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Testing Specific Deterrence in the National Basketball Association: An Application of
Beccaria's Theory of Deterrence

A thesis

presented to

the faculty of the Department of Criminal Justice and Criminology

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Master of Arts in Criminal Justice and Criminology

by

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ABSTRACT

Testing Specific Deterrence in the National Basketball Association: An Application of

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by

Michael McCutcheon

While the concept of deterrence has been applied to punishment in America's criminal justice system, the empirical data is mixed on whether it effectively deters crime. This lack of consensus may be a result of missing elements from deterrence theory; namely, that punishment is often neither swift nor certain. Similar to the criminal justice system, professional sports leagues aim to control behavior of athletes by having guidelines that, when violated, result in punishment. However, these punishments are delivered much quicker and there is a higher level of certainty. The current study examines specific deterrence in the National Basketball Association by using longitudinal data of fines and suspension from the 2000-2001 season to the 2015-2016 season to test whether punishment that is swift and certain can deter rule-breaking behavior. Results from the study showed no deterrent effect when deterrence was analyzed by punishment type (suspension or fine) and severity of punishment.

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CHAPTER 1

INTRODUCTION

In several ways, punishment in professional sports mirrors that of the criminal justice system. For example, leagues have a set list of rules intended to guide the behavior of professional athletes. Furthermore, professional sport leagues and player associations publicly assert that their goal is to deter negative player activities by administering suspensions and fines (Berry & Smith, 2000). This goal is similar to the criminal justice system's idea that laws and the repercussions of violating laws will cause members of society to reconsider law breaking. Ingrained in this concept is a crucial element of deterrence theory; namely, that humans are rational actors who consider the costs of violating rules (Beccaria, 1764). Moreover, deterrence theory posits that punishment should be swift, certain, and severe in order to prevent future deviance (Beccaria, 1764).

Although many policies and laws in America are enacted under the facade of deterrence theory, most fail in their application. Punishment is severe, but it is neither certain nor swift. In contrast, professional sport leagues like the National Basketball Association (NBA) deliver punishment in a swift and certain manner. Additionally, punishments are created to fit the offense, with variations in severity across multiple offenses. Punishment in America differs from this, which is evidenced by three strike laws, drug penalties, and DUI arrests being dictated by prior offenses.

The NBA's system of punishment allows for deterrence to be examined in a way that is unique compared to America's criminal justice system, because Beccaria's (1764) deterrence theory is better applied by the NBA. For the most part, the empirical results are mixed regarding

punishment's effectiveness at deterring crime, but this may be because of the poor application of deterrence theory rather than failure of its conceptual underpinnings. Opportunely, the NBA offers an environment that can more ably test the deterrent effects of Beccaria's propositions. In hopes of finding such an effect, this study examines specific deterrence in the NBA by using longitudinal data of fines and suspensions from the 2000-20001 season to the 2015-2016 season to test whether punishment that is swift, certain, and severe can deter rule-breaking behavior. Evidence of a deterrent effect can justifiably lend support to the contentions of the classical school of criminology.

It is important for the purposes of this study to briefly explain how punishment in the NBA is administered and by who. In NBA games, three referees monitor the behavior of ten players during four twelve minute quarters. These referees look for common rule violations such as fouls or stepping out of bounds, but they also monitor more deviant behaviors like flagrant fouls. A flagrant foul is when a player fouls an opponent in a manner deemed unnecessary or potentially harmful. These types of foul calls can result in an ejection from the game, a suspension, a fine, or a combination of the three. Moreover, referees have the ability to review certain foul calls mid-game by watching replays of the behavior that occurred.

In addition to referees, the Board of Governors also affects punishment in the NBA. The Board of Governors is made up of representatives from the league office and the owners of the thirty different organizations (Royster, 2014). This board meets annually and discusses rules changes or different points of emphasis for referees for the upcoming season. The league office, which is made up of the NBA commissioner and his cabinet, are oftentimes tasked with delivering punishments for the more deviant behaviors. In these cases, they have the ability to review the film from the games and see if anything happened that the referees did not notice.

Referees have the power to eject players but only the league office can fine or suspend players. Furthermore, many of the guidelines and limitations for punishment by the league office is explained in the NBA Constitution and By-Laws.

The current study focuses on behavior in the NBA and therefore, requires a brief explanation of behavioral trends and public perception throughout the league's history. Over the past fifty years, the image and comportment of the NBA has gone through multiple changes. In the 1960's, the league as a whole was represented by the values of the Boston Celtics, who won nine championships during the decade by utilizing teamwork, fundamentals, and a passionate drive to win (Gelso, 2009). Following this, the NBA began to shift into more of a flashy, showman's league, due in part to the American Basketball Association, mainly consisting of African Americans who grew up playing basketball on the streets, merging with the NBA in 1976 (Gelso, 2009). Shortly after the merger, the changing style of the league, coupled with a serious cocaine issue, negatively impacted the league's image and resulted in a significant decrease in fans and televised games (Gelso, 2009). In 1984, the NBA hired David Stern to be its new commissioner and he quickly changed the league's image by using drug tests and dress codes amongst other alterations (Gelso, 2009). Stern retired in 2014, but he successfully changed the image of the NBA and its popularity has consistently increased over the last decade (Tack, 2015).

While the NBA did successfully turn its image around after the late 1970's and early 1980's, it is still just the third most popular professional sports league in America behind the National Football League (NFL) and Major League Baseball (MLB) respectively (Public Policy Polling, 2016). However, signs such as the general disdain for NFL commissioner Roger Goodell, the well-publicized concussion issues in the NFL, and the steady decrease in popularity

of MLB may indicate that the NBA will surpass the NFL and MLB in the future (Gallo, 2016). In spite of this, a 2015 survey of 1,009 people displayed that members of the public believe that professional athletes are worse role models now than they were “10 or 20” years ago (Cohn, 2015). Cohn (2015) attributes this finding to the growth of technology and the effects the media have on the public perception of athletes. Buenning (2014) believes that NBA players are more likely to be negatively perceived by the general public because of their overall visibility compared to the NFL and MLB. NBA players do not have their faces covered when they play and they are also very close to fans when on the court or the bench (Buenning, 2014).

One reason why some members of the public view professional athletes negatively may be because players do get away with behavior that would be unacceptable in other working environments. For example, in 1997, Latrell Spreewell choked his head coach P.J. Carlesimo during practice and only received a one-year suspension for it (Javier, 2000). Similar to that incident, Kermit Washington, in 1977, punched fellow player Rudy Tomjanovich so hard in the face that he nearly killed him and only received a 26-game suspension for the encounter (Javier, 2000). Both of these cases would have resulted in an arrest in the real world, but these players were only given suspensions (Javier, 2000). These types of behavior and the response to the behavior could negatively impact the NBA’s image to the general public.

Public perception alone is not a fair indicator of the actual behavioral tendencies of professional leagues, but there have been studies comparing the arrest rates of sports league to the general population (Leal, Gertz, Piquero, 2015; Tracy, 2014). Tracy (2014) analyzed arrests from the NBA, NFL, MLB, and National Hockey League (NHL) from 2010-2014 and found that the NBA had the highest arrest rate followed by the NFL, MLB, and NHL in that order. Furthermore, all four of the leagues were well below the national average for males between 20

and 39 (Leal et al., 2015; Tracy, 2014). The national average across those years for males between 20 and 39 was more than 5,000 arrests per 100,000 people, while the rates of the NBA (2,466), NFL (2,157), MLB (553), and NHL (175) fall below that (Leal et al., 2015; Tracy, 2014).

Leal et al. (2015) and Benedict (2004) performed studies similar to Tracy's (2014) but each focused on just one sport. Benedict (2004) investigated the criminal histories of 177 NBA players from the 2001-2002 season and found that four out of ten players had a police record involving a serious crime. Leal et al. (2015) looked at NFL players' arrest rates from 2000-2013 and discovered that the NFL rate varied from slightly below 2,000 per 100,000 to slightly below 4,000 per 100,000 during that span while the national average was slightly higher than 5,000 per 100,000.

The statistics detailed from the three studies display that athletes, specifically NFL and NBA players, may not deserve their reputation as bad role models or "thugs" which is evidenced by the fact that their crime rates are lower than males in their same age bracket from the general population. On the surface, it may appear that the NFL has the biggest problem with crime, but that is likely because there are so many more players in the NFL compared to the MLB, NBA, and NHL. This means that there are more NFL players getting arrested, but their rate is still lower than the NBA's.

An additional concern for the NFL is that it has received more negative attention from the media over the past couple of years because of questionable decision-making from their commissioner regarding Ray Rice's domestic abuse case and Tom Brady's ball deflation investigation. Ray Rice was filmed assaulting his fiancée and initially suspended just two games by Roger Goodell for the incident. However, after the video went viral and was seen by the

public, Goodell changed the suspension to indefinite due to the scrutiny he was facing from the public. Goodell also mishandled Tom Brady's case, who was being investigated for having knowledge of footballs being deflated prior to a playoff game. Despite there being little evidence that Brady was involved with the deflations, he was suspended for four games by Goodell in what many considered a "witch hunt" (Jenkins, 2016).

The reason the perceptions of professional sports leagues are being discussed is to prove that the media can paint an unrealistic picture of what is actually occurring within the leagues. Professional athletes are arrested less than their counterparts from the general public. The average citizen would probably not expect this to be the case because every time an athlete is arrested or even charged, it is all over the internet and news channels. Kim and Parlow (2009) note that, in February of 2009, the media reported deviant behavior of athletes in 22 out of the 28 days of the month. Clearly, this could create perceptions that professional athletes are constantly being arrested or engaging in unacceptable behavior. Additionally, arguably the biggest court case in our country's history, the OJ Simpson case, involved a former professional athlete. This type of publicity and criticism is not fair, but is the nature of the profession.

Benedict's (2004) study does paint a bad picture of the NBA, showing that players have more of a criminal history than the general public. Obviously, this is a troublesome finding but it may be that becoming a professional athlete deters future criminal behavior. In fact, Benedict's (2004) finding combined with Tracy's (2014) article, suggests that just being in the league potentially deters individuals from engaging in criminal activity. Or, because Benedict's (2004) study was performed well before Tracy's (2014), it is possible that the criminality of NBA players has decreased over the past decade. In fact, commissioners in professional leagues have recently been imposing harsher and more frequent punishments to players that committed

criminal acts in hopes of improving the images of their leagues (Kim & Parlow, 2009). These changes could potentially explain the discrepancy between Benedict's (2004) study and the others previously explained.

Having a general understanding of punishment in the NBA and the behavioral trends throughout the NBA's history is beneficial for readers of this thesis because it assists in comprehending what the current study is testing. The main goal of the current paper is to assess whether punishment in the NBA can serve as a deterrent of deviant behavior both on and off the court. Several studies display that NBA players commit crimes at a lower rate than their counterparts in the general public. This could potentially indicate that players in the NBA are capable of being deterred by the threat of punishment which is exactly what this thesis wishes to determine.

This introduction has served to lay the groundwork for the current study. Chapter two examines the available literature on deterrence focusing on criminology and sports. The chapter will also apply deterrence theory to the NBA punishment structure. Chapter three discusses the methodology used to examine the relationship between deterrence and punishment in the NBA. Chapter four displays the results from the statistical analyses in addition to an explanation of what they mean. The results of the study are discussed in chapter five including implications, opportunities for futures research, and limitations.

CHAPTER 2

LITERATURE REVIEW

The literature review for the current study focuses on the existing research connecting criminology and sports, the current literature on deterrence, and the application of Beccaria's deterrence theory to the NBA. A brief discussion of why sports can be an environment to test human behavior and, more relevant to this study, responses to punishment is given. Next, the existing literature on criminology and sports is reviewed. Following this, various studies testing deterrence in the criminal justice system are detailed. To conclude, the application of deterrence theory to the NBA is compared to the application of deterrence theory by our criminal justice system.

Prior to discussing the actual studies and theoretical arguments focusing on punishment in sports, it is important to briefly explain why individuals have chosen to perform these studies in the sporting world and not the real world. Torgler (2009) argues that sports offer a legitimate arena to test economic theories because of their observability and controlled environment. Furthermore, he posits that data obtained from sports would be highly reliable and easily documented (Torgler, 2009). The generalizability of studying behavior in sports may be lacking but, overall, testing behavioral theories in these types of controlled and easy-to-manage environments could be beneficial (Torgler, 2009). The current study at hand focuses on criminological theories rather than economic theories, but Torgler's (2009) reasoning for studying behavior in sports is applicable to both of these social sciences.

Brickman (1977) discusses how the punishment structure in sports can potentially be used to improve the criminal justice system. He argues that a system that relies singularly on

deterrence or rehabilitation is unfair and unjust because the aims of punishments for these systems do not lead to fair punishment for the victim and the offender (Brickman, 1977). Instead, Brickman (1977) calls for an equity-based system of punishment where restoring fairness is the main goal. He further argues that professional sports leagues like the NBA and NFL utilize both equity-based punishment and deterrence-based punishment (Brickman, 1977). An example of an equity-based punishment would be a basketball player receiving free throws after being fouled while shooting. The player is rewarded the opportunity to make up for the two points missed because of the foul. This restores fairness to the game and represents an equity-based punishment (Brickman, 1977). In contrast, punishments like fines and suspension are used to deter players from future rule-breaking behaviors (Brickman, 1977).

Brickman's (1977) argument that the criminal justice system can learn from punishment in sports is particularly relevant to the current study, because it is testing punishment in the NBA to see if any support for Beccaria's deterrence theory is found. Additionally, Torgler's (2009) reasoning for studying behavior in sporting environments lends credence to the study at hand. Taken together, Torgler (2009) and Brickman's (1977) writings are supportive of the research being performed in this study. Experiments performed in sport leagues have few ethical concerns and can be used to make generalizations for society. Moreover, sports are a suitable setting for testing the propositions and validity of theories.

Criminology and Sports

Professional sports may not seem to be an area likely to receive attention from criminal justice academia. Nonetheless, there has been a reasonable amount of literature linking criminology and sports. In addition, much of the literature is relevant to the topic of this study: deterrence. A few instances of deterrence being studied or at least considered include Division I

college basketball and football, the National Football League (NFL), the National Hockey League (NHL), Major League Baseball (MLB), and the English Premiere League (Allen, 2002; Cullen, Latessa, & Johnson, 2012; Greenman, 2014; Gulotta Jr., 1979; Heckelman & Yates, 2003; Levitt, 2002; McCormick & Tollison, 1984; Nagel, Southal, & O'Toole, 2004; Strelan & Boeckmann, 2006; Witt, 2005). The remainder of this section of the literature review further details the literature connecting sports and criminology in addition to discussing the relationship between sports and delinquency.

In 1984, McCormick and Tollison used college basketball as a venue to test whether an increase in police officers could lead to a decrease in arrests. Their reasons for using college basketball was due to an increase in referees in the Atlantic Coastal Conference (ACC) from two to three (McCormick & Tollison, 1984). By comparing referees to police officers and fouls to arrests, McCormick and Tollison (1984) found that an increase in enforcement resulted in a 34 percent reduction in "offending." Although this study did not look at deterrence from a punishment perspective, an implication taken from these finding is that an increase in certainty of penalties, caused by an increase in referees, leads to a decrease of rule violations.

During the 1998-1999 NHL season, the league decided to experiment with the amount of referees used in a game by employing one referee in some games and two referees in the remaining games (Allen, 2002). Similar to the McCormick and Tollison (1984) study, this experiment by the NHL allowed for a comparison of the police as referees and players as citizens (Allen, 2002). However, unlike the McCormick and Tollison (1984) study, Allen (2002) found that an increase in referees resulted in an increase in penalties, specifically violent penalties, concluding that extra referees were able to find and enforce penalties better than a single referee

could. Therefore, Allen (2002) contributed the findings to an “apprehension” effect rather than a deterrence effect.

In addition to Allen (2002), Heckelman and Yates (2003) also took advantage of the change in referees during the 1998-1999 NHL season. As might be expected, their findings were the same as Allen’s (2002) with more penalties being called in games that had two referees compared to those with just one referee (Heckelman & Yates, 2003). Moreover, they conclude from their results that there is no significant deterrent effect from an increase in referees (Heckelman & Yates, 2003). They further theorize that players in games may not consider the increase of referees in games, leading them to behave in the same way as they would with just one referee (Heckelman & Yates, 2003).

Yet another study to address the referee experiment of the 1998-1999 NHL season was performed by Levitt (2002). However, findings from this study were moderately different than the two previously mentioned. Levitt (2002) concluded that the increase in referees did not significantly increase the probability of being detected for a penalty and, because of this, there was no way to realistically test the deterrence hypothesis. In sum, the finding from the study did not support or disprove the idea that an increase in referees would deter rule-breaking behavior (Levitt, 2002).

Witt (2005) also studied the effects of a rule change in sports by examining fouls in the English Premiere League. The rule change was made prior to the 1998 season and it included more offenses that could result in red cards (Witt, 2005). To clarify, in soccer, players who are called for fouls can receive non-card fouls, yellow cards, or red cards, with red cards leading to an ejection from the match (Witt, 2005). Despite the change allowing for more offenses to result in red cards, Witt (2005) found that the amount of red cards did not increase, whereas yellow

cards and non-card fouls did increase in the 1998-1999 season. This finding is attributed to a displacement effect, with players adjusting their on-field behavior to avoid being ejected (Witt, 2005). Moreover, another implication that can be taken from the results of this study is that an increase in the severity of punishment can lead to a decrease in the more deviant forms of behavior (Witt, 2005).

Using thirteen years of data from the 2000-2001 season to the 2012-2013 season, Greenman (2014) examined general deterrence in the NFL at both the team and league level. This study considered the effects of penalties and monetary fines on future rule-breaking behavior by observing NFL punishment on a week-by-week basis (Greenman, 2014). For example, the study tested whether the amount of penalties from one week decreased in the following week (Greenman, 2014). After controlling for numerous variables, there was no general deterrent effect from penalties or fines at either the team or league level (Greenman, 2014).

In contrast to the McCormick and Tollison (1984), Allen (2002), Witt (2005), and Greenman (2014) studies, which looked at in-game penalties, Cullen et al. (2012) used survey data from 1994 to examine out-of-game NCAA rule infractions of Division I football and basketball players. They found that seven in ten respondents admitted to violating NCAA rules, with most of the infractions being minor and resulting from economic deprivation (Cullen et al., 2012). Additionally, Cullen and his colleagues (2012) argued that paying college athletes and punishing them more harshly is unlikely to deter future infractions; instead, they contended that establishing programs to identify high risk student athletes and educating student-athletes on the legitimacy of NCAA rules would better deter violations.

Another study that looked at out-of-game behavior and deterrence was performed by Strelan and Boeckmann (2006), who surveyed 116 Australian soccer players. They looked at performance enhancing drug (PED) use in hopes of finding out why or why not players use these drugs. (Strelan & Boeckmann, 2006). After analyzing the survey data, Strelan and Boeckmann (2006) found that moral beliefs and health concerns had the strongest effects on drug use. Moreover, they concluded that the threat of legal sanctions altered behavior by having an influence on the players' moral beliefs, thus, serving as a deterrent to PED use (Strelan & Boeckmann, 2006). Understanding why individuals do or do not engage in the illegal use of PEDs can be beneficial in shaping punishment to have a deterrent effect.

Kaye and Boardley (2012) theorize why athletes who take PEDs are not deterred by the threat of drug tests. In general, doping (the use of performance enhancing drugs) is most commonly seen during the Olympic sports of cycling, track and field, and any type of weight lifting event (Kaye & Boardley, 2012). Moreover, baseball players are often caught using PEDs (Kaye & Boardley, 2012). Despite many athletes being detected and sanctioned for doping, the use of PEDs is not slowing down and it does not appear that it will in the near future (Kaye & Boardley, 2012). Kaye and Boardley (2012) attributes this lack of deterrence to moral disengagement, which athletes use to reduce accountability and distort the consequences of illegal drug use. They further propose that a better understanding of the underlying psychological causes of moral disengagement could potentially result in a system of punishment that more effectively deters PED use (Kaye & Boardley, 2012).

Nagel et al. (2004) and Gulotta Jr. (1979) offered suggestions for punishment in sports without directly testing the effects of punishment. Nagel et al. (2004) identified the punishments given as a result of deviant behavior in the four major professional sports leagues: the NHL,

NFL, NBA, and MLB. They found that punishment occurred most often as a result of in-game fighting or intimidation (Nagel et al., 2004). Furthermore, they argued that punishment in professional sports should be used as a public relations tool rather than a deterrent; it was their belief that the image of the leagues was more valuable than attempting to deter future deviant behavior (Nagel et al., 2004). Despite this contention, their findings regarding fighting and intimidation could be utilized to shape punishment. For example, to increase the likelihood of deterrence, leagues could attempt to develop punishment methods aimed at decreasing fighting and intimidation offenses.

Gulotta Jr. (1979) did not perform any type of study but, instead, discussed the best ways to deter violence in professional sports. This article acknowledged that intervention via criminal trials did not work particularly well at making players and organizations accountable for excessively violent in-game behavior (Gulotta Jr., 1979). Due to this, Gulotta Jr. (1979) argued that civil law may be a better arena for combatting violence in professional sports. Moreover, deterrence could be increased by combining civil law with stronger internal controls by the various league offices (Gulotta Jr., 1979). The individual leagues have to take responsibility in their own hands and more effectively punish violence in sports if a deterrent effect is to be found (Gulotta Jr., 1979).

Overall, the research testing deterrence in college or professional sports is mixed. Several of the studies did lend tentative support to deterrence theory while others failed to find any kind of deterrent effect. Research of this kind is limited and should be expanded for a more comprehensive understanding of the impact of rules and punishment in sports. However, many of the authors, using findings from their own studies, did offer suggestions for potentially improving deterrence within sports.

One theory connecting sports and criminology that has been frequently studied is the idea that simply playing sports deters individuals from engaging in criminal activity. In fact, this concept is not new at all and the research in this area dates back to the early Twentieth Century (Segrave, 1984). The logic behind this assertion is that sports help teenagers build character and surrounds them with positive role models (Begg et al., 1996). Truxal (1929), in an early study, found that delinquency was reduced by 50% in Knoxville and St. Louis and by 96% in Binghamton after a recreational area was placed in these cities. Moreover, Shanas (1942) also examined the relationship between recreation and delinquency in Chicago. Using a sample of 15,217 boys and 7,939 girls between the age of ten and seventeen, it was found that the youth who regularly participated in recreational activities were significantly less likely to be delinquent (Shanas, 1942).

More recently, research has focused on youth involvement in scholastic sports rather than just recreation. For example, Begg, Langley, Moffitt, and Marshall (1996) looked at the relationship of both sporting activity and team sport participation and delinquency. They surveyed their sample at the age of fifteen, and then did follow-up surveys when they turned eighteen (Begg et al., 1996). After controlling for a variety of factors, they found that males and females with high levels of sporting activity were significantly more likely to be delinquent than their inactive counterparts (Begg et al., 1996). Additionally, no relationship was found between team sport participation and delinquency (Begg et al., 1996). Begg et al. (1996) believed that past studies which found a deterrent effect from youth who participate in sports may have suffered from selection bias or methodological issues.

Chiffriller, Falcone, Mayers, and Hornung (2013) also found a relationship between youth sport involvement and delinquency in their survey of 146 college students. More

specifically, their research indicated that the portion of their sample which described their teenage involvement in sports as “time-consuming” were more likely to be delinquent (Chiffriller et al., 2013). Additionally, individuals who played “more” sports as a child or started sports at a later age had a significant positive relationship with drug use (Chiffriller et al., 2013). However, there was no relationship between delinquency and those surveyed who were currently involved in varsity sports (Chiffriller et al., 2013).

Another study examining sports and delinquency compared youth who participate in sports to youth who participate in non-sport organized activities and to youth who do not participate in either (Gardner, Roth, & Brooks-Gunn, 2003). Using a sample of 1,344 urban boys and girl, there was no indication that participation in sports deters deviant behavior (Gardner et al., 2003). Furthermore, the group of youth participating in sports were more likely to be involved in nonviolent delinquency than the group that participated in non-sport organized activities (Gardner et al., 2003). In contrast, this relationship was not found between those involved in sports and those that were not involved in any activity (Gardner et al., 2003). Additionally, there was no relationship between involvement in sports and violent delinquency (Garner et al., 2003).

Kreager (2007) additionally tested the effects of sports on delinquency but, different from the previous studies mentioned, examined the effects that different sports had on delinquency. Using a sample of 75,871 high school athletes from 129 different schools, there was no evidence that sports deterred delinquent behavior (Kreager, 2007). However, playing more physical sports like football or wrestling significantly increased the likelihood of being involved in more violent forms of delinquency (Kreager, 2007). Other sports like basketball, baseball, and tennis had no relationship with delinquency (Kreager, 2007).

Another study focusing on high school sports and delinquency examined the relationship between sports and different types of delinquency (Hartman & Massoglia, 2007). Furthermore, this study spanned fourteen years with surveys initially being administered to high school freshmen in 1988 and then again to the individuals in 2002 when they were 29 or 30 (Hartman & Massoglia, 2007). A positive relationship was found between participation in high school sports and driving under the influence arrests, indicating that former athletes were more likely to be caught driving drunk (Hartman & Massoglia, 2007). Additionally, a relationship was found between being a high school athlete and shoplifting, showing that former athletes were less likely to be arrested for shoplifting (Hartman & Massoglia, 2007). This study looked at the impact of participating in high school sports on delinquency over a longer period of time compared to the previous studies (Hartman & Massoglia, 2007). Moreover, it displays that participation in sports can, depending on the type of offense, be criminogenic or a deterrent (Hartman & Massoglia, 2007).

Eitle, Turner, and Eitle (2003) tested for a relationship between sport participation and drug or alcohol abuse. In this study, they found that white males who played sports in high school were statistically more likely to abuse alcohol in the future (Eitle et al., 2003). Additionally, being a white male and playing football in the 12th grade was found to be a past predictor for alcohol abuse (Eitle et al., 2003). In contrast, the study also found that, for black males, as involvement in sports increased, the likelihood of drug or alcohol abuse decreased (Eitle et al., 2003).

In sum, the research on the relationship between youth sports or activity and delinquency is mixed. Some of the earliest studies (Shanas, 1942; Truxal, 1929) found that recreational activity significantly reduced the chances of delinquency. However, over the past two decades,

the research on scholastic sports and delinquency is less consistent. Several of the studies detailed in this review found that involvement in sports increased the likelihood of law-breaking. Others found no relationship, meaning that individuals involved in sports were no more or less likely to be delinquent than their peers who do not participate in sports. These studies are relevant for the current research because they are testing the relationship between sports and rule-breaking behavior which is similar to what is examined in the current study.

Current State of Deterrence

In addition to reviewing the literature on the link between criminology and sports, it is important to briefly address the current state of deterrence in America's criminal justice system. To date, there is little consensus in academia regarding punishment and the threat of punishment's ability to deter crime; however, this does vary by punishment and policy type. The remainder of this literature review will examine several studies that have tested deterrence in hopes of providing a more thorough understanding on the research of the effects that various punishments have on crimes. Punishments and policies included in this literature review will be police strategies, focused deterrence strategies, sentencing changes, and capital punishment. Implications discerned from the literature could potentially show support or a lack thereof for deterrence theory.

A common response to high crime rates is an increase in patrolling police officers. This increase in officers should, ideally, result in a higher certainty of arrest which is one of Beccaria's (1764) crucial guidelines for deterrence. Fortunately, several studies have been performed to test the effectiveness of an increase in officers (Evans & Owens, 2007; Levitt, 2004; Worrall & Kovandzik, 2010). Levitt, in 2004, concluded that one reason there was a major crime drop in the 1990s was due to the number of police officers increasing around 14 percent

per capita. This increase in police officers was largely a result of the Violent Crime Control and Law Enforcement Act of 1994 (Evans & Owens, 2007). Evans and Owens (2007) used this increase in officers to study data from 1990 to 2001 from 2,074 cities, and found that the increase led to statistically significant reduction in auto theft, robberies, burglaries, and aggravated assaults. Worrall and Kovandzik (2010) also used data from 1990 to 2001 while examining 5,000 cities and found that homicide, robbery, assault, and burglary rates decrease when police presence increased.

One way that police departments attempt to reduce crime is to increase the number of police officers in “hot spots” which are specific areas within a city that have a particularly high crime rate. This strategy should ideally increase the certainty of being arrested in the specific area targeted. Braga and Bond (2008) tested the effects of “hot spot” policing in Lowell Massachusetts and had some encouraging findings. In Lowell, thirty-four high crime areas were distinguished and half (seventeen) of these areas received an increase in police presence (Braga & Bond, 2008). The areas that received treatment saw a significant reduction in crime (Braga & Bond, 2008). Oftentimes, there is a fear that there will be a displacement effect after “hot spot” policing, which is when criminal activity simply moves to a different area (Braga & Bond, 2008). However, Braga and Bond (2008) found no evidence that crime was displaced in their study.

Ratcliffe, Taniguchi, Groff, and Wood (2011) also tested the effectiveness of “hot spot” policing. Their study, which focused on sixty high crime areas in Philadelphia, found that the targeted areas had a significant reduction in crime (Ratcliffe et al., 2011). Additionally, it was estimated that, after accounting for displacement, “hot spot” policing in Philadelphia during the summer of 2009 prevented fifty-three violent crimes (Ratcliffe et al., 2011). Telep, Mitchell, and

Weisburd (2012) had similar findings in their study of “hot spot” policing in Sacramento. Police officers in Sacramento would randomly rotate between “hot spots,” spending close to fifteen minutes in each spot (Telep et al., 2011). This strategy was found to significantly reduce crime in the spots treated (Telep et al., 2011).

In a meta-analysis of studies focused on the effectiveness of “hot spot” policing, Braga, Papachristos, and Hureau (2012) found that, in most cases, these strategies work. After analyzing twenty-five tests from nineteen studies, it was concluded that twenty out of the twenty-five resulted in a significant reduction in crime (Braga et al., 2012). Moreover, the research showed that crime displacement is not inevitable following “hot spot” policing strategies (Braga et al., 2012). Overall, the findings from this meta-analysis indicate that “hot spot” policing strategies are effective at deterring crime and can be successfully utilized by police departments without a significant displacement of crime.

A relatively new strategy by the police, known as focused deterrence, has grown in popularity over the past few years. These strategies utilize law enforcement, community mobilization, and social services to identify the causes and risk factors involved in gang and gun violence (Braga & Weisburd, 2015). Braga, Apel, and Welsh (2013), using gang data from 2006 to 2010, found that the focused deterrence strategies resulted in a statistically significant decrease in total shootings by gangs. Furthermore, they noticed a spillover effect where non treated gangs that came in contact with the treated gangs also experienced a statistically significant decrease in total shootings (Braga et al., 2013). Engel, Tillyer, and Corsaro (2013), studying the Cincinnati Initiative to Reduce Violence (CIRV), also found support for focused deterrence, evidenced by gang-related homicides and violent firearm incidents significantly decreasing. Another successful finding came from Braga and Weisburd (2011), who performed a meta-analysis using

11 focused deterrence studies and concluded that the strategies resulted in a statistically significant reduction in crime.

Another project worth mentioning related to the certainty of punishment is the Hawaii Opportunity Probation with Enforcement (HOPE) community supervision program. To deter probationers from violating supervision conditions, Project HOPE uses high-certainty, high-celerity, and low-severity sanctions (Duriez, Cullen, & Manchak, 2014). Hawken and Kleiman (2009) found that individuals in the HOPE program were less likely than participants in other probation programs to violate supervision conditions or arrested and imprisoned. Duriez et al. (2014) acknowledge that Project HOPE has been successful but question its application in different areas across the country.

Sentencing severity is another policy that deserves attention when reviewing the deterrence literature. Doob and Webster (2003) studied the impact of varying sentences in California from 1994 to 1998 and concluded that the severity of sentencing has no deterrent effect. Kessler and Levitt (1999) also examined sentence severity in California following the passage of Proposition 8 in 1982. In contrast to Doob and Webster (2003), they did find that an increase in sentence severity had a deterrent effect (Kessler & Levitt, 1999). Helland and Tabarrok (2007) focused on three strike laws in California and concluded that individuals with two strikes (serious felony) had a 17-20 percent reduction in felony arrest rates. Lastly, Raphael and Ludwig (2002) examined gun crimes and Project Exile in Virginia and determined that enhancing prison penalties did not have a deterrent effect.

A critical element of the capital punishment debate that has been raging for decades is whether execution serves as a deterrent for violent crime. Many researchers' findings display that there is a deterrent effect (Cloninger & Marchesini, 2001; Dezhbaksh, & Shepherd, 2006;

Dezhbaksh, Rubin, & Shepherd, 2003; Liu, 2004; Mocan & Gittings, 2003), whereas others refute these assertions (Berk, 2005; Cohen-Cole, Durlauf, Fagan, & Nagin, 2009; Donohue & Wolfers, 2006; Donohue & Wolfers, 2009; Fagan, 2006). The former of these two groups claim that their statistical analyses indicate that capital punishment effectively reduces the violent crime rate. In rebuttal, the latter group attacks the methodology and statistical analysis of the studies, concluding that it would be near impossible to make such a claim. Additionally, in 2012, the National Research Council, after reviewing more than thirty years of studies, concluded that prior research on deterrence and the death penalty was fundamentally flawed and does not accurately confirm whether capital punishment increases, decreases, or has no effect on the homicide rate (Nagin & Pepper, 2012).

The research on deterrence in the criminal justice system detailed in this literature review indicates that an increase in certainty and, to a lesser degree, celerity often does successfully deter crime. Most of the studies reviewed support “hot spot” policing, focused deterrence strategies, and an increase in patrolling officers. However, the research on the severity of punishment (sentencing, capital punishment) is less conclusive. These takeaways do lend moderate support to Beccaria’s (1764) theory of deterrence, as he believed that certainty and celerity were more important for deterring crime than severity. Moreover, these findings are relevant to the study at hand, which studies a system of punishment that is more likely to be certain and swift than severe.

Applying Beccaria’s Theory of Deterrence

In the late 1600’s, when Christian influences on society were apparent across Europe, many individuals began to question criminal justice systems believed to be cruel and unjust (Cullen & Gilbert, 2012). As a result, the Enlightenment began and attitudes about society

started to drastically change (Cullen & Gilbert, 2012). Influenced by the Enlightenment and the appalling methods of justice in Italy, where he lived, Cesare Beccaria published *On Crimes and Punishments* in 1764, calling for reform in Italy's criminal justice system (Lilly, Cullen, & Ball, 2011). This treatise would eventually become the foundation for classical criminology and deterrence theory, with Beccaria currently being recognized as the father of the classical school of criminology (Lilly et al., 2011). In *On Crimes and Punishments* (1764), Beccaria argues that humans are rational and hedonistic, and that punishment should be based on this concept (Lilly et al., 2011).

Beccaria (1764) proposed six guidelines of punishment that he believed were crucial if criminal behavior was to be deterred: punishment must be swift, certain, proportional, easily known, should fit the offense, and legislators should make laws and determine punishment. Furthermore, Beccaria (1764) believed that punishment should be for deterrent purposes only and not for revenge. This paper will argue that the NBA has applied Beccaria's goals for punishment better than America's criminal justice system. Armed with this knowledge, the effectiveness of Beccaria's theory of deterrence will be tested on data from the NBA.

Beccaria's (1764) first recommendation for successful punishment is that it must be administered swiftly after the offense is committed. America's criminal justice system struggles with this element of deterrence theory as trials often drag on for months or even years and individuals on death row typically spend multiple years in prison prior to execution. In fact, between 1984 and 2010, the average amount of time spent on death row between sentencing and execution was a little under eleven years (Capital Punishment, 2010). In contrast, fines and suspensions in the NBA are delivered within a couple days following the rule violation. This is especially necessary for suspensions because a player who did something serious enough to

warrant a suspension in one game is required to complete that suspension the following game (NBA Rule Book, 2015-2016).

The second guideline posited by Beccaria (1764) was that punishment be certain, which he believed was most important for deterring crime. There is very little certainty of punishment in the United States, which is evidenced by the many crimes that go undetected or unreported. Additionally, money and mistakes made by the police or the courts can lead to a guilty person not being punished. In the NBA, undetected violations are extremely rare. This is due to the fact that all games are televised and the multiple cameras used can view almost any angle on the court at any point during the game. If the in-game officials do not catch a deviant behavior that occurred during the game, the league office will undoubtedly notice the behavior after the game and punish the culprit accordingly.

Thirdly, Beccaria (1764) asserts that punishment should be proportionate to the crime committed and should not be cruel or excessive. America's criminal justice system does an adequate job of punishing proportionately, but there are some instances when it fails to do so. To begin with, the disparities in sentencing between crack and cocaine adopted in 1986 demonstrate disproportionality (Mauer, 2011). These two drugs have a very similar composition with the only difference being that crack is cocaine mixed with baking soda. Despite this fact, "selling 500 grams of powder cocaine triggered a mandatory 5-year prison term, whereas, for crack cocaine, sale or possession of just 5 grams resulted in the same 5-year sentence" (Mauer, p. 94, 2011). For two drugs that are very similar, this is clearly not a proportionate sentence, and it has resulted in minorities being arrested for drug distribution at significantly higher rates than whites.

Another example of disproportionality in sentencing comes from three strike laws. The "strike" is a conviction for a serious felony, and any additional strikes following the first one

results in a tougher sentence than the previous strike did (Helland & Tabarrok, 2007). This type of sentencing culminates with a third strike, which leads to a prison sentence of twenty-five to life (Helland & Tabarrok, 2007). It is obvious that these three strike laws do not lead to proportionate sentences for individuals convicted of multiple serious felonies. It would be difficult to argue that all of the punishment divvied out by the NBA is proportionate, but the NBA Rule Book (2015-2016) does set some guidelines for fining that would make it tough to disproportionately charge players. For example, there is a maximum fine set at \$50,000 for fines resulting from technical fouls, ejections, and leaving the bench during an altercation (NBA Rule Book, 2015-2016). Additionally, the NBA has a Constitution which describes the limitations for the league commissioner on fines (NBA Constitution and By-Laws). This would be beneficial in preventing excessive punishment, but human error could still feasibly lead to disproportionate suspensions or fines. As a whole, the NBA is unlikely to be perfectly proportionate when giving fines and suspensions, but their punishment is likely to be more proportionate than the criminal justice system.

In addition to being proportionate, swift, and certain, Beccaria (1764) also believed that punishment should be easily known. The NBA and America's criminal justice system both have a set list of rules that are accessible for the public; however, punishment is more easily known in the NBA because the rule book and Constitution is drastically smaller than the list of laws of the criminal justice system and the United State Constitution. In the United States, punishment can be different at the federal, state, and city level. Moreover, the discretion of judges can render inconsistent punishment in some situations.

Similar to proportionality, Beccaria (1764) also posited that punishment should fit the offense and not the offender. He believed that circumstances surrounding the crime should not be

relevant to the type of punishment (Beccaria, 1764). Three strike laws and drug laws, which were addressed previously, prove that the criminal justice system does consider circumstances surrounding the crime and prior to the crime. In the NBA, circumstances involved with rule-breaking behavior are taken into account, but previous offenses should not affect the amount of punishment. In spite of this, personal biases and human error could impact the commissioner or the league office's decision when punishing someone who has repeatedly been in trouble.

Finally, Beccaria (1764) contended that legislators should make the laws and determine the punishments. It was his belief that legislators know the laws better than anyone else since they created them, so they should be the ones to enforce the laws (Beccaria, 1764). This is not the case for the criminal justice system, which has a legislative branch that creates laws, and a judicial branch that enforces the laws. In the NBA, rules on punishment are created and updated by the Board of Governors, which is made up of team owners, and league office representatives (Royster, 2014). Furthermore, the powers of the Commissioner and the Board of Governors to punish are explained in the NBA Constitution and By-Laws. The Board of Governors need a majority vote to change how suspensions and fines are administered, and the Commissioner holds all the power of punishment in special cases (NBA Constitution and By-Laws). To further clarify, the league office, made up of the Commissioner and members of his cabinet, create and update rules in conjunction with the Board of Governors, but the league office are the individuals who deliver the punishments when violations occur. In this way, some of the legislators (the league office) play a role in giving punishment, but others (the Board of Governors) do not. This can be easily explained because it would not be fair for owners of different teams to be in charge of punishing players on teams that they compete against.

This paper does not contend that the NBA's form of punishment is a perfect application of Beccaria's (1764) theory of deterrence but, instead, that it does so better than America's criminal justice system. For the reasons listed previously, the argument can be made that the NBA's system of justice shares similarities with Beccaria's goals for punishment. Moreover, it is evident that the criminal justice system fails at properly adhering to many of Beccaria's suggestions. Establishing this is important because the current study could potentially provide support for Beccaria's assertions if a deterrent effect is found.

Conclusion

This literature review in its entirety has served to provide a background on research related to the study at hand. The existing literature linking criminology and sports was described. For this portion of the literature review, there are a few different sections of note, with the first being the available studies that analyzed rule changes in sports. In addition to these, there are several studies that discuss the relationship between deterrence and criminal behavior off the courts. Finally, the end of this section focuses on the relationships between recreation and delinquency and sports and delinquency. In this section, research focuses on whether or not simply playing in sports affected delinquency. Following the review of the literature connecting criminology and sports was the current research on deterrence in the criminal justice field. To conclude the literature review, the application of Beccaria's theory of deterrence by the NBA was discussed. Chapter three will focus on the methodology of the current study.

CHAPTER 3

METHODS

Chapter three for this thesis is used to discuss the methodology behind the current study. Included in the methodology is: the sample and how it was collected; the research question and hypotheses guiding the study; description of the dependent, independent, and control measures and how they were created; and the analytic strategy utilized to test the research question. Furthermore, chapter three will contain table one, which summarizes the various measures for the current study.

Previous studies focused on deterrence and sports have mixed results (Allen, 2002; Greenman, 2014; Heckelman & Yates, 2003; Levitt, 2002; McCormick & Tollison, 1984; Witt, 2005). However, those studies do not examine the deterrent effect over sixteen seasons, while the current study does. This study uses a longitudinal research design to test the impact of punishment in the NBA.

Sample

Secondary data is used for this study, and the sample is collected from two different websites: <https://www.eskimo.com/~pbender/fines.html> (2016) and <http://www.basketball-reference.com> (2016). The former of these two data sources contains a list of all players receiving publicized fines and suspensions (given by the league or team) from the NBA dating back to the 1994-1995 season, but does not include mandatory fines for technical fouls, ejections, and flagrant fouls. This rich data source gives the name of the player along with the date when the suspension, fine, or suspension/fine is announced. Following this, an explanation for the fine or suspension is listed as well as the length of the suspension and the amount of the

fine. In total, the data collected amounts to over sixteen NBA seasons. Basketball-reference (2016) is utilized to find the salary of individual players in the year that they have been fined or suspended, so that the proportion of fine to salary can be determined. Moreover, basketball-reference (2016) is used to find game logs for the players so that the total number of games between punishments can be collected. The specific sample for the current study is drawn between the 2000-2001 season and the 2015-2016 season.

Research Questions

This study aims to add to the limited amount of literature linking criminology, deterrence, and sports. More specifically, this study uses longitudinal data covering twenty-one NBA seasons to determine if fines and suspensions have a specific deterrent effect on players. Additionally, this study could lend support to Beccaria's (1764) theory if a deterrent effect is established. Though deterrence has been applied to professional sports in the past, it has not been examined in the NBA and it has not been examined over the course of sixteen seasons in any sport. Furthermore, there is scarce research on specific deterrence in sports, with the majority of the literature studying general deterrence. Listed below are the research question and hypotheses guiding the study.

Research Question: Is there evidence of specific deterrence in the National Basketball Association?

H1: As the proportionality of fine to salary increases, the gap (in games) between violations will increase, controlling for other possible explanations.

H2: As the length of suspensions increase, the gap (in games) between violations will increase, controlling for other possible explanations.

H3: Suspensions will result in a larger gap (in games) between violations than fines, controlling for other possible explanations.

Measures

Dependent Variables

Punishment in the NBA is aimed at preventing rule-breaking behavior whether it be a player that has never been suspended or fined or a player that is chronically violating rules. This is obviously not a perfect system of punishment, which is evidenced by the numerous suspensions and fines that are levied every NBA season, but it is possible that rules and punishments do effectively deter rule-breaking behavior. In this study, the effects of fines and suspensions on the distance between rule violations for individual players are analyzed. To be specific, the dependent measure is the amount of games between punishments and is denoted as *games between* for the remainder of the paper. This variable is measured by counting the amount of games played by a player between two separate punishments. The reason that only the games individuals actually played in are counted, rather than games where they just sat on the bench, is because basketball-reference (2016), up until 2012, only listed the games that players entered. (See Table 1 for a list of all measures).

Table 1. *Operationalization of Variables*

Variable	Description
Games Between Punishment	The amount of games between punishment (suspension or fine). Only applicable if an individual player has received some form of punishment at least once.
Punishment	
Suspensions	Amount/length of fine, suspension, and both (fine and suspension).
Fines	
Both	
Proportionality	The proportionality between fine and salary.
Team or League	Punishments delivered by either the league or the individual team.
Race	Race of the player punished.
White	
Non White	
International	Whether the punished player was raised internationally or raised in the United States.
College Experience	Whether or not the player punished played college basketball.
Years in the League	The <i>n</i> th year that the player is in when receiving the punishment.
Behavior Type	Whether the offense that resulted in punishment took place during a game or off the court.
In-Game	
Out-of-Game	

Independent Variables

Punishment in the NBA is delivered in a variety of ways and can come from multiple sources. Referees, the front office of teams, and the league office all play a role in disciplining players. On-court rule violations such as fouls, technical fouls, and flagrant fouls are enforced by referees, who have the power to eject a player from the game or caution players of future conduct. The league office will review in-games violations to determine whether further punishment is necessary. Players can be given suspensions, fines, or even indefinite suspensions in extreme cases. In addition, the front office of teams, consisting of the owner, general manager, and the coaching staff have the right to fine or suspend their players. Typically, the front office of teams will only address conduct detrimental to the team such as skipping practice, missing part of training camp, failing to take care of an injury, or altercations among teammates or coaches.

For this particular study, the punishments examined are publicized suspensions and fines that have been handed down by either the league office or a team's front office. Furthermore, the proportion between fine and salary (denoted as *fine proportion*) of the player is used while testing deterrence. This is computed by dividing a player's salary (found on basketball-reference) by the amount of fine (denoted as *fine amount*) they receive. Finally, the length of suspension (*suspension severity*), whether it be one game, two games, or five games is relevant for testing the hypotheses. This variable was created by simply listing the length of the suspension, in games (found on eskimo), for a punished player. Additionally, the impact of a fine (*fine*) is compared to the impact of a suspension (*suspension*).

Controls

Several control variables are included in the statistical models to account for spuriousness when running the statistical analyses. Outside of these controls, there are also other sources of spuriousness, but these are not controlled for in the statistical models. Instead, additional spurious variables are detailed in the limitations portion of this paper. The variables that are controlled for are race (denoted as *race*), number of seasons in the NBA (*career length*), previous punishments (*previous offenses*), if the punishment was administered by a team or the league (*team or league*), if the offense occurred in-game or out (*in or out-of-game*), whether the player punished grew up internationally or domestically (*international*), and whether the individual played basketball in college or not (*college experience*).

Race, which is typically controlled for in social science studies, shows if there is any indication of bias in how punishments are handed down and account for that bias if it is found. This is made into a dichotomous variable with “0” being nonwhite and “1” being white. *Career length*, which is the *n*th season that the player received a punishment in is also controlled. To clarify, this variable is created by listing the season a player is in when punished. So, for example, if a player is suspended in his 7th season, the number “7” is entered under the *career length* variable. It is possible that, similar to the American population, there is an “aging out” effect on rule-breaking behavior for NBA players who have had a particularly lengthy career. *Previous offenses* are also controlled for in hopes of seeing whether or not repeat offenders are more or less likely to be deterred. This variable is created by simply ranking the amount of punishments an individual player had starting with zero “0”. So, a player with four punishments in their career is coded as follows: 0, 1, 2, 3. *Team or league* is controlled for because it may be that receiving a punishment from your team hurts worse than being punished by the league.

Similar to *race*, this is coded into a dichotomous variable with “0” being league and “1” being team.

College experience is also controlled for. More specifically, a dichotomous variable is created with “0” representing players that did not play college basketball and “1” being those who did play college basketball. An argument can be made that individuals who attended college come into the NBA with a more mature and controlled demeanor than those who came directly from high school or never played at a university. College athletics are much more structured than high school and players’ actions are under a microscope at the Division I level. *In or out-of-game* is controlled for because it is possible that players who get into legal troubles are more inclined to engage in deviant behaviors on and off of the court compared to those who abide by the laws of the criminal justice system. This measure was coded into a dichotomous variable with “0” being punishments from in-game behavior and “1” being punishments from out-of-game behavior. The final control variable that will be used in the statistical models is *international*. This is created by forming a dichotomous variable where “0” represents domestic players (raised in the United States) and “1” represents international players (raised internationally). This is controlled for because there are obvious cultural differences between America and other countries across the world that could impact behavior.

Strengths

This study has a variety of strengths, which are mainly attributable to the size of the data set. There are more than 900 cases of publicized fines and suspensions over the course of the sixteen NBA seasons analyzed. Using a data set of this magnitude and chronological length increases the validity of the findings; it is unlikely that any type of deterrent effect found is a

result of outliers. Any chronic rule-violators or one-time rule violators are balanced out with such a rich data set so that the results are likely not skewed. Moreover, the amount of data collected is large enough to produce clear results from the multiple variables that are tested. In sum, the large sample size provides more external validity than a smaller sample would.

Analytic Strategy

Due to the nature of the study and data at hand, a form of regression analysis is used to test the three hypotheses under consideration. Regression is used as a means to predict the effects that a set of independent variables will have on the target, or dependent, variable (Winship & Radbill, 1994). Additionally, this allows for multiple variables to be controlled for so that a clear relationship can be displayed between the hypothesized independent and dependent variables (Winship & Radbill, 1994). This structure is in line with the goals of the current research, where the impact of multiple independent variables on the outcome of interest – *games between* - are concurrently assessed through the use of separate models.

Deciding which form of regression is suitable to the current study involves taking a few qualities of the data into account. First, it is important to acknowledge that the dependent variable is count data and, as a result, cannot take on negative values. It would be impossible for someone to play less than 0 games between punishment. This rules out the potential use of ordinary least squares regression which fails to make assumptions regarding negative values and limits the available analyses to Poisson regression or negative binomial regression (Hilbe, 2011). Second, the dependent variable is not normally dispersed, evidenced by the variance (19829.389) being higher than the mean (130.98). As a result, negative binomial regression, the most appropriate technique for over-dispersed count data, is best suited to test the hypotheses of this study (Cameron & Triveldi, 2013; Hilbe, 2011).

Testing the three hypotheses requires three separate negative binomial models. The first explores the relationship between *fine proportion* and *games between*. Following this, the second model examines how *suspension severity* affect *games between*. Lastly, the third model tests for a difference between the effects of fines and suspensions on *games between*. All three of these models serve to address the main research question that guides the current study.

STATA

The current study utilizes the statistical software STATA, which is often used in the social sciences, to run the three negative binomial regression models. STATA is selected over competing statistical software such as SPSS because it is better suited at running negative binomial regression analyses. The process by which these models are ran is much more simplified and practical compared to SPSS though both are capable of using negative binomial regression.

Conclusion

This chapter examined the source of the data by describing how the data was collected from two websites. The independent, dependent, and control variables were described. In addition, the types of analysis that were conducted was explained. The next chapter will present the results for each hypothesis.

CHAPTER 4

RESULTS

The results section of this thesis begins by detailing the descriptive statistics of the data set used to test the research question. Following this, an explanation of the bivariate analysis is given including a table of the bivariate correlations and a discussion regarding multicollinearity. To conclude, the multivariate analyses will be displayed and explained with the assistance of three tables that represent the separate negative binomial regression models.

Descriptive Statistics

The descriptive statistics for the sample are detailed in Table 2. The sample is predominately nonwhite with just 88 whites (9.8 percent) and 814 nonwhites (90.2 percent) included. For *career length*, the average season that an individual player was in when punished was 7.23 (standard deviation of .335). In regard to *college experience*, 779 (86.4 percent) of the punishments were given to players who played college basketball whereas 123 (13.6 percent) were given to those that did not attend college prior to becoming a professional. The *team or league* variable consists of 779 (86.4 percent) punishments that were delivered by the league and 213 (13.6 percent) punishments handed down by teams. For the *international* variable, 76 (8.4 percent) of the punishments were given to international players whereas 826 (91.6 percent) were given to domestic players. Lastly, for *in or out-of-game*, 627 (69.5 percent) of the punishments were a result of in-game behavior and 275 (30.5 percent) of the punishments resulted from out-of-game behavior.

Table 2.

Descriptive Statistics

Variable	Percent (N)	Mean (SD)
Games Between Punishment		130.98 (140.817)
Punishment	100 (902)	
Suspensions	47.8 (431)	
Fines	45.0 (406)	
Both	6.8 (61)	
Proportionality		.004890 (.008614)
Suspension Severity		2.65 (8.612)
Team	13.6 (123)	
League	86.4 (779)	
Race		
White	9.8 (88)	
Non White	90.2 (814)	
International	8.4 (76)	
American	91.6 (826)	
College		
Yes	86.4 (779)	
No	13.6 (123)	
Years in the League		7.23 (.335)
Behavior Type		
In-Game	69.5 (627)	
Out-of-Game	30.5 (275)	
Previous Offenses		2.05 (2.99)

For the dependent variable, the average amount of games between punishments is approximately 131 games ($M = 130.98$) with significant dispersion amongst the sample, indicated by the standard deviation score of 140.817 ($V = 19829.389$) and the range of *games between* being 0 to 875. Again, this variation found in the dependent variable is a fundamental reason why negative binomial regression is used instead of the other available options (e.g., OLS regression). In regards to the independent variables, the current sample contains a total of 902 administered punishments. Out of these 902 punishments, 627 (69.5 percent) resulted from in-game behavior whereas 275 (30.5 percent) resulted from an out-of-game behavior. The actual punishments are divided into three categories: suspension, fine, and both (fine and suspension). The frequency for each category are as follows: 431 (47.8 percent) suspensions, 406 fines (45.0 percent), and 61 fall in the “both” category where a suspension and fine was given (6.8 percent).

The mean for *suspension severity* is 2.65 games, whereas *fine amount* has a mean of \$17,917.94 showing that the average fine is around \$18,000. For *fine proportion* (salary divided by fine amount), the mean is .004890 with a standard deviation of .008614. The range for proportion was .0001 to .0959. These statistics indicate that the majority of fines failed to reach even 1 percent of a player’s salary. To further illustrate this point, the average fine of \$17,917.94 divided by the average salary of the fined players (\$7,249,050.95) is just .002472, again displaying that the fines typically have little impact on a player’s salary.

Bivariate Analysis

Table three contains a complete overview of the bivariate correlations. The bivariate correlations displayed show the relationships between the measures that are included in the multivariate analysis. For the current study, the coefficients listed should be interpreted with caution because the dependent measure is overdispersed leading to Pearson correlation

coefficients that may be biased. This is a concern because Pearson correlations assume that the measures compared are normally distributed (Chen & Popovich, 2002). However, a bivariate analysis is still important because it can allow for an understanding of the relationships between the measures and it can assess if multicollinearity is a problem in the multivariate analysis (Berry & Feldman, 1985). The bivariate correlations for the current study indicate that multicollinearity may not be an issue, meaning that potential relationships found between the dependent and independent measures should not be biased. This is evidenced by the fact that none of the correlations between the dependent variable, *games between*, and the independent and control variables have a coefficient higher than 0.7 which would indicate that multicollinearity may be an issue. It is important to note that there is a perfect correlation between *suspension severity* and *game control*, but this is due to the fact that *game control* is created to control for the impact of *suspension severity*.

Multivariate Analysis

The current study utilizes three multivariate analyses (in the form of negative binomial regression models) to test the research question and corresponding hypotheses. Model one tests the relationship between *fine proportion* and *games between*. Model two tests the relationship between *sentence severity* and *games between*. Model three tests whether there is a difference between the effect that suspension and fines have on *games between*. The remainder of the results section discusses the findings of the individual models, and whether they lend support to the hypotheses they are testing.

Table 3.

Bivariate Correlations

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Suspension Severity	--														
2. Fine Amount	0.38**	--													
3. Fine Proportion	0.15	0.59**	--												
4. Games Between	0.02	0.03	-0.01	--											
5. College Experience	-0.01	-0.06	-0.01	-0.03	--										
6. Career Length	-0.04	0.06	-0.17**	-0.14**	0.02	--									
7. Proportion Control	-0.02	0.59**	1.00**	-0.01	-0.01	-0.08*	--								
8. Fine	-0.05	0.02	0.01	0.01	0.01	0.05	0.35**	--							
9. Suspension	B	-0.03	0.01	0.01	-0.00	-0.04	-0.30**	-0.87**	--						
10. Game Control	1.00**	-0.04	0.03	0.02	-0.01	-0.04	-0.07*	-0.20**	0.20**	--					
11. Race	-0.11*	-0.05	-0.06	-0.12**	0.16**	0.08*	-0.04	-0.01	-0.01	-0.08*	--				
12. Previous Offenses	0.02	0.09	-0.08	-0.20**	-0.11**	0.38**	-0.06	-0.03	-0.04	0.01	-0.13*	--			
13. International	-0.02	0.10*	0.14**	0.11**	-0.30**	-0.11**	0.06	-0.06	0.06	0.00	-0.47**	-0.14**	--		
14. In or Out-of-Game	0.13**	0.24**	0.11*	-0.08*	0.03	-0.01	-0.01	-0.13**	0.09**	0.11**	0.06	-0.10	-0.10**	--	
15. Team or League	-0.04	0.55**	0.37**	-0.06	0.03	-0.10**	0.00	-0.25**	0.21**	0.00	0.04	-0.03	-0.05	0.47	--

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the .05 level (2-tailed)

b. Cannot be computed

Model One

Before discussing the specific findings, it is necessary to address the suitability of model one. To do this, it is important to assess the dispersion parameter (α), which suggests whether or not the dependent measure is overdispersed (Cameron & Triveldi, 2013). An α value higher than zero “0” means that the dependent variable may be overdispersed. For the current model, the α parameter is 1.04, indicating that the measure is indeed overdispersed. Furthermore, this implies that a negative binomial model is appropriate because it is used for overdispersed, count data (Cameron & Triveldi, 2013; Hilbe, 2011).

An overview of the results found from the model assessing a potential relationship between *fine proportion* and *games between* can be found in Table 4. The sample size for this model is 438 because it only focuses on the punishments of fine or both (fine and suspension). Prior to discussing the findings from model one, it is important to explain the inclusion of the *game control* variable. This variable is created to control for the impact that suspensions which are attached to fines (the “both” category) may have on *games between*.

Although model one does have significant findings, these findings are the opposite of what was predicted. To clarify, a statistically significant relationship ($\beta = -19.24$; $p = .01$) is found between *fine proportion* and *games between*; however, this suggests that as *fine proportion* increases, *games between* decreases. A statistically significant relationship ($\beta = 5.87e^1$; $p = .01$) is found between the raw amount of the fine and *games between* as well. This relationship suggests that as the raw fine increases, *games between* increases. Logically, these two findings are inconsistent with each other as it would make little sense that a player would be deterred by

¹ 5.87×10^{-6}

raw fine amount and not the percentage of money taken from their salary. Furthermore, the combination of these two findings show no support for the hypotheses of this study. In addition to *fine amount* and *fine proportion*, *previous offenses* ($\beta = -.07$; $p = .00$) is statistically significant indicating that as the amount of *previous offenses* increase, the amount of *games between* decrease. The remaining measures of *race* ($\beta = -.20$; $p = .27$), *college experience* ($\beta = -.09$; $p = .46$), *career length* ($\beta = -.03$; $p = .05$), *international* ($\beta = -.11$; $p = .63$), *team or league* ($\beta = -.50$; $p = .17$), *in or out-of-game* ($\beta = .04$; $p = .77$), and *game control* ($\beta = .14$; $p = .11$) all fail to be statistically significant.

Table 4.

Fine Proportion Negative Binomial Model

Measure	B	SE	p> z
Fine Amount	5.87e ^{2*}	2.19e ³	0.01
Fine Proportion	-19.24*	7.17	0.01
College Experience	-0.09	0.13	0.46
Career Length	-0.03	0.02	0.05
Race	-0.20	0.18	0.27
International	-0.11	0.22	0.63
Team or League	-0.50	0.36	0.17
Previous Offenses	-0.07**	0.02	0.00
In or Out-of-Game	0.04	0.13	0.77
Game Control	0.14	0.09	0.11
A	1.04		

Note: * $p < .05$; ** $p < .00$

n = 438

² 5.87 x 10⁻⁶

³ 2.19 x 10⁻⁶

Model Two

Table 5 contains a summation of the results for the model assessing the relationship between *suspension severity* and *games between*. The sample size for model two, which focuses on suspensions, is 484. Before addressing the findings from model two, it is important to explain why the variable *proportion control* is included in this model. This variable is created to control for the effect that *fine proportion*, which can be attached to a suspension if a player receives a fine and suspension, may have on *sentence severity*. Similar to model one, the α parameter ($\alpha = 1.22$) indicates that negative binomial regression is appropriate for model two. Results from the current model fail to lend support towards the hypotheses of this study, as *suspension severity* ($\beta = -.00$; $p = .73$), moving in the opposite direction of what is predicted, is not statistically correlated with *games between*.

Table 5.

Suspension Severity Negative Binomial Model

Measure	B	SE	p> z
Suspension Severity	-0.00	0.01	0.73
College Experience	-0.13	0.14	0.38
Career Length	-0.01	0.01	0.41
Race	-0.23	0.19	0.22
Proportion Control	-3.85	11.64	0.74
In or Out-of-Game	-0.24	0.14	0.07
International	0.16	0.21	0.44
Team or League	-0.14	0.16	0.41
Previous Offenses	-0.07**	0.02	0.00
A	1.22		

Note: * $p < .05$; ** $p < .00$

n = 484

However, *previous offenses* ($\beta = -.07$; $p = .00$) is again statistically significant indicating that as the amount of *previous offenses* increases, *games between* decreases. The remaining variables of *college experience* ($\beta = -.13$; $p = .38$), *career length* ($\beta = -.01$; $p = .41$), *race* ($\beta = -.23$; $p = .22$), *in or out-of-game* ($\beta = -.24$; $p = .07$), *international* ($\beta = .16$; $p = .44$), *team or league* ($\beta = -.14$; $p = .41$) and *proportion control* ($\beta = -3.85$; $p = .74$) are not statistically significant.

Model Three

Table 6 contains a summation of the results found from the Suspension Versus Fine Model. The α parameter ($\alpha = 1.19$) again displays that negative binomial regression is suited for the current model. The sample size for the current model, which included all punishments, is 898.

Table 6.

Suspension Versus Fine Negative Binomial Model

Measure	B	SE	p> z
College Experience	-0.10	0.10	0.32
Career Length	-0.02	0.01	0.11
Race	-0.19	0.14	0.17
Fine	0.01	0.15	0.93
Suspension	0.03	0.15	0.85
International	0.08	0.16	0.60
Team or League	-0.16	0.13	0.22
In or Out-of-Game	-0.09	0.09	0.34
Previous Offenses	-0.07**	0.01	0.00
A	1.19		

Note: * $p < .05$; ** $p < .00$

n = 898

Due to missing data in a few of the cases the sample for this model is slightly smaller than the overall sample size of the data set (902). Similar to the previous models, there is no support found for the hypotheses in the third model, meaning that there is no statistically significant relationship in *games between* and *suspension* ($\beta = .03$; $p = .85$) and *fine* ($\beta = .01$; $p = .93$). *Previous offenses* ($\beta = -.07$; $p = .00$) is the only statistically significant measure from this model, again indicating that as *previous offenses* increase, *games between* decreases. The remaining measures of *college experience* ($\beta = -.10$; $p = .32$), *career length* ($\beta = -.02$; $p = .11$), *race* ($\beta = -.19$; $p = .17$), *international* ($\beta = .08$; $p = .60$), *team or league* ($\beta = -.16$; $p = .22$), and *in or out-of-game* ($\beta = -.09$; $p = .34$) are not statistically significant.

Conclusion

Chapter four of this thesis has addressed the results obtained from the negative binomial regression models in addition to the bivariate analysis and descriptive statistics of the data set. These models were utilized to test whether any kind of deterrent impact could be found from punishment in the NBA. In the final chapter, the results from these models will be discussed including implications, opportunities for research, and limitations.

CHAPTER 5

DISCUSSION

Chapter five of this thesis is a discussion of the findings from the three models from the results of chapter four. This discussion includes conclusion from the results, implications for punishment in the NBA, ideas for future research, and limitations of the current study. A conclusion is given at the end of this discussion to briefly sum up the overall findings of the thesis and acknowledge how the current study adds to the literature.

Results from the three models display no support for the research question and hypotheses guiding this study. A significant relationship is found between *fine proportion* and *games between* but is the opposite of what is predicted. Moreover, no statistical difference was found between the impact that *fine* and *suspension* has on *games between*. *Suspension severity* also has no impact on *games between*.

Despite this lack of support for the research question, there are still a few conclusions from the three models. First, it is important to acknowledge that *previous offenses* is significant in all three of the models, suggesting that as *previous offenses* increases, *games between* decreases. This essentially means that players who commit more offenses are less likely to be deterred than those who commit less. There are several implications from these findings. For example, this finding could indicate that certain players are predisposed to rule-breaking behavior and therefore continue to violate the rules despite being punished. Additionally, these results could imply that specific players have criminogenic tendencies in terms of violating NBA rules and, as a result, are not deterred by punishment.

Two other significant findings that need to be discussed are the relationship between *fine amount* and *games between* and the relationship between *fine proportion* and *games between*. In regards to *fine amount*, the results display that as *fine amount* increases, *games between* increases. In contrast, the finding relating to *fine proportion* was that, as the *fine proportion* decreases, *games between* increases. These two findings are inconsistent and, therefore, should be viewed with speculation. It would make little sense if players are deterred by a raw fine amount, but not deterred when the fine takes a higher percentage of money from their paychecks.

It is hypothesized that *fine proportion* would deter future rule-breaking, but it is possible that the size of fines are so miniscule in relation to salary that no significant punishment is felt. For example, the mean for *fine proportion* is .004890, meaning that, on average, a fine is less than 1 percent of a player's salary. The average salary of players fined is \$7,614,016.22. It is highly unlikely that a player making this type of money is concerned with a fine that only removes less than 1 percent of their salary. It is reasonable to assume that, despite there being certainty and celerity to the punishment, these fines are not severe enough to serve as a deterrent.

The study at hand does not lend support to Beccaria's (1764) theory of deterrence. This deduction can be the result of several factors. First, it is possible that the NBA's punishment is so low in severity that many players are not concerned with the threat of punishment. For reasons previously mentioned, fines are hardly felt by the players and short suspensions may not mean much to an individual in an 82-game season. Second, the limitations of the data set may impact the results obtained from the three statistical models. These limitations include missing data and data collection issues that are further detailed in the limitations section. Third, it is possible that some of the chronic offenders impact the overall results of the study. The potential for chronic offenders is evident considering that *previous offenses* is significant in all of the models. Lastly,

it is possible that players in the NBA are just not deterred by punishment. This does not mean that the threat of punishment does not serve as a deterrent because only a small percentage of NBA players are punished on a yearly basis, implying that many of the players do acknowledge and comply by the rules. However, those that are punished may not be worried about violating a rule a second time.

Another argument that could be made based on the findings of this study is that NBA players lose rationality while on the court. Beccaria (1764) believed that it was necessary for individuals to be rational and considerate of consequences if they were to be deterred by punishment or the threat of punishment. However, the mindset and demeanor of the general public is likely different than that of an NBA player in the middle of a game. According to Beccaria (1764), a lack of rationality can be supported by the results found in the current study.

On a physiological level, evidence can imply that NBA players lose rationality during games. For example, a study by Hill et al. (2008), asserts that cortisol levels increase in individuals who are engaging in moderate to high levels of physical activity. Moreover, cortisol levels are known to increase in situations of high stress (Starcke & Brand, 2012). After cortisol levels become acutely elevated, individuals are more likely to engage in immediate reward-seeking and risk-taking behavior (van den Boos, Hertevelde, & Stoop, 2009). Taken together, these findings indicate that professional athletes can understandably have an increase in cortisol during a game and, as a result, engage in behavior that potentially leads to punishment. NBA games are certainly high stress and involve high levels of physical activity. This argument is not intended to claim that all players behave irrationally on the court, but the concept can potentially explain why there is no deterrent effect found in the current study.

The current study does not support Beccaria's (1764) theory of deterrence, but this does not mean that sports cannot be an arena where criminological policies and theories are tested. As detailed in the literature review, there have already been several significant findings when analyzing the connection between criminology and sports. Additionally, the idea that the application of Beccaria's (1764) deterrence theory results in unsuccessful punishment should not be a conclusion from this study. This paper explains why the NBA, in theory, does a better job of applying Beccaria's (1764) theory than America's criminal justice system, but it also explains that the NBA does not do a perfect job of applying it. Moreover, there is evidence from a variety of deterrence studies (covered in the literature review) that punishment which is certain and administered swiftly can deter crime.

Although it is somewhat cliché, it is true that no statistically significant findings are still findings. The current study fails to confirm the hypotheses, but it did shed some light on punishment in the NBA. For example, *previous offenses* being significant in all three models could mean that a certain group of chronic rule-violators are not deterred in any way from punishment. Additionally, the finding that as *fine proportion* increases, *games between* decreases insinuates that players who have been fined are not concerned enough with being punished again to change their behavior. Part of that could be attributed to the players' rationality, but part of it could also be attributed to the lack of severity amongst fines. In addition, the lack of support for the hypothesis relating to *suspension severity* suggests that the suspension lengths need to be longer or that players are not worried about missing games. The latter of these explanations seems unlikely; it seems more plausible that players would rather take a hit to their wallet than hurt the team by missing games which is related to the fines versus suspension finding. Lower rationality can also potentially explain the lack of findings in the current study.

Implications

There are not many implications that can be gleaned from the current study. The results from the statistical analyses do not indicate that suspensions are a more effective deterrent than fines and vice versa. Moreover, there appears to be no relationship between the *suspension severity*, *fine proportion* and *games between*. One implication that can be taken is that punishment should be more severe in the NBA. If a larger percentage of a player's salary was taken from a fine, there is a better chance that the player will think twice before committing an action that may result in another fine. Additionally, if suspensions are lengthened, it is possible that players feel the weight of not being able to help their team for the amount of games missed and behave more appropriately on and off the court. Another implication that could potentially shape punishment in the NBA is the significant findings regarding *previous offenses*. Perhaps targeting the chronic offenders with more severe punishment would be beneficial to the NBA.

Limitations

Although this study does have several strengths, it is also important to acknowledge the limitations involved with the research. First and foremost, this study cannot claim without a doubt that fines and suspensions deter rule-breaking behavior; however, it is able to display whether different types of punishment or severity of punishment significantly affect the gap between punishments. Additionally, it can demonstrate whether or not the *fine proportion* significantly affects the distance between punishments.

Another limitation in this study can be found in the data collection process and also in the secondary sources used to collect the data. One issue, which was briefly discussed previously, is that games between punishments and games between a player's final punishment and their

retirement are collected in the same way. This is the only way that the data could be collected, and it may have resulted in significant findings that have little meaning. For example, the three statistical models, taken as a sum, imply that players who have been in the NBA for a longer time are less likely to be deterred. While this finding may have some validity, the limitations in the study may be affecting that particular result. In addition to this concern, there is also an issue with how the dependent variable, *games between*, is collected. In the NBA, players can violate rules and be punished from the bench without even playing a second in a game. Unfortunately, the present study is not able to account for this because basketball-reference (2016) only listed the games that a player played in up until the 2012-2013 season. For this reason, the games between punishments listed in the data set only takes into account games that members of the sample actually played in.

The amount of unknown, missing data is another limitation for this study. Because the data set is only made up of publicized fines and suspensions, many punishments that have occurred over the past sixteen seasons are not listed. Punishments handed down by the league office are always publicized, but much of the discipline that is administered at the team level is handled privately. Moreover, some of the punishments that teams give do not list the amount of the fine or the *suspension severity*. In addition to the missing unpublicized data, the data source used also did not list mandatory fines for technical fouls, ejections, and flagrant fouls. Although it is important to recognize this, it should not be considered a huge threat to the study because mandatory punishments do not result from serious offenses. Rather, they result from less severe actions in which the league feels no needs to intervene further. It is important to recognize the missing data as a limitation for this study; however, the sheer size of the data set can help alleviate any major issues resulting from missing data.

A further limitation to this study is that many of the players in the data set started their careers prior to the collection of publicized suspension and fines. Though many players' entire career was covered within the sixteen seasons of data collection, many others had careers that overlap with the time before data collection and the time after. This limitation can potentially skew the data because the evidence of deterrence may be more likely to be found at a greater age. Furthermore, a small percentage of the data contains players who are still in the NBA and may be in the league another ten plus years. This also threatens the results because rule violations are more likely to occur in the beginning-to-middle portion of a career. Fortunately, controlling for amount of time in the league should help diminish the effects that this limitation may have on the study.

Spurious variables may also have an impact on the results from this study and, therefore, limit the findings from the research. One spurious variable that can affect the data on fines and suspensions is the media. To clarify, large cities with historically successful NBA organizations such as Los Angeles, Boston, and Miami receive considerably more media attention than small-market teams in cities like Minnesota, Milwaukee, and Charlotte. This amount of media attention alone could affect the behavior of players who are members of large-market teams. Constantly being under a microscope would understandably have an effect on these players' decisions on and off the court. In addition to media attention for teams, star players are also given an excessive amount of attention from the media. Individuals like LeBron James, Kobe Bryant, Michael Jordan, and Shaquille O'Neal are viewed by fans across the world, so their regressions are heavily scrutinized at the national and international level. This level of attention may also lead to alterations in behavior.

Team culture is another spurious variable that can affect the behavior for players. To explain further, many teams have a culture that they are recognized for that is instilled by veteran players or veteran coaches. A great example of a team with a culture that encourages legal behavior is the San Antonio Spurs. They have had the same coach, Greg Popovich, for twenty years, and he is the type of coach that is not afraid to discipline his players. Moreover, they have had the same core of players in Manu Ginobili, Tim Duncan, and Tony Parker for fourteen years. This type of stability creates a culture where incoming players are held to different standards compared to other teams. Across the board, there are a variety of different cultures in NBA organizations, with many being more disciplinary and others being more disorderly. Undoubtedly, these cultures play a role in how players behave on and off the court and could affect the results in this study.

Future Research

Opportunities for future research using the data set from this study are plentiful. If given the proper time, many of the limitations of this study can be controlled for and many other forms of deterrence can be analyzed. For example, a study can be performed examining whether star players are more likely to be deterred or if large-market teams are more likely to be deterred. Moreover, general deterrence can be examined across the NBA at the individual or team level. Another option is to look at deterrence from a regional perspective, testing whether location in the United States has an effect on rule-breaking behavior. Similarly, research could be performed testing whether different periods of the season (months) result in more punishment or if a larger deterrent effect is found at different points in a season.

Additional possibilities include analyzing rule violations before and after specific changes to the rules. An example of this would be examining the amount of fines before and

after the changes made in officiating “flopping,” which is basically pretending to be fouled when little to no contact occurred. Furthermore, the sample size used in this study could be increased because eskimo.com (2016) actually began collecting punishment data in the 1994-1995 season, whereas this study only examined the seasons between 2000-2001 and 2015-2016. Other opportunities for future research include comparing deterrence between in-game behavior and out-of-game behavior or by comparing the different reasons for punishment. In whole, there are a multitude of options for future research using the data set from this study, with only a few being addressed in this paper.

Conclusion

The current study aims to add to the limited literature examining the connection between criminology and sports. In this regard, the study was a success despite there being no significant findings relating to the research question that guided the study. Moreover, there are still some important conclusions that can be collected from this paper. One finding is that punishment in the NBA does not appear to have a deterrent effect on players. This was the case when considering the severity of the punishment, the type of the punishment, and the when considering the effect that the punishment had on a player’s salary. Furthermore, it is evident that there are many other ways that deterrence can be tested in the NBA, and this study assisted in getting the ball rolling for future research on the topic. Prior to this research, there were no studies applying criminological policies or theories to the NBA and no studies that take into account in-game and out-of-game behaviors. In sum, this study did not successfully confirm what was originally hypothesized, but it did contribute to the criminological literature in other ways.

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