to go out of my way to help someone in trouble," and "I have never deliberately said something to hurt someone's feelings." (Crowne & Marlowe, 1960, p. 351). Respondent scores

are totaled after the appropriate scores are reversed in order to develop a single score of social desirability bias. These scores allow researchers to eliminate survey data from participants who scored high on social desirability bias in order to increase the validity of the data.

One technique among adolescents has been the utilization of a "some/other" format in survey question structures. For example, "Some adolescents believe…., but other adolescents also believe…" This technique is believed to neutralize adolescents' perception of what response is most desirable in order to decrease the influence of social desirability on the response for that particular topic or question. A recent meta-analysis of eleven experiments indicated that the technique did not increase the validity of the self-reports from adolescents (Yeager & Krosnick, 2011). While the structure did lead youth to believe that certain behaviors and attitudes were more common, the criterion validity was lower with the "some/other" question structure.

Forgiving introductions have been utilized as a way to reduce the amount of intrusion participants perceive in survey questions that probe into more sensitive behaviors or attitudes. Forgiving introductions also reduce the perception of a potential negative consequence of a truthful answer (Peter & Valkenburg, 2011; Tourgangeau & Yan, 2007). A recent study examining the use of forgiving introductions in surveys found that the effect varied both by age group and the social desirability response style of the participant, which refers to the tendency to provide overly positive self-descriptions. (Peter & Valkenburg, 2011). While the forgiving introductions increased the reporting of sensitive behaviors among adolescents and young adults high in social desirability response style, there was little difference among adults (Peter & Valkenburg, 2011).

The current review of literature will focus on the use of separate behavioral measures as a technique to detect, and in some cases, reduce the effect of social desirability and deception on

behavioral research. The objective measures utilized in research varies depending on the topic of interest. Examples of measures include: observation; biochemical measures such as hair, urine and blood; police records; business records; and tax forms, to name a few.

Seatbelt Use

Seatbelt use is subject to social desirability bias and the social climate at the time of the survey. Seatbelt use is a simple behavior that is widely known to prevent injuries and fatalities in motor vehicle crashes (Helsing & Comstock, 1977). Compulsory laws may further increase the amount of overreporting. In states in which seatbelt use is mandated not only is the behavior considered socially-desirable, failure to buckle is illegal (Streff & Wagenaar, 1989). Studies examining seatbelt use often compare the self-reported behavior collected through surveys or interviews with observational data. One study utilized stratified probability sampling to observe 240 intersections within a state (Streff & Wagenaar, 1989). Face-to-face interviews of drivers were conducted at the time of the observation. Results suggested that overreporting was minimal among those who reported "always" wearing a seatbelt yet the self-report measures overestimated seatbelt use by 8.9-19.4% (Streff & Wagenaar, 1989). It is important to note that the participants in this study knew they were being observed at the time of the interview which may have decreased the likelihood of socially desirable responses.

A similar study conducted observations for thirteen days on a single roadway (Fhanér & Hane, 1973). Later, the observed drivers were identified and contacted at least two months after the observation period. Among respondents who reported using seatbelts 60-100% of the time, 14% were observed not wearing one at the time of the observation. The authors concluded that the tendency to overestimate seatbelt use was most likely due to the effects of social desirability (Fhanér & Hane, 1973).

Other research expanded the focus to both drivers and their passengers (Stulginskas, Verreault & Pless, 1985). The observational data was collected as adults and their children arrived and left a hospital. Self-reports were collected from parents who were contacted by phone on the day of the observation. Participants were asked to complete a survey on usual seatbelt use and actual use that day. The researchers compared verbal reports of seatbelt use with observations and found that parents were more inclined to exaggerate a child's seatbelt use rather than their own; children's seatbelt use was overreported by 38% (Stulginskas et al., 1985).

Finally, one study specifically focused on the population of El Paso, Texas, a community known for its low rate of seatbelt use (Parada, Cohn, Gonzalez, Byrd & Cortes, 2001). Researchers collected self-report and observational data simultaneously and participants were unaware of the observation. Two researchers observed vehicles and driver seatbelt use as cars drove into convenience store parking lots. The researchers waited until drivers exited their vehicles to ask them to participate in an opinion survey. Although 75% reported always wearing their seatbelt, only 61% were observed utilizing a seatbelt at the time of the observation (Parada et al., 2001).

Medical Screenings & Preventative Healthcare

Medical screenings are important procedures which promote health and assist in disease prevention. General medical screenings are widely accepted health practices which may result in tendencies to conform to normative social responses regardless of actual behaviors (Johnson, O'Rourke, Burris & Warnecke, 2005). Zapka et al. (1996) conducted a study comparing self-reported dates of mammographies with medical records. Self-reports were collected either through mail surveys or telephone interviews among a sample of ethnically-diverse women over the age of fifty. All women in the study had had a mammography and they consented to the

review of their medical records prior to completing the self-reports. Results indicated that 83%

accurately reported their mammography procedure within the correct year, with 54% reporting

accurately within a three month window of time. A similar study collected self-reports of pap

smears and mammograms from women over 40 who were attending a family practice center

within an impoverished urban area of New York (Tumiel-Berhalter, Finney & Jaén, 2004). These

reports were collected in face-to-face interviews and were then compared with medical records.

For lifetime pap smear utilization there was an agreement level of 87.1%, with a high of 89.3%

among African-Americans and a low of 82.6% among Non-Hispanic whites. Concordance rates

were lower for lifetime mammography utilization and there was an overall agreement rate of

73.3%. Puerto Ricans had a higher level of agreement (76.8%) while Non-Hispanic whites again

had lower concordance rates (65.8%) (Tumiel-Berhalter et al., 2004).

Newell, Girgis, Sanson-Fisher and Ireland (2000) examined both pap tests and

cholesterol screenings among a population within a rural Australian community. Door-to-door

surveys were compared with pathology laboratory records. For the cholesterol screens, one-third

of those self-reporting they were being screened adequately for high cholesterol were not. More

than one-fourth of women self-reporting adequate pap screenings were actually not receiving

adequate tests. Participants also inaccurately reported the results of their screenings. Almost half

of those reporting normal cholesterol actually had high cholesterol and around one-tenth of those

reporting normal pap results had received abnormal test results (Newell et al., 2000). A study

utilizing Medicare administrative data and self-reports examined mammography among

Medicare recipients aged 65 or older (Holt, Franks, Meldrum & Fiscella, 2006). Results

indicated that 11% of the sample reported false positives. Blacks were found to have lower

likelihoods of verified self-reported mammographies. McPhee et al. (2002) conducted a similar

study utilizing phone interviews and medical records for both breast and cervical cancer screenings. Most participants reported having had prior screenings, yet between one-fourth and one-third of these reports were unable to be validated. Longer periods of time between the self-reported test date and the interview date were associated with lower rates of validation (McPhee et al., 2002).

Another medical care topic studied is adherence to medication. Similar to medical screenings, adherence to medication as issued by a medical care provider is widely accepted as a healthful practice to prevent disease or control medial issues such as hypertension (Morisky, Green & Levine, 1986). Due to its widespread acceptance within social norms, people may have the tendency to overreport their adherence to medication guidelines from medical personnel. A summary of the medication adherence literature was conducted by Garber et al. (2004). Of the eighty-six studies included in the analysis, forty-nine were not high in concordance levels between the self-report and the non-self report measures. Of those forty-nine studies, forty-six had self-reports indicating a higher level of adherence to medication than the objective measures. The level of concordance within studies varied depending on the type of measures used (Garber et al., 2004).

Finally, caloric intake has been examined in order to seek an explanation for why obese persons who repeatedly diet fail to lose weight (Lichtman et al., 1992). A sample of obese participants consisted of one group with a history of failed dieting and a second group with no history of diet resistance. Researchers evaluated total energy expenditure and actual energy intake. Results for group one indicated substantial underreporting of food intake and overreporting of physical exercise. Food intake was underreported by 47% and physical activity

was overreported by 51%. Those in group two had higher rates of concordance between the self-reports and objective measurements (Lichtman et al., 1992).

Environmentally-Conscious Behaviors

Several studies have been conducted in order to compare self-reported behaviors that are environmentally-conscious with objective measures. Recycling is a highly valued behavior endorsed by a majority of people, although in practice is has been found to be predicted in part by circumstances such as convenience (Barker et al., 1994; Hopper & Nielsen, 1991). This rupture between attitudinal support and actual practice may lead to the overreporting of recycling behaviors. One study focused on recycling behaviors among undergraduate students (Barker, Fong, Grossman, Quin & Reid, 1994). The researchers placed self-report questionnaires in student mailboxes along with a "bogus notice" which was linked to the questionnaire. Researchers periodically retrieved the notices from the garbage, recycling receptacles, and off of the floor. The location from which the notice was retrieved was then compared to students' self-reported attitudes and recycling behaviors as indicated in completed surveys. Results indicated that recycling behavior was overreported; only one-sixth of students reporting pro-recycling attitudes actually recycled (Barker et al., 1994). Fujii, Hennessy and Mak (1985) evaluated the veracity of self-reported electricity conservation during an energy crisis by comparing self-reported conservation with actual average daily consumptions levels provided by the local electric companies. Self-report data was collected through home interviews of a large sample of residences in Hawaii. The authors found a bias in the self-report data with conservation underreported by 16.8% of participants but overreported by 29.67% (Fujii, et al., 1985).

GPA & Test Scores

Previous research has suggested that caution should be used when making use of self-reported academic achievement data (Frucot & Cook, 1994; Kuncel, Credé & Thomas, 2005; Zimmerman, Caldwell & Bernat, 2002). Grade point averages (GPA) are subject to overreporting when students exaggerate their GPA to reflect better academic performance than their actual performance levels. Studies examining the veracity of self-reported GPA compare the self-reports with school records. Frucot and Cook (1994) studied upper-level business students at a private university. Self-reports from both male and female students included SAT scores, university GPA's, and grades in prerequisite courses. The self-reports were compared with actual data located within the students' academic records. Over 50% overestimated their SAT scores, while only 14.5% provided an underestimate. Both males and females significantly overestimated their GPA's. Non-reporting students were found to have significantly lower GPA's than those students who did provide a self-report.

Another study focused on a high school sample of tenth graders from four schools in the Midwest (Zimmerman et al., 2002). Researchers found that almost half of surveyed students overreported their GPA by at least two half-grades when compared with their official academic records. Overreporters were also characterized by less psychological distress, more successful academic beliefs, and fewer behavioral problems (Zimmerman et al., 2002). A meta-analysis was conducted by Kuncel et al. (2005) of studies comparing self-reported GPA with academic records to summarize the GPA literature. They concluded that the self-reports were reasonable measures for those students with high abilities and good official GPA's. Minority students were less likely to give accurate estimates, and high school self-reported GPA's were less reliable than those reported by students (Kuncel et al., 2005).

Charitable Giving

Helping behaviors such as charitable giving or volunteering are also subject to social desirability bias. Charitable organizations play a large role in social services and their dependency on donations has resulted in a normative pressure for individuals to donate (Louie & Obermiller, 2000). This normative social pressure may also lead some to either exaggerate their history of charitable giving or purposely express a false intent to donate. Burt and Popple (1998) examined the accuracy of charitable donation recall. They conducted an experiment among college students in which study participants earned money after completing a task, and were then given the option to donate the earned money. Five weeks later participants were asked to recall how much money they had donated. There was a significant difference between the actual amount donated and the amount recalled; students had the tendency to overestimate the amount they had given to charity, while they accurately recalled the amount of money they had earned in the task (Burt & Popple, 1998). Charitable giving has also been studied by comparing self-reports of past donations to the actual donation records from the Giving in the Netherlands Charity (Bekkers & Wiepking, 2011). The reported donations were significantly larger than the actual recorded amount by 30.5%. These differences were positively related to other factors including level of education, religious affiliation and social desirability (Bekkers & Wiepking, 2011).

Church Attendance

Church attendance has been considered a normative behavior among many cultures for centuries. While there is evidence that people respond to inquiries about church attendance in a socially-desirable manner, increased secularization in recent decades may decrease the tendency

to respond inaccurately to questions about church attendance. Hadaway, Marler and Chaves (1993) compared actual church attendance levels with self-reported church attendance. They used poll-based estimates of religious preferences and attendance, comparing them with actual counts conducted within all Protestant churches in one county in Ohio. There was no church attendance data available for the county's Catholic churches. Instead the authors utilized dioceses-wide counts collected by select dioceses during an October weekend and averaged them to create an estimate of weekly attendance. Results suggest that Protestant and Catholic church attendance is approximately half of that indicated in reports conducted by Gallup (Hadaway et al., 1993). Overreporting explains a substantial portion of the gap between church attendance counts and poll-based estimates (Hadaway, Marler & Chaves, 1998).

Voting

Political participation through voting and knowledge of current government affairs are often expressed as important responsibilities and rights for American citizens. As such, reports of voting behaviors are subject to social desirability because lack of knowledge and participation represents an unfavorable movement from the perceived social norm (Presser, 1990).

The 1978 Vote Validation Study represents an early study on voting behaviors (Katosh & Traugott, 1981). Actual voter registration was compared to self-reports of voter registration during interviews. Seventy-three percent reported they had registered to vote, yet only 62% were actually registered. Additionally, while 55% reported that they had voted in the 1978 general election, only 43% had actually voted. Of the 14% of inaccurate reporters, 12.3% represented overreports and only 2.1% were underreporting their registration status (Katosh & Traugott, 1981). A similar study measured voting overreporting within a population of non-voters (Silver, Anderson & Abramson, 1986). The study was conducted using data from the National Election

Studies from 1964, 1976 and 1980. The authors used the percentage of participants who did not actually vote but had reported voting as the dependent variable (Silver et al., 1986). Level of education, external political efficacy, sense of citizen duty, strength of partisanship, concern about the election outcome, and political interest were used as predictor variables. Study results suggest that those with higher education levels, those most supportive of the regime norm of voting, and those who view the norm of voting as most salient are most likely to overreport their voting behaviors (Silver et al., 1986).

Finally, a more recent study expanded the research on voting overreports by including a variety of predictor variables (Belli, Traugott & Beckmann, 2001). The study used the National Election Studies data from seven years. Predictor variables in the study included: age, race, sex, level of education, a series of political attitudes variables, and contextual variables such as the amount of time between the election and the interview, whether the election was presidential or non-presidential, and the election year. Study results suggest that overreporters fell between the admitted nonvoters and the validated voters in age. Overreporters were also primarily nonwhite. Finally, those who overreported were more similar to validated voters in education levels and the strength of political attitudes than admitted nonvoters. The authors argue that intentional deception was a factor in the overreport levels within the study (Belli et al., 2001).

Sexual Behaviors

Human sexuality and sexual behaviors are challenging to study due to the private nature of the topic. Opinions on sexual behaviors are subject to varying levels of social, cultural, religious, and legal evaluation depending on the type of behavior and its location in time and space (Fenton, Johnson, McManus & Erens, 2001). Certain behaviors may be more stigmatized than others and thus it is expected that those behaviors which are most stigmatized may be

subject to larger amounts of underreporting in the survey or interview context. Certain demographics have also been found to either underreport or overreport specific behaviors. For example, men consistently report a higher mean number of partners than women. Women have been found to underreport their amount of sexual experience prior to marriage (Fenton et al., 2001). These tendencies reflect some of the methodological issues within research on sexual behaviors (Catania, Gibson, Chitwood & Coates, 1990). Sexual behaviors are subject to both recall accuracy and social desirability (Levinger, 1966; Udry & Morris, 1967).

Studies in this area of research have utilized a number of techniques to validate self-reported sexual data (Udry & Morris, 1967). Attempts to improve the procedure have included research on sexual terminology and how people feel about answering questions that contain particular wording or phrases (Catania et al., 1990). Validity checks have been done by comparing the reports from both partners under the assumption that the inaccuracy is within underreporting rather than overreporting (Catania et al., 1990).

A study conducted by Levinger (1966) used a sample of sixty middle class couples who had children and had been married for a minimum of four years. Interviews were conducted separately with each spouse by interviewers of the same sex; the interview included questions on preferred sex frequency, spouse's preferred frequency of sex, and reported actual frequency (Levinger, 1966). The wives' reports of actual frequency exceeded that of reports from husbands. Another study used urine testing among female study participants. Women provided first-morning urine samples and a daily report slip indicating the amount of sexual activity experienced in the past twenty-four hours. Of the fifteen women in the sample who could be checked for self-report validity, 80% provided accurate reports that were in concordance with the urine results (Udry & Morris, 1967).

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Abortion

Abortion is a legal behavior, yet it is heavily stigmatized and still incites intense debates of morality and women's rights. This divided opinion about abortion may lead many women to provide more socially-desirable responses to questions about abortion practices in order to avoid potentially negative, in some cases even hostile, responses. Research on abortion has relied on women's self-reported abortion procedures in order to gain a national estimate of the number of abortion procedures conducted. However, studies comparing self-reported abortion procedures with other external measures have found that abortions are underreported in surveys and interviews when compared with the external estimates (Fu, Darroch, Henshaw & Kolb, 1998; Jones & Forrest, 1992).

One study compared the medical records of a sample of women with their self-reported abortion histories (Udry, Gaughan, Schwingle & van den Berg, 1996). Results indicated 19% of women had failed to report one or more abortion procedures. A similar study specifically examined Medicaid claims and compared data from the claims with women's self-reported abortions (Jagannathan, 2001). Only 29% of abortions listed in the Medicaid claims records were self-reported. Black women, younger women, and those with attitudes more favorable toward childbearing were more likely to underreport their abortion procedures (Jagannathan, 2001).

On a national level, one study examined the methodology of the National Survey of Family Growth (NSFG), a national survey which contains several questions about previous abortion procedures (Fu et al., 1998). Results from the NSFG were compared with a survey of abortion providers conducted by the Alan Guttmacher Institute, and a sample survey of obstetrician-gynecologists and hospitals. When examining the methodological changes that had been implemented within the NSFG, researchers found that in general women were more likely

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to underreport in the main interview than in the self-report section. This is consistent with other studies comparing self-reported abortions during surveys and interviews (Jones & Forrest, 1992). When examining the self-report portion of the survey, only six of every ten abortions were reported on the NSFG (Fu et al., 1998). Another study utilizing the NSFG was conducted comparing the number of induced abortions performed from 1997-2001 with abortions reported in the survey (Jones & Kost, 2007). They found that fewer than half of the induced abortions performed were reported in the survey. Hispanics, blacks, low income women, and those who had procedures conducted within the first trimester were least likely to report an abortion procedure (Jones & Kost, 2007).

Smoking

Tobacco use and smoking is another behavioral category which may be subject to underreporting due to increased stigmatization in recent decades (Klebanoff, Levine, Clemens, Dersimonian & Wilkins, 1998). Research comparing objective measures with self-reported smoking has examined adult populations, adolescents, and pregnant women. Self-report behaviors are compared with biochemical measurements such as blood, saliva, urine or expired air samples collected from the research participants.

A study examining hospital outpatients compared responses within a self-report questionnaire to a number of biochemical measurements including samples of blood, expired air, saliva, and urine (Jarvis, Tunstall-Pedoe, Feyerabend, Vesey & Saloojee, 1987). Study results indicated that 15-20% of those who tested positive within the various biochemical tests claimed to be nonsmokers on the questionnaires. A similar study compared self-reported cessation of cigarette smoking with carboxyhemoglobin concentrations in blood (Sillett, Wilson, Malcolm & Ball, 1978). Three samples were used: patients post-myocardial infarction, subjects participating

in a trial of nicotine chewing gum, and non-smoking hospital staff. With the exception of the latter sample, participants were unaware the blood sample would be used to test for smoking. Twenty-two percent of post myocardial infarction patients and 40% of chewing gum trial subjects stated they had not smoked but had positive blood samples (Sillett et al., 1978).

Adolescent smoking is also stigmatized, and additionally represents an illegal activity for youth due to age restrictions on product use. Its illegal status for youth may result in even greater challenges in eliciting truthful reporting from participants. A meta-analysis of the validity of self-reported smoking behaviors found that compared to adults, adolescents were more likely to provide lower estimates of smoking behaviors and deny smoking (Patrick et al., 1994). One adolescent study compared telephone surveys with face-to-face interviews and saliva cotinine samples (Luepker, Pallonen, Murray & Pirie, 1989). Participants knew the saliva samples would be tested for tobacco consumption and results indicated that the presence of the chemical measurement increased the accuracy of reporting during interviews with the adolescents. It also allowed for the correct classification of individuals who still underreported (Luepker et al., 1989). Most adolescents' self-reports were in concordance with the cotinine measurement, although the telephone survey resulted in an underestimate of around 3-4%. Thirty-five percent of those who reported quitting during the telephone survey reported smoking during the home interview (Luepker et al., 1989).

Another study examined the influence of the objective measure on self-reports among a group of adolescents and their mothers (Bauman & Dent, 1982). The objective measure utilized in the study was carbon monoxide levels within alveolar air. Subjects within the control group were unaware of the objective measure during their self-reports, while those in the experimental group knew they would be tested prior to reporting their smoking behaviors. Eighty-six percent

of the experimental group reported smoking within the previous four hours, while only 64% in the control group reported recently smoking (Bauman & Dent, 1982).

One demographic group that may be particularly likely to underreport smoking is pregnant women. Especially in recent years, smoking behaviors have become stigmatized and pregnant women who are smokers are likely to receive counseling to quit smoking. This change in medical advisement may have led to an increase in socially-desirable responses in self-reports (Klebanoff et al., 1998). An assessment of the veracity of self-reported smoking during pregnancy was conducted in a 1960's cohort; the serum cotinine samples suggested that for this specific cohort, women accurately reported whether or not they had smoked (Klebanoff et al., 1998).

A study conducted in Wales examined women attending a public antenatal clinic (Walsh, Redman & Adamson, 1996). Comparisons were made between midwife classifications, self-reports, and urinalysis. Women were aware of urine testing for tobacco use and consent was given following the self-report survey. Eight percent of women with positive urine samples failed to self-report tobacco use (Walsh et al., 1996). A similar study was conducted in England using face-to-face interviews and saliva cotinine samples of pregnant women. The saliva measure revealed that 3% had underreported their tobacco use (Owen & McNeill, 2001). Another recent study collected both self-reports and saliva samples from pregnant women at the first prenatal visit, mid-pregnancy, and at the end of their pregnancies (Boyd, Windsor, Perkins & Lowe, 1998). Participants were aware the saliva samples would be analyzed. Just over 26% of the self-reported nonsmokers had positive saliva samples. Researchers concluded that social desirability may have contributed to a lack of accuracy in women's self-reports (Boyd et al., 1998).

Drug Use

Illicit drug use is another behavior that is not only stigmatized, but also illegal. Studies have evaluated the accuracy of self-reported use of a number of drugs, including but not limited to marijuana, heroin, other opiates, cocaine, crack cocaine, and methamphetamine. Among adolescent populations the introduction of a fictitious drug in the survey instruments has been used among to control for exaggerations (Poulin, MacNeil & Mitic, 1993). Among both adolescent and adult populations biochemical measures such as urinalysis and hair assays have also been used and compared with self-report data collected through interviews or surveys.

Studies utilizing urinalysis have examined a variety of populations including adolescents, veterans, drug dependent populations, and arrestees. Two studies compared high risk adolescent populations with their lower-risk counterparts; HIV positive youth and youth with a high risk for substance use dependency were compared with a sample of low risk youth (Murphy, Durako, Muenz & Wilson, 2000; Akinci, Tarter & Kirsci, 2000). The first study found that within a five day reporting period, 94% of the HIV positive adolescents who tested positively for marijuana in the urinalysis acknowledged their use through self-reports, while only 50% of HIV negative subjects reported their marijuana use during the same time frame (Murphy et al., 2000). The second study also examined marijuana use through urinalysis. Twenty-three percent of adolescents classified as high risk for drug dependency (defined by the authors as those who reported using marijuana at least every other day) denied use, while 50% of those classified as low risk who tested positive denied marijuana use in the self-report (Akinci et al., 2001). Participants were aware a urine sample would be collected.

Many studies have focused on adult populations that are at a high risk of drug dependency. These samples include hospital patients, patients of outpatient treatment centers,

and jail populations. Studies examining drug dependent populations have surveyed veteran heroin addicts, outpatient rehabilitation patients, clinical addiction research participants, and methadone clinic clients (Bale, Van Stone, Engelsing & Zarcone, 1981; Ehrman, Robbins & Cornish, 1997; Magura, Goldsmith, Casnel, Goldstein & Lipton, 1987). All four studies of drug dependent samples compared self-reports collected in interviews with urine testing.

Bale et al. (1981) conducted a study on veteran heroin addicts within a withdrawal program and found that 84% reporting no use in the past three months produced negative urine samples. Seventy-eight percent of those reporting no heroin use in the past week produced negative samples. Ehrman, et al. (1997) utilized a similar sample of outpatient therapy participants with cocaine dependence. Twenty-one percent of those submitting at least one positive urine sample over a one month period failed to self-report cocaine use on the Addiction Severity Index. Within the forty-eight hour self-reports, 31% of those submitting at least one positive urine sample failed to report use within the survey materials.

A clinical study collected reports of cannabis use from a small sample of research participants characterized by the use of multiple drugs and found a higher degree of concordance (Martin, Wilkinson & Kapur, 1988). Researchers utilized structured interviews to collect information on the recency, frequency and typical dosage levels of marijuana use and compared the interview data with results from urinalysis. Ninety percent of those reporting use within the past three days had positive urine samples, while 89% of those reporting no use within the past two weeks had negative urine samples (Martin et al., 1988).

Studies have also examined arrestee populations (Lu, Taylor & Riley, 2001; Plüddemann & Parry, 2003). One study focused on a sample of arrestees in South Africa and researchers found large amounts of underreporting. Only 54% of positive cannabis urinalysis results were

self-reported by participants. Thirty-five percent of those who tested positive for cocaine also failed to report use (Plüddemann & Parry, 2003). A second study utilized the Arrestee Drug Abuse Monitoring (ADAM) data collected from interviews of arrestees in jails in six U.S. cities (Lu, Taylor & Riley, 2001). There was also considerable underreporting in this study for all drug measures; an average of only 50% of those testing positive self-reported their drug use. Marijuana users were most likely to self report their drug use (63.6%), followed by methamphetamine users (56.1%), crack cocaine users (48.2%) and those who used opiates (45.9%) (Lu et al., 2001). Blacks and females were more likely to admit to crack cocaine use, and those with prior arrests or treatment histories were more likely to provide accurate drug use reports.

Finally, a study examined a variety of high-risk populations including STD patients, emergency room patients, and arrestees through urinalysis (Hser, Maglione & Boyle, 1999). Self-reports were collected through face-to-face interviews about lifetime drug use, current drug use, dependency, and treatment histories for a variety of illicit and prescription medications. Urine results were compared with the interview data and results indicated substantial underreporting within the samples. While each sample showed underreporting, the arrestee sample had higher degrees of validity within the self-reports when compared with the emergency room sample and the STD patient sample (Hser et al., 1999).

Other forms of data have also been used to assess the veracity of self-reported drug use. While urine is the most common biochemical measurement, the analysis of hair has also been used. As with the urinalysis studies, hair analysis studies have utilized a variety of samples, including households, high risk groups such as the homeless, known drug users, and previous

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inmates (Colón, Robles & Sahai, 2001; Fendrich, Johnson, Sudman, Wislar & Spiehler, 1999;

Nyamathi, Leake, Longshore, & Gelberg, 2001; Tassiopoulos et al., 2004).

One study utilized results from a household survey and compared self-reported drug use

with hair specimens. Among those respondents who consented to a hair test, both heroin and

cocaine use were underreported in the interviews (Colón et al., 2001). Hair testing yielded

cocaine prevalence rates 13.7 times that of those estimated from interviews for use in the past 90

days. For heroin, the hair tests estimated a usage rate 2.9 times the estimate of use in the past 90

days. These results reflected a high degree of underreporting in the interview process (Colón et

al., 2001).

Several studies were conducted examining hair specimens of high-risk populations. A

study conducted by Fendrich et al. (1999) examined a high risk community within Chicago.

Results indicated that estimates of cocaine use based on hair specimens were nearly five times

the self-report-based estimates of use in the past month. The hair specimens were four times

higher than the survey-based rates of past year use. Underreporting in this study was more

pronounced for cocaine than heroin, and those with higher concentrations of cocaine in their hair

were more likely to disclose their cocaine use (Fendrich et al., 1999). Finally, black respondents

were less likely to disclose lifetime use than white respondents or respondents of other

ethnicities.

A study of homeless women compared self-reports and hair assays (Nyamathi et al.,

2001). The women in the study knew prior to reporting their drug use that hair assays would be

collected and analyzed. Just under half of the sample self-reported cocaine use within the past

six months, while an additional 7% were found to have positive hair assays. Over 25% of the

sample underreported cocaine use, with those with the highest concentrations found within the hair assays most likely to report their cocaine use (Nyamathi et al., 2001).

In a study on heroin users examining participants' use of other drugs, both hair samples and self-reports of drug use were collected (Tassiopoulos et al., 2004). Thirty-four percent of heroin users who tested positive for cocaine within the hair sample did not self-report their recent cocaine use. Demographics in this study were not significant predictors of self-disclosure. Those who did disclose had significantly more cocaine in their hair than non-disclosers (Tassiopoulos et al., 2004).

Finally, post-arrestees were studied by contacting male youth in New York City after their release from jail (Magura, Kang & Shapiro, 1995). Personal interviews were compared with hair assays and results indicated that while 36% admitted to lifetime cocaine use and 22% stated they had used cocaine in the past three months, cocaine was detected on 51-67% of specimens. Cocaine use was two to three times more prevalent in the hair samples than reported use during interviews (Magura, Kang & Shapiro, 1995).

Tax Evasion

Tax evasion is another illegal behavior. As with drug use, people who commit forms of tax evasion may be motivated by the potential consequences or the undesirable qualities of their behavior to inaccurately report their tax evasion. Hessing, Elffers and Weigel (1988) studied self-reported tax evasion among a population in the Netherlands and compared the survey results with official tax records. Although there were some who overreported tax evasion and others who underreported when compared with the official tax returns, underreporting the behavior was more prevalent. Sixty-nine percent of known tax evaders denied tax evasion during the self-report procedure (Hessing et al., 1988).

Official Police Contact & Criminal Records

Researchers have been concerned about the validity of self-reported criminal behaviors and arrests for a number of years. Studies have examined both juvenile and adult populations through the comparison of self-reports and official records. One early study, conducted by Clark and Tifft (1966), tested this accuracy by comparing responses to anonymous questionnaires about deviant behaviors to responses made during a later interview with a polygraph examination. The researchers utilized a sample of male college students who were informed during the interview and polygraph that the researchers were interested in the accuracy of the students' questionnaire responses. Participants had the opportunity to reconsider their initial survey responses before the polygraph exam. Fifty-eight percent of the sample made changes in their responses at this time, and forty-two percent made alterations to their initial responses during the polygraph testing. The majority of changes led to an increase in the frequency of delinquent behaviors. Sixty-six percent of instances in which participants did not initially admit to a delinquency behavior and then later did stated, "… the act was never permissible according to their own feelings," (Clark & Tifft, 1966, p. 521).

Farrington et al. (2003) studied delinquent careers by comparing official court referral records with self-reports. The researchers utilized the Seattle Social Development Project data which included court records and self-reports from youth ages eleven through seventeen. Official records and self-report data collected at each age were compared and it was found that the prevalence rates for offending were higher in self-reports than official records. The most similar rates were found for motor vehicle theft (court records 23.8%, self-reports 33.1%) and the largest difference in rates was found for marijuana use (court records 1.8%, self-reports, 49.1%). Among

individuals, the average number of offenses was also higher among the self-reports than the court records (Farrington et al., 2003).

Lab and Allen (1984) compared self-reported contact with police to official contact data for a sample of juveniles. Data was collected from the Juvenile Bureau and the Records Division of the Racine Police Department and interview data including questions about police contact. They found that there was a good level of concordance between status offenses and felonies; there were differences between the measures for misdemeanor offenses. Nonwhites self-reported less contact compared with whites, while whites were more likely to provide concordant reports or even overreport their police contact. Males, those with less education, and those from low socioeconomic neighborhoods tended to underreport their official contact with the police (Lab & Allen, 1984).

Kirk (2006) utilized data from the Project on Human Development in Chicago Neighborhoods. During interviews, the sampled youth reported previous arrests, including when and where each arrest occurred, the reason for the arrest, and the court location. This data was compared with official arrest records obtained through the Chicago Police Department, including both juvenile and adult records. Results indicate that while 23.4% of those without an official record self-reported an arrest, 45.5% of those officially arrested did not self-report *any* arrests during the interviews (Kirk, 2006).

Maxfield, Weiler and Widom (2000) studied a sample of young adults with a history of child abuse or neglect and matched them with others similar in demographics with no history of abuse. Participants completed interviews which included a scale of criminality and a survey of arrest history. These self-reports were compared with official arrest records. Seventy-three percent of those with an official record self-reported an arrest history; 72% of abuse or neglect

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victims self-reported their arrests, compared with 76% of the control group. Males and those who were white were more likely to report their arrest history than blacks and females. Of those with no official arrest record, 21% self-reported an arrest history during the interview; the positive bias was higher for those victimized during childhood (28%) than for those from the control group (14%). Results also indicated that those with records of arrests in the more distant past were more likely to self-report the arrest than those with arrests in the more recent past (5 years). Order and drug crimes had the highest amount of concordance between the two measures while rape and prostitution had the lowest agreement levels. Fewer respondents also self-reported arrests for property or violent crimes (Maxfield et al., 2000).

Hardt and Peterson-Hardt (1977) similarly examined the validity of self-reported delinquency. They used a sample of adolescents from a metropolitan area in a Mid-Atlantic state. Official data was collected from the county central registry of juvenile offenders; this data was then compared to data from questionnaires administered within the classroom setting. Twenty-two percent of the sample reported official police contact while only 19% had an official record. Among those with an official record, 28% self-reported their official police contact. In contrast, less than 10% self-reported a record yet had no official data. A social desirability scale was included in the self-report questionnaire. Levels of high social desirability were more frequent among those with inaccurate responses. Only 17% of accurate non-delinquents and 18% of accurate delinquents scored high on the scale, while 29% of overreporters and 39% of underreporters had high scores of social desirability (Hardt & Peterson-Hardt, 1977).

A number of studies have focused on adult samples in order to evaluate the veracity of self-reported criminal behaviors and official contact with the criminal justice system by comparing survey and interview results with official court records and arrest records. Babinski,

Hartsough & Lambert (2001) compared self-reports of arrests with official arrest records for a sample of participants in a hyperactivity study at a university in California. Participants were unaware that their self-reported behaviors would be compared with official arrest data. Results indicate that the level of agreement between the self-reports and arrest records varied based on the type of offense. There was a high level of agreement for drug-related and theft-related crimes. Low levels of agreement were found for disorderly conduct, vandalism, assault with a weapon, and assault without a weapon. The agreement between the two data sources was found to be unreliable for sex-related crimes and robbery. When focusing specifically on crimes against persons, 68.4% failed to report assault with a weapon, 41.7% failed to report assault without a weapon, and 57.1% failed to report hitting a spouse/partner. The authors argue that for researchers interested in more serious crimes, particularly crimes against persons, it is imperative to consider official arrest records due to the number who fail to disclose arrest information. A combination of both self-report data and official records is a more ideal data collection strategy when both forms of data are available (Babinski et al., 2001).

Wyner (1980) conducted a study examining response errors within self-reports of arrest records. He used a subsample form the Vera Institute of Justice Supported Employment Experiment. All participants within the subsample had an arrest record and were asked about their arrest histories during a quarterly interview of the larger study. Results indicated similar means for the arrest records (9.25) and self-reported behaviors (8.96). Of the sample (79), only ten respondents provided completely accurate self-reports. More than 20% of participants made self-reporting errors of plus or minus at least five arrests. Underreporting was partially due to recall error, but also partially the result of social desirability bias (Wyner, 1980).

Nieves et al. (2000) researched a sample of psychiatric probation and parole clients. Interviews were conducted to collect data about criminal arrests and behaviors, as well as substance abuse. Arrest data included age at the first time of arrest, number of juvenile arrests, number of lifetime arrests, and an estimate of the total time spent in jail. These results were compared with official records accessed through the municipal court, excluding juvenile arrests. Fifty percent of the sample underreported their number of arrests; in contrast, only 29.5% overreported the number of arrests (Nieves et al., 2000).

Roberts and Wells (2010) analyzed self-reported criminal justice contact by collecting self-reports from a sample of incarcerated men and comparing them with official records. Self-reports were collected through face-to-face interviews using the life event calendar method. Official records were obtained through access to pre-sentence investigation reports. The authors found a substantial amount of reporting errors within the self-report data. Seventy-five percent accurately reported whether or not they had been arrested during a three year period. Twenty-one percent of those who had an arrest record within the specified time period failed to report it during the interview. In terms of arrest frequency, those with the highest number of arrests within their official records were also the most likely to experience difficulty in accurately recalling their arrest histories; the direction of error for this group was largely underreporting rather than overreporting their (Roberts & Wells, 2010).

Similarly, Johnson, Taylor and Golub (2005) collected self-reports and official criminal records for a sample of arrestees. The subjects were notified at the time of the self-reports that their criminal histories would be obtained and utilized within the research study. Results suggest the influence of social desirability in that there were twice as many underreporters (20.1%) as overreporters (10.2%). In terms of lifetime arrests, 47% of the sample underreported the number

of times they had been arrested and less than one-eighth of the sample self-reported an accurate number of lifetime arrests. Furthermore, 18% failed to report serving any prison time and 27% of those with jail sentences failed to disclose any sentences. Finally, 48% of those ever sentenced to probation failed to report any lifetime history of a probation sentence. Some of these reporting discrepancies are subject to memory fading, selective forgetfulness and the limitations of the official records themselves, yet resistance to accurate reporting and social desirability bias are important (Johnson et al., 2005).

Jansson, Hesse and Fridell (2008) conducted a study of female substance abusers and examined the validity of self-reported theft, drug offenses, violence, and prison sentences. Self-reported data collected through interviews were compared with official judicial records. Results for drug and theft offenses were relatively comparable. Violent offenses were overreported for 9% of the sample, while 71% of those with records of violent offenses failed to disclose them during the interview. The significant underreporting of official records of violence suggests social desirability or willful nondisclosure had an important effect on the self-report data (Jansson et al., 2008).

Thompson, Leinfelt and Smyth (2006) conducted a validity test of a survey asking college students to report their alcohol-related official trouble by comparing student self-reports with municipal alcohol-related arrest reports. Study results indicated that student self-reported official trouble was substantially higher than the official record data. The authors argue that this is due to the more narrow scope of the official records, which were only collected locally, in comparison with self-reports which included official trouble in other communities as well. Students' reports of official trouble may have also included official trouble outside of the arrest

record data including trouble at the university with conduct staff, residence hall staff, and even athletic coaches.

While the previous literature comparing self-reported behaviors has found some degree of concordance, as well as evidence of the influence of social desirability bias, the studies were conducted for research purposes. Within the research setting, no negative repercussions were present for the disclosure of undesirable behaviors or the discovery of willful or unintentional reporting errors. Nieves et al. (2000) succinctly discuss the difference in reporting within research settings and criminal justice settings:

> Criminal justice settings, as opposed to treatment settings, provide a disincentive to reporting where admission of drug use may have more negative than positive consequences, such as disciplinary action, violation of probation or parole, or a return to court or jail. The costs and benefits of truthful reporting are salient dynamics in the assessment of self-report validity of substance abuse data. (p.137)

Within the context of the current research setting, many of these same issues are relevant. Disclosure of violent records or felony convictions on the admissions application may lead to the negative consequence of rejection for admission. In contrast, nondisclosure, if undetected by the university, allows for a greater chance of admission and a less burdensome admission process for the prospective student.

The current study design is structured in a manner similar to the cited literature. A comparison of self-reports and official criminal records is used to address the following research question: How accurately are university students reporting their qualifying criminal records during the admissions process?

METHODS

University Context

North Dakota State University (NDSU) is a medium-sized land grant university located in Fargo, North Dakota. According to the enrollment demographic reports 14,407 students (11,977 undergraduates, 2,084 graduates, and 346 professional students) were enrolled at NDSU in 2010. Much of the student population at NDSU has residency in surrounding states. Nearly forty-four percent of students were North Dakota residents, approximately forty-one percent were Minnesota residents, and approximately two percent were South Dakota residents. Just under ninety percent of enrolled students were United States citizens, while approximately nine percent had foreign citizenship.

Sampling

The sample of this study included 1,400 male and female students listed within the NDSU campus directory during the 2010-2011 academic year. Subjects were selected through systematic random sampling. A random number generator (utilizing numbers 1-10) was used to determine the starting point in the sampling frame. Every subsequent tenth person was included in the study. Any name which appeared to indicate foreign citizenship was excluded due to the inability to search criminal records outside of the United States. Additionally, any subjects with common last names (Anderson, Erickson, Johnson, Nelson, Smith, etc.) or who lacked a middle initial were skipped due to identification issues within the official record databases. This procedure was important due to lack of other demographic identifiers such as dates of birth; it decreased the likelihood of recording the criminal history of another individual with the same

first and last names and middle initial. In these cases the next listed and qualifying name within the sampling frame was selected.

Official Arrest & Conviction Records

Official records of arrests and convictions were collected and recorded from four separate online databases for each student within the sample:

1. North Dakota Case Records (http://publicsearch.ndcourts.gov/default.aspx): The North Dakota case records database allows for the search of North Dakota district criminal, traffic and civil cases. Municipal court cases from many areas are also included in the database.

2. Minnesota Case Records (http://pa.courts.state.mn.us/Search.aspx?ID=100): The Minnesota case records database is similar to the North Dakota database and includes criminal, traffic, petty misdemeanor, civil, family and probate case records.

3. National Sex Offender Public Website (http://www.nsopw.gov/en-US/Search): The National Sex Offender Public Website is a public safety resource providing nationwide sex offender data collected from public, state, territorial, and tribal registries. Information on offenders varies from registry to registry. Basic information including a full name, location, and the nature of the offense are included. This website is included to expand the scope of the background search by potentially providing records from outside the local region.

4.   Federal Bureau of Prisons Inmate Locator

(http://www.bop.gov/iloc2/LocateInmate.jsp): The prisoner locator website is a

search that allows users to locate inmates incarcerated from 1982 to the present.

Information provided about the inmates includes their full name, age, race, sex,

release date (either actual or projected), and location. This website is also used in

order to expand the scope of the background search by potentially providing

records from outside of the local region. Incarceration is the result of conviction

of serious crimes and thus it is expected that any history of prison sentences

implies a conviction at the level of a felony or violent misdemeanor.

After the subject names within the sample were searched, any criminal records were

tallied and recorded in their respective coding categories. Categories were created for different

types of citations received within the two state case record databases. Examples of these

categories include Driving Under Influence (DUI), Minor in Possession (MIP), Urinating in

Public (UIP), and Disorderly Conduct. The majority of traffic violations were collapsed into one

category. A full list of coding categories is provided in Table 1.The dates of any convictions for

qualifying violent misdemeanors or felonies were also documented. Gender and dates of birth

were also recorded when available. For the National Sex Offender Public Website and the

Federal Bureau of Prisons Inmate Locator only the presence or absence of a positive search

result was recorded. In addition to determining the frequency of underreported qualifying

criminal records, the collected official criminal records are used to develop an estimated profile

of the criminal records of NDSU students.

Self-Report of Records

Self-reports in the current study were obtained by accessing a list of applicants who had responded 'yes' to any of the safety and security questions on the admissions application. Any student with an official record of the following will be cross-referenced with the list of students who self-reported their criminal histories during the admissions process:

1. Any felony

2.   Misdemeanor crimes of violence in the past ten years including: abuse, arson, assault, battery, breaking and entering, burglary, criminal mischief, vandalism, harassment, homicide, menacing, reckless endangerment, stalking, terrorizing, unlawful restraint, or imprisonment.

3. Any requirement to register as a sex offender

This cross-reference will be important in order to determine whether or not students with qualifying records reported those records during the admissions process. Those students whose names are not included within the list provided by the admissions committee represent those who have failed to report their criminal backgrounds, while any student names included in the admissions list represent those who have reported criminal records during the admissions process.

Table 1

Coding Categories for Criminal Record Data

Alcohol/Drug violations	Property violations	Predatory violations
Minor in possession/consumption	Burglary	Simple Assault Criminal neglect
Underage drinking and driving	Forgery	Endangerment by fire or explosives
Minor entering liquor establishment	Theft	Disorderly fighting/brawling
Public consumption	Theft of property	Criminal sexual conduct
Drove or in physical control	Theft of movable property	Harassment- violation of restraining order
Driving under the influence	Shoplifting	
Open container	Issuing checks without funds	
Possession of marijuana	Vandalism	
Possession of drug paraphernalia	Criminal mischief	
Possession of controlled substance	Criminal trespassing	
Possession of ecstasy	Criminal damage to property	
Possession of marijuana with intent to deliver		
Delivery of marijuana		

Traffic violations	Public order violations	Other
Reckless driving	Urinating in public	Contributing to delinquency of minor
Exhibition driving	Loud party	Sale of tobacco to a minor
Duty striking fixtures	Failure to cooperate	File sealed
Driving after suspension/revocation; driving without insurance	False report to law enforcement	Miscellaneous additional misdemeanors including hunting violations
Other traffic (speeding, traffic light violations, etc.)	Fleeing a police officer	
	Obstructing a police officer	
	Resisting a police officer	
	Preventing arrest	
	Display or possession of false identification	
	Disorderly conduct	
	Concealed weapon	

RESULTS

Self-Reports & Official Records

The total number of failed reporters was calculated through a series of elimination steps. Table two displays this breakdown of individuals with qualifying convictions. In terms of inaccurate criminal record reporting, results show that two individuals within the sample met the following criteria: conviction due to a felony or violent misdemeanor, conviction prior to August 2010, conviction prior to the date of application, and no affirmative responses to the criminal record questions on the admissions application. This represents 0.14% of the sample. Basic demographic information indicates that both individuals were male and were older-than-average students (25+ years old). The types of serious crimes committed by the two individuals included simple assault, burglary, theft (felony level), possession of a controlled substance (felony level), and possession of drug paraphernalia (felony level). They also had records of more minor offenses such as carrying a concealed weapon, possession of marijuana, urinating in public, driving under the influence, driving under suspension/revocation or without insurance, exhibition driving, and basic traffic citations.

Table 2

The Breakdown of Individuals with Qualifying Records

Individuals with felony or violent misdemeanor convictions	N
Conviction due to felony or violent misdemeanor	12
Conviction prior to August 2010	6
Conviction prior to application to NDSU	4
Admission through Safety & Security Committee	2
Failed reporters	2

Criminal Profile of NDSU Students

Descriptive statistics of the criminal background of university students is also provided. Table three displays the frequencies of alcohol and drug-related offenses. A total of 515 offenses were recorded within the sample. The prevalence rate for alcohol-related offenses is 21.4% and the incidence among those with a drug or alcohol-related offense is approximately 1.7 offenses per person. Thus, 299 students in this sample were convicted of an alcohol or drug offense. An extrapolation of this estimate to the student body yields a projection that approximately 3,000 students were convicted of alcohol or drug offenses. Minor in possession/consumption was the most common citation (n=323), followed by driving under the influence (n=85), and misdemeanor-level possession of drug paraphernalia (n=26). Felony-level drug charges were the least common violations.

Table four shows the frequencies of various property-related offenses. Property-related citations reflect 37 total offenses among the sample. The prevalence rate for property offenses is 1.5%. The incidence among those with property convictions is approximately 1.8 offenses per person. Therefore 21 students in the sample were convicted of a property offense. By extrapolating this estimate to the entire student body, it is projected that approximately 210 students have been convicted of a property offense. Misdemeanor-level theft (n=8), issuing a dishonored check or a check without sufficient funds (n=6), and shoplifting (n=6) were the most frequent property violations. Felony-level violations were the least frequent property citations among the sample.

Table 3

Frequencies for Alcohol and Drug Offenses

Alcohol & drug frequencies by violation	Incidence	Prevalence	N
Minor in possession/consumption			323
Consuming in public			19
Minor entering liquor establishment			5
Driving under the influence			85
Underage drinking & driving			5
Drove or in physical control of vehicle			11
Open container/receptacle			17
Misdemeanor possession of marijuana			15
Drug paraphernalia (misdemeanor)			26
Delivery of marijuana (felony)			2
Possession of ecstasy (felony)			1
Possession of a controlled substance (felony)			2
Possession of marijuana with intent to deliver (felony)			3
Drug paraphernalia (felony)			1
Total alcohol & drug violations	1.722	21.4%	515

Table 4

Frequencies for Property Offenses

Property frequencies by violation	Incidence	Prevalence	N
Theft/theft of movable property (misdemeanor)			8
Issue dishonored check/check without funds			6
Shoplifting			6
Financial card fraud (misdemeanor)			2
Criminal damage to property			1
Criminal mischief			7
Trespassing			2
Burglary (felony)			1
Forgery (felony)			1
Theft of property (felony)			2
Financial card fraud (felony)			1
Total property violations	1.762	1.5%	37

Table five illustrates the frequencies for various public order violations. A total of 102 public order citations occurred within the sample. The prevalence rate for public order offenses is 6.7%. The incidence of public order offenses among those with public order convictions is approximately 1.09 offenses per person. Thus, 94 students in the current sample were convicted of a public order offense. Extrapolating this estimate to the entire student body, 940 students are projected to have been convicted of a public order offense. Loud party citations were the most frequent (n=56), followed by urinating in public (n=14) and disorderly conduct (n=11). Conflict or displays of dishonesty during police contact reflected the bulk of the remaining public order violations (n=20).

Table 5

Frequencies for Public Order Offenses

Public order frequencies by violation	Incidence	Prevalence	N
Loud party			56
Urinating in public			14
Disorderly conduct			11
Failure to cooperate			1
False report to law enforcement			1
Fleeing a police officer (not in motor vehicle)			5
Obstructing a police officer			1
Resisting a police officer			6
Preventing arrest or discharge of other duties			1
Display/possession of false identification			5
Carrying a concealed dangerous weapon			1
Total public order violations	1.085	6.7%	102

Table 6

Frequencies for Predatory Offenses

Predatory frequencies by violation	Incidence	Prevalence	N
Criminal sexual conduct (3rd degree)			1
Disorderly fighting or brawling			1
Criminal Neglect			2
Harassment/violation of a restraining order			1
Endangering by fire or explosion			1
Simple assault			2
Total predatory violations	1.143	0.5%	8

Table six illustrates the frequencies for predatory violations. Only 8 predatory crimes were recorded within the sample. The prevalence rate for predatory crimes is 0.5%. The incidence of predatory offenses among those with predatory convictions is 1.1 offenses per person. Therefore 7 students in the current sample were convicted of a predatory offense. By extrapolating this estimate to the entire student body, it is projected that approximately 70 students have been convicted of a predatory offense. Criminal neglect (n=2) and simple assault (n=2) represented half of the predatory crimes committed.[2]

Table seven shows the frequencies for traffic violations. A total of 2,512 traffic violations were recorded within the sample. The prevalence rate for traffic offenses is 62.0%. The incidence among those with traffic offenses is approximately 2.9 offenses per person. Thus, 868 students were cited for a traffic offense. Through extrapolation of this estimate to the entire

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[2] In Minnesota criminal neglect involves a caregiver who intentionally neglects a vulnerable adult or knowingly allows conditions which lead to abuse or neglect. This may manifest in either abuse or neglect. Abuse is defined as an assault; the use of drugs to injure or facilitate crime; the solicitation, inducement or promotion of prostitution; or criminal sexual conduct. Neglect is defined as the failure to provide necessary food, clothing, shelter, health care or supervision.

student body, it is estimated that approximately 8,680 students have been cited for a traffic

offense. Basic traffic violations such as speeding or traffic light violations occurred most

frequently (n=2,371), followed by driving under suspension/revocation or without insurance

(n=109) and reckless/exhibition driving (n=29).

Table 7

Frequencies for Traffic Violations

Traffic citations by violation	Incidence	Prevalence	N
Reckless/Exhibition driving			29
Duty striking fixtures			3
Suspension/Revocation/Insurance			109
Traffic violations			2371
Total traffic violations	2.894	62.0%	2512

Table eight displays the frequencies for violations within the other category. A total of 29

other offenses were recorded. The prevalence rate for this category is 1.9%. The incidence

among those with convictions is approximately 1.1 offenses per person. A total of 27 students

were convicted of other offenses. Extrapolating this estimate to the entire student body, it is

estimated that approximately 260 students have been convicted of other offenses. The most

common citation category was a compilation of other misdemeanor violations which included

hunting and fishing offenses (n=24).

Table 8

Frequencies for Other Violations

Other frequencies by violation	Incidence	Prevalence	N
Contributing to the delinquency of a minor			1
Sale of tobacco to a minor			3
File sealed			1
Miscellaneous misdemeanors			24
Total other violations	1.074	1.9%	29

Overall, a total of 3,198 offenses and violations were recorded among the sample. Traffic violations (n=2,512) reflected just over seventy-eight percent of the total violations. Alcohol and drug-related violations represent much of the remaining citations (15.98%), and all other categories reflect only a small proportion of student citations (5.47%). The frequencies, percentages, incidence and prevalence rates for each crime category are shown in table nine.

Table 9

Frequencies for Crime Categories

Violations by category	Incidence	Prevalence	N	%
Alcohol and drug-related	1.722	21.4%	511	15.98
Property-related	1.762	1.5%	36	1.12
Public order-related	1.085	6.7%	102	3.19
Predatory	1.143	0.5%	8	0.25
Traffic	2.894	62.0%	2,512	78.55
Other	1.074	1.9%	29	0.91
Total violations	3.442	66.36%	3,198	100.00

DISCUSSION

Results of Self-Reports & Official Records

Results show that less than one percent of the sample failed to report a serious conviction. At first glance this appears to suggest that the self-report admissions policy is an effective way to screen criminal backgrounds in order to increase the safety and security of the campus environment. However, some caution must be taken in interpreting these results. Only 0.14% of the sample failed to report a serious conviction, yet a very limited number of the individuals within the sample would have had the opportunity to develop an adult criminal record prior to application to the university. Any students who are attending college immediately following graduation from high school are likely to have applied when they were under eighteen years of age or had recently turned eighteen at the time of application for admission. It is expected, based on enrollment reports, that these individuals represent both the bulk of university students as well as the bulk of students within the current sample. Consequently, the timing of the application process likely obscures potentially dangerous persons from the admissions process since there is no obligation to report serious juvenile adjudications outside of sex offenses.

Reports from records and enrollment indicate that 14,407 students were enrolled during the 2010-2011 academic year. Just over 2,000 of these individuals were graduate students and 789 were newly admitted transfer students. It is unknown how many older students are represented in the remaining 11,000 undergraduate and professional students. Had a focus been placed only on the transfer and graduate student population, it is expected that the sample would reflect a larger percent of the eligible population. Focusing only on those who have had the opportunity to develop a criminal record prior to application for admission eliminates a large proportion of the student population. While it is unknown if a larger number of underreporters

would be found, a reduction in the base number of students examined would more accurately reflect a relationship between those who have a potential for a record and those who have failed to report.

Another possible factor which may have influenced the low frequency of failed reporters is the social context of the university itself. The university is located in a community where two other four-year colleges and one technical college are located. A look at the admission applications of these other schools revealed that the private college utilized one security question inquiring about previous felony convictions, while the other four-year public college and the technical school did not inquire about any criminal records on the admissions application. It is possible that some individuals with previous qualifying convictions are avoiding NDSU and are instead pursuing an education in locations where they do not need to report their criminal histories.

Finally, it is possible that the vast majority of students are reporting their criminal records accurately. However previous studies cited in the literature review suggests that there is a certain amount of dishonesty within self-reports in studies without consequences for admitting to undesirable or illegal behaviors. The added stake of being denied admission due to a criminal history increases the incentive to fail to report criminal backgrounds.

Although juvenile records were not examined in the current study, they warrant some discussion as well. Unless juveniles with records have been convicted as adults or are required to register as sex offenders there is currently no way to monitor students who have been convicted of predatory crimes at the juvenile level. Limited access to juvenile records protects those who have committed offenses in adolescence and provides them with a fresh start. For those who continue offending this limited access fails to provide university administrators with the

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background information to determine issues such as what housing is best for the individual, other residents on campus, and the campus community. Restriction from accessing juvenile records means that the university is unable to assess their risk level during the admissions process or monitor these individuals once admitted. If the majority of the student population enters college immediately following graduation from high school, juvenile records are the only way to anticipate continued criminal behavior among most college students. Thus, campus administrators are left with little insight or control over the criminal backgrounds of most enrolled students.

Criminal Profile of NDSU Students

The results of the criminal records searches indicate that the majority of the offenses students are involved in are traffic-related. After eliminating these citations, the majority of the remaining criminal records reflect alcohol or drug violations. Many of these offenses involve underage drinking, driving under the influence, and petty drug-related violations such as the possession of drug paraphernalia. Very few predatory convictions or felony convictions were found among the sample. Still, extrapolation from this sample to the NDSU population leaves us with roughly 3,500 students who have been convicted of a non-traffic citation.

Policy Implications

Despite the low frequency of failed reporting among the current sample, one issue which needs to be addressed is the threshold of underreporting for particularly dangerous individuals. The criminal actions of one individual can have a wide scope of influence. The two individuals who were found to have failed to report in the current study both had extensive criminal histories compared to most students. The university has already witnessed first-hand the effects of

reoffending among those with extensive criminal histories. One particular individual who had been enrolled at the university committed a series of violent acts and was subsequently incarcerated and sentenced to the death penalty. Fortunately for the university, these acts were not committed on campus. Nevertheless it does require some thought and consideration in terms of liability and the amount of risk placed on the campus community. Extrapolating the prevalence rate to the NDSU population means that there are roughly twenty non-reporting students among the student body. Within the current study the two individuals who failed to report serious convictions had a wide range of violations and behaviors. If the individuals are still exhibiting these behaviors it may negatively impact members of the campus community. Assault, felony-level drug possession, concealed weapons, theft, and burglary are all behaviors that may continue to be exercised within the campus environment.

Individuals already at risk for certain behaviors may also be likely to further their deviance if they are able to meet and interact with other offenders while on campus. For example, someone with a criminal history of drug or alcohol-related convictions who is currently recovering from substance abuse may be at risk for relapsing by associating with the student community and participating in a number of events where substance use is common. Therefore, while the raw frequency of underreporting appears to be low, the scope and liability of the actions of those associated with the low count requires some discussion among the committee members and campus administrators.

Furthermore, in light of the demographic information about the failed reporters, some consideration must be taken in terms of which individuals are most likely to violate the current policies. Both individuals were male and were between the ages of twenty-five and forty. During admissions it may be most beneficial for the university to target those who have had the

opportunity to accumulate a criminal record. Criminal record checks on graduate student applicants, transfer applicants, and those with a gap in their education may be the best way to address the issue in a complete and cost-effective manner. Policies targeting certain populations may be challenging to implement due to issues such as discrimination.

Finally, criminal background reporting policies at competing local institutions should be closely monitored. If it is possible that students with criminal records are currently being deterred by the university's application process, any change in the admission policies of other local institutions of higher education may alter the trends in the current student population. This may result in an increase in both disclosers and failed disclosers. If the other local institutions, particularly Minnesota State University Moorhead and Minnesota State Community and Technical College, incorporate safety components in their admissions applications, any deterrent effect the current security policy may have on those within the area may diminish because there will be no simple alternative locally which requires no disclosure. It is also possible that another local institution receives a larger portion of applicants with criminal records. A recent study conducted on students admitted through a safety and security committee found that those with records had substantially lower grade point averages during college than the average student population (Custer, 2013). It is not unreasonable to hypothesize that academic difficulties for these individuals began prior to college. Variation in admissions policies in the local community which allow for lower high school grade point averages or ACT scores may also affect the distribution of these applicants, criminal record checks being equal.

Limitations

In addition to the age of most students upon application to the university, there are several other limitations to the current study. First, the criminal records of students may be

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incomplete due to the limited scope of the jurisdictions included. Sampson and Laub (2003)

extended the Glueck's cohort data which had originally followed a group of delinquents from the

Boston area over a period of twenty-five years. They extended the data set which had previously

ended when the delinquents were thirty-two years old by collecting official criminal records and

death records through the age of seventy. Criminal records were collected both through the

Massachusetts Office of the Commissioner of Probation and the Federal Bureau of Investigation.

While the Massachusetts data represented the majority of offenses, Sampson and Laub found that

55% had a record in both data sources. Of the 475 delinquents tracked through the age of

seventy, 93 had an arrest record after age thirty-one that existed in the national database but not

in the state database (Sampson & Laub, 2003).

Although there are students from a variety of states, the majority of the university

students are residents of either Minnesota or North Dakota. Due to the younger age of the student

population, it is expected that failure to collect complete criminal records at a national level is

less of an issue than in studies tracking older adults. It is not known if these trends apply to older

students, transfer students, or graduate students who are most likely to have an adult criminal

record when considering age and the time available to develop a record.

Second, the sampling frame is limited in personal identifiers and it is feasible that data is

collected on the wrong person. It is possible for example, that an individual with the same first

name, last name, and middle initial was recorded rather than that of the actual student. To reduce

the likelihood of this occurrence, common last names such as Anderson, Johnson, Larson,

Thompson, and Smith were skipped in the sampling frame. Finally, any study collecting data

from official records is limited by the accuracy of the recording process within the agencies, as

well as the limitation on accessing records which have been expunged or deferred. Any

misspellings of names at the data entry process within the agency may lead to a failure during the study to access a student's case records. Those individuals with deferred or expunged records would also not be included.

Directions for Future Research

Despite the limitations, this study represents a promising starting point for research into this popular admissions policy. Future research should narrow the scope of the sample when evaluating policies which only inquire about adult records. Conducting a sample or census of the criminal histories of transfer applicants and graduate students would be one way to eliminate searches on those who were unable to acquire an adult record at the point of admission. Future studies may also wish to access more demographic and academic student data, as well as increase the breadth of the criminal background data searched and collected. Dates of birth, academic majors, grade point averages, and state of residency are just a few examples of additional information which may prove valuable for future research in this area. Finally, in order to address the potential effect of the social context of the university, research examining different colleges and geographic locations will be valuable in determining the influence of other local education options on failed disclosure rates. As campus populations continue to grow and diversify, policies seeking to regulate campus safety and security will continue to benefit from empirical evaluation.

REFERENCES

Akinci, I.H., Tarter, R.E., & Kirisci, L. (2001). Concordance between verbal report and urine screen of recent marijuana use in adolescents. *Addictive Behaviors, 26*, 613-619.

Astin, A., Astin, H., Bayer, A., & Bisconti, A. (1997). Overview of the unrest era. *The History of Higher Education*, *2*, 724-738.

Babinski, L.M., Hartsough, C.S., & Lambert, N.M. (2001). A comparison of self-report of criminal involvement and official arrest records. *Aggressive Behaviors, 27*, 44-54.

Baker, K., & Boland, K. (2011). Assessing safety: A campus-wide initiative. *College Student Journal, 45*(4), 683-699.

Bale, R. N., Van Stone, W. W., Engelsing, T. M., Zarcone, V. P., & Kuldau, J. M. (1981). The validity of self-reported heroin use. *Substance Use & Misuse*, *16*(8), 1387-1398.

Barker, K., Fong, L., Grossman, S., Quin, C., & Reid, R. (1994). Comparison of self-reported recycling attitudes and behaviors with actual behavior. *Psychological Reports, 75*, 571-577.

Bauman, K.E., & Dent, C.W. (1982). Influence of an objective measure on self-reports of behavior. *Journal of Applied Psychology, 67*(5), 623-628.

Bekkers, R., & Wiepking. (2011). Accuracy of self-reports on donations to charitable organizations. *Quality and Quantity, 45*, 1369-1383.

Belli, R.F., Traugott, M.W., & Beckmann, M.N. (2001). What leads to voting overreports? Contrasts of overreporters to validated voters and admitted nonvoters in the American national election studies. *Journal of Official Statistics, 17*(1), 479-498.

Boyd, N.R., Windsor, R.A., Perkins, L.L., & Lowe, J.B. (1998). Quality of measurement of

smoking status by self-report and saliva cotinine among pregnant women. *Maternal and Child Health Journal, 2*(2), 77-83.

Burt, C.D.B., & Popple, J.S. (1998). Memorial distortions in donation data. *The Journal of Social Psychology, 138*(6), 724-733.

Catania, J.A., Gibson, D.R., Chitwood, D.D., & Coates, T.J. (1990). Methodological problems in AIDS behavioral research: Influences on measurement error and participation bias in studies of sexual behavior. *Psychological Bulletin, 108*(3), 339-362.

Clark, J.P., & Tifft, L.L. (1966). Polygraph and interview validation of self-reported deviant behavior. *American Sociological Review, 31*(4), 516-523.

Colón, H.M., Robles, R.R., & Sahai, H. (2001). The validity of drug use responses in a household survey in Puerto Rico: Comparison of survey responses of cocaine and heroin use with hair tests. *International Journal of Epidemiology, 30*, 1042-1049.

Crisanti, A.S., Laygo, R., Claypoole, K.H., & Junginger, J. (2005). Accuracy of self-reported arrests among a forensic SPMI population. *Behavioral Sciences and the Law, 23*, 295-305.

Crowne, D.P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*(4), 349-354.

Custer, B. D. (2013). "Why college admissions policies for students with felony convictions are not working at one institution." College and University. American Association of Collegiate Registrars and Admissions Officers. Retrieved September 10, 2013 from HighBeam Research: http://www.highbeam.com/doc/1P3-3015008341.html

Dickerson, D. (2008). Background checks in the university admissions process: an overview of legal and policy considerations. *Journal of College and University Law*, *34*(2).

Ehrman, R.N., Robbins, S.J., & Cornish, J.W. (1997). Comparing self-reported cocaine use with repeated urine tests in outpatient cocaine abusers. *Experimental and Clinical Pharmacology, 5*(2), 150-156.

Fallahi, C.R., Shaw Austad, C., Fallon, M., & Leishman, L. (2009). A survey of perceptions of the Virginia Tech tragedy. *Journal of School Violence, 8,* 120-1335.

Farrall, S. (2005), Officially recorded convictions for probationers: The relationship with self-report and supervisory observations. *Legal and Criminological Psychology, 10,* 121-131.

Farrington, D.P., Jolliffe, D., Hawkins, J.D., Catalano, R.F., Hill, K.G., & Kosterman, R. (2003). Comparing delinquency careers in court records and self-reports. *Criminology, 41*(3), 933-958.

Fendrich, M., Johnson, T.P., Sudman, S., Wislar, J.S., & Speihler, V. (1999). Validity of drug use reporting in a high-risk community sample: A comparison of cocaine and heroin survey reports with hair tests. *American Journal of Epidemiology, 149*(10), 955-962.

Fenton, K. A., Johnson, A. M., McManus, S., & Erens, B. (2001). Measuring sexual behaviour: Methodological challenges in survey research. *Sexually transmitted infections*, *77*(2), 84-92.

Fhanér, G., & Hane, M. (1973). Seat belts: The importance of situational factors. *Accident Analysis and Prevention, 5*, 267-285.

Fox, J.A., & Savage, J. (2009). Mass murder goes to college: An examination of changes on campuses following Virginia Tech. *American Behavioral Scientist, 52*(10), 1465-1485.

Frucot, V.G., & Cook, G.L. (1994). Further research on the accuracy of students' self-reported grade point averages, SAT scores, and course grades. *Perceptual and Motor Skills, 79*(2), 743-746.

Fu, H., Darroch, J.E., Henshaw, S.K., & Kolb, E. (1998). Measuring the extent of abortion

    underreporting in the 1995 national survey of family growth. *Family Planning*

    Perspectives, 30(3), 128-133, 138.

Fujii, E.T., Hennessy, M., & Mak, J. (1985). An evaluation of the validity and reliability of

    survey response data on household electricity conservation. *Evaluation Review, 9*(1), 93-

    104.

Garber, M.C., Nau, D.P., Erickson, S.R., Aikens, J.E., & Lawrence, J.B. (2004). The

    concordance of self-report with other measures of medication adherence. *Medical Care,*

    42(7), 649-652.

Gips, M. (1995). Is background screening academic? *Security Management, 39*(8), 11.

Gusfield, J.R. (1971). Student protest and university response. *The ANNALS of the American*

    Academy of Political and Social Science, 395, 26-38.

Hadaway, C. K., Marler, P. L., & Chaves, M. (1993). What the polls don't show: A closer look at

    US church attendance. *American Sociological Review*, 741-752.

Hadaway, C.K., Marler, P.L., & Chaves, M. (1998). Overreporting church attendance in

    America: Evidence that demands the same verdict. *American Sociological Review, 63*(1),

    122-130.

Hardt, R.H., & Peterson-Hardt, S. (1977). On determining the quality of the delinquency self-

    report method. *Journal of Research in Crime and Delinquency, 14*(2), 247-261.

Helsing, K.J., & Comstock, G.W. (1977). What kinds of people do not use seat belts?. *American*

    Journal of Public Health, 67(11), 1043-1050.

Hessing, D. J., Elffers, H., & Weigel, R. H. (1988). Exploring the limits of self-reports and

reasoned action: An investigation of the psychology of tax evasion behavior. *Journal of personality and social psychology*, *54*(3), 405-413.

Hindelang, M.J., Hirschi, T., & Weis, J.G. (1979). Correlates of delinquency: The illusion of discrepancy between self-report and official measures. *American Sociological Review, 44*(6), 995-1014.

Holt, K., Franks, P., Meldrum, S., & Fiscella, K. (2006). Mammography self-report and mammography claims. *Medical Care, 44*(6), 513-518.

Hopper, J.R., & Nielsen, J.M. (1991). Recycling as altruistic behavior: Normative and behavioral strategies to expand participation in a community recycling program. *Environment and Behavior, 23*(2), 195-220.

Hser, Y., Maglione, M., & Boyle, K. (1999). Validity of self-report of drug use among STD patients, ER patients, and arrestees. *American Journal of Drug and Alcohol Abuse, 25*(1), 81-91.

Hughes, S.F., & White, R.J. (2006). Risk mitigation in higher education: An overview of the use of background checks on campus. *CUPA-HR Journal, 57*(2), 23-32.

Hughes, S. F., & Wolf, C.R. (2008). Should we require self-disclosure in the admissions process?. *Recruitment and Retention in Higher Education, 22*(4), 3-5.

Jagannathan, R. (2001). Relying on surveys to understand abortion behavior: Some cautionary evidence. *American Journal of Public Health, 91*(11), 1825-1831.

Jansson, I., Hesse, M., & Fridell, M. (2008). Validity of self-reported criminal justice system involvement in substance abusing women at five-year follow-up. *BMC Psychiatry, 8*(2).

Jarvis, M.J., Tunstall-Pedoe, H., Feyerabend, C., Vesey, C., & Saloojee, Y. (1987). Comparison

of tests used to distinguish smokers from nonsmokers. *American Journal of Public Health, 77*(11), 1435-1438.

Johnson, B.D., Taylor, A., & Golub, A. (2005). Research note: How accurate are arrestees' self-reports of their criminal justice histories? *Justice Research and Policy, 7*(1), 81-101.

Johnson, T.P., O'Rourke, D.P., Burris, J.E., & Warnecke, R.B. (2005). An investigation of the effects of social desirability on the validity of self-reports of cancer screening behaviors. *Medical Care, 43*(6), 565-573

Jones, E.F., & Forrest, J.D. (1992). Underreporting of abortion in surveys of U.S. women: 1976 to 1988. *Demography, 29*(1), 113-126.

Jones, R. K., & Kost, K. (2007). Underreporting of induced and spontaneous abortion in the United States: an analysis of the 2002 National Survey of Family Growth. *Studies in Family Planning*, *38*(3), 187-197.

Katosh, J.P., & Traugott, M.W. (1981). The consequences of validated and self-reported voting measures. *Public Opinion Quarterly, 45*, 519-535.

Kirk, D.S. (2006). Examining the divergence across self-report and official data sources on inferences about the adolescent life-course of crime. *Journal of Quantitative Criminology, 22*, 107-127.

Klebanoff, M.A., Levine, R.J., Clemens, J.D., DerSimonian, R., & Wilkins, D.G. (1998). Serum cotinine concentration and self-reported smoking during pregnancy. *American Journal of Epidemiology, 148*(3), 259-262.

Krohn, M.D., Thornberry, T.P., Gibson, C.L., & Baldwin, J.M. (2010). The development and impact of self-report measures of crime and delinquency. *Journal of Quantitative Criminology, 26*(4), 509-525.

Kuncel, N.R., Credé, M., & Thomas, L.L. (2005). The validity of self-reported grade point averages class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Literature, 75*(1), 63-82.

Lab, S.P., & Allen, R.B. (1984). Self-report and official measures: A further examination of the validity issue. *Journal of Criminal Justice, 12*(5), 445-455.

Levinger, G. (1966). Systematic distortion in spouses' reports of preferred and actual sexual behavior. *American Sociological Review, 31*(4).

Lichtman, S.W., Pisarska, K., Berman, E.R., Pestone, M., Dowling, H., Offenbacher, E., Weisel, H., Heshka, S., Matthews, D.E., & Heymsfield, S.B. (1992). Discrepancy between self-reported and actual caloric intake and exercise in obese subjects. *The New England Journal of Medicine, 327*(27), 1893-1898.

Lipka, S. (2008). Campaigns to overrule campus gun bans failed in many states. *Chronicle, 54(32)*, A16. http://chronicle.com/section/Home/5

Louie, T.A., & Obermiller, C. (2000). Gender stereotypes and social desirability effects on charity donation. *Psychology & Marketing, 17*(2), 121-136.

Luepker, R.V., Pallonen, U.E., Murray, D.M., & Pirie, P.L. (1989). Validity of telephone surveys in assessing cigarette smoking in young adults. *American Journal of Public Health, 79*(2), 202-204.

Lu, N. T., Taylor, B. G., & Riley, K. J. (2001). The validity of adult arrestee self-reports of crack cocaine use. *The American Journal of Drug and Alcohol Abuse*, *27*(3), 399-419.

Magura, S., Goldsmith, D., Casriel, C., Goldstein, P. J., & Lipton, D. S. (1987). The validity of methadone clients' self-reported drug use. *Substance Use & Misuse*, *22*(8), 727-749.

Magura, S., Kang, S., & Shapiro, J.L. (1995). Measuring cocaine use by hair analysis among

criminally-involved youth. *Journal of Drug Issues, 25*(4), 683-701.

Martin, G.W., Wilkinson, D.A., & Kapur, B.M. (1988). Validation of self-reported cannabis use by urine analysis. *Addictive Behaviors, 13*, 147-150.

McPhee, S.J., Nguyen, T.T., Shema, S.J., Nguyen, B., Somkin, C., Vo, P., & Pasick, R. (2002). Validation of recall of breast and cervical cancer screening by women in an ethnically diverse population. *Preventive Medicine, 35*, 463-473.

Morisky, D.E., Green, L.W., & Levine, D.M. (1986). Concurrent and predictive validity of a self-reported measure of medication adherence. *Medical Care, 24*(1), 67-74.

Murphy, D.A., Durako, S., Muenz, L.R., & Wilson, C.M. (2000). Marijuana use among HIV-positive and high-risk adolescents: A comparison of self-report through audio computer-assisted self-administered interviewing and urinalysis. *American Journal of Epidemiology, 152*(9), 805-813.

Nederhof, A.J. (1985). Methods of coping with social desirability bias: a review. *European Journal of Social Psychology, 15*, 263-280.

Newell, S., Girgis, A., Sanson-Fisher, R., & Ireland, M. (2000). Accuracy of patients' recall of pap and cholesterol screening. *American Journal of Public Health, 90*(9), 1431-1435.

Nichols, W. (1995). Violence on campus. *FBI Law Enforcement Bulletin*, *64*(6), 1.

Nieves, K.E., Draine, J.N., & Solomon, P.L. (2000). The validity of self-reported criminal arrest history among clients of psychiatric probation and parole service. *Journal of Offender Rehabilitation, 30*(314), 133-151.

Nyamathi, A., Leake, B., Longshore, D., & Gelberg, L. (2001). Reliability of homeless women's reports: Concordance between hair assay and self report of cocaine use. *Nursing Research, 50*(3), 165-171.

Owen, L., & McNeill, A. (2001). Saliva cotinine as indicator of cigarette smoking in pregnant women. *Addiction, 96*, 1001-1006

Parada, M.A., Cohn, L.D., Gonzalez, E., Byrd, T., & Cortes, M. (2001). The validity of self-reported seatbelt use: Hispanic and non-Hispanic drivers in el Paso. *Accident Analysis and Prevention, 33*, 139-143.

Patrick, D.L., Cheadle, A., Thompson, D.C., Diehr, P., Koepsell, T., & Kinne, S. (1994). The validity of self-reported smoking: a review and meta-analysis. *American Journal of Public Health, 84*(7), 1086-1093.

Peter, J., & Valkenburg, P.M. (2011). The impact of 'forgiving' introductions on the reporting of sensitive behavior in surveys. *Public Opinion Quarterly, 75*(4), 779-787.

Peterkin, C. (2012). Colleges grapple with applicants' juvenile records and criminal histories. *Chronicle of Higher Education, 59*(7), A20.

Pierce, M. W., & Runyan, C. W. (2010). Criminal records and college admissions. *Injury Prevention*, *16*(1), 58-60.

Plüddeman, A., & Parry, C.D.H. (2003). A short report: Self-reported drug use vs. urinalysis in a sample of arrestees in South Africa. *Drugs: Education, Prevention & Policy, 10*(4), 379-383.

Poulin, C., MacNeil, P., & Mitic, W. (1993). The validity of a province-wide student drug use survey: lessons in design. *Canadian Journal of Public Health, 84*(4), 259-264.

Presser, S. (1990). Can changes in context reduce overreporting in surveys?. *The Public Opinion Quarterly, 54*(4), 586-593.

Rasmussen, C., & Johnson, G. (2008). The ripple effect of Virginia Tech: Assessing the

nationwide impact on campus safety and security policy and practice. *Midwestern Higher Education Compact.*

Roberts, J., & Wells, W. (2010). The validity of criminal justice contacts reported by inmates: A comparison of self-reported data with official prison records. *Journal of Criminal Justice, 38*(5), 1031-1037.

Rowe, A.R., & Tittle, C.R. (1977). Life cycle changes and criminal propensity. *The Sociological Review, 18*(2), 223-236.

Sampson, R.J., & Laub, J.H. (2003). Life-course desisters? Trajectories of crime among delinquent boys followed to age 70*. *Criminology,41*(3), 555-592.

Sattler, D.N., Larpenteur, K., & Shipley, G. (2011). Active shooter on campus: Evaluating text and e-mail warning message effectiveness. *Journal of Homeland Security and Emergency Management, 8*(1).

Sillett, R.W., Wilson, M.B., Malcolm, R.E., & Ball, K.P. (1978). Deception among smokers. *British Medical Journal,2*, 1185-1186.

Silver, B.D., Anderson, B.A., & Abramson, P.R. (1986). Who overreports voting? *American Political Science Review, 80*(2), 613-624.

Stokes, J.W.D., & Groves, A.W. (1996). Rescinding offers of admissions when prior criminality is revealed. *New Directions for Higher Education, 95*, 55-71.

Streff, F.M., & Wagenaar, A.C. (1989). Are there really shortcuts? Estimating seat belt use with self-report measures. *Accident Analysis and Prevention, 21*(6), 509-516.

Stulginskas, J.V., Verreault, R., & Pless, B. (1985). A comparison of observed and reported restraint use by children and adults. *Accident Analysis and Prevention, 17*(5), 381-386.

Tassiopoulos, K., Bernstein, J., Heeren, T., Levenson, S., Hingson, R., & Bernstein, E. (2004).

Hair testing and self-report of cocaine use by heroin users. *Addiction, 99*, 590-597.

Thompson, K.M., Leinfelt, F.H., & Smyth, J.M. (2006). Self-reported official trouble and official

   arrest: Validating a piece of the core alcohol and drug survey. *Journal of Substance Use,*

   11(1), 23-36.

Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin,*

   133(5), 859-883.

Tumiel-Berhalter, L.M., Finney, M.F., & Jaén, C.R. (2004). Self-report and primary care medical

   record documentation of mammography and pap smear utilization among low-income

   women. *Journal of the National Medical Association, 96*(12), 1632-1639.

Twenge, J.M., & Im, C. (2007). Changes in the need for social approval, 1958-2001. *Journal of*

   Research in Personality, 41, 171-189.

Udry, J.R., Gaughan, M., Schwingl, P.J., & van den Berg, B.J. (1996). A medical record linkage

   analysis of abortion underreporting. *Family Planning Perspectives, 28*(5), 228-231.

Udry, J.R., & Morris, N.M. (1967). A method for validation of reported sexual data. *Journal of*

   Marriage and the Family, 29(3), 442-446.

Walsh, R.A., Redman, S., & Adamson, L. (1996). The accuracy of self-report of smoking status

   in pregnant women. *Addictive Behaviors, 21*(5), 675-679.

Wyner, G.A. (1980). Response errors in self-reported number of arrests. *Sociological Methods &*

   Research, 9, 161-177.

Yeager, D.S., & Krosnick, J.A. (2011). Does mentioning "some people" and "other people" in a

   survey question increase the accuracy of adolescents' self-reports?. *Developmental*

   Psychology, 47(6), 1674-1679.

Zapka, J.G., Bigelow, C., Hurley, T., Ford, L.D., Egelhofer, J., Cloud, M., & Sachsse, E. (1996).

Mammography use among sociodemographically diverse women: the accuracy of self-report. *American Journal of Public Health, 86*(7), 1016-1021.

Zimmerman, M. A., Caldwell, C. H., & Bernat, D. H. (2006). Discrepancy between self-report and school-record grade point average: Correlates with psychosocial outcomes among African American adolescents1. *Journal of Applied Social Psychology*, *32*(1), 86-109.