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*University of*  
**HUDDERSFIELD**

**Examining the Relationships between  
Religiosity, Alcohol Consumption and  
Violent Behaviour in Young Adults in  
North West England**

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Charlotte R. Inman

A thesis submitted to the University of Huddersfield in partial  
fulfilment of the requirements for the degree of Master of  
Science by Research

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# **Examining the Relationships between Religiosity, Alcohol Consumption and Violent Behaviour in Young Adults in North West England**

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# ABSTRACT

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Existing literature on the topic of religiosity and violent behaviour is still underdeveloped and much of the research is concentrated on Christian religiosity. Most of the literature on the topic suggests that religiosity acts as a protective factor for violent behaviour. The mechanisms through which this effect is seen however, are still poorly understood, though there are a wealth of criminological theories to provide a foundation upon which to hypothesize. The present study employs a quantitative approach to investigate the relationship between religiosity, alcohol consumption and violent behaviour. Explanatory, self-report questionnaires were distributed to 226 undergraduate students at one university in North West England in the year 2016 and unlike most previous studies on the topic, the present study did not exclude participants based on their religion, additionally including those who do not have a religion to act as a control group of sorts. Overall, findings were largely consistent with those of previous research, with religiosity being found to have negative correlations with both violent behaviour and alcohol consumption. The relationships between religiosity and nine risk factors for violent behaviour and were additionally investigated, the results of which were varied. Furthermore, the present study concludes that religiosity does not have consistent effects across all religious groups, and that any findings concerning religiosity cannot be generalised to any religious group other than those investigated.

# CONTENTS

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1. Introduction	7
2. Literature review	11
2.1 Search methods	11
2.2 Religiosity	12
2.3 Religiosity and violence	13
2.4 Factors influencing violent behaviour	14
2.4.1 Norms of masculinity	15
2.4.2 Self-control and social learning	16
2.4.3 Routine activity	18
2.4.4 Violent video game exposure	19
2.4.5 Socioeconomic disadvantage	20
2.4.6 Alcohol consumption	22
2.5 Religiosity and alcohol consumption	23
2.6 Baier's study	24
2.7 The present study	25
3. Methodology	27
3.1 Hypotheses	27
3.2 Philosophical position	28
3.3 Method	30
3.3.1 Ethical considerations	30
3.3.2 Questionnaire	30
3.3.3 Target sample	33
3.3.4 Access to participants	34

3.3.5 Recruitment of participants	35
3.3.6 Sampling	35
3.4 Analysis of data	36
4. Results	37
4.1 Descriptive statistics	37
4.2 Bivariate analyses	42
4.3 Linear regressions	42
4.4 Multivariate general linear model by religious group	46
5. Discussion	48
5.1 Overview	48
5.2 Relationship between risk factors, and religiosity and violence	50
5.2.1 Gender	50
5.2.2 Agreement with norms of masculinity	51
5.2.3 Self-control	52
5.2.4 Parental disapproval of violence	53
5.2.5 Academic commitment	54
5.2.6 Delinquent peers	55
5.2.7 Socioeconomic disadvantage	56
5.2.8 Parental education	57
5.2.9 Leisure time	58
5.2.10 Violent video game exposure	59
5.2.11 Alcohol consumption	60
5.2.12 Summary of the relationship between religiosity and risk factors	61
5.3 Relationship between religiosity and violence	62

5.4 Limitations	64
6. Conclusion	66
6.1 Research hypotheses	66
6.2 Recommendations for future research	69
References	70
Appendices	83
Copyright Statement	92

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# 1. INTRODUCTION

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In the most recent Crime Survey for England and Wales (Office for National Statistics, 2016a), it was recorded that 1.3 million incidents of violent behaviour against adults had been reported. Of this figure, 55% of the incidents resulted in no injury, 21% resulted in a minor injury such as bruising, and 24% resulted in a more severe or serious injury. Of the reported violent incidents, victims were able to provide details about the perpetrator(s) for 99% of the reports. These details revealed that 76% of the violent incidents were carried out by males, and that 42% of the time the perpetrator was between 25 and 39 years of age. Violent behaviour was most likely to be carried out by a sole individual (74% of cases), followed by four or more individuals (11% of cases), or two individuals (10% of cases). Notably, 40% of the individuals engaging in violent behaviour were believed to be under the influence of alcohol.

Religion and religiosity is a subject that is largely avoided in criminological texts (Ellis and Peterson, 1996; Stack and Kanany, 1975), with Bainbridge (1989:288) even arguing that religion is criminology's "forgotten variable". Though there are indeed numerous studies that have investigated the relationship between religiosity and violent behaviour in a range of settings (for example, see Baier 2014; Benda and Toombs, 2000), the subject area has to date been largely neglected and is at present underdeveloped and unclear, with many conflicting findings (Salas-Wright, Vaughn and Maynard, 2014). More research has been conducted into the effects of religiosity on an individual's general character, with conclusions being made that religiosity is important in moral functioning (Walker, 2003), that there is a high correlation between religiosity and values (Rocca, 2005), and that higher levels of religiosity are associated with a sense of compassion, honesty and altruism (Beit-Hallahmi and Argyle, 1997). It is on such findings as these that studies into the relationship between religiosity and violent behaviour tend to hypothesise that higher levels of religiosity will be associated with lower levels of violent behaviour.

It is important to acknowledge the international context associated with the issue of religiosity and violent behaviour. Since the infamous 9/11 attacks in the United States, Islamophobia in the United States and throughout Europe has been on the

rise, though Islamophobia was certainly present throughout the Western world before the tragedy (Amnesty International, 2012). Despite low numbers of home-grown Islamic terrorists in Europe and other Western countries (see Schanzer, Kurzman and Moosa, 2010), there is a growing sentiment amongst the British public that Islam preaches violence, and that all (or at least, many) followers of Islam should be considered a threat or a problem to their non-Muslim counterparts. One need only look to British media to see the growing, and already large, lack of distinction between Islamic terrorists and everyday Muslims in some members of the British public – an article by the Sun in July 2016 expressed outrage when a young Muslim woman wearing a hijab presented a news story about the Nice lorry massacre on Channel 4, questioning how appropriate it was “for her to be on camera when there had been yet another shocking slaughter by a Muslim” (MacKenzie, 2016). News outlets are littered with a surprisingly high number of articles reinforcing ideas that Muslims are ‘different’ to the rest of the British public (Dolan, 2016; Drury, 2016; Duell, 2016), and that Muslims isolate themselves and are therefore cut-off from society (Burnip, 2016; Duell, 2016). Indeed, when Moore, Mason and Lewis (2008) examined around 1,000 British newspaper articles about British Muslims, they found that around two-thirds presented Muslims as a threat to Britain or a problem in another way. However, this research is not politically driven and does not seek to examine terrorism, extremism or radicalisation. The present study will look exclusively at everyday violent behaviour, not motivated by extremist religious beliefs.

Baier conducted a study published in 2014 that aimed to investigate any similarities and differences in the relationship between religiosity and violent behaviour in Christians and Muslims. As he quite rightly notes, existing literature on the topic has been carried out “almost exclusively for the Christian religiosity” (Baier, 2014:102). His study used a survey to question 16,545 male students in ninth grade schools across Germany about topics ranging from their religiosity, to factors such as their socioeconomic status, to any past violent behaviour they may have engaged in. His study concluded that there are indeed notable differences between the effects of Christian and Muslim religiosity on violent behaviour. Based on this, it is reasonable to purport that the fact that the majority of existing literature on the topic examines

Christian religiosity means that there is a significant amount of knowledge to be gained by additionally examining other religious groups in this subject area.

The present research is a partial-replication study of Baier's 2014 work. The same research tool will be used to investigate similar hypotheses on a different, United Kingdom-based sample. The hypotheses under examination of the present research are outlined below, and will be explored in greater detail throughout the study:

- *H<sub>1</sub>*: Individuals with a higher level of religiosity will be more likely to have engaged in violent behaviour than those with a lower level of religiosity.
- *H<sub>2</sub>*: Religiosity will correlate with an increase in risk factors for violent behaviour. For example, religiosity will have a negative correlation with parental disapproval of violence, and a positive correlation with delinquent peers.
- *H<sub>3</sub>*: Religiosity will have either a positive correlation, or no correlation, with alcohol consumption.

Throughout section 2 'literature review', a systematized review of the existing literature on the topic will be presented, with areas in the research requiring further investigation identified, and insight will be provided into what is already known on the topic in order to give a foundational context to the study. Firstly, the subject area of religiosity will be explored, where definitions will be discussed and clarified, as the definition of 'religiosity' can vary greatly across studies. Secondly, what is already known about, and what requires further investigation regarding the relationship between religiosity and violence, will be explored more fully. Thirdly, factors influencing violent behaviour will be examined. Given the large number of factors known to influence violent behaviour, this section will be largely limited to those explored by Baier's study (2014), of which the present study is based upon, and will include: norms of masculinity; self-control and social learning; the routine activity theory; violent video game exposure; socioeconomic disadvantage, and; alcohol consumption. Fourthly, the relationship between religiosity and alcohol consumption will be explored to give a fuller context to *H<sub>3</sub>*. An overview of Baier's study (2014), including his aims, methodology, findings and conclusions will then be given, before the present study's hypotheses are reiterated.

Section 3 'methodology' will begin by highlighting the research hypotheses and detailing the philosophical position of the present research. The method will then be explored, beginning with ethical considerations, then detailing the questionnaire as the research tool, followed by an explanation of the target sample, before explaining how access to and recruitment of participants was carried out and highlighting any issues faced in these processes. Finally, the process of the analysis of data will be explored.

A full exploration of the results of the research will be presented in section 4 'results'. The structure of this section will be based on the types of analysis carried out on the dataset – descriptive statistics, bivariate analyses, linear regressions, and multivariate general linear modelling by religious group. Any issues arising from the analysis of data will be briefly addressed.

Section 5 'discussion' will fully explore the implications of the findings in the context of existing literature. The relationship between religiosity, violent behaviour and each risk factor for violent behaviour will be fully considered individually, and the relationship between religiosity and violence will also be discussed in its own right. In addition to this, section 5.4 'limitations' will detail the limitations of the present study, from the research tool to the interpretation of findings.

A conclusion will finally be made in section 6 'conclusion', which will give an overview of the entire study and discuss the findings in the global (particularly Western) context as well as that of the existing literature. Conclusions will be made for each research hypothesis individually, and recommendations for future research will be made.

## 2. LITERATURE REVIEW

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### **2.1 SEARCH METHODS**

This literature review has been carried out using the methods of a systematized review. Five online databases (JSTOR, Scopus, COPAC, Sociological Abstracts, and Sage Publishing), recommended by various academic institutions, such as the University of Connecticut and the University of the West of England, for use by academic researchers in the wider field of Criminology, were searched to identify studies for possible inclusion. Search terms are shown in table 1 below.

Table 1. Search terms

Area of interest	Search terms
Alcohol consumption	Alcohol consumption, alcohol, drinking, drunk
Disadvantage	Socioeconomic status, SES, socioeconomic disadvantage, disadvantage
Location	England, United Kingdom, Great Britain, North, Northern, North West, North Western
Norms of masculinity	Norms of masculinity, masculinity, gender identity, maleness, manliness
Religiosity	Religiosity, religion, religious
Self control	Self control, self control theory
Social learning	Social learning, social learning theory, social control, informal social control, social control theory
Video games	Video games, computer games, console games, digital games, digital media
Violent behaviour	Violence, violent, aggression, aggressive

Databases were searched between November to June 2016. The author reviewed the first 50 titles in each individual search. Due to time constraints on the research, it was not possible to review every title, so after reviewing the search strategies of other systematized reviews across different disciplines, 50 titles per search was deemed to provide a suitable level of rigour, while not exceeding time constraints. Irrelevant titles, duplicate titles and titles in languages other than English were excluded. Furthermore, the author reviewed the reference lists of returned titles to identify further studies for inclusion.

## **2.2 RELIGIOSITY**

Though generally not explicitly defined in criminological research, religiosity is a term that can vary across studies and differ greatly between academic disciplines, which complicates research examining religiosity (Holdcroft, 2006). On a basic level, the word 'religiosity' is synonymous with the more familiar word 'religiousness' meaning pious or devout in the Collins Dictionary (2011). However, in order to gain a deeper understanding of the term and thereby develop more reliable tools to measure it, greater exploration is required. Though early research surrounding religiosity focused on what could be described as religious involvement, such as church attendance (Bergan and McConatha, 2000), recent studies have employed more complex measures of religiosity that attempt to combine not only the behavioural dimensions of religion, but also the cognitive, cultural, subjective and devotional dimensions, amongst others (Chumblor, 1996; Ellison, 1991; Holdcroft, 2006).

Glock and Stark (1965) were influential in defining religiosity, and identified five dimensions: consequential, intellectual, experiential, ritualistic, and ideological. The intellectual dimension involves "the expectation that the religious person will be informed and knowledgeable about the basic tenets of his faith and sacred scriptures" (p. 20), and closely related to the intellectual dimension, the ideological dimension assumes that the religious individual will hold a certain set of beliefs, generally outlined in some form of holy book or similar. The experiential dimension explores the religious individuals' own faith experience, and the ritualistic dimension focuses on the faith experience involved in the religious community, including worship. They did however, note that religious knowledge does not necessarily encourage belief, and religious belief is not necessarily inductive to religious knowledge.

Ellison, Gay and Glass (1989) developed three types of religion variables to be used as measures of religiosity. The first was identified as individual belief, and/or religious experience, which was explained as "[facilitating] a comprehensive interpretive framework through which the individual can make sense of the totality of human existence and its vicissitudes" (p. 103). The authors argued that an indicator of private religiosity is important regardless of organisational activity and implied that such measures should be included in definitions of the term 'religiosity'. Indeed,

Witter, Stock, Okun and Haring (1985) suggested that religiosity may give individuals an enduring sense of significance beyond the individuals' self, in which case it would be an important aspect of religiosity.

The second variable was identified as the participatory dimension (Ellison et al., 1989), which refers to organisational activity such as church attendance. The authors argued that participatory measures should investigate both the quantity and intensity of organisational activities and the individuals' bonds with their religious community. The vast majority of criminological research involving religiosity employs measures to capture the participatory dimension (for example, see Baier and Wright, 2001; Chadwick and Top, 1993; Ellis and Thompson, 1989; McCullough and Willoughby, 2009) and as previously mentioned, early research generally captured this dimension alone (Bergan and McConatha, 2000).

The third and final dimension is the affiliative dimension (Ellison et al., 1989), or the individual's denominational connection, which is concerned with the specific religious community the individual integrates or identifies with and the extent to which they feel they are a part of that community. Indicators of such community integration in previous studies have included evangelism, distinctiveness of lifestyle and social action (see Kelley, 1986).

Inspired by the work of Ellison et al., (1989), the present study will define religiosity as an individual's relationship to their religion, manifested in behavioural rituals such as praying, and the individuals' own attitudes toward their religion.

### **2.3 RELIGIOSITY AND VIOLENCE**

Hirschi and Stark's 1969 study, which concluded that religiosity does not affect adolescent delinquency, has been significantly influential in this body of research. As a result of the strengths of the study, it became somewhat accepted that religiosity does not influence delinquency and violent behaviour (for example, see Brownsfield and Sorenson, 1991; Burkett, 1993; Tittle and Welch, 1983). However, there is a growing body of research to suggest that higher levels of religiosity act as a protective factor against deviant and delinquent behaviour. Nevertheless, research into the effects religiosity has on violence is at present underdeveloped and unclear (Salas-Wright et al., 2014). Research has shown that at an individual level, religiosity

assists in the development of moral standards and values. For example, Walker's study (2003) concluded that religious experience is important in moral functioning, Roccas's study (2005) concluded that there is a high correlation between religiosity and values, and Beit-Hallahmi and Argyle (1997) argued that religiosity assisted with an individual gaining a sense of compassion, honesty and altruism. Such effects are likely to reduce socially undesirable behaviours, including interpersonal violence, as shown in previous research (for example, see Brinkerhoff, Grandin and Lupris, 1992; Ellison and Anderson, 2001; Ellison, Bartkowski and Anderson, 1999; Ellison, Trinitapoli, Anderson and Johnson, 2007; Salas-Wright et al., 2014).

Salas-Wright et al.'s study (2014) on the effects of religiosity on violence in adolescents in the United States found that fighting, group fighting and violent attacks were less likely amongst those with a higher level of religiosity overall. Furthermore, they found that religious service attendance had a larger effect than the perceived importance of religious beliefs and participation in religious groups, a finding that supported that of Brinkerhoff et al.'s study (1992). The authors argued that "formal religious services expose adolescents to a prosocial adult community and prosocial norms" (Salas-Wright et al., 2014: 1193), suggesting that the way religiosity reduces violent behaviour is through the social control theory.

This means that one can predict that the present study is likely to find a negative correlation between religiosity and violent behaviour, with violent behaviour becoming less likely as an individual's religiosity increases, and violent behaviour becoming more likely as an individual's religiosity decreases.

## **2.4 FACTORS INFLUENCING VIOLENT BEHAVIOUR**

There is a huge body of research examining the causes of and risk factors for violent behaviour. For example, it is widely accepted in the field of criminology that males are significantly more likely to engage in violent behaviour than females, and that young people are significantly more likely to engage in violent behaviour than older people (Baier, 2014). Previous research has identified numerous other factors that are still under debate, some more intensely than others. Baier's study (2014) measured a number of these factors, such as norms of masculinity and exposure to violent video games, and these factors will be the primary focus of this section. It

must be noted that these factors are only a segment of the causes of violent behaviour, and many other factors are known to encourage violence, including real or imagined threat, and even environmental factors such as loud music. However, there is a gap in the research on how religiosity affects these factors, and that is true for every known factor for violent behaviour (Benda and Toombs, 2000).

Baier's study (2014) did not explicitly define 'violent behaviour', though an idea of his definition can be gained by examining the survey questions he used to measure it (see Baier, 2014: 112). The present study will define violent behaviour as the deliberate use of force, or threat of force, against another person or people, either as an individual or as part of a group, for any reason. Throughout the study, the terms 'violent behaviour' and 'violence' will be used interchangeably and are not intended to have different meanings.

#### **2.4.1 NORMS OF MASCULINITY**

Bui and Morash (2008) argue that gender identity is important in explaining how a person behaves. Inherently masculine ideals are based around achieving control and power, such as by providing for their family, protecting their family and standing up for themselves in disputes. It has been argued that when men do not have the means to achieve their masculine ideals in other ways, they will resort to violence. Hegemonic masculinity generally associates masculinity with the exclusion of women from positions of power and control, such as by excluding women from decision making, ensuring it is the man providing for the family, and even maintaining control through sexual domination (Connell, 2005; Jasinski, 2001; Kaufman, 1994; Kersten, 1996).

Research has shown that when men in a variety of countries perceive themselves to be unable to demonstrate their masculinity, they will engage in violent and controlling behaviours against women (Adjei, 2015; Jewkes, Levin and Penn-Kakana, 2022; Schwartz and DeKeseredy, 1997; Scully and Marolla, 1985; Whaley, 2001; Yick, 2001). Macmillan and Gartner (1999) administered a survey to over 8,000 women in Canada and found that when women were employed but their partners were unemployed, their risk for becoming victim to abusive behaviours including physical violence was increased.

One can therefore predict that the present study will find a positive correlation between violent behaviour and agreement with norms of masculinity, with violent behaviour becoming more likely as an individual's agreement with norms of masculinity increases. Conversely, it is likely that those who are found to disagree with norms of masculinity are less likely to have engaged in violent behaviour.

#### **2.4.2 SELF-CONTROL AND SOCIAL LEARNING**

Gottfredson and Hirschi (1990) argued that the principle indicator of criminality, including violent behaviour, is the individual's level of self-control. They purported that every person has some propensity to engage in criminal or violent behaviour (referred to as the individual's "criminality"), and that those with a higher level of self-control are more likely to desist from engaging in such behaviours than those with a lower level of self-control. The emphasis they put on self-control as an indicator of criminality was so great that they suggested that demographic differences such as gender would be largely inconsequential when self-control has been accounted for.

According to the self-control theory (Gottfredson and Hirschi, 1990), an individual's level of self-control is developed in childhood as a result of their parents' effectiveness in applying the following parental management tasks: (1) forming an emotional bond with their child; (2) supervising their child; (3) identifying undesirable or deviant behaviour, and; (4) using appropriate discipline to correct this behaviour. The authors argued that the age at which self-control is reasonably established is 8 years, and that little change is seen in their level of self-control after this age. Support for this idea has been largely inconsistent in the literature, with findings from some studies reinforcing the hypothesis that self-control is stable over time (for example, see Beaver and Wright, 2007; Hay and Forrest, 2006) and others suggesting self-control can vary over time (for example, see Arneklev, Cochran and Gainey, 1998; Mitchell and MacKenzie, 2006).

Empirical research has largely reinforced the self-control theory (for example, see Chapple, Vaske and Hope, 2010; Nakhaie, Silverman and LaGrange, 2000; Perrone, Sullivan, Pratt and Margaryan, 2004). LaGrange and Silverman (1999) conducted a study surveying 2000 secondary students in Canada on various personality characteristics thought to indicate their level of self-control, such as impulsivity and

risk-taking. They found that self-control did indeed reduce the impact gender had on criminality, with males showing less self-control than females, though the impact of gender was not found to be completely irrelevant. The study did however, suggest that females were more closely monitored by their parents and other adults, and this in turn meant that they had less opportunity to engage in risky or criminal behaviours than their male counterparts, a finding that was also supported by Svensson's 2003 study and Koon-Magnin, Bowers, Langhinrichsen-Rohling and Arata's 2016 study.

Closely related to self-control is the social learning theory, comprised of four elements: (1) imitation – the emulation of behaviour seen in the people the individual admires or looks up to; (2) definitions - the attitudes and values of the individual about matters of morality and respect for the law; (3) differential association – the effect exposure to the behaviour, attitudes and values of the individual's family and friends, and; (4) differential reinforcement – the perceived costs and rewards associated with certain behaviours (Akers, 1973; 1977; 1985; 1998). Findings from previous research generally supports the theory in areas of violent behaviour such as sexual aggression and rape (Boeringer, Shehan and Akers, 1991), dating and courtship violence (Sellers, Cochran and Winfree, 2003), and intimate partner violence (Sellers, Cochran and Branch, 2005). Studies have also shown that adolescents exposed to community violence are more likely to engage in deviant behaviour, including physical fighting (Gorman-Smith, Henry and Tolan, 2004; Schwab-Stone et al., 1995) and that witnessing violence has a normalising effect on violent and aggressive behaviour (Guerra, Huesmann and Spindler, 2003). However, studies directly testing the social learning theory are somewhat limited (Sellers et al., 2005). Such studies suggest that an individual's propensity for violent behaviour is influenced by both their parents' behaviours and values, and the behaviours and values of the individual's friendship group.

It can therefore be predicted that the present study will find a negative correlation between violent behaviour and self-control, with violent behaviour becoming less likely as an individual's level of self-control increases. Conversely, individuals with lower levels of self-control may be more likely to have engaged in violent behaviour.

### **2.4.3 ROUTINE ACTIVITY**

Simplified, the routine activity theory explains delinquency and deviance, including violence, in terms of exposure to opportunities to commit such behaviours (Osgood, Wilson, O'Malley, Bachman and Johnston, 1996), viewing crime as a product of the activities of everyday life that bring together motivated offenders, suitable targets and an absence of capable guardians, authority figures, or anyone else capable of preventing the behaviour (Cohen and Felson, 1979). Authors (Briar and Piliavin, 1965; Gold, 1970) have therefore argued that the more time an individual spends in situations conducive to delinquency, the more likely they are to engage in delinquent behaviour. Osgood et al. (1996: 639) identified situations conducive to delinquency as “unstructured and unsupervised socializing with peers”, as peers increase the ease with which one can engage in deviant behaviour, such as by providing backup in disputes and providing alcohol and drugs. Research has supported the idea that the amount of leisure time an individual spends with peers increases the risk of violence and aggression, as well as substance use, crime and underage sexual activity (Agnew and Petersen, 1989; Bernburg and Thorlindsson, 2001; Haynie and Osgood, 2005; Higgins and Jennings, 2010; Osgood et al., 1996; Weerman, 2011).

Landau and Bendalak (2008) administered a self-report questionnaire informed by the routine activity theory to 2,356 members of permanent staff in emergency wards across all 25 hospitals in Israel, measuring violent incidents the participant or the participants' colleagues had been exposed to while in the workplace. In terms of target suitability, the study found that participants who considered themselves unable to cope with verbal violence were more at risk of victimisation, supporting the routine activity theory. However, they also found that those with training for coping with violence were more likely to be victimised, which contradicts the theory. The authors argued that this could be because participants with such training were less likely to overlook the event and more likely to act on it, such as by reporting the event to police or physically restraining the offender. In terms of guarding, the study found that participants without an emergency button were more likely to experience a

violent event, which supports the theory. Unfortunately, the study did not measure factors such as proximity to security guards.

One can therefore predict that the present study will find a positive correlation between violent behaviour and time spent at places known to experience higher levels of violent behaviour, such as pubs and clubs. It is likely that the present study will find that those who spend more time at higher-risk places for violent behaviour will be more likely to have engaged in violent behaviour, and that those who regularly spend less time at such places will be less likely to have engaged in violent behaviour.

#### **2.4.4 VIOLENT VIDEO GAME EXPOSURE**

Whether there is a link between violent video games and violent behaviour has been intensely debated since the release of *Grand Theft Auto IV* in 2008 (Ferguson, Olson, Kutner and Warner, 2014). Some authors (such as Anderson, 2004; Bushman and Anderson, 2002) have concluded that there is a causal link between violent video games and violent behaviour. Sherry's (2001) meta-analysis on previous studies from 1975 to 2000 concluded that there is a relationship between violent video games and aggression, though it is only a weak relationship and had less of an effect than other media influences. Anderson and Bushman's (2001) meta-analysis supported this conclusion, again finding that violent video game exposure is related to aggression. In a more recent study using propensity score matching on a sample of 6567 8<sup>th</sup> grade students in Delaware, Gunter and Daly (2012) found a weak link between video game violence and actual violence, though the authors noted that their findings "[suggested] the common assertion that there is a causal link between video games and violence is, if nothing else, highly suspect" (Gunter and Daly, 2012: 1353).

On the other hand, a number of studies have found that there is no correlation between violent video games and real-life violence (see Ferguson and Rueda, 2009; Ferguson and Rueda, 2010; Ferguson, San Miguel and Hartley, 2009; Wallenius and Punamaki, 2008). For example, Durkin and Barber (2002) administered questionnaires measuring factors such as game use, risk behaviours (including aggressive or violent behaviours) and social context to 1304 10<sup>th</sup> grade students in

Michigan. The study did not find any evidence that exposure to video game violence was a risk factor for violent behaviour, as well as any other negative outcomes such as activity involvement or positive school engagement. In addition to this, more recently Ferguson (2011) conducted a study on 536 children using a media violence questionnaire to measure how exposure to video game violence affects real-life aggression over time and concluded that there is no link between the two variables.

However, there is an unusually large body of literature criticising the quality and methodologies used in the research on this topic (for example, see Ferguson, 2007; Kuntsche, 2004; Sternheimer, 2007). An example of this would be Anderson, Shibuya, Ihori, Swing, Bushman, Sakamoto, Rothstein and Saleem's (2010) meta-analysis using literature from both the west and Japan (a body of research the authors claim is largely unnoticed in the west) concluded that there is a strong correlation between exposure to video game violence and real-life aggressive behaviour. Ferguson and Kilburn's (2010) response to the study criticised the authors for ignoring issues of causality such as third variables, which could skew the results. Issues with methodologies used on the topic of video game violence and real-life violence have included citation bias (Freedman, 2002; Gauntlett, 1995); publication bias (Ferguson and Kilburn, 2009); the third variable effect (Ferguson et al., 2014; Savage, 2008); effect sizes too small to be meaningful (Freedman, 2002; Olson, 2004; Savage, 2008); and issues with aggression measures used, such as their poor validity (Ritter and Eslea, 2005; Tedeschi and Quigley, 2000) or their unstandardised use (Ferguson and Kilburn, 2009; Ferguson et al., 2014).

As much of the literature on the relationship of violent video game exposure and actual violent behaviour is conflicting, one cannot make a confident as to whether the present study will find any significant correlations at all. However, the present study will test this variable as a risk factor for violent behaviour, and so will predict that the two variables will have a positive correlation, with those who spend more time playing violent video games being more likely to have engaged in violent behaviour.

#### **2.4.5 SOCIOECONOMIC DISADVANTAGE**

It is well established that the socioeconomic status of a particular area or neighbourhood affects the frequency of violent incidents within that area, with

communities with a lower socioeconomic status facing higher rates of violence, and communities with a higher socioeconomic status facing lower rates of violence (Baumer, Horney, Felson and Lauritsen, 2003; Sampson and Lauritsen, 1994). There are two main theories that may explain this (Estrada-Martinez, Caldwell, Schulz, Diez-Roux and Pedraza, 2011): Hirschi's social control theory (1969; see section 2.4.2), and social disorganisation theories (Sampson, 2003), which suggest that various factors within neighbourhoods and wider communities can determine whether an individual is protected from, or exposed to, risk factors for violent behaviour (Estrada-Martinez et al., 2011; Leventhal and Brooks-Gunn, 2000; Sampson and Lauritsen, 1994).

However, research addressing the effect of socioeconomic status on violence at an individual level is currently still underdeveloped. Previous research into the subject area has shown that there is a relationship between lower socioeconomic status and increased propensity for violent behaviour (Brownfield, 1986; Elliot, Huizinga and Menard, 1989; Farnworth, Thornberry, Krohn and Lizotte, 1994), that those involved in violent crimes are more likely to be unemployed, and that people in lower-income families are more likely to engage in violence against their spouses (Gelles, 1990; Hotelling and Sugarman, 1986; Markowitz, 2003; Straus and Gelles, 1990). Markowitz (2003: 146) notes that while progress is being made on the topic, there is still little explanation as to why those of lower socioeconomic status disproportionately engage in violent behaviour at an individual, rather than community, level.

Within the research, there is a somewhat large variety of definitions for socioeconomic status – generally some combination of occupation, education and income – producing inconsistent findings (Heimer, 1997). Studies at the individual level generally report weak or insignificant relationships between socioeconomic status and delinquency (for example, see Tittle and Meier, 1990). However, research has more consistently found that violent delinquency is most frequently engaged in by those in the lowest socioeconomic strata (Brownfield, 1986; Elliot and Ageton, 1980; Farnworth et al., 1994; Thornberry and Farnworth, 1982).

Based on this, one can predict that the present study will find a negative correlation between socioeconomic status and violent behaviour, with those of a lower

socioeconomic status being more likely than those of a higher socioeconomic status to have engaged in violent behaviour.

#### **2.4.6 ALCOHOL CONSUMPTION**

According to the most recent Office for National Statistics (ONS) report on adult drinking habits in Great Britain (2016b), 28.9 million people (equating to 58% of the population) reported having drunk alcohol in the week before being interviewed, of which 45% drunk more than 4.67 units and 9% drunk more than 14 units (the recommended weekly amount in the United Kingdom). 48% of young people aged 16-24 years had drunk alcohol in the previous week, 17% of which had consumed more than 14 units in one day, meaning they are more likely than any other age group to consume more than 14 units of alcohol in one day. £11 billion is spent by the U.K. government a year to tackle alcohol-related crime (House of Commons Health Committee, 2012), 29% of all violent incidents in 2013-14 took place in or around a pub or club, rising to 42% for violent acts committed against a stranger (ONS, 2015), and in 53% of violent incidents in 2011-12, the victim believed the offender was under the influence of alcohol (ONS, 2013).

In addition to statistics, it is widely accepted in the literature that there is a link between alcohol consumption and increased likelihood of violent behaviour (Abbey, 2011; Chermack and Giancola, 1997; Leonard, 2008; Roizen, 1997). For example, significant associations between the consumption of alcohol and various forms of violent behaviour have been found by numerous general population studies (Bye and Rossow, 2008; Felson, Savolainen, Aaltonen and Moustgaard, 2009; Felson, Teasdale and Burchfield, 2008; Pape, Rossow and Storrø, 2008; Rossow, 1996; Wells and Graham, 2003). Furthermore, studies based on police reports found that prior to cases of assault, 70 – 80% of the offenders had consumed alcohol (Room and Rossow, 2001). Rossow (1996) additionally found that young people are more likely to engage in violent behaviour after consuming alcohol than older people.

The present study will therefore predict that it will find a positive correlation between violent behaviour and alcohol consumption, with those who regularly consume larger amounts of alcohol being more likely to have engaged in violent behaviour than those who do not, or do not consume alcohol at all.

## **2.5 RELIGIOSITY AND ALCOHOL CONSUMPTION**

Research into the relationship between alcohol consumption and violent behaviour is extensive and arguably conclusive. However, the literature on the relationship between alcohol consumption and religiosity is relatively small, which as Chitwood, Weiss and Leukefeld (2008) note, is ironic given that historically the use and regulation of alcohol has been considerably influenced by religion. Stark (1984) suggested the reason for this lack of literature could be because researchers interested in substance use (including alcohol consumption) are typically assuredly secular, and so overlook the effects and influences religion and religiosity can have in modern society.

Alcohol consumption is generally either limited or prohibited entirely by religious holy books. To use the two largest religious groups in the U.K. – Christianity and Islam (ONS, 2011) – as an example, followers of Christianity are permitted to drink alcohol but prohibited to get drunk, and followers of Islam are prohibited entirely from drinking alcohol. Unsurprisingly then, the literature generally shows that religiosity appears to be a protective factor for alcohol consumption, with studies on the topic typically finding that religiosity has an inverse relationship with alcohol use for both adolescents and adults (for example, see Cochran, Beeghley and Bock, 1988; Francis, 1997; Jeynes, 2006; Wells, 2010). The sociologist Durkheim's work largely focussed on the mechanisms through which this relationship is seen and argued that it is primarily through social control theory (see section 2.4.2), with religion providing an individual with a moral community (1912). According to this theory, the religious individual will associate themselves – either intentionally or unintentionally – with people that share their fundamental attitudes and beliefs, such as through church attendance (Marsiglia, Kulis, Nieri and Parsai, 2005).

Sebena, El Ansari, Stock, Orosova and Mikolajczyk's (2012) study supported this body of research. By administering questionnaires to 2529 first-year university students across five different countries: Germany, Poland, Bulgaria, United Kingdom and Slovakia, they investigated how the relationship between religiosity and alcohol consumption differs across cultures and found that for all countries involved, there was an inverse relationship between the two variables and that interestingly, this was consistent across all five countries, regardless of the differing religious cultures and

traditions between them. This suggests that religiosity could be more important to the relationship with alcohol consumption than religious denomination. They additionally found that this effect was stronger in females than males, theorising that this could be due to different socialisation and expected roles for males and females. Females reported higher levels of religiosity than their male counterparts, consistent with previous findings (for example, Brown, Parks, Zimmerman and Phillips, 2001). However, there were numerous methodological issues with the study, such as that only one measure of religiosity was used, and that frequency of alcohol consumption was measured, but not quantity.

However, although literature regarding religiosity and alcohol consumption in university students in England does exist (such as El Ansari, Sebena and Stock, 2014; Sebena et al., 2012), the body of research is to date still modest and requires further exploration. The investigation into factors limiting alcohol consumption is particularly important in the U.K. given its prevalence.

Based on the existing literature and religious teachings, one can predict that the present study will find a negative correlation between religiosity and alcohol consumption, with those who are more religious consuming less (or no) alcohol when compared with their less religious (or non-religious) counterparts.

## **2.6 BAIER'S STUDY**

In 2014, Dirk Baier conducted a cross-sectional survey of 16,545 male Christian and Islamic students in the 9<sup>th</sup> grade across 3,052 classes in 61 districts in Germany. The study intended to investigate three main hypotheses: (1) "The stronger an individual's religiosity, the less frequently that individual will engage in violent behaviour" (Baier, 2014: 104); (2) "The deterrent effect of religiosity on violence is due to various factors..." such as self-control and social control (Baier, 2014: 106), and; (3) "The stronger an individual's religiosity, the less frequently that individual will consume alcohol..." (Baier, 2014: 107). As the majority of previous research has been conducted on only Christian participants, he additionally hypothesized that "it is also true for Muslim individuals that increased religiosity goes hand in hand with less frequent violent behaviour. The relationship is however less pronounced than among Christian individuals" (Baier, 2014: 108). The study, although not the first of its kind,

was one of only few that has so far attempted to go beyond questioning whether religiosity influences violent behaviour, questioning exactly *how* the relationship between the two factors works, and whether there are similarities and differences between different religious groups.

The study suggested that while other factors such as association, self-control and alcohol consumption were considerably more important for predicting violent behaviour in adolescents, religiosity is not irrelevant as a factor for both Christians and Muslims. Religiosity was found to reduce violent behaviour in Christians by a coefficient of 0.26, and interestingly, it was found to increase violent behaviour in Muslims by a coefficient of 0.05, both significant at  $p < 0.001$ . However, it also found that Muslims rated higher for factors such as norms of masculinity and exposure to violent media, and after controlling for alcohol consumption (which Muslims rated lower than Christians for), multivariate analyses showed a direct relationship between religiosity and violent behaviour, with higher levels of religiosity reducing the likelihood of violence, and lower levels of religiosity increasing the likelihood. The study therefore concluded that religiosity does not affect violent behaviour in the same ways for both Christians and Muslims.

## **2.7 THE PRESENT STUDY**

The present study is a replication study of Baier's "*The Influence of Religiosity on Violent Behavior of Adolescents: A Comparison of Christian and Muslim Religiosity*" (2014), using the same instruments, and will compare findings with a sample of university students in North West England. The study will attempt to investigate the following three principal hypotheses (and conversely, null hypotheses):

- *H<sub>1</sub>*: Individuals with a higher level of religiosity will be more likely to have engaged in violent behaviour than those with a lower level of religiosity.
  - *Null hypothesis 1: Individuals with a higher level of religiosity will be less likely to have engaged in violent behaviour than those with a lower level of religiosity. The likelihood of an individual having engaged in violent behaviour will therefore be reduced as the individual's religiosity increases.*

- *H<sub>2</sub>*: Religiosity will correlate with an increase in risk factors for violent behaviour. For example, religiosity will have a negative correlation with parental disapproval of violence, and a positive correlation with delinquent peers.
  - *Null hypothesis 2: Religiosity will correlate with a reduction in risk factors for violent behaviour. For example, religiosity will have a positive correlation with parental disapproval of violence, and a negative correlation with delinquent peers.*
  
- *H<sub>3</sub>*: Religiosity will have either a positive correlation, or no correlation, with alcohol consumption.
  - *Null hypothesis 3: Religiosity will have a negative correlation with alcohol consumption, with alcohol consumption decreasing as religiosity increases.*

## 3. METHODOLOGY

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### **3.1 HYPOTHESES**

The hypotheses (and conversely, the null hypotheses) of this research are as follows:

- *H<sub>1</sub>*: Individuals with a higher level of religiosity will be more likely to have engaged in violent behaviour than those with a lower level of religiosity.
  - *Null hypothesis 1: Individuals with a higher level of religiosity will be less likely to have engaged in violent behaviour than those with a lower level of religiosity. The likelihood of an individual having engaged in violent behaviour will therefore be reduced as the individual's religiosity increases.*
  
- *H<sub>2</sub>*: Religiosity will correlate with an increase in risk factors for violent behaviour. For example, religiosity will have a negative correlation with parental disapproval of violence, and a positive correlation with delinquent peers.
  - *Null hypothesis 2: Religiosity will correlate with a reduction in risk factors for violent behaviour. For example, religiosity will have a positive correlation with parental disapproval of violence, and a negative correlation with delinquent peers.*
  
- *H<sub>3</sub>*: Religiosity will have either a positive correlation, or no correlation, with alcohol consumption.
  - *Null hypothesis 3: Religiosity will have a negative correlation with alcohol consumption, with alcohol consumption decreasing as religiosity increases.*

Where Baier's study (2014) focussed on the similarities and differences in the relationships of religiosity and risk factors influencing violent behaviour between Christians and Muslims, this study instead focusses on the relationships on the whole of the sample, not excluding other religious groups and atheists. Although this study will also report on how these relationships differ across religious groups, this

will not be the focus of the study. For this reason, the present study examines different hypotheses to those of Baier's study (2014).

### **3.2 PHILOSOPHICAL POSITION**

This research is conducted within the philosophical position of realist ontology. Neuman (2014:94) describes realist ontology as the perspective that the world "exists independently of humans and their interpretations of it", meaning that information and knowledge can be definitively obtained. Where nominalist ontology purports that we can never truly control for human interpretation and inner subjectivity, realist ontology believes that it is possible to eliminate our interpretative bias. A positivistic epistemological paradigm is taken, described by Neuman (2014: 97) as the approach of the natural sciences, which "emphasises the discovery of causal laws, careful empirical observations, and value-free research". The present study aims to test hypotheses and determine whether correlations exist between variables. The scientific approach of the positivist paradigm and the belief within realist ontology that it is possible to obtain definitive knowledge through scientific study therefore provide the most suitable approaches to this research.

To determine whether correlations exist between religiosity, violent behaviour, risk factors for violent behaviour, and alcohol consumption, and the size and direction of the correlations, the most appropriate methodological approach was deemed to be a quantitative approach. Through quantitative research, it is possible to reliably illustrate correlations and establish causality within a credible confidence range (Creswell, 2003). Qualitative methodology, on the other hand, are more appropriate in research aiming to provide insight into experiences, attitudes, thought-processes and similar, and would therefore be unsuitable for the present study. Furthermore, the typically smaller sample sizes involved in qualitative research can affect generalisability, which in turn can affect the usefulness of the information generated by the research. Provided the sample of a quantitative study is of sufficient size and appropriately obtained, findings can typically be generalised to the population being studied, particularly when the research has been replicated and largely consistent findings are reported. Baier's study (2014) employed representative sampling, which provided the study with a cross-sectional sample of the target population. It could be argued that the sample is representative and as such, this means that Baier's

findings could potentially be generalised (Farris and Holtzworth-Munroe, 2007; Wilks, 1940) to 9<sup>th</sup>-grade males in Germany. In cases where a study has been replicated a number of times on different populations and subpopulations, quantitative research can often be generalised on a comparatively large scale. Existing literature on the topic of the relationship between religiosity and violent behaviour is, at present, predominantly quantitative in nature because the literature is still underdeveloped, and in a relatively descriptive stage (as opposed to in-depth and explanatory). Further quantitative research would be the most useful contribution to the existing body of research, as many themes within the topic are still controversial, unclear and in need of development. It is typically easier to replicate quantitative research, which in turn further increases the reliability of findings (Black, 1999).

The present study is a replication of a study by Baier in 2014, who used an explanatory (see Ackroyd and Hughes, 1981), self-report questionnaire for his research. Questionnaires are arguably the most widely used method for quantitative research in the social sciences for two main reasons (Neuman, 2014; Saris and Gallhofer, 2014). First is the quality of research generated through the use of questionnaires. Findings resulting from the proper use of questionnaires provide a relatively high level of objectivity, reliability and validity to the research when compared with qualitative methods such as interviews. In line with quantitative research in general, factors such as researcher bias (an umbrella term describing types of bias occurring from the researcher influencing or guiding responses, such as by ordering the questions in a way that impacts on the participants' thoughts and attitudes) and respondent bias (an umbrella term describing bias resulting from the participant as opposed to the researcher, such as by giving socially acceptable answers, denying undesirable past behaviours, and so on) can be better controlled in the use of questionnaires. Second is the issue of practicality. The use of questionnaires often allows researchers to collect a larger amount of data from larger samples comparatively quickly, and are typically relatively cost-effective when compared with methods such as interviews, which typically take longer to carry out, or experimental or observational research which may require expensive equipment. Quantification of data during analysis can also be comparatively quicker, particularly if the researcher uses analytical software, as answer formats are typically numerical or categorical (Saris and Gallhofer, 2014).

## **3.3 METHOD**

### **3.3.1 ETHICAL CONSIDERATIONS**

This research has been carried out in accordance with the British Society of Criminology's most recent Statement of Ethics (2015), all legal requirements such as the Data Protection Act (Great Britain, 1998) and all policies and frameworks required of research at the University of Huddersfield such as the University of Huddersfield Code of Practice for Research (University of Huddersfield, 2015). The study was given full ethical approval by the University of Huddersfield's school of Human and Health Sciences.

The participant information sheet (appendix 2) and consent form (appendix 3) were given to participants when receiving the questionnaires. These forms were intended to ensure participants were giving their full, informed consent for participation in the study. In events were a participant failed to complete the consent form, their data was excluded from the study.

Only the researcher and supervisors had direct access to the data once it had been collected and consent forms (which were the only forms containing personal participant information) were kept separately from the rest of the questionnaires and securely in order to preserve participant anonymity. Any personal information disclosed by participants were either anonymised in the reporting of findings or excluded entirely.

Hard copies of data were destroyed once it had been documented and backed-up electronically, and electronic copies will be retained for 10 years, in line with the University of Huddersfield Code of Practice for Research (University of Huddersfield, 2015).

### **3.3.2 QUESTIONNAIRE**

The present study employed the questionnaire used in Dirk Baier's study (2014), which includes questions on eleven topics (in the order they appear in the questionnaire): religiosity; norms of masculinity; self-control; parental disapproval of violence; academic commitment; leisure time; violent video games; delinquent peers; alcohol consumption; disadvantage; and violent behaviour. Throughout the following

sections, the term 'risk factors' for violent behaviour will be limited to those investigated in this research, namely: norms of masculinity; self-control; parental disapproval of violence; academic commitment; leisure time; violent video games; delinquent peers; alcohol consumption; and disadvantage. For the full questionnaire and the specific wording used, see appendix 1.

The religiosity topic is comprised of three items which intend to measure how often the participants pray, how often they visit their place of worship, and how important their religion is to them personally. These items incorporate the three dimensions of religion identified by Ellison, Gay and Glass in 1989 (discussed in greater detail in section 2.2): an indicator of private religiosity; an indicator of religious participation; and an indicator of the individual's connection to their religion, respectively. The integration of the different aspects of religiosity may give a stronger, more comprehensive and reliable measurement of participants' religiosity than previous measurement tools (Bergan and McConatha, 2000). Salamati, Naji, Koutlaki and Rahimi-Movaghar (2015) criticised the use of only three items, arguing that the items used capture only a small part of religiosity, and citing the System of Belief Inventory (Holland et al., 1998) – a comprehensive, 35-item scale – as a better alternative. Baier (2015:3488) responded to this by arguing that the three items used “capture central attributes of religiosity; there should be strong correlations with other, more comprehensive instruments”. In addition to this, he commented that the survey overall was an ombibus survey, and so assessed a wide range of topics. Indeed, research has found that longer surveys are associated with lower quality of data, such as the finding that longer surveys typically have lower response rates (Galesic and Bosnjak, 2009; Heberlein and Baumgartner, 1978; Yammarino, Skinner and Childers, 1991), and that questions nearer the end of longer surveys can be responded to differently to those nearer the beginning of longer surveys, such as higher rates of identical answers to different questions, known as uniform answers, which can affect the reliability of findings (Herzog and Bachman, 1981), and higher rates of missing answers (Krosnick et al., 2002).

Four items from a scale inspired by Enzmann, Brettfeld and Wetzels (2004) were used to measure norms of masculinity, two of which focussed on the appropriateness of violence in the protection of the family, and two of which focussed on the appropriateness of violence within the family. To measure self-control and

risk-taking behaviours, four items were selected from a scale provided by Grasmick, Tittle, Bursick and Arneklev in their study (1993) of Gottfredson and Hirschi's general theory of crime (1990).

Parental disapproval of violence was measured using a single item which described a scenario and asked the participant to indicate each of their parents' reactions. Academic commitment was measured using two items addressing how the participant felt about their university, and whether they enjoyed attending university. Two items comprised the leisure time topic: one measuring the amount of time the participant spends at places at risk for violent behaviour on week days; and the other on weekend days. One item assesses violent video game consumption, asking the participant to indicate how often they play shooting games.

The delinquent peer topic is comprised of five items, which ask the participant the number of friends that have engaged in five types of criminal behaviour. On the topic of alcohol consumption, participants are asked to indicate the age at which they first drank beer, alcopops, and spirits, and how often they drank those types of alcohol drinks in the last 12 months. Disadvantage is measured by employment status of each parent; whether the participant or either of their parents receive benefits, social benefits or job seeker's allowance; and the highest level of qualification obtained by each parent.

Finally, on the topic of violent behaviour, three examples of violent behaviour are given and participants are asked to indicate if they have ever engaged in the listed behaviours. If the participant indicates that they have, they are then asked about the age at which they first engaged in that behaviour, and how often they have engaged in that behaviour in the last 12 months.

However, Baier's study was conducted in Germany and so the questionnaire he used was written in the German language. This would have been unsuitable for distribution in the United Kingdom, so it was kindly translated by a lecturer in German Studies in the School of Arts, Languages and Cultures at the University of Manchester in the United Kingdom. Following the translation, interviews were conducted with 14 people personally known to the researcher, in order to identify and correct any ambiguous or misleading wording resulting from the translation. This was intended to raise the validity of the results through validation. Although no

corrections to the questionnaire were deemed necessary from these interviews, it must be noted that a rigorous, extensive process of validation was not conducted on the translated questionnaire and that this may affect the validity of any findings from this study.

### **3.3.3 TARGET SAMPLE**

The participants of Baier's study (2014) were adolescent males attending grade 9 in schools across Germany. In the United Kingdom, however, violent offenders are most likely to be aged between 16 and 24 years, with 46% of violent incidents being carried out by a person within that age group (Office for National Statistics, 2015). Grade 9 students would be aged around 14-15 years, and would therefore fall just outside of the age group most likely to be involved in violent behaviour. Although the study of age groups falling outside the most problematic age group would certainly not be redundant, this study aimed to target a sample aged between 16 and 24 years.

In order to improve comparability with Baier's study, it was decided that the sample should still involve those in an educational setting, as Baier's sample had been recruited from schools across Germany. In order to satisfy that requirement while still involving participants aged between 16 and 24 years, access to students across six sixth-forms (either as part of a school or stand-alone colleges) across North West England, and access to undergraduate students at one university in North West England, was attempted. Sixth-form students in the United Kingdom are typically aged between 16-18 years which is both similar to Baier's sample and part of the age group most likely to engage in violent behaviour. Undergraduate university students in the United Kingdom are typically not younger than 18 years, and generally do not exceed 24 years of age, though this is not always the case. However, it must be noted that because the present study involved a sample that was at least 3 years older than that of Baier's, and were recruited from a higher educational setting rather than a secondary-educational setting, the two studies have reduced comparability.

In England and Wales, 12% of the population have achieved the same level of qualification. 27% have achieved an undergraduate degree or equivalent, or higher,

which leaves 55% of the population with qualifications lower than A-Level or equivalent. A further 6% held 'other qualifications' (Office for National Statistics, 2011). When examining the area the university is located in, similar figures are seen: 12.6% of the population hold A-Level qualifications or equivalent; 58.4% hold qualifications lower than A-Levels (or no qualifications); 23.9% hold undergraduate degrees or equivalent, or higher, and; 5.1% hold 'other qualifications' (Kirklees Council, 2016). By contrast, 100% of the present study's sample are expected to hold A-Level qualifications or equivalent, or higher, as this is the requirement to secure a place at the university. It is possible that some participants will have secured their place based on their work experience rather than their qualifications, but it is nevertheless reasonable to assume that the present study's sample will have a higher level of qualification than the average for their area, and for England and Wales. This means that findings from the present study will lack generalisability across all socioeconomic groups, and can only be most reliably generalised to university students.

Power calculations indicated that a sample size of 377 would be provide suitably reliable results for this study, based on a population size of 19,000, a confidence level of 95% and a confidence interval of 95%.

### **3.3.4 ACCESS TO PARTICIPANTS**

To attempt access to sixth form students, head teachers and teaching staff from six sixth form colleges across North West England, United Kingdom, were contacted to request access to their students. Due to concerns raised those contacted about issues such as the study's potential to offend participants given the sensitive nature of the topic (specifically the relationship between religion and violence, and the potential for the impression being given that the study is racially motivated), and concerns that participation would take up too much teaching time, access to sixth-forms was unsuccessful.

To access university students, approximately 330 lecturers at one university in North West England, United Kingdom, were contacted to request access to their students. 42 responses were received, of which 34 were unable to participate due to a variety of reasons, including: no longer teaching any classes at that time of the year;

insufficient time in the lecture to dedicate to anything other than teaching; conflicting lecture times; and in the case of one school, concerns about the nature of the study potentially offending students. It was agreed that in the case of the school in question, the study would be passed through their own ethical committee. The response was approval of the study with the condition that certain questions were altered. As distribution had already begun across other schools, and because altering the questionnaire would further affect the validity of the research tool, the school in question was therefore unable to participate in the research. Therefore, a total of 8 responses resulted in successful access to participants.

### **3.3.5 RECRUITMENT OF PARTICIPANTS**

Recruitment of participants was carried out in the same way in all 8 cases where access was successful. The researcher attended classes recommended by the lecturer, which varied in size from around 20 to nearly 100 students. Once the students had arrived and settled down, either the researcher or the lecturer briefly introduced the research to the class, citing the title of the research, briefly explaining the research aims, the process of distribution, and explaining that participation is voluntary and that students were not obligated to participate. The researcher, occasionally with the help of the lecturer, then manually distributed the questionnaires with the consent form (appendix 3) and participant information sheet (appendix 2) attached, to each student in the class.

Between roughly five and ten minutes were given for the participants to complete the questionnaire, and the researcher collected the questionnaires back in, sometimes with the help of the lecturer. The class would then begin if it had not yet already. It must be noted that no measures were taken to provide participants with privacy from their colleagues sitting next to or near them. This could affect the degree of honesty employed by participants, particularly with regards to more personal questions such as those about previous violent behaviour engaged in by the participant, and could therefore affect the reliability of the findings of this study.

### **3.3.6 SAMPLING**

The participants of this study were a convenience, voluntary sample. Participation depended on whether students were in attendance of the classes allocated to the

researcher. All students in the lectures attended were given a questionnaire to complete, but participation was voluntary and so they were free to decide whether they completed it or left it blank. Five to ten minutes, depending on the size of the class, was allocated to the completion of the questionnaires. Once this time had elapsed, the questionnaires were manually collected by the researcher and on occasion, with the help of the lecturer.

### **3.4 ANALYSIS OF DATA**

The data collected in the course of this research has been entirely quantitative in nature. Using IBM SPSS Statistics 22.0, a mixture of descriptive analyses, bivariate analyses and multivariate analyses were carried out. Careful attention has been paid to how Baier (2014) conducted his analyses in order to present the most reliable comparison possible. However, because Baier's sample was of significantly larger size than the sample of the present study, in some cases this was deemed inappropriate.

The data collected over the course of this research has been entirely quantitative in nature. The analysis has been carried out using IBM SPSS Statistics 22.0. Descriptive statistics about the sample demographics and an overview of answers given to each question were detailed. Bivariate analyses between religiosity, alcohol consumption and violent behaviour were carried out using independent-sample T tests or Pearson's correlation. To illustrate potential relationships between each measure and religiosity, violent behaviour and alcohol consumption, linear regressions were carried out. Finally, to illustrate similarities and differences in values for each measure by religious groups, a multivariate general linear model was used.

## 4. RESULTS

### 4.1 DESCRIPTIVE STATISTICS

226 participants from one university in Northern England were involved in this research. 67.3% were female and 32.7% were male and had an average age of 20.3 years old (sd = 1.6). As shown in Table 2 below, Muslims made up the largest group in the sample, followed by atheists and Christians. All 226 participants (100%) indicated their religion. Three items in the questionnaire were used to measure religiosity. The responses to all three items were z-standardised, and the sum of the z-standardised values to each item were divided by three to give a mean value of the participants' religiosity.

Table 2. Religious groups

<i>Religious group</i>	<i>Size</i>	<i>Religiosity</i>
Christian	27% (n=61)	
Roman Catholic	8.4% (n=19)	-0.68 (SD=0.09)
Protestant	11.1% (n=25)	-0.72 (SD=0.04)
Orthodox	7.5% (n=17)	-0.67 (SD=0.05)
Islam	32.7% (n=74)	
Shiite	2.7% (n=6)	-0.72 (SD=0.04)
Sunni	26.5% (n=60)	-0.65 (SD=0.04)
Other	3.5% (n=8)	-0.59 (SD=0.05)
Buddhist	1.3% (n=3)	-0.66 (SD=0.00)
Other	7.5% (n=17)	-0.59 (SD=0.04)
No religion	31.4% (n=71)	N/A

To determine the internal validity of the research measures, Cronbach's coefficient alpha was used in cases where there were three or more items. Although many researchers report also using Cronbach's alpha for measures comprising only two items (see Lowe, Kroenke and Grafe, 2005), Eisinga, Grotenhuis and Pelzer (2013) argue that Cronbach's alpha often underestimates true reliability in cases of two-item measures, whereas the Spearman-Brown coefficient is never lower than Cronbach's alpha and is on average less biased. Therefore, following Eisinga, Grotenhuis and Pelzer's (2013) recommendation, the Spearman-Brown coefficient was used instead of Cronbach's alpha for two-item measures. The internal validity for each measure is shown in table 3 below.

Table 3. Internal validity of research measures

<i>Measures</i>	<i>Number of items</i>	<i>Cronbach's Alpha / Spearman-Brown</i>
Religiosity	3	0.99
Norms of masculinity	4	0.75
Self control	4	0.91
Parental disapproval of violence	2	0.83
Academic commitment	2	0.11*
Leisure time	2	0.76
Delinquent peers	5	0.86
Alcohol consumption	9	0.91
Disadvantage	3	0.16*
Parental education	2	0.12*
Violent behaviour	9	0.81

\*Low internal validation

For the purposes of analyses, the mean value of each measure was calculated, with the exception of religiosity and violent behaviour. As previously mentioned, the religiosity items were first z-standardised before the mean was calculated, but as the items within the other measures had consistent scales within the measures, z-standardisation was deemed unnecessary. The violence questions had a 91.2% response rate (n=206) and of these, 19% (n=43) reported having committed at least one of the three offences outlined in the questions. However, only three participants (1.5% of the respondents or 6.9% of the 'offenders') reported having engaged in violent behaviour in the last 12 months. For this reason, violent behaviour was binary-coded to differentiate between those who had engaged in violent behaviour, and those who had not. This coding is used throughout the entirety of the analyses.

Table 4 represents a collection of information about responses to each item of the questionnaire. This is intended to be used for reference throughout the rest of this section.

Table 4. Collection of questionnaire response information

<i>Measure</i>	<i>Answer options</i>	<i>Mean</i>	<i>SD</i>	<i>Response rate</i>
<b>Religiosity</b>				
How often prayed	(never) 1 – 7 (daily)	4.33	2.53	68.6%
How often visited place of worship	(never) 1 – 7 (daily)	3.07	1.70	61.9%
How important is your religion	(completely unimportant) 1 – 4 (very important)	4.12	1.15	67.7%
<b>Norms of masculinity</b>				
Husband is entitled to hit wife	(not true) 1 – 4 (true)	1.08	0.35	99.1%
Acceptable for man to use violence to defend against insults	(not true) 1 – 4 (true)	1.29	0.71	100%
The man is the head of the family	(not true) 1 – 4 (true)	1.14	0.43	99.1%
Acceptable for man to use violence when someone insults family	(not true) 1 – 4 (true)	1.26	0.53	100%
<b>Self-control</b>				
Like to test limits by doing something dangerous	(not true) 1 – 4 (true)	1.73	0.83	100%
Find danger exciting	(not true) 1 – 4 (true)	1.71	0.82	100%
Excitement is more important than safety	(not true) 1 – 4 (true)	1.75	0.78	100%
Like taking risks	(not true) 1 – 4 (true)	1.81	0.85	99.1%
<b>Parental disapproval of violence</b>				
Mother disapproves	(approves) 1 – 5 (disapproves)	4.46	0.94	96.5%
Father disapproves	(approves) 1 – 5 (disapproves)	4.27	1.05	94.2%
<b>Academic commitment</b>				
Likes their university	(not true) 1 – 4 (true)	3.30	0.70	98.7%
Likes going to their university	(not true) 1 – 4 (true)	3.30	0.70	96.0%
<b>Leisure time</b>				
Week day	00h00m – 05+h	01h21m	1h26m	86.3%
Weekend day	00h00m – 05+h	01h48m	1h35m	81.4%
<b>Violent video games</b>				
How often played	(never) 1 – 7 (daily)	2.06	1.72	95.1%
<b>Delinquent peers</b>				
Stole from a shop	0 – 10+ friends	0.13	0.73	96.0%
Took something using violence	0 – 10+ friends	0.03	0.58	96.0%
Hit/injured someone	0 – 10+ friends	0.29	1.02	96.0%

Vandalism	0 – 10+ friends	0.05	0.88	96.0%
Sold drugs	0 – 10+ friends	0.19	0.94	96.0%
<b>Alcohol consumption</b>				
Ever drank beer	Yes / no	59.1% yes 40.9% no	N/A	87.6%
Age first drank beer	6 – 20+ years	15.44y	2.27y	85.0%
How often drank beer	(never) 1 – 7 (daily)	3.32	1.69	50.9%
Ever drank alcopops	Yes / no	57.1% yes 41.4% no	N/A	87.6%
Age first drank alcopops	6 – 20+ years	15.43y	2.15y	80.5%
How often drank alcopops	(never) 1 – 7 (daily)	2.83	1.30	50.0%
Ever drank spirits	Yes / no	52.7% yes 44.3% no	N/A	89.0%
Age first drank spirits	6 – 20+ years	16.43y	2.12y	80.5%
How often drank spirits	(never) 1 – 7 (daily)	3.57	1.39	52.2%
<b>Disadvantage</b>				
Mother's employment	4 answer options, 1 (low dis.) – 4 (high dis.)	2.28	1.62	89.8%
Father's employment		1.41	1.06	85.8%
Benefits	Yes / no	18.7% yes 81.3% no	N/A	51.3%
<b>Parental education</b>				
Mother's qualifications	4 answer options, 1 (highly qualified) – 4 (no qual.)	2.95	3.80	91.2%
Father's qualifications		2.62	2.64	86.7%
<b>Violent behaviour</b>				
Ever engaged in non-weapon violence	Yes / no	20.9% yes 79.1% no	N/A	91.2%
Age first engaged in non-weapon violence	6 – 20+ years	14.45y	2.46y	17.7%
How often engaged in non-weapon violence	0 – 20+ times	1.51	1.87	23.5%
Ever engaged in violence using a weapon	Yes / no	5.9% yes 94.1% no	N/A	89.8%
Age first engaged in violence using a weapon	6 – 20+ years	13.75y	4.07y	5.3%
How often engaged in violence using a weapon	0 – 20+ times	2.00	3.05	13.3%
Ever stolen from someone using violence	Yes / no	3.0% yes 97.0% no	N/A	89.8%

Age first stolen from someone using violence	6 – 20+ years	13.00y	4.38y	2.7%
How often stolen from someone using violence	0 – 20+ times	2.88	3.56	10.6%

## **4.2 BIVARIATE ANALYSES**

Because the data was not normally distributed, an independent-samples T test was used to identify possible differences between religiosity (an interval-ratio variable) and violent behaviour (a binary variable). When carried out on the sample as a whole, a significant difference in religiosity between those who had reportedly engaged in violent behaviour and those who had not was found,  $t(203) = 2.51$ ,  $p = 0.01$ , with a mean difference of 1.04. This means that there is a significant difference in the likelihood of an individual having engaged in violent behaviour based on their religiosity, with those who are more religious being less likely to have engaged in violent behaviour.

An independent-samples T test was additionally carried out to determine whether a significant difference exists between alcohol consumption (an interval-ratio variable) and violent behaviour (a binary variable). A significant difference was found between the two variables,  $t(175) = -2.12$ ,  $p = 0.04$ , with a mean difference of -0.75. This means that there is a significant difference in the likelihood of an individual having engaged in violent behaviour based on their alcohol consumption, with those who consume more alcohol being less likely to have engaged in violent behaviour.

To identify possible correlations between alcohol consumption (an interval-ratio variable) and religiosity (also an interval-ratio variable), Pearson's correlation was used. A significant relationship was found between the two variables,  $r(181) = -0.57$ ,  $p = 0.00$ . This means there is a negative correlation between religiosity and alcohol consumption.

## **4.3 LINEAR REGRESSIONS**

To determine whether any significant relationships exist between each of the measures, linear regressions were carried out on the sample as a whole, and by religious group. The findings for the sample as a whole are presented in table 5 below. Religiosity was found to have moderate significant positive correlations with parental disapproval of violence, leisure time, and violent video game exposure, a moderate significant negative correlation with alcohol consumption, and a strong significant negative correlation with delinquent peers. Strong significant negative correlations were found between violent behaviour and self control and parental

education, and a strong significant positive correlation with delinquent peers. Alcohol consumption was found to have moderate significant correlations with self control and violent video game exposure, a strong significant positive correlation with leisure time, a moderate significant negative correlation with religiosity, and a strong significant negative correlation with norms of masculinity. Gender was controlled for throughout the linear regressions.

Table 5. Linear regressions between each variable and religiosity, violent behaviour, and alcohol consumption, for the sample as a whole

<i>Measure</i>	<i>Religiosity</i>	<i>Violent behaviour</i>	<i>Alcohol consumption</i>
	<i>Unstandardised coefficient</i>	<i>Unstandardised coefficient</i>	<i>Unstandardised coefficient</i>
Gender	-0.20	1.43	0.21
Norms of masculinity	-0.77	3.89	-0.84*
Self-control	0.52	-5.89**	0.54*
Parental disapproval of violence	0.52*	0.45	0.17
Academic commitment	-0.03	-2.28	0.17
Delinquent peers	-1.06*	6.27*	-0.11
Disadvantage	0.43	-3.81	-0.17
Parental education	-0.29	-4.57**	-0.19
Leisure time	0.63*	-3.30	0.91**
Violent video game exposure	0.83**	-1.87	0.34**
Religiosity	-	1.04	-0.42**
Alcohol consumption	-0.83**	-0.01	-
Violent behaviour	0.02	-	-5.99

\*Significant at  $p < 0.05$

\*\*Significant at  $p < 0.01$

Table 6 below represents the findings from the linear regressions conducted on those with no religion alone. For this reason, religiosity was excluded from these analyses. Moderate significant positive correlations were found between violent behaviour and norms of masculinity, delinquent peers, disadvantage, leisure time and violent video game exposure. Moderate significant negative correlations were found between violent behaviour and gender (meaning in the present study that males are significantly more likely to have engaged in violent behaviour than females), self control, parental disapproval of violence, and academic commitment, and a weak but significant negative correlation was found between violent behaviour and alcohol consumption. Strong significant negative correlations were found between alcohol consumption and gender (meaning in the present study that males are consume significantly more alcohol than females), parental education, and

violent behaviour. Strong significant positive correlations were found between alcohol consumption and norms of masculinity and disadvantage.

Table 6. Linear regressions between each variable and violent behaviour and alcohol consumption: non-religious participants

<i>Measure</i>	<i>Violent behaviour</i>	<i>Alcohol consumption</i>
	<i>Unstandardised coefficient</i>	<i>Unstandardised coefficient</i>
Gender	-0.32**	-0.87**
Norms of masculinity	0.50**	1.29*
Self-control	-0.15**	-0.51
Parental disapproval of violence	-0.15**	0.14
Academic commitment	-0.22**	-0.34
Delinquent peers	0.53**	-0.03
Disadvantage	0.49**	1.46*
Parental education	-0.13	-1.67**
Leisure time	0.24**	0.01
Violent video game exposure	0.30**	-0.05
Alcohol consumption	-0.07*	-
Violent behaviour	-	-2.22*

\*Significant at  $p < 0.05$

\*\*Significant at  $p < 0.01$

The results for the linear regressions conducted on Christians alone are presented in table 7. Strong significant positive correlations were found between religiosity and norms of masculinity, and parental disapproval of violence. No other significant correlations were found between religiosity and any other variable. Very strong significant positive correlations were found between violent behaviour and self control, and religiosity. Very strong significant negative correlations were found between violent behaviour and parental disapproval of violence, delinquent peers, and leisure time. A moderate significant positive correlation was found between alcohol consumption and delinquent peers, a strong significant positive correlation was found between alcohol consumption and leisure time, and a weak but significant negative correlation was found between alcohol consumption and religiosity.

Table 7. Linear regressions between each variable and religiosity, violent behaviour, and alcohol consumption: Christian participants

<i>Measure</i>	<i>Religiosity</i>	<i>Violent behaviour</i>	<i>Alcohol consumption</i>
	<i>Unstandardised coefficient</i>	<i>Unstandardised coefficient</i>	<i>Unstandardised coefficient</i>
Gender	-1.34	10.94	0.01
Norms of masculinity	4.29*	-3.00	-0.63
Self-control	-1.36	9.53*	-0.15

Parental disapproval of violence	1.37*	-14.55**	-0.18
Academic commitment	1.01	-4.67	0.07
Delinquent peers	-0.58	-15.14**	0.60**
Disadvantage	-0.52	12.50*	-0.46
Parental education	-0.31	-3.00	0.09
Leisure time	-0.18	-9.24*	1.05**
Violent video game exposure	-0.15	1.90	-0.10
Religiosity	-	4.00**	-0.14*
Alcohol consumption	0.58	4.38	-
Violent behaviour	0.04	-	0.01

\*Significant at  $p < 0.05$

\*\*Significant at  $p < 0.01$

The results of the linear regressions conducted on Muslims alone are presented in table 8. Because not a single Muslim participant reported having ever consumed alcohol, the alcohol consumption variable was excluded from these analyses. The only significant correlation found between religiosity and another variable was a strong significant negative correlation with delinquent peers. Violent behaviour was found to strongly correlate with gender in a positive direction to a significant level, meaning in the present study that males are more likely to have engaged in violent behaviour than females. Very strong significant negative correlations were found between violent behaviour and norms of masculinity, parental disapproval of violence, academic commitment, and disadvantage.

Table 8. Linear regressions between each variable and religiosity, violent behaviour, and alcohol consumption: Muslim participants

<i>Measure</i>	<i>Religiosity</i>	<i>Violent behaviour</i>
	<i>Unstandardised coefficient</i>	<i>Unstandardised coefficient</i>
Gender	-0.16	19.86*
Norms of masculinity	-1.23	-36.86*
Self-control	-0.29	-11.30
Parental disapproval of violence	-0.20	-15.23*
Academic commitment	-0.21	-14.21*
Delinquent peers	-2.09**	-19.74
Disadvantage	0.13	-18.83*
Parental education	0.03	-6.38
Leisure time	-0.41	3.74
Violent video game exposure	0.28	8.56
Religiosity	-	3.79
Violent behaviour	0.01	-

\*Significant at  $p < 0.05$

\*\*Significant at  $p < 0.01$

## **4.4 MULTIVARIATE GENERAL LINEAR MODEL BY RELIGIOUS GROUP**

A multivariate general linear model was used to identify differences and similarities between the different religious groups involved in the research. Due to the small sample sizes of the Buddhist and 'Other' groups, these were excluded from this testing, although they have been included in the rest of the analyses. The findings from the general linear model are shown in table 9. The majority of significant differences were found in the Muslim group, with more similarities than differences being found between Christians and atheists.

Table 9. Multivariate general linear model by religious group

<i>Measure</i>	<i>Christian</i>		<i>Muslim</i>		<i>Atheist</i>	
	<i>Muslim</i>	<i>Atheist</i>	<i>Christian</i>	<i>Atheist</i>	<i>Christian</i>	<i>Muslim</i>
Religiosity	-1.21**	3.41**	1.21**	4.62**	-3.41**	-4.62**
Norms of masculinity	-0.04	-0.02	0.04	0.02	0.02	-0.02
Self-control	0.48*	0.01	-0.48*	-0.47**	-0.01	0.47**
Parental disapproval of violence	-0.23	0.14	0.23	0.37*	-0.14	-0.37*
Academic commitment	-0.14	0.14	0.14	0.27*	-0.14	-0.27*
Delinquent peers	0.09	-0.23	-0.09	-0.32*	0.23	0.32*
Alcohol consumption	2.79**	-0.85**	-2.79**	-3.64**	0.85**	3.64**
Violent behaviour	-5.89	-0.25	5.89	5.64	0.25	-5.64
Disadvantage	-0.88**	-0.18	0.88**	0.71**	0.18	-0.71**
Parental education	-0.51*	-0.38	0.51*	0.14	0.38	-0.14
Leisure time	0.39	-0.12	-0.39	-0.51**	0.12	0.51**
Violent video game exposure	0.99**	1.32**	-0.99**	0.33	-1.32**	-0.33

\*Significant at  $p < 0.05$

\*\*Significant at  $p < 0.01$

Significant differences in religiosity were found between each group, with Muslims having significantly higher levels of religiosity than both Christians and atheists, and Christians having significantly higher levels of religiosity than atheists. Though Christians and atheists were found to have similar attitudes to risk-taking, Muslims rated significantly lower than both groups. Muslims also reported that their parents disapprove of violent behaviour significantly more strongly than atheists, though not significantly more than Christians. Atheists were found to be significantly less committed to their university than Muslims, and were significantly more likely to have

delinquent peers than their Muslim counterparts. Significant differences between the groups' alcohol consumption were found, with Christians drinking significantly more than Muslims and significantly less than atheists, and Muslims also drinking significantly less than atheists. Muslims were found to have be significantly more disadvantaged than both Christians and atheists, though their parents were found to have higher qualifications than both Christians and atheists. Muslims also reported spending significantly less time in 'violence risk' places such as bars and clubs than atheists, though not significantly less than Christians. No significant differences were found between any of the groups in their attitudes to norms of masculinity or actual reported violent behaviour.

## 5. DISCUSSION

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### **5.1 OVERVIEW**

The present study's sample consisted of 226 participants from one university in North West England, United Kingdom. Of the 226 participants, Muslims made up the majority of the sample, closely followed by non-religious, and Christians. Although religious sub-groups (such as Shiite and Sunni Islam) were recorded, the sub-groups were of an insufficient size to compare, and so these analyses were excluded from the study. Although the author was unable to locate any statistics regarding the religious makeup of the students of the university in question, information was readily available about the town the university is situated in. 7,813 people were asked to describe their religion, and 59% reported that they were Christian, 30% that they had no religion, 9% that they were Muslim, and 1% that they had any other religion (Kirklees Council, 2011). The 2011 census (Office for National Statistics, 2011) gave similar results in terms of religious affiliation, with 59.3% of respondents identifying as Christian, 25.1% with no religion, and 4.8% identifying as Muslim. This means that the present study's sample neither represents the town the study was based in, nor the wider country in terms of religious affiliation: most notably, the present study involves a higher proportion of Muslims than is representative, and a lower proportion of Christians than is representative. This means that the findings of this study have reduced generalisability.

Throughout the majority of the questionnaire, response rates were good. The main exception to this was in the case of previous violent behaviour. Response rates to the three questions regarding whether a participant had ever previously engaged in violent behaviour (see appendix 1) were good (with a minimum of 89.8%), but when questioned about the age at which participants had first engaged in the violent behaviour in question, and how often they had engaged in the violent behaviour in the past 12 months, response rates were as low as 2.7% (see table 4). In terms of the former, it is possible that participant simply did not know what age they had first engaged in that type of violent behaviour, and so left the question blank. In terms of the latter, it is possible that if a participant had indeed engaged in that form of violent behaviour in the past 12 months, they could have been concerned about possible

legal repercussions. It was made clear in the participant information sheet (see appendix 2) that due to the anonymous nature of the study, it would not be possible to match a questionnaire with a participant once the questionnaire had been handed in to the researcher, and so it would not be possible to report any crimes revealed in the questionnaire. However, it is possible that participants were unwilling to take the perceived risk. This low response rate may affect the reliability of any conclusions made about  $H_1$  and  $H_2$  (below), as the actual number of participants who reported having engaged in violent behaviour was very low. This must be taken into consideration when interpreting the conclusions made about the first two hypotheses.

The present study aimed to investigate three hypotheses, outlined below:

- $H_1$ : Individuals with a higher level of religiosity will be more likely to have engaged in violent behaviour than those with a lower level of religiosity.
  - *Null hypothesis 1: Individuals with a higher level of religiosity will be less likely to have engaged in violent behaviour than those with a lower level of religiosity. The likelihood of an individual having engaged in violent behaviour will therefore be reduced as the individual's religiosity increases.*
- $H_2$ : Religiosity will correlate with an increase in risk factors for violent behaviour. For example, religiosity will have a negative correlation with parental disapproval of violence, and a positive correlation with delinquent peers.
  - *Null hypothesis 2: Religiosity will correlate with a reduction in risk factors for violent behaviour. For example, religiosity will have a positive correlation with parental disapproval of violence, and a negative correlation with delinquent peers.*
- $H_3$ : Religiosity will have either a positive correlation, or no correlation, with alcohol consumption.
  - *Null hypothesis 3: Religiosity will have a negative correlation with alcohol consumption, with alcohol consumption decreasing as religiosity increases.*

## **5.2 RELATIONSHIP BETWEEN RISK FACTORS, AND RELIGIOSITY AND VIOLENCE**

These present study included people who identified themselves as having no religion, though Baier (2014) excluded these from his analyses to focus on Christians and Muslims. This study found that in many cases, correlations between religiosity and other factors were only apparent once the non-religious were included in analyses, acting as a kind of control group. The inclusion of atheists therefore strengthens the present study, and it is recommended that atheists are included in the analyses of future research.

Please note that risk factors marked with an asterisk (\*) were found to have low internal validity. Although internal validity is mainly considered important where the researcher(s) are attempting to identify cause-and-effect relationships – whereas the present study attempts to identify correlations, rather than cause-and-effect – it is nevertheless advisable that results featuring these variables should be interpreted with more caution than the rest.

### **5.2.1 GENDER**

It is a well-known fact in criminological research that males are far more likely to engage in violent behaviour than females. This is one of the reasons that Baier (2014) decided to exclude females from his study, but the present study sought to expand the research by including both males and females. When the sample was considered as a whole, no significant relationships were found between gender and violence. The same was true when Christians were considered separately. When the analyses were restricted to Muslims however, it was found that males were far more likely to have engaged in violent behaviour than females. The opposite was true for the non-religious, where females were more likely to have engaged in violent behaviour than males, though the effect size was much smaller. Previous research does not offer much in the way of explanation for this, so to speculate, it is perhaps a result of cultural upbringing, with more females in the sample coming from places with higher rates of violent behaviour than the males in the sample.

No significant relationships were found between religiosity and gender, including when analyses were restricted by religious group.

## **5.2.2 AGREEMENT WITH NORMS OF MASCULINITY**

As discussed in more detail in section 2.4.1, masculine ideals revolve around the male having control and power, and in cases where it is not possible to achieve these, or when it is deemed necessary to defend these, men are more likely to violence (Bui and Morash, 2008). When examining the sample as a whole, no significant correlations were found between agreement with norms of masculinity and violent behaviour, or between religiosity and agreement with norms of masculinity. For the non-religious, a moderate positive correlation between the norms of masculinity and violent behaviour was found. No significant differences in the extent of agreement with norms of masculinity were found between the three religious groups, suggesting that contemporary religious teachings do not affect agreement with norms of masculinity.

When the sample was narrowed down to Christians, a strong positive correlation between religiosity and agreement with norms of masculinity was found, though no significant correlation between norms of masculinity and violent behaviour was found. These findings are not consistent with Baier's (2014), which found a weak but significant negative correlation between norms of masculinity and religiosity, and a strong positive correlation between norms of masculinity and violent behaviour in Christians.

No significant correlations between religiosity and norms of masculinity were observed in Muslims. Unexpectedly however, a very strong negative correlation was observed between norms of masculinity and violent behaviour for the group, meaning that those who agreed more strongly with norms of masculinity were less likely to have engaged in violent behaviour. No significant differences in the extent of agreement to norms of masculinity were found between the three religious groups, so further investigation of both agreement to norms of masculinity and its relationship with violent behaviour in Muslims would be necessary to explain this correlation, as there is simply not enough information to explain such a phenomenon in the present study. Baier's study (2014) found positive correlations between norms of masculinity and religiosity and violent behaviour in Muslims, though the latter was found to be much stronger than the former.

It is therefore concluded that the relationship between agreement with norms of masculinity and religiosity is insignificant, except for Christians, where religiosity is positively correlated with agreement with norms of masculinity. It is also concluded that agreement with norms of masculinity is not a suitable factor to predict violent behaviour, as no correlations were found in the sample as a whole or in Christians, but a strong negative correlation between the two variables were found in Muslims, and a positive correlation was found in the non-religious. It is therefore not possible to deduce that agreement with norms of masculinity is a mechanism through which religiosity affects violent behaviour.

### **5.2.3 SELF-CONTROL**

Gottfredson and Hirschi (1990) theorised that those with a higher level of self-control are less likely to engage in violent behaviour, arguing that an individual's level of self-control is the principle indicator of criminality, including likelihood of engaging in violent behaviour. No significant relationships between religiosity and self-control were observed in the present study in any case, including when analyses were restricted by religious group. It was however, found that both Christians and the non-religious had significantly more self-control than Muslims. Baier's study (2014) found a significant negative correlation between religiosity and self-control in Christians, and no significant correlation in Muslims.

Self-control was found to have a strong negative correlation with violent behaviour, an effect that is also seen to a lesser extent in the non-religious. This finding supports much of the existing literature on self-control and criminality (Chapple et al., 2010; Nakhaie et al., 2000; Perrone et al., 2004). Muslims were an exception to this, with no significant correlation being found. Unexpectedly however, a strong positive correlation between the two variables was found in Christians, which contradicts much of the literature on the subject. Baier's study (2014) also found strong positive correlation between the two variables for both Christians and Muslims.

It is therefore concluded that the relationship between self-control and violent behaviour is not consistent across different religious groups. In general, without discerning differing religions, self-control has a negative correlation with violent behaviour, and although the same was true for the non-religious, there was no

significant correlation for Muslims and a positive correlation for Christians. It is also concluded that there is no link between religiosity and self-control, which means that self-control is not a mechanism through which religiosity affects violent behaviour.

#### **5.2.4 PARENTAL DISAPPROVAL OF VIOLENCE**

Parental disapproval of violence was expected to affect violent behaviour in the way one would expect: individuals whose parents more strongly disapprove of violence would themselves disapprove more strongly of violence, and therefore be less likely to have engaged in violent behaviour. On the other hand, individuals whose parents approve of violence would themselves approve of violence and therefore be more likely to have engaged in violent behaviour. This idea has roots in the empirically reinforced social learning theory (for example, see Gorman-Smith et al., 2004; Guerra et al., 2003; Sellers et al., 2005).

When examining the non-religious and Christians, this effect is indeed seen: both groups had negative correlations between parental disapproval of violence and actual violent behaviour, meaning that those whose parents disapprove of violence more strongly were less likely to have engaged in violent behaviour. However, this was not true for Muslims, or the sample as a whole, where no significant correlations between the two variables were identified. Baier's study (2014) on the other hand found negative correlations between the two variables for both Christians and Muslims, and in the case of Christians, identified a stronger correlation than the present study. Muslims were also found to have the lowest standard deviation in responses to the parental disapproval of violence measure, which could partially explain why no significant correlation was found for that group.

A strong positive correlation between religiosity and parental disapproval of violence was found when examining the sample as a whole. This is an unsurprising finding, as contemporary religions are well-known to advocate peace, tolerance and kindness, and to condemn the use of violence. It is thus an expected finding that higher religiosity is associated with parents who more strongly disapprove of violence. The same trend is seen when the sample is restricted to Christians, but no significant correlations were observed when the sample was restricted to Muslims. Once again, an explanation for this could perhaps be found in the lower standard

deviation in responses to the parental disapproval of violence variable in Muslims. These findings support Baier's study (2014) in both cases, which also found a positive correlation between the two variables in Christians (though a stronger correlation was found by the present study) and did not find a significant correlation between the two variables in Muslims.

It is therefore concluded that parental disapproval of violence is not irrelevant as a factor for actual violence, that religiosity is not irrelevant as a factor for parental disapproval of violence, but that in both cases, the relationships vary across religious groups. It is therefore concluded that parental disapproval of violence could potentially be a mechanism through which religiosity affects violent behaviour.

### **5.2.5 ACADEMIC COMMITMENT\***

The expected effect of academic commitment on violent behaviour has its roots in both the routine activity theory, which explains violence in terms of opportunity to engage in violent behaviour (Osgood et al., 1996) and the self-control theory (Gottfredson and Hirschi, 1990), which in this case would suggest that those who are more committed to their university and studies would have greater reason to desist from violent behaviour in order to avoid the negative consequences of engaging in violent behaviour (such as criminal proceedings potentially resulting in the expulsion of the student, or damage to career prospects). Therefore, the expectation was that those who have a higher level of academic commitment are less likely to have engaged in violent behaviour.

For Muslims and the non-religious, this expectation was found to be correct: strong negative correlations between the two variables were found for both groups, though the effect was much stronger for Muslims than for the non-religious. Baier's study (2014) also found a strong negative correlation for Muslims. His study did additionally find a strong negative correlation for Christians as well (indeed, a stronger correlation than that for Muslims), but the present study did not find any significant correlation for Christians, or when the sample was considered as a whole.

No significant correlations were found between academic commitment and religiosity in any case, including when analyses were restricted by religious group. This does not support Baier's findings (2014) of positive correlations between religiosity and

academic commitment for both Christians and Muslims. It is possible that the age difference between Baier's sample (9<sup>th</sup> grade students) and the present study (university students) could explain this inconsistency. Baier's sample will have been required by law to attend school, as they would still be too young to leave. On the other hand, enrolment in university is the individual's own choice, and so it would be reasonable to assume that students attending university would be more committed to their studies than 9<sup>th</sup> grade school students, who have no choice but to attend school. Indeed, the present study found very high levels of academic commitment and very low standard deviations on the academic commitment measures.

The present study therefore concludes that academic commitment as a factor for violent behaviour is only suitable for the non-religious and Muslims, and that academic commitment is not a mechanism through which religiosity affects violent behaviour. As a factor for violent behaviour, academic commitment is not a central variable to use.

### **5.2.6 DELINQUENT PEERS**

The idea that association with delinquent peers increases an individual's propensity for criminality and violent behaviour has its roots in several theories, such as Gottfredson and Hirschi's self-control theory (1990), the social learning theory and the routine activity theory. On the topic of delinquent peers, one can purport from these theories that: (1) individuals associate themselves with peers who are similar to themselves, in terms of interests, values, and morals, which means that people who are more likely to involve themselves in criminality and violence will likely have peers that do the same, and; (2) individuals are more likely to engage in behaviour that they are exposed to, so people who see their peers engaging in violent behaviour are more likely to do so themselves. Therefore, the expected relationship between violent behaviour and delinquent peers would be that people with delinquent peers are more likely to have engaged in violent behaviour (see Agnew and Petersen, 1989; Bernburg and Thorlindsson, 2001; Haynie and Osgood, 2005; Higgins and Jennings, 2010; Osgood et al., 1996; Weerman, 2011).

For the sample as a whole and the non-religious, this effect is indeed seen. Both groups have strong positive correlations between delinquent peers and violent

behaviour, with the likelihood of having engaged in violent behaviour increasing as the number of delinquent peers increases. No significant correlation was found in Muslims between the two variables. Oddly however, a very strong negative correlation between delinquent peers and violent behaviour was found in Christians, meaning that those with a higher number of delinquent peers were less likely to have engaged in violent behaviour than those with a lower number of delinquent peers. Baier's study (2014) found strong positive correlations between the two variables for both Christians and Muslims.

In terms of the relationship between delinquent peers and religiosity, it was expected that a negative correlation between the two variables would be found. Research as shown that religiosity is associated with stronger morals, values, and a greater sense of honesty (Beit-Hallahmi and Argyle, 1997; Rocca, 2005), which would in theory mean that people with a higher level of religiosity would be less likely to associate themselves with delinquent peers, as it would go against their morals and values. For the most part, this is what the present study found: for the whole sample, a strong negative correlation was found, and for Muslims, an even stronger negative correlation was found. No significant correlation was found for Christians. Baier's study (2014) found the opposite: a strong negative correlation in Christians, and no significant correlation in Muslims.

This study therefore concludes that delinquent peers are a good factor to consider in violent behaviour, and that less association with delinquent peers could be one of the mechanisms through which religiosity reduces violent behaviour. Christians appear to be an exception to this in both cases.

### **5.2.7 SOCIOECONOMIC DISADVANTAGE\***

There is a sizeable body of literature on the relationship between socioeconomic disadvantage and violent behaviour, with much agreement that a positive correlation exists between the two. Explanations for this have included higher stress levels resulting from financial difficulties, lower levels of parental monitoring, residing in areas with higher crime and delinquency rates, and higher drug and alcohol use rates (Baumer et al., 2003; Gelles, 1990; Hotelling and Sugarman, 1986; Markowitz, 2003; Straus and Gelles, 1990). The anticipated result from the present study is

therefore in line with existing literature on the topic: that there will be a positive correlation between socioeconomic disadvantage and violent behaviour, with violent behaviour becoming more likely as an individual's level of disadvantage increases.

In the non-religious and Christians, disadvantage has a strong positive correlation with violent behaviour, as was to be expected. This additionally supports Baier's finding (2014) of a positive correlation between the two variables for Christians. However, his study did not find any significant correlation between the two factors for Muslims, and the present study oddly found a strong negative correlation for Muslims, meaning that Muslims who are more disadvantaged are more likely to desist from violent behaviour, and those that are in better socioeconomic situations are more likely to have engaged in violent behaviour – a very surprising finding that contradicts a huge body of research on the topic of socioeconomic disadvantage and violent behaviour. No significant correlations between the two variables were found for the sample as a whole, but this was likely skewed by the strange results from the Muslim group.

Unsurprisingly, no correlations were found between socioeconomic disadvantage and religiosity in any case, including when analyses were restricted by religious group. There is little logical reason to believe that a person's religiosity affects their socioeconomic status, and vice versa, and these findings support that. Baier's study (2014) however, did find a negative correlation between religiosity and socioeconomic disadvantage in Christians only.

The present study therefore concludes that while socioeconomic disadvantage is a useful predictor of violent behaviour in general, more research would be beneficial on the relationship between the two factors in Muslims specifically. Regardless, there is no significant correlation between disadvantage and religiosity, so it is not a mechanism through which religiosity reduces violence.

### **5.3.8 PARENTAL EDUCATION\***

The idea behind parental education as a factor for violent behaviour is very similar to that of disadvantage, but was measured separately as it is not necessarily a measure of socioeconomic disadvantage. The present study however found no significant correlations between parental education and violent behaviour, or parental

education and religiosity in any case, including when analyses were restricted by religious group. In contrast, Baier's study (2014) however, found a positive correlation between parental education and religiosity in Christians only, and a negative correlation between parental education and violent behaviour in Christians.

It is therefore concluded by the present study that parental education is not a suitable factor to use in the study of violent behaviour in university students, and that it is not a mechanism through which religiosity affects violent behaviour.

### **5.2.9 LEISURE TIME**

The leisure time variable – the amount of time an individual spends in areas that violent behaviour is known to be more likely to occur – and its link with violent behaviour is rooted entirely in the routine activity theory. The theory behind the variable is that violent behaviour will only occur where a motivated offender, a suitable target, and an absence of capable guardians, are brought together (Cohen and Felson, 1979). In other words, if a person who is likely to engage in violent behaviour happens across the correct circumstances to engage in such behaviour, the person is likely to engage in violent behaviour (Briar and Piliavin, 1965; Gold, 1970), and much of the existing literature has supported this theory (for example, see Haynie and Osgood, 2005; Osgood et al., 1996).

In the present study, no significant correlations were found between violent behaviour and leisure time when examining the sample as a whole, or when examining Muslims separately. A moderate positive correlation was identified in the non-religious, but a strong negative correlation was identified between the two variables in Christians. By contrast, Baier's study (2014) identified positive correlations between the two variables in both Christians and Muslims, and a stronger correlation was found in Christians.

For the sample as a whole, a strong positive correlation was found between religiosity and leisure time. On one hand, the finding that people that are more religious spend more time in violence-risk places seems a little surprising. But on the other hand, the wording of the question in the questionnaire specifies "pub, clubbing, cinema, events", and there is no reason to believe that people with a higher level of religiosity would go to the cinema and events less often than less religious or non-

religious people. When the analyses were restricted by religious group, no significant correlations were found between the two variables for either Christians or Muslims. Baier's study (2014) however, did find a weak negative correlation between the two variables for Christians, and like the present study, no significant correlation between the two variables for Muslims.

This study therefore concludes that leisure time is only a suitable predictor of violent behaviour in the non-religious, and further investigation is required to discern any reasoning behind the peculiar finding in the Christians. It must also conclude that there is a positive correlation between leisure time and religiosity, but that given the strange and inconsistent trends identified by the present study, leisure time cannot at present be considered as a mechanism through which religiosity acts as a protective factor against violent behaviour.

### **5.2.10 VIOLENT VIDEO GAME EXPOSURE**

Existing literature on the relationship between violent video game exposure and actual violent behaviour is mixed. The majority of studies have either found a weak but significant positive correlation between the two (Anderson, 2004; Bushman, 2001; Bushman and Anderson, 2002; Gunter and Daly, 2012; Sherry, 2001) or no significant correlation between the two (Durkin and Barber, 2002; Ferguson, 2011; Ferguson and Rueda, 2009; 2010; Ferguson et al., 2009; Wallenius and Punamaki, 2008). As a possible risk factor for violent behaviour, violent video game exposure was included in this study. The expected result was either a positive correlation between the two variables, or no correlation.

Interestingly, the only group where a significant positive correlation was found was for the non-religious. No significant correlation between the two variables was found for Christians, Muslims, nor the sample as a whole. The correlation for the non-religious was of a moderate strength. Baier's study (2014) found significant positive correlations between violent video game exposure and actual violent behaviour for both Christians and Muslims, so age could be a factor in this relationship. It is well-known that the younger a person is (i.e. children and adolescents), the more likely they are to imitate behaviour they are exposed to, so it could be the case that the correlation between the two factors is weakened by age. The amount of exposure to

violent video games is unlikely to be an explanation, as the non-religious were found to have a significantly lower level of exposure to violent video games than Christians, who in turn had a significantly higher level of exposure to violent video games than Muslims.

Oddly, the present study also found a strong positive correlation between violent video game exposure and religiosity. To speculate about this finding, it could be that rather than people with a higher level of religiosity being more interested in violent video games than their less or non-religious counterparts, it could be that less or non-religious people spend more time pursuing other interests (such as partying, for example), and so spend less time on violent video games than people with a higher level of religiosity. Findings from the multivariate general linear model (presented in table 4.4) may support this theory based on the finding that the non-religious reportedly play violent video games the least, and Christians the most. Baier's study (2014) found a negative correlation between the two variables in Christians, and a positive correlation in Muslims.

The present study therefore concludes that violent video game exposure only correlates with actual violent behaviour in the non-religious. It also concludes that violent video game exposure is positively correlated with religiosity, though further investigation will be necessary to determine the reason for this. For this reason, violent video game consumption cannot be considered a mechanism through which religiosity reduces violent behaviour at this time.

### **5.2.11 ALCOHOL CONSUMPTION**

It is a well-established principle in criminology that increased alcohol consumption is linked with increased propensity to engage in violent behaviour (Abbey, 2011; Chermack and Giancola, 1997; Leonard, 2008; Roizen, 1997). As is to be expected considering the prohibition or limitation of alcohol consumption in most religions, most research has found that religiosity acts as a protective factor for alcohol consumption, with alcohol consumption falling as the individual becomes more religious (Cochran et al., 1988; Francis, 1997; Jeynes, 2006; Wells, 2010). Both topics – alcohol consumption and violent behaviour, and alcohol consumption and

religiosity – are well developed areas in the research, so it was imperative that the measure be included in the present study, even if only as a control variable.

Unsurprisingly, the present study found a strong negative correlation between alcohol consumption and religiosity. No significant relationship was found when Christians were considered separately, and no Muslims reported having ever consumed alcohol whatsoever. The lack of any significant relationship between the two variables for Christians could perhaps be attributed to the absence of non-religious people as a control group. These findings support those of Baier's (2014), which found strong negative correlations between the two variables for both Christians and Muslims, and a much stronger correlation for Muslims.

The present study's findings on the relationship between alcohol consumption and violence however, are more unexpected. No significant correlations between the two variables were found in any case, with the exception of the non-religious, where the two variables had a weak but significant negative correlation. This means that in non-religious people, increased alcohol consumption reduces, rather than increases, the likelihood of having engaged in violent behaviour. This finding also contradicts those of Baier's study (2014), which identified strong positive correlations between alcohol consumption and violent behaviour in both Christians and Muslims.

$H_3$  states that "religiosity will have either a positive correlation, or no correlation, with alcohol consumption" ( $Null_3$ : "religiosity will have a negative correlation with alcohol consumption, with alcohol consumption decreasing as religiosity increases"). This study concludes that there is indeed a strong correlation between alcohol consumption and religiosity, with religiosity acting as a 'protective factor' against alcohol consumption as existing literature would suggest. Therefore,  $H_3$  will be confidently rejected, and the null hypothesis will be accepted. However, the study must also conclude that alcohol consumption is an unsuitable measure to use to predict violent behaviour in university students.

### **5.2.12 SUMMARY OF THE RELATIONSHIP BETWEEN RELIGIOSITY AND RISK FACTORS**

One of the main findings from this study is that the relationship between religiosity and risk factors for violent behaviour is rarely consistent between Christians and

Muslims, and that correlations can at times only be seen when non-religious people are included as a control group for religiosity.  $H_2$  states that “religiosity will correlate with an increase in risk factors for violent behaviour...” ( $Null_2$ : “religiosity will correlate with a reduction in risk factors for violent behaviour”). In only one case can it be confidently concluded that religiosity has the anticipated correlation with violent behaviour, and this is the case of the delinquent peers variable. Parental disapproval of violence is another variable that could arguably be said to have the anticipated correlation with violent behaviour. The other risk factors however, did not have the anticipated correlation with violent behaviour. For this reason,  $H_2$  will be accepted for the most part, and  $Null_2$  will be rejected for the most part.

### **5.3 RELATIONSHIP BETWEEN RELIGIOSITY AND VIOLENCE**

Although research into the relationship between religiosity and violence is still in its earlier stages, the literature suggests that religiosity acts as a protective factor against violent behaviour (Brinkerhoff et al., 1992; Salas-Wright et al., 2014), though findings across the body of research are often inconsistent. The present study found that in the absence of other variables, there is a fairly strong negative correlation between religiosity and the likelihood of an individual having engaged in violent behaviour, with individuals with a higher level of religiosity less likely to have engaged in violent behaviour than those with a lower level of religiosity.

However, once other variables known to affect the likelihood of violent behaviour were introduced to the analyses, it was found that religiosity and violent behaviour did not have a significant correlation. This would suggest that religion itself is not the cause of religiosity’s deterrent effect on violent behaviour, but rather that religiosity is associated with the strengthening of mediating factors, such as self-control, and the reduction of risk factors, such as delinquent peers (as explored throughout section 5.2).

When the analyses were restricted by religious group, the deterrent effect of religiosity on violent behaviour was no longer found in Muslims. To speculate, it would seem logical to assume that this was because the range of religiosity among the sample was significantly smaller once the non-religious were removed, so significant effects of religiosity could not be observed without the contrast in

religiosity provided by the non-religious group. This both supports and contradicts Baier's (2014) findings. It could be regarded as contradicting his findings in the sense that the author concluded that higher levels of Muslim religiosity were associated with higher propensity for violent behaviour. However, because he based this on an unusually low significance level of  $p < 0.06$ , which the present study regards as insignificant, it could also be regarded as supporting his findings if one interprets those findings with a significance level of  $p < 0.05$  as opposed to  $p < 0.06$ .

Interestingly, the present study found a strong positive correlation between religiosity and violent behaviour when the analyses were restricted to Christians. The author was unable to find any previous research that observed a similar finding. Baier's study (2014) for example, did not find any significant correlation between religiosity and violent behaviour for Christians. To speculate, this unexpected finding could perhaps be explained by examining the research tool and analytical methods: while the religiosity measures gave a measure of how religious the individual was observed to be within the past 12 months, the measure of violence used in the analysis was simply whether or not the individual had ever engaged in an act of violence (because too few participants reported having engaged in violent behaviour in the past 12 months; see section 4.1). Therefore, this could mean that in the cases influencing this finding, the individuals had been less religious in previous years when they have been involved in violent behaviour. It would seem improbable that the teachings of Christianity could explain the increase in violent behaviour, as the teachings of "both Islam and Christianity invite to tolerance, peace, and friendship" (Salamat et al., 2015:3484), and it is well-known that religions in the modern world strongly condemn violence.

$H_1$  states that "individuals with a higher level of religiosity will be more likely to have engaged in violent behaviour than those with a lower level of religiosity". ( $Null_1$ : "individuals with a higher level of religiosity will be less likely to have engaged in violent behaviour than those with a lower level of religiosity...").  $H_1$  can therefore be partially accepted and partially rejected. While religiosity was observed to have a negative correlation with violent behaviour overall, the opposite was found to be true for Christians and no significant correlation whatsoever was observed for Muslims. Therefore,  $H_1$  will be rejected and the null hypothesis accepted when considering religiosity overall, although  $H_1$  will be accepted and the null hypothesis rejected when

discerning between different religious groups. Nevertheless, the same conclusion as Baier's study is reached: "religiosity is not a central variable for explaining violent behaviour" (2014:120).

## **5.4 LIMITATIONS**

The present study involved a sample of 226 participants. Power calculations based on the number of students attending the university (which will be withheld to protect the anonymity of the university) and a confidence level of 95%, showed that the sample has a confidence interval of 6.48% - 1.48% higher than the more reliable 5%. This means that the reliability of the findings from this study are slightly hampered by a smaller-than-recommended sample size. However, this does not mean that the findings from the present study cannot be trusted – only that the study's reliability would have benefitted from a larger sample. Furthermore, tests between different religious denominations would have been possible if more people from certain religious denominations (for example Islamic Shiite, n=6) had been involved in the research, which would have added more depth to the study.

There are four issues relating to the questionnaire. First, the 'leisure time' measure asks participants how much time on an average week and weekend day they spend at pubs, clubbing, at the cinema and at events. This question is intended to determine how much time a participant spends at places that are higher-risk for violent behaviour. For a younger sample such as that of Baier's study (2014), it is reasonable to classify places such as cinemas and general events as being higher-risk for violent behaviour, but those two places in particular seem unreasonable to classify as being higher-risk for violent behaviour for an adult sample such as that of the present study, though pubs and clubbing would certainly both still be included.

Secondly, the questions measuring alcohol consumption ask participants about their consumption of beer, spirits, and alcopops – but excludes wine consumption. It would be reasonable to assume that Baier's sample (2014) of 9<sup>th</sup> grade males would not consume very much wine, and this is perhaps the reason it is omitted from the questions, but the same cannot be said about both male and female adults. Though it is unlikely this will have affected the alcohol consumption measures to a great extent, the inclusion of wine consumption would have covered all types of alcoholic

beverage. However, the present study is a partial-comparison study, and so to amend these two mistakes would detract more from the study than it would have contributed to it.

Thirdly, Salamati et al.'s commentary (2015:3482) on Baier's study (2014) quite rightly noted that "honesty is one of the criteria of religiosity that cannot be assessed by [the questionnaire]. As a result, honest people are more likely to report past misbehavior than liars..." and that because religiosity is strongly correlated with honesty (for example, see Beit-Hallahmi and Argyle, 1997), those with a higher level of religiosity could appear to be more likely to engage in violent behaviour than those with a lower level of religiosity. Baier agreed that such an assertion would seem plausible, but that no studies have looked into this (Baier, 2015). However, honesty is an issue faced in all self-report questionnaires. It would indeed be interesting to see research into the effect of religiosity on honesty in self-report, anonymous questionnaires, but this is an issue that could not be tackled by the present study, in particular because it is a partial-comparison study, and so to alter the questionnaire would affect comparability. Relating to the issue of the reporting of past misbehaviour, it once again must be reiterated that the present study faced a very low response rate of 2.7% when it came to the reporting of past engagement in violent behaviour, and that this reduces the reliability of any conclusions the present study made when using this information.

Fourthly is the issue of questionnaire translation. Although the questionnaire was translated by a reliable academic and this translated questionnaire was piloted to 14 people for validation purposes, a full validation of the translated questionnaire was not undertaken, which would have contributed to the reliability of findings.

## 6. CONCLUSION

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This study aimed to examine the relationships between religiosity, alcohol consumption and violent behaviour in young adults in North West England. A quantitative approach was taken in the present research, as it is typically considered the most appropriate approach to illustrate correlations between multiple variables, providing insight into the size and direction of any correlations (Creswell, 2003). The study was a partial-replication study based on Dirk Baier's study '*The Influence of Religiosity on Violent Behavior of Adolescents: A Comparison of Christian and Muslim Religiosity*' (2014). An explanatory, self-report questionnaire was used for data collection (see appendix 1 for full questionnaire wording), employed due to the ability of a questionnaire to provide a high level of objectivity, reliability and validity to the research, and the mitigation of limiting factors such as researcher bias and respondent bias. The questionnaire used in the present study was a translated, partially re-validated version of that used in Baier's study (2014).

The present study makes a contribution to an unclear, underdeveloped research area in criminology. Research into the relationship between religiosity and violent behaviour is arguably underdeveloped in itself, but the fact that the majority of existing literature exclusively examines Christian religiosity, and that studies have found that Christian religiosity is not representative of all types of religiosity (for example, Baier's 2014 study found significant differences between the way Christian religiosity and Muslim religiosity interact with violent behaviour) mean that there is a significant gap of knowledge in the body of research. By not including other religious groups – namely Muslims, who made up a large part of the sample – the present study makes a valuable contribution to this gap of knowledge. Furthermore, existing literature tends to exclude those who identify as not having a religion. The present study opted to include these participants to provide a contrast, or a 'control group' of sorts, to the research. The addition of this group further strengthens the present study's contributions to the existing literature.

### **6.1 RESEARCH HYPOTHESES**

The present study aimed to investigate three hypotheses. Conclusions to these are outlined below:

- $H_1$ : Individuals with a higher level of religiosity will be more likely to have engaged in violent behaviour than those with a lower level of religiosity.
  - *Null hypothesis 1: Individuals with a higher level of religiosity will be less likely to have engaged in violent behaviour than those with a lower level of religiosity. The likelihood of an individual having engaged in violent behaviour will therefore be reduced as the individual's religiosity increases.*

Religiosity was found to have a negative correlation with violent behaviour when analyses were carried out on the sample as a whole, including every participant, meaning that as an individual's religiosity increases, they become less likely to have engaged in violent behaviour. Conversely, those with a lower level of religiosity were found to be more likely to have engaged in violent behaviour. This finding supports much of the existing literature on the topic (for example, see Brinkerhoff et al., 1992; Salas-Wright et al., 2014; Vaughn and Maynard, 2014), and was the expected outcome for the present study. However, when analyses were restricted to Muslims, no significant correlation was identified. Furthermore, when analyses were restricted to Christians, a positive correlation was found between religiosity and violent behaviour, meaning that as a Christian individual's religiosity increases, so too does the likelihood of their having engaged in violent behaviour. This was unanticipated finding. To speculate, a possible explanation could be that in the cases of many of the Christian participants, the participants had 'turned their lives around' so to speak, having been more predisposed to violent behaviour in previous years and having increased their involvement in Christianity in more recent years. However, a sound explanation would require further investigation.

Because a negative correlation was identified between religiosity and violent behaviour for the sample as a whole,  $H_1$  can be partially rejected, and the null hypothesis partially accepted. However, because no significant correlation between the two variables was found when analyses were restricted to Muslims and a positive correlation was found in Christians,  $H_1$  can also be partially accepted, and the null hypothesis partially rejected. This means that when considering the sample as a whole,  $H_1$  can be rejected, but when considering only Christians and Muslims,  $H_1$  can be accepted.

- $H_2$ : Religiosity will correlate with an increase in risk factors for violent behaviour. For example, religiosity will have a negative correlation with parental disapproval of violence, and a positive correlation with delinquent peers.
  - *Null hypothesis 2: Religiosity will correlate with a reduction in risk factors for violent behaviour. For example, religiosity will have a positive correlation with parental disapproval of violence, and a negative correlation with delinquent peers.*

The relationship between religiosity and risk factors for violent behaviour was found to be somewhat complex. Of the nine risk factors the present study investigated, two were found to correlate in the expected direction when the sample was analysed as a whole (parental disapproval of violence and delinquent peers), two were found to correlate in the unexpected direction (leisure time and violent video game exposure), and no correlations were found in the remaining five. Alcohol consumption as a risk factor for violent behaviour has been excluded from the discussion of this hypothesis, as it is the focus of  $H_3$ . When analysing Christians separately, two variables were found to correlate in the expected direction (norms of masculinity and parental disapproval of violence), and no correlations were found for the remaining seven. For Muslims, only one variable was found to correlate with religiosity, and it did so in the expected direction (delinquent peers).

$H_2$  can be partially accepted and partially rejected, and will be examined on a case-by-case basis. The anticipated correlations were found between religiosity and the following risk factors for violent behaviour: norms of masculinity; parental disapproval of violence, and; delinquent peers. In these three cases,  $H_2$  can be rejected, and the null hypothesis accepted. However, no correlations between religiosity and the following risk factors for violent behaviour were identified: self control; academic commitment; disadvantage, and; parental education. In addition to this, the leisure time factor and the violent video game exposure factor both correlated in the opposite direction as to what was expected. Therefore, in these cases,  $H_2$  can be accepted and the null hypothesis rejected.

- $H_3$ : Religiosity will have either a positive correlation, or no correlation, with alcohol consumption.

- *Null hypothesis 3: Religiosity will have a negative correlation with alcohol consumption, with alcohol consumption decreasing as religiosity increases.*

The third and final hypothesis can be rejected and the null hypothesis accepted. Analyses found a strong negative correlation between religiosity and alcohol consumption when the sample was considered as a whole, meaning that those with a higher level of religiosity consume less alcohol than their less religious counterparts. No correlation was found when analysing Christians separately, and not a single Muslim reported having ever consumed alcohol – unsurprising, given the total prohibition of alcohol consumption in Islam. This conclusion is consistent with existing literature, which generally agrees that religiosity acts as a protective factor for alcohol consumption (for example, see Cochran, Beeghley and Bock, 1988; Francis, 1997; Jaynes, 2006; Wells, 2010).

## **6.2 RECOMMENDATIONS FOR FUTURE RESEARCH**

The research into the relationship between religiosity and violent behaviour is still limited. Research into how this relationship may differ between different cultures, religious groups, and between different sub-groups of religions (such as Sunni or Shiite Islam) is considerably limited, and both require further investigation.

In the study of religiosity, it is recommended that where possible, atheists are included. In some cases, significant relationships relating to religiosity are only seen once atheists are included, as they act as a control group. When only members of religious groups are included in the study of religiosity, the study includes only religious people. Even if some of those people are not particularly religious, they still identify themselves as part of a religious community.

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# APPENDICES

## APPENDIX 1: QUESTIONNAIRE

### Some information about yourself...

*Please only select one answer per line.*

What is your gender?

Male

Female

How old are you? (please state)

### To which religious group do you and your parents belong?

*Please select one for you, your mother and your father*

	myself	mother	father
Catholic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protestant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Christian Orthodox	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Islam			
Shiite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunnite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alevist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jewish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buddhist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other religious community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No religious community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### How often have you prayed and visited your place of worship in the last 12 months?

*Please only select one answer per line. If you have no religion, please skip this question.*

	never	once or twice	3 to 12 times	more than once a month	once a week	several times a week	daily
How often did you pray?	<input type="checkbox"/>						
How often did you visit a place of worship (for example a church, a mosque, a synagogue)?	<input type="checkbox"/>						

**How important is religion to you personally?**

*Please only select one answer per line.*

	Completely unimportant	Quite unimportant	Quite important	Very important	I have no religion
How important is religion for you personally in everyday life?	<input type="checkbox"/>				

**How do you see the roles of men and women?**

*Please only select one answer per line.*

	Not true	Mostly false	Mostly true	True
If a woman betrays her husband, he is entitled to hit her.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A man who is not prepared to use violence to defend himself against insults is a weakling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The man is the head of the family and is permitted, if necessary, to assert himself using violence.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A real man is prepared to use physical violence if someone talks badly about his family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Please indicate for each statement how far it applies to you personally.**

*Please only select one answer per line.*

	Not true	Hardly true	Mostly true	True
I like to test my limits by doing something dangerous.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sometimes I find it exciting to do things that could put me in danger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Excitement and adventure are more important to me than safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like to take risks, simply because it is fun.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Imagine you fell out with another student. You get angry and hit him. He falls over, tears his trousers, and gets a strong nosebleed. If you did something like that, how bad would the following people think that was?**

*Please only select one answer per line. You can adjust the degree of your opinion by crossing somewhere between "not bad at all" and "very bad".*

	Not bad at all				Very bad
your mother	<input type="checkbox"/>				
your father	<input type="checkbox"/>				

**What is your opinion about your university?**

*Please only select one answer per line.*

	Not true	Hardly true	Mostly true	True
I really like it at my university.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like going to university.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Please think of a normal week day and a normal weekend day. How long do you spend on the following activities?**

*In each case only one cross, please, for school and weekend day. If you do not do a particular activity, please cross "00"*

Normal Week Day						Normal Weekend Day					
Going to the pub, clubbing, cinema, events						Going to the pub, clubbing, cinema, events					
00	01	02	03	04	05+ h	00	01	02	03	04	05+ h
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>						

**How often in the last 12 months did you play the following kinds of video games?**

*Please only select one answer.*

	Never	Once or Twice	3 to 12 times	Several times a month	Once a week	Several times a week	Daily
<b>Ego- and Third-Person-Shooter</b> (for example: Cally of Duty, Counter Strike, Battlefield, Star Wars Battlefront)	<input type="checkbox"/>						

**How many of your friends did the following during the last 12 months?**

*Please only select one answer per line.*

Number of friends who...	0	1	2	3-5	6-10	More than 10
Stole something from a shop	<input type="checkbox"/>					
Took something from someone, using violence	<input type="checkbox"/>					
Hit or injured another person	<input type="checkbox"/>					
Deliberately vandalised windows, telephone booths, street lanterns or similar items	<input type="checkbox"/>					
Sold drugs (cannabis, ecstasy, etc.) to others	<input type="checkbox"/>					

**This box lists a range of alcoholic beverages. Have you ever tried any?**

*Please select all that apply to you. If you are not sure, please give an estimation.*

<i>Have you ever...</i>	No	Yes	a) How old were you when you <u>first</u> drank that type of drink? b) How often have you drunk that type of drink in the <u>last 12 months</u> ?
Drunk <b>beer</b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<p>a) Age when you did this for the first time?</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>06 07 08 09 10 11 12 13 14 15 16 17 18 19 20+ years</p> <hr/> <p>b) How often in the last 12 months?</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Never      Once or twice      3 to 12 times      Several times a month      Once a week      Several times a week      Daily</p>
Drunk <b>alcopops (for example Bacardi Breezer, Smirnoff Ice)</b> ?	<input type="checkbox"/>	<input type="checkbox"/>	<p>a) Age when you did this for the first time?</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>06 07 08 09 10 11 12 13 14 15 16 17 18 19 20+ years</p> <hr/> <p>b) How often in the last 12 months?</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Never      Once or twice      3 to 12 times      Several times a month      Once a week      Several times a week      Daily</p>
Drunk <b>spirits</b> (e.g. vodka, whiskey)?	<input type="checkbox"/>	<input type="checkbox"/>	<p>a) Age when you did this for the first time?</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>06 07 08 09 10 11 12 13 14 15 16 17 18 19 20+ years</p> <hr/> <p>b) How often in the last 12 months?</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Never      Once or twice      3 to 12 times      Several times a month      Once a week      Several times a week      Daily</p>

**Do your parents have a job?***Please only select one for your mother and your father. If you are unsure, please make a guess.*

	Mother	Father
Yes, full time	<input type="checkbox"/>	<input type="checkbox"/>
Yes, part time or hourly paid	<input type="checkbox"/>	<input type="checkbox"/>
Yes, temporary employment	<input type="checkbox"/>	<input type="checkbox"/>
No, unemployed	<input type="checkbox"/>	<input type="checkbox"/>
No, other (for example pensioner, home-maker, parental leave)	<input type="checkbox"/>	<input type="checkbox"/>

**Do you or your parents currently receive benefits, social benefits or job seeker's allowance?***Please only select one answer.*
 No   
 Yes   
 I don't know
**What are your parents' highest academic qualifications?***Please only select one answer for your mother and your father. If you are unsure, please make a guess.*

	Mother	Father
No qualifications	<input type="checkbox"/>	<input type="checkbox"/>
GCSE / O Level, or equivalent	<input type="checkbox"/>	<input type="checkbox"/>
A Level, or equivalent	<input type="checkbox"/>	<input type="checkbox"/>
University degree or higher, or equivalent	<input type="checkbox"/>	<input type="checkbox"/>



## **Appendix 2: Participant information sheet**

# **PARTICIPANT INFORMATION**

**Project title:** Examining the relationships between religiosity, alcohol consumption and violent behaviour in young adults in North West England.

**Project institution:** Department of Human and Health Sciences, University of Huddersfield.

**Project researcher:** Charlotte R. Inman, MSc Criminology/Criminal Justice,  
University of Huddersfield  
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Email: K.Christmann@hud.ac.uk

### **What is the research about and what are its potential benefits?**

Religiosity is generally understood to reduce violent behaviour, but reasons for this are not yet well understood. Moreover, findings often vary somewhat significantly across different cultures and demographics and limited research has been conducted here in England. This research will attempt to expand the literature, primarily by examining the relationships between religiosity, alcohol consumption and violent behaviour here in North West England. It will also examine the effects of other factors which are understood to either reduce or increase violent behaviour. Please note that this research does **NOT** attempt to study religiously-motivated violence such as religious extremism, radicalisation, terrorism or similar.

### **What will I be asked to do?**

You will be asked to complete a self-report survey looking at different factors that are understood to either reduce or increase violent behaviour. The survey should take around 5 minutes to complete and will be collected either immediately or at the end of the class, depending on what is more convenient for your teacher. There will not be any follow-up questions or interviews at any time afterwards.

### **Do I have to take part?**

No. Participation is entirely voluntary. Your decision to take part or not take part will have no consequences for you. Even if you decide to participate but change your mind as you are completing the questionnaire, you are still completely free to withdraw without giving any reason. However, because the questionnaires are anonymous, you will not be able to withdraw your questionnaire once it has been handed in to the researcher.

### **What will you do with the findings from the research?**

I will submit them as part of my thesis for the completion of my Master's degree in Criminology/Criminal Justice. I will also aim to publish them in academic journals and may present them at academic conferences.

### **Will the information I provide be confidential? Will I be identifiable in the research?**

No. Any and all information you provide will be kept entirely anonymous throughout the study. However, this does mean that once you have handed your survey in, it will no longer be possible to withdraw from the research, as it will not be possible to link you with your survey.

**Is taking part likely to have any detrimental effect on me?**

This is highly unlikely. However, when taking part in any research there is always a small possibility that a participant may become distressed. If this happens, you should contact that University of Huddersfield Counselling Service on 01484 472227.

**What should I do if I have any questions?**

I will be happy to answer any queries you have have, both before and after taking part in the research. Contact details for both myself and my supervisors are provided above.

## Appendix 3: Consent form

# CONSENT FORM

**Title of Project:** Examining the relationships between religiosity, alcohol consumption and violent behaviour in young people in North West England.

**Researcher:** Charlotte R. Inman, MSc Criminology/Criminal Justice, University of Huddersfield.

Thank you for considering completing this survey. The intention of this form is to ensure you understand the purpose of the study and that you are willing to voluntarily take part.

**Please  
Tick**

- |    |   |                          |
|----|---|--------------------------|
| 1. | I understand the purpose of the study and have had the opportunity to ask questions   | <input type="checkbox"/> |
| 2. | I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.  | <input type="checkbox"/> |
| 3. | I understand that my questionnaire will be retained by the researcher in hard copy until electronic copies have been made, and in electronic copy until the research has been completed | <input type="checkbox"/> |
| 4. | I understand that I am not obliged to answer any question and can choose not to answer without giving any reason  | <input type="checkbox"/> |
| 5. | I give my consent for my answers to be used in this research, which may be read by others or published later, on the condition that I will remain anonymous and unidentifiable.         | <input type="checkbox"/> |

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Name of Participant	Date	Signature
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Name of Researcher	Date	Signature
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