Religiosity, Moral Cognition, and Attitudes Toward Addiction

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Abstract

Religion is an important aspect of many people's addiction recovery. But while some research shows religion predicts positive attitudes toward people who use drugs, other research suggests that it may also be associated with prejudice toward drug users. What accounts for this discrepancy? Some research suggests that one's views on the nature and causes of addiction are related to people's religious beliefs and experiences as well as their attitudes toward people struggling with addiction. Here we test whether conceptions of addiction can explain the relationship between religiosity and attitudes towards addiction. In a correlational study (N = 125), we test whether religiosity is associated with acceptability of discrimination toward addicts in the context of housing and employment, and whether this can be explained by different levels of endorsement of two conceptions of addiction. Our results suggest that religiosity is unrelated to whether addiction discrimination is viewed as acceptable. However, the view that addiction is primarily a problem of moral character was related to greater acceptance of discrimination, but the view that addiction is a biological condition was related to less acceptance of discrimination. Participants' religiosity was negatively related to the biological view of addiction, but unrelated to the moral view. Limitations and future directions are discussed.

Religiosity, Moral Cognition, and Attitudes Toward Addiction

Religion is an important part of many people's recovery from drugs and alcohol. Alcoholics Anonymous (AA), an international mutual aid fellowship dedicated to recovery from alcoholism, consists of two million members. Its primary text prescribes spiritual commitment and efforts to seek God's care and support as part of the path to recovery (Wilson, 1939). Independent of AA, there are more than 130,000 congregation-based addiction recovery programs in the United States alone (Grim & Grim, 2019). These programs work alongside recovery advocates to responsibly educate religious leaders and communities about drug use and intervention (*The Overdose Crisis*, n.d.) and attempt to expand access to mental health and harm-reduction resources (Davis, 2019; Poellot, n.d.).

Past research finds that religiosity and spirituality positively influence addiction prevention (Grim & Grim, 2019), cessation (Castaldelli-Maia et al., 2019), and abstinence (Castaldelli-Maia et al., 2014). But less is known about how religion influences perceptions of addicts. Some research suggests that higher religiosity correlates with more negative attitudes toward addiction, but other studies find no relationship (Grant Weinandy & Grubbs, 2021). How do we reconcile these inconsistent findings?

One approach is to investigate the type of prejudice typically associated with addiction. A lot of prejudice against addicts is inherently moralistic (Frank & Nagel, 2017), and research shows that religion has a distinct influence on moral judgment (Norenzayan, 2014; Shariff, 2015). One major component of religious morality is the intuition that indulging in vices like drugs and alcohol lowers self-control and cooperativeness–both critical components of positive moral agency (Fitouchi et al., 2021). Also, a common conception of addiction among laypeople is that it reflects poor moral character, and a competing view is that it is essentially a biological condition. Which conception a person holds influences their attitudes toward addicts (Kelly et

al., 2021; Rundle et al., 2021), and religion may play a role in which conception someone holds (Broadus & Evans, 2015; Weiss & Moore, 1992). Here, we suggest that varying perceptions of the nature and causes of addiction can explain the link between religion and prejudice against addicts.

We test this hypothesis by investigating whether religiosity predicts acceptability of discrimination toward addicts in a sample of American adults, and whether this relationship is at least partially explained by varying levels of endorsement of the moral weakness and biological essentialism models of addiction. Our results suggest that religiosity is not related to discrimination. However, we found that endorsement of the biological essentialism model of addiction was associated with lower acceptability discrimination, while the moral weakness model was associated with higher acceptability of discrimination.

Lay beliefs about addiction

Before examining religion's unique relationship with perceptions of addicts, we need to unpack how people generally understand addiction. There are two common conceptions of addiction's nature and causes held by laypeople, namely that it reflects either *moral weakness* or a *chronic disease*. The moral weakness model views addiction as a reflection of poor moral character and weak willpower. The chronic disease model views addiction as the result of a disease process.

People who endorse the moral weakness model view excessive drug and alcohol use as a freely chosen behavior that is at best irresponsible and at worst evil (Thombs & Osborne, 2019). People freely indulge in substances and are thus morally responsible for their addiction and any harm it causes. Those who endorse the moral weakness model also tend to believe that the best way to treat addiction and relapse is through social and legal punishment in the form of jail

sentences, fines, and ostracization. This model predicts multiple forms of prejudice toward addicts. In this model, people who misuse drugs are perceived as agents who, by using drugs, are lowering their own self-control and increasing their own likelihood of harming others. And since drug use is presumed to be a freely chosen, potentially harmful behavior, the act motivates a moralistic desire to punish. Past research finds that endorsement of the moral weakness model is associated with higher rates of stigma toward addicts (Rundle et al., 2021) and lower support of life-saving harm reduction policies (Ricardo et al., 2022). Addiction conception also has a structural effect. Physicians and attorneys who believe addiction reflects a moral lapse or a failure of self-control are less likely to view addicted patients and clients as enjoyable, treatable, and worthy of resources (Avery et al., 2020).

The chronic disease model of addiction regards excessive drug and alcohol use as the result of an underlying disease process (Thombs & Osborne, 2019). Addiction is a manifest symptom of an existing, difficult to treat illness. There are different views on the nature of this illness. Many proponents of the disease model believe it has genetic origins and that the chemicals in drugs and alcohol interact with people's neurochemistry in ways that compromise people's self-regulation and decision-making abilities. Other proponents, especially members of AA and other 12-step programs, argue that addiction is the result of an incurable "spiritual disease" that can only be conquered by a "spiritual experience" (*Narcotics Anonymous*, 1988; Wilson, 1939). Where these two disease perspectives align is on the belief that addicts are victims of an illness and are powerless to cure themselves. For addicts, substance use is not a freely chosen behavior, so they are not viewed as evil or irresponsible. And because addiction is the result of an illness, they deserve compassionate care and competent medical treatment rather than punishment.

The chronic disease model of addiction has a more complicated relationship to prejudice toward addicts. In this model, addicts are more likely to be seen as victims, lacking agency, self-control, and any control over their recovery. Compared to the moral weakness model, this conception may be less likely to elicit feelings of moral condemnation, attributions of blame, and a desire to punish. However, attributions of helplessness may cause addicts to be infantilized, essentialized as permanently addicted, or viewed as dangerous. Research finds that believing addiction is a disease predicts the perceptions that addicts are unlikely to maintain recovery and dangerous (Kelly et al., 2021). Although, on balance, the chronic disease model of addiction appears to predict less negative attitudes toward addiction compared to the moral weakness model (Avery et al., 2020; Grant Weinandy & Grubbs, 2021). Considering religion's effects on moral judgments, it is likely that religion plays a major role in which model of addiction people endorse.

Religion and prejudice toward addiction

Despite overwhelming evidence that religious practices and institutions have a profound impact on addiction recovery, religion's effect on attitudes toward addiction is less clear. Some research shows that religion predicts positive attitudes toward addiction and alcoholism, such as expressions of support and understanding (Linsky, 1965). On the other hand, some studies find that negative attitudes toward addiction can vary drastically between denominations. For example, one study found that Protestants expressed greater support than Jewish individuals for the professional punishment of people with substance abuse disorder (Rooney & Gibbons, 1966), while another found that Catholic nursing students were less comfortable working with patients with alcohol use disorder compared to students from other religious denominations (Gurel &

Spain, 1977). Many other studies find no difference in attitudes between denominations or according to level of religiosity (Grant Weinandy & Grubbs, 2021).

These seemingly contradictory findings may be partially explained by the diversity of religiosity measures used. For example, most studies on this topic have operationalized religiosity using single-item measures of religious affiliation (Bugle et al., 2003), frequency of religious service attendance (Crothers & Dorrian, 2011), belief in a higher power (Dermatis et al., 2004), and importance of religion (Broadus & Evans, 2015). Also, it is important to think of religion not as a monolith, but as an amalgamation of many different thoughts, beliefs, attitudes, and behaviors on which people may vary (Barrett, 2000). There is considerable psychological and behavioral variability even within denominations (Norenzayan, 2016), so mere religious affiliation tells us little about individuals. Even self-identified non-religious people have all the necessary cognitive and motivational foundations for religiosity, such as afterlife beliefs (Bering et al., 2005); attributions of fate (Banerjee & Bloom, 2014), divine intervention (Weeks & Lupfer, 2000), and supernatural punishment (Johnson, 2005); and engaging in repetitive bonding rituals (Henrich, 2009). This makes it less useful to categorically compare religious and secular people. When previous researchers suggest that religiosity does or does not predict attitudes toward addiction, it is hard to know what aspects of religious experience they are measuring.

Instead of asking whether general religiosity predicts addiction prejudice, we should be asking what specific aspects of religious experience influence attitudes toward addiction. Given that much of the prejudice towards addicts is moral in nature (see literally “moral weakness model”), one contender could be religious morality. Many aspects of religion have unique influences on moral judgment and behavior (Abrams et al., 2021). Belief in moralizing supernatural agents motivates cooperative behavior (Norenzayan & Shariff, 2008), while belief

in religious absolution may make people more likely to excuse their own moral transgressions (Cohen et al., 2006). Additionally, religious leaders have incited moral panics over drug use by framing it as an attack on human dignity and a driver of moral decay (Cornelio & Lasco, 2020). Perhaps some aspect of religious cognition that influences moral judgements also shapes attitudes toward addiction.

Puritanical morality

One unique aspect of religious morality across many different traditions is its emphasis on "victimless wrongs." Religious populations are more likely to condemn seemingly harmless indulgences, such as drug and alcohol use (Ford & Hill, 2012; Francis & Mullen, 1993). Fitouchi et al. (2021) use the term *puritanical morality* to describe the moralization of apparently victimless pleasures that humans crave, such as eating, dancing, gambling, having sex, masturbating, dressing indecently, and consuming drugs and alcohol. These values are found in the teachings of most world religions (Doniger, 2014; Garden, 2014; Newhauser & Ridyard, 2012; Sterckx, 2005). Research shows that individuals' puritanical moral values differ based on regional, cultural, and religious norms, such that more religious people are more likely to moralize drug and alcohol use (Najjar et al., 2016; Poushter, 2014).

But these victimless wrongs are not really seen as victimless after all. Puritanical morality carries the unique perception that indulgences such as drug and alcohol use are immoral because they lower people's self-control and inhibitions, making them seem more likely to cause actual harm to others. Puritanical morality likely develops from three intuitive folk-psychological perceptions: (a) cooperative, prosocial behavior requires self-control over selfish impulses (e.g., violence, adultery, theft, free-riding); (b) alcohol and drug use lower people's self-control, making them more impulsive and thus less uncooperative, antisocial behaviors; (c)

self-discipline, temperance, and regular ritual observance improve people's self-control, thus ensuring they continue to engage in prosocial behaviors (Fitouchi et al., 2021). Recent research finds that if a person increases their alcohol consumption, they are then viewed as less cooperative, an effect that is fully mediated by decreased perceptions of self-control (Fitouchi et al., 2022).

Moral judgments depend on perceptions of harm and moral agency and harm is the main ingredient in moral perception (Gray et al., 2012). Acts are intuitively judged as immoral when an intentional agent (i.e., someone capable of doing and thinking) causes damage to a vulnerable patient (i.e., someone capable of feeling and experiencing; Schein & Gray, 2018). Further, moral condemnation is proportional to the perceived agency of the harm-doer and the perceived patiency of the victim. Therefore, the perceived loss of self-control caused by excessive drug and alcohol use is moralized to the extent that the user is attributed agency. Someone with high moral agency is perceived as highly capable of causing harm. This person may appear dangerous when he uses drugs and loses self-control over his urges to cheat, steal from, and assault others.

Agency and patiency are intuitively perceived as mutually exclusive. People are morally typecast as *either* agents *or* patients (Gray & Wegner, 2009). People who are viewed as more agentic are simultaneously perceived as capable of harm and unable to experience pain and fear, even when they are perceived as morally good. Conversely, moral patients are viewed as highly vulnerable to suffering but also less able to think, plan, and act. In the context of addiction attitudes, this suggests that addicts who are attributed agency are not seen as particularly vulnerable to suffering. On the other hand, addicts who are seen as victims should be attributed less ability to think, act, and plan. A tendency to typecast addicts as exclusive moral agents or vulnerable patients may have important implications for how they are perceived and treated.

Whether addicts are cast primarily as agents or patients is likely the result of which model of addiction is endorsed. The moral weakness model seems to paint addicts as possessing agency (and thus, the capacity to do harm). It regards drug use as freely chosen, irresponsible, and best minimized through punishment. Religion may also play a role to the extent that possessing puritanical moral values makes one more likely to view drug use as indirectly harmful and thus immoral because it lowers self-control over harmful urges. Therefore, if addicts are cast as agents who intentionally cause indirect harm, then it may seem justified to support harsh legal and social punishment of drug use. On the other hand, the chronic disease conception of addiction probably paints addicts as patients (i.e., vulnerable to physical and emotional suffering). The chronic disease model generally regards addicts as blameless victims of a relapsing illness, the treatment of which requires compassionate care. Religiosity may predict low endorsement of this model because religious people are more likely to believe in free will (Carey & Paulhus, 2013) and to moralize work ethic (Giorgi & Marsh, 1990), meaning they may also be less likely to believe that addicts are truly helpless over their condition.

We argue that interventions for reducing prejudice against addicts should aim to influence perceptions of the causes of addiction. Our goal should be to help undermine the belief that addiction is simply a failure to muster the willpower or self-control necessary to overcome one's selfish, harmful urges. Doing so may diminish the perceived moral relevance of addicts' imperfect attempts at recovery. This may be done by educating people on how the factors that lead someone to use and become severely dependent on drugs and alcohol are complex and multidimensional. Convincing people of this alone may be enough to reduce prejudice toward addicts without changing any aspects of people's religious experience.

Here, we examine the relationship between religiosity and prejudice toward addicts and explore whether differing perceptions of the causes and nature of addiction can explain this relationship.

Method

Participants

We recruited participants using CloudResearch. Participants had to be at least 18 years old, a current U.S. resident, and fluent in English. An a priori power analysis determined that we would need 103 participants to achieve 80% power to detect a small-to-medium effect ($f = .15$) of any main effects and interactions. We aimed to recruit 125 participants to account for failed attention checks and incomplete responses. We ended up with a total of 125 participants (M_{age} = 38.6, SD_{age} = 11.1; 61 men, 64 women).

Measures

Religiosity

We measured participants' religiosity using four items from the Four Basic Dimensions of Religiosity Scale (Saroglou et al., 2020). This scale consists of four subscales, each relating to a distinct dimension of religiousness: belief (i.e., meaning, purpose), bonding (i.e., emotions, ritual engagement), behavior (i.e., moral/prosocial actions), and belonging (i.e., community engagement). We used one item from each subscale: "I feel attached to religion because it helps me to have a purpose in my life" (belief), "Religious rituals, activities, or practices make me feel positive emotion" (bonding), "Religion helps me to try to live in a moral way" (behavior), and "Belonging to a religious tradition and identifying with it is important for me" (belonging). Participants rated their agreement with each item on a 7-point Likert-type scale (1 = "Totally disagree", 7 = "Totally agree"). We averaged scores on all items together to create one composite

measure of religiosity (α = .96). This short-form version of the scale has been recommended by its original authors as a broad measure of general religiosity, but cannot be used to disentangle the unique effects of each of the four proposed dimensions of religiosity.

Moral Weakness Model Endorsement

We measured participants' endorsement of the moral weakness model of addiction using the moral weakness subscale of the Addiction Belief Inventory (Luke et al., 2002). Participants reported their level of agreement with five statements about substance use on a five-point Likert scale (1 = "Strongly disagree," 5 = "Strongly agree"). Items included "Abusing alcohol/drugs is a sign of personal weakness" and "It is their fault if an alcoholic/addict relapses." We averaged scores on all items together to create one composite measure of moral weakness model endorsement (α = .88).

Chronic Disease Model Endorsement

To our knowledge, no well-validated, internally consistent measures of chronic disease model endorsement exist in the literature. We therefore measured the extent to which participants view addiction as rooted in biology as a proxy for chronic disease model endorsement by using items adapted from the Biological Basis subscale of the Psychological Essentialism Scale (Bastian & Haslam, 2006). Participants rated their agreement with eight statements about the biological basis of addiction on a 6-point Likert scale (1 = "Strongly disagree," 7 = "Strongly agree"). Items include "Whether someone is an addict or not is determined by their biological make-up" and "Being an addict can be largely attributed to their genetic inheritance." After reverse-coding scores on relevant items, we averaged scores on all items together to create one composite measure of biological essentialism (α = .85).

Perceived Agency and Patiency

We developed our own measures to assess participants' perceptions of addicts' agency and patiency. We asked participants to report the extent to which they believe addicts have each of three agentic qualities–the capacity to make plans, have intentions, and think for themselves–and three experiential (i.e., patient) qualities–the capacity to experience fear, joy, and pain. Participants indicated their responses using a ten-point slider scale (0 = "Not at all", 10 = "Very much"). We separately averaged scores on all agency and patiency items to create two composite measures of perceived agency ($\alpha = .92$) and patiency ($\alpha = .87$), respectively.

Acceptability of Discrimination

We measured how acceptable discrimination against addicts was to participants using items adapted from Barry et al. (2014). Participants reported their level of agreement with three statements about discrimination against addicts on a seven-point Likert-type scale (1 = "Strongly disagree," 7 = "Strongly agree"). The items were "Employers should be allowed to deny employment to a person with drug addiction," "Landlords should be able to deny housing to a person with drug addiction," and "Discrimination against people with drug addiction is a serious problem" (reverse scored). After reverse-coding scores on the third item, we averaged scores on all items together to create one composite measure of acceptability of discrimination ($\alpha = .82$).

Procedure

After providing consent, participants completed an online questionnaire via Qualtrics. All measures were presented in random order and were followed by demographic questions. The survey took approximately 8 minutes to complete, and participants who completed the survey were paid $1.00 for their efforts.

Data analysis

First, we tested whether religiosity is a significant predictor of acceptability of discrimination in a linear regression model. We predict that religiosity will predict significantly higher discrimination against addicts. Next, we tested whether religiosity significantly predicts endorsement of 1) the moral weakness model and 2) biological essentialism of addiction in two separate linear regression models. We predict that religiosity will significantly positively predict endorsement of the moral weakness model, and that religiosity will significantly negatively predict biological essentialism of addiction.

Then, we tested whether 1) moral weakness model endorsement and 2) biological essentialism of addiction individually predict acceptability of discrimination against addicts in two separate models. We predict that moral weakness model endorsement will predict acceptability of discrimination, and that biological essentialism will significantly negatively predict acceptability of discrimination. We also tested whether the relationships between each addiction model and discrimination hold controlling for each other. Then, we tested whether endorsement of addiction models that significantly predicted discrimination in the previous model mediate the relationship between religiosity and acceptability of discrimination.

Finally, we tested whether perceptions of addicts' agency and patiency independently moderated the relationship between each addiction model and acceptability of discrimination. For each of the main regression models above, we also explored whether significant effects were robust to other relevant covariates, such as political conservatism, age, education, and socioeconomic status (SES).

Results

Religiosity, Models of Addiction, and Acceptability of Discrimination Toward Addicts

How does religiosity relate to discrimination toward addicts? First, we examined the relationship between religiosity ($M = 3.47$, $SD = 2.12$), acceptability of discrimination ($M = 4.46$, $SD = 1.62$), and endorsement of the moral weakness model ($M = 3.14$, $SD = 1.02$). Contrary to our hypothesis, our analyses revealed that participants' religiosity did not predict whether they found discrimination acceptable, $b = .07$, $p = .33$. Also, there was no significant relationship between moral weakness model endorsement and religiosity, $b = .05$, $p = .29$ (see Figure 1). We did find, however, that moral weakness model endorsement strongly predicted acceptability of discrimination, $b = .86$, $p < .001$ (see Figure 2), consistent with our hypotheses and prior work on perceptions of addiction. This relationship remained after controlling for political conservatism, age, education level, and SES, $b = .60$, $p < .001$ (see Table 1).

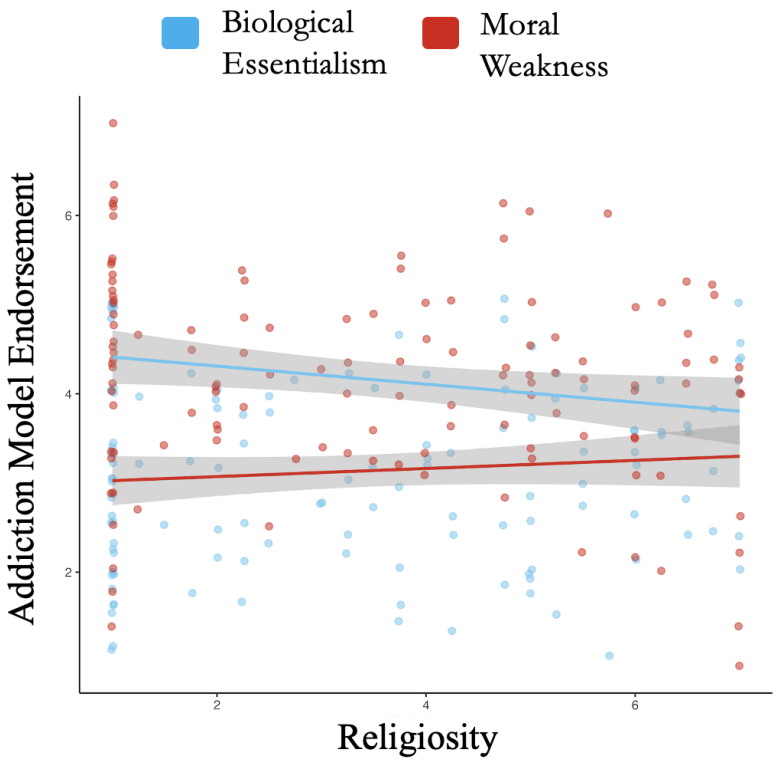

Figure 1. The relationship between religiosity and endorsement of each model of addiction

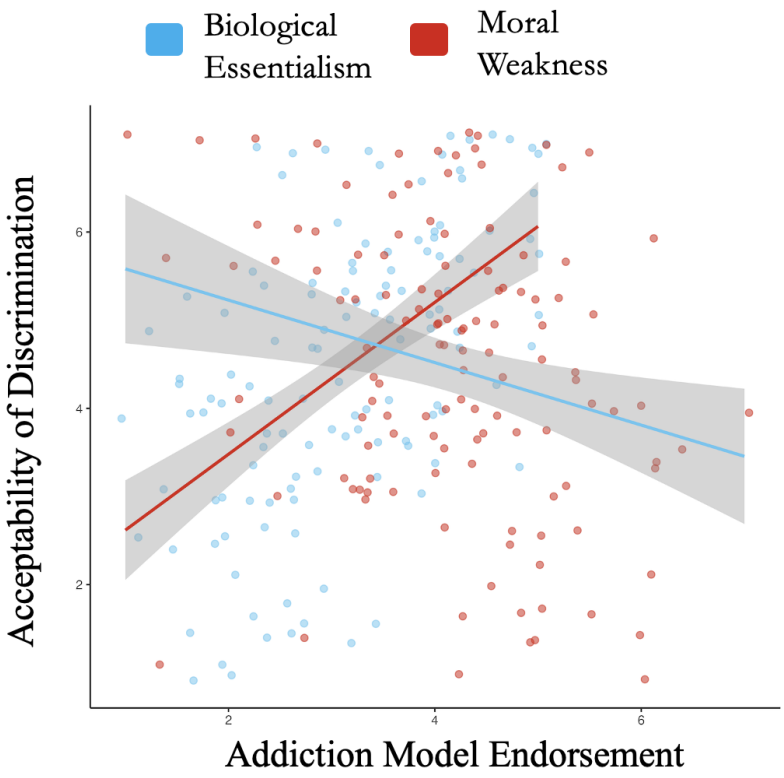

Figure 2. The relationship between endorsement of each model of addiction and acceptability of discrimination toward addicts

Table 1

Moral Weakness Model Endorsement and Acceptability of Discrimination

	Acceptability of Discrimination		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.25	-0.09 – 2.59	0.068
Moral Weakness	0.68	0.43 – 0.94	**<0.001**
Conservatism	0.18	0.07 – 0.29	**0.002**
Age	0.02	-0.00 – 0.04	0.069
Education	-0.14	-0.33 – 0.05	0.144
Income	0.07	-0.12 – 0.26	0.439
Observations	124		
R^2 / R^2 adjusted	0.365 / 0.338		

We next performed a series of analyses testing the relationships between biological essentialism of addiction (M = 4.16, SD = 1.11), religiosity, and acceptability of discrimination toward addicts. First, we found that religiosity weakly, negatively predicted biological essentialism of addiction, b = –.10, p = .03 (see Figure 1), although this relationship did not remain significant when controlling for conservatism, age, education, and SES, b = –.04, p = .43 (see Table 2). Next, we tested whether biological essentialism predicts acceptability of discrimination. As predicted, biological essentialism negatively predicted acceptability of discrimination, b = –.35, p = .01 (see Figure 2). But as above, this relationship was no longer significant when controlling for the same covariates, b = –.20, p = .14 (see Table 3).

Table 2

Religiosity and Biological Essentialism of Addiction

	Biological Essentialism		
Predictors	*Estimates*	*CI*	*p*
Intercept	4.53	3.58 – 5.48	**<0.001**
Religiosity	-0.04	-0.13 – 0.06	0.425
Conservatism	-0.17	-0.26 – -0.08	**<0.001**
Age	0.01	-0.01 – 0.03	0.262
Education	-0.01	-0.16 – 0.14	0.896
Income	0.03	-0.12 – 0.19	0.649
Observations	124		
R^2 / R^2 adjusted	0.160 / 0.124		

Table 3

Biological Essentialism and Acceptability of Discrimination

	Acceptability of Discrimination		
Predictors	*Estimates*	*CI*	*p*
Intercept	3.70	1.96 – 5.44	**<0.001**
Biological Essentialism	-0.18	-0.43 – 0.08	0.166
Conservatism	0.27	0.15 – 0.39	**<0.001**
Age	0.02	0.00 – 0.05	**0.046**
Education	-0.19	-0.40 – 0.02	0.076
Income	0.12	-0.09 – 0.33	0.266
Observations	124		
R^2 / R^2 adjusted	0.226 / 0.193		

Agency and Patiency Moderation

For our final planned analyses, we explored whether perceptions of addicts' agency and patiency moderated the relationship between different models of addiction and acceptability of discrimination toward addicts. We performed four separate moderation analyses, all of which were non-significant. Agency did not moderate the effect of biological essentialism, b = -.02, SE = .05, p = .68, nor moral weakness model endorsement, b = -.07, SE = .05, p = .18, on discrimination. Similarly, patiency did not moderate the effect of biological essentialism, b = -.01, SE = .08, p = .86, nor moral weakness model endorsement on discrimination, b = -.00, SE = .08, p = .96, on discrimination.

Discussion

Past research suggests an inconsistent relationship between religious experience and attitudes toward addiction. Some studies have found that religiosity predicts worse attitudes (Grant Weinandy & Grubbs, 2021). Others find that the relationship differs by denomination (Gurel & Spain, 1977; Rooney & Gibbons, 1966). Still others find no relationship at all (Crothers & Dorrian, 2011). Part of this inconsistency may be explained by poor measures. Most studies on this topic operationalize religiosity using single-item measures and general religious identification (Grant Weinandy & Grubbs, 2021). Additionally, to the extent that a relationship does exist, it is likely mediated by one or more beliefs or psychological characteristics. We hypothesized that religiosity predicts worse attitudes toward addicts, and that this relationship would be at least partially explained by people's conception of the causes of addiction. Finally, to the extent that each conception of addiction is related to discrimination, we hypothesized that perceptions of addicts' levels of agency and patiency (i.e., ability to experience pain, joy, and fear) would moderate the relationship.

Several of our findings are consistent with previous research in demonstrating that participants' beliefs about addiction are associated with their acceptance of discrimination. Those who view addiction as a result of weak moral character are more likely to accept discrimination, while those who attribute addiction to biological and genetic factors are less likely to accept it. Also, as predicted, religious people were less likely to view addiction as an essentially biogenetic condition.

However, contrary to our predictions and past research, participants' religiosity was unrelated to whether they viewed addiction as reflecting moral weakness, and participants who reported higher levels of religiosity were no more likely to find discrimination toward addicts acceptable compared to participants who are less religious. Finally, the relationships between each model of addiction and acceptability of discrimination did not differ as a function of participants' perceptions of addicts' agency and patiency.

Although we predicted a positive relationship between religiosity and acceptability of discrimination toward addicts, the lack of significant association was not especially surprising considering the diversity of religious people's values, attitudes, and worldviews (Norenzayan, 2016), which can make it difficult to generalize their stance on addiction. While some religious groups and individuals unequivocally condemn drug and alcohol use, others display compassion and acceptance towards those recovering from addiction. This is exemplified by the number of churches and religious organizations that welcome addicts and devote their resources to gathering and distributing recovery aid. Future research should investigate what beliefs or cognitions explain the drastic difference in addiction attitudes across religious subcommunities.

That religiosity and moral weakness endorsement are not related is noteworthy given past research finding that religious populations are more likely to morally condemn drug and alcohol

use (Ford & Hill, 2012; Francis & Mullen, 1993; Najjar et al., 2016; Poushter, 2014). Contrary to past research suggesting a link between religiosity and moral weakness endorsement, our study found no significant association between these variables. One possible reason for this discrepancy is that some past studies have focused on adolescent drug and alcohol users, which may trigger greater levels of concern, and thus greater disapproval of alcohol use, in respondents. Also, most of the studies that found a relationship between these variables measured participants' general disapproval of drug and alcohol use rather than causal attributions of addiction. It is possible for one to condemn drug use without believing addiction is caused by poor moral character. Future research investigating predictors of addiction prejudice should include explicit measures of moral condemnation, rather than general disapproval.

We recommend that psychologists studying addiction prejudice focus more on the causal roles of addiction conception and moralization of addiction, which may or may not be influenced by specific religious beliefs and traditions, rather than religiosity *per se*. Addiction conception and moralization are likely influenced by many factors unrelated to religious experience. This research area may also benefit from qualitative methods. Researchers may yield interesting results by conducting open-ended interviews with religious subjects in which they attempt to achieve a more nuanced understanding of how people view what addiction is, what causes it, what to do about it, whether it is a moral issue, and who it may be harming. This information may help us sort through the complexity of religious experience and discover which specific aspects of religious life and cognition are contributing to addiction prejudice.

A major goal of this study was to discover something about how and why religiosity influences addiction prejudice so that we may contribute evidence-based interventions to reduce negative attitudes toward addiction. But since the present study suggests that a broad relationship

between religiosity and addiction discrimination may not exist, we feel it is best to design interventions aimed at reducing discrimination in all participants, regardless of individuals' levels of religiosity. One way to do this is to reduce participants' endorsement of the moral weakness model. Another way is to increase belief in biological essentialism. However, while the biological model of addiction is closer to a true description of addiction than the moral weakness model, neither conception is exactly in line with current expert consensus, which is that addiction is the result of many interacting factors and can not be boiled down to solely moral character, biology, or any other single factor. We feel the most effective, and most honest and ethically defensible, intervention would aim to educate and convince people about the complex, multidimensional, unstable nature of addiction.

In conclusion, it is clear that religion and addiction beliefs are complex and multifaceted constructs that can have a significant impact on people struggling with addiction. The present research has highlighted the need for greater clarity and nuance in the way these concepts are approached by researchers. By recognizing the complexity of religiosity, moral cognition, and addiction beliefs, we can gain a more comprehensive understanding of the factors that contribute to addiction prejudice.

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