Brazilian Journal of Psychiatry
bjp
Revista Brasileira de Psiquiatria

Braz J Psychiatry. 2023 Mar-Apr;45(2):162-181
doi:10.47626/1516-4446-2022-2832
Brazilian Psychiatric Association

REVIEW ARTICLE

The role of religiosity and spirituality in interpersonal violence: a systematic review and meta-analysis

Juliane Piasseschi de Bernardin **Gonçalves**,[1] Giancarlo **Lucchetti**,[2] Everton de Oliveira **Maraldi**,[3,4] Paulo Eduardo Lahoz **Fernandez**,[5] Paulo Rossi **Menezes**,[6] Homero **Vallada**[1,7]

[1]*Departamento de Psiquiatria, Instituto de Psiquiatria, Faculdade de Medicina, Universidade de São Paulo (USP), São Paulo, SP, Brazil.* [2]*Departamento de Medicina, Faculdade de Medicina, Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brazil.* [3]*Programa de Pós-Graduação em Estudos Religiosos, Pontifícia Universidade Católica de São Paulo, São Paulo, SP, Brazil.* [4]*Instituto D'Or de Pesquisa e Ensino, São Paulo, SP, Brazil.* [5]*Departamento de Neurologia, Hospital Sírio-Libanês, São Paulo, SP, Brazil.* [6]*Departamento de Medicina Preventiva, Faculdade de Medicina, USP, São Paulo, SP, Brazil.* [7]*Department of Molecular Medicine and Surgery, Center for Molecular Medicine, Karolinska Institutet, Stockholm, Sweden.*

Objectives: Religiosity and spirituality (R/S) have been negatively associated with several mental health problems, including delinquency. The study aimed to investigate the relationship between R/S and interpersonal violence using a systematic review.
Methods: We conducted a descriptive systematic review followed by meta-analyses using seven different databases. We included observational studies that assessed the relationship between R/S and different types of interpersonal violence (physical and sexual aggression and domestic violence).
Results: A total of 16,599 articles were screened in the databases and, after applying the eligibility criteria, 67 were included in the systematic review and 43 were included in the meta-analysis. The results showed that higher levels of R/S were significantly associated with decreased physical and sexual aggression, but not domestic violence. All selected studies evidenced sufficient methodological quality, with 26.8% being cohort studies. In the subanalyses, the role of R/S was more prevalent among adolescents.
Conclusion: There is an inverse relationship between R/S and physical and sexual aggression, suggesting a protective role. However, these results were not observed for domestic violence. Healthcare professionals and managers should be aware of their patients' beliefs when investigating interpersonal violence to create tailored interventions for reducing violent behavior.

Keywords: Violence; aggressiveness; religiosity; spirituality; meta-analysis

Introduction

According to the World Health Organization, violence is the fourth leading cause of death worldwide among people aged 15-44 years, with approximately 1.3 million deaths registered annually.[1] Non-fatal violence, such as assaults or physical, sexual, and/or psychological abuse is also very common, and its effects on survivors include mental health problems, such as higher levels of depression,[2] post-traumatic stress disorder, increased anxiety and self-harming.[3] It also causes physical health complications, including poor maternal and fetal outcomes for women,[4] high-risk sexual behavior, and substance abuse.[5] The consequences are more serious when traumatic experiences occur during childhood, showing a later association with illicit substance use,[6] personality disorders and mental problems,[7] and risky sexual behavior and criminal behavior.[8,9]

Thus, the adverse effects of violence should be considered a global mental health crisis with long-term social and economic consequences[10,11] for which it is increasingly necessary to formulate control strategies.[12] According to the DSM-5, multidimensional treatments incorporating cultural aspects should be considered when addressing the consequences of violence,[11] i.e., understanding how people react to and interpret violence within their cultural context is a crucial factor in managing the consequences of violent acts.

Religiosity is the belief and practice of the doctrinal foundations of religion,[13] while spirituality refers to a personal quest for the understanding of existential issues, which may not necessarily be linked to a particular religion.[13] Spirituality can also be defined as the way people find meaning and purpose in life, and experience a connection with others and whatever they may define as sacred.[14]

Correspondence: Juliane Piasseschi de Bernardin Gonçalves, Instituto de Psiquiatria, Universidade de São Paulo, Rua Ovídio Pires de Campos, 785, CEP 01060-970,São Paulo, SP, Brazil.
E-mail: juliane.pbg@alumni.usp.br
Submitted Aug 23 2022, accepted Oct 17 2022.

How to cite this article: Gonçalves JPB, Lucchetti G, Maraldi EO, Fernandez PEL, Menezes PR, Vallada H. The role of religiosity and spirituality in interpersonal violence: a systematic review and meta-analysis. Braz J Psychiatry. 2023;45:162-181. http://doi.org/10.47626/1516-4446-2022-2832

Studies have shown that religiosity/spirituality (R/S) is correlated with enhanced psychological well-being, satisfaction, happiness, and lower depression, anxiety, and post-traumatic stress symptomatology.[13,15,16] Consistent with these recommendations, spiritual and religious beliefs have been widely used as complementary treatments for mental health rehabilitation regarding depression, anxiety, substance abuse and suicide, yielding promising results.[13,16]

Moreover, R/S plays a protective role against violence and delinquency, deterring crime regardless of the type.[17,18] For instance, nationally representative studies of adolescents and youth in the USA found fewer fights, gang fights, shootings, and stabbings among religious participants.[19-21] Similarly, it has been reported that people with higher levels of R/S perpetrate fewer violent acts toward intimate partners,[22] are less involved in risky sexual behavior,[23] and more strongly condemn victimless crimes.[24]

The role of religion in deterring criminal behavior can be explained by belief in supernatural punishment/rewards (e.g., "I will not go to heaven if I harm others"),[25] socialization,[26,27] social support,[28] and the encouragement of healthy behaviors and attitudes.[29] The theory of social control proposes that for families, religious institutions act as educators and help construct normative beliefs that promote greater assistance, commitment, and involvement with society.[28] Moreover, the rational choice theory suggests that religious individuals create self-impositions that increase the probability of feeling guilty about harmful attitudes and behavior, which reduces their expression toward others.[30] Additionally, religious individuals usually associate with others who have similar beliefs, which positively reinforces and enhances morality.[26,29]

Nevertheless, the influence of R/S can move in different and even opposite directions within the same disease or condition.[31] For instance, negative religious coping (e.g., "God is punishing me") and religious fundamentalism may encourage violence. Saroglou[32] published a meta-analytical review on the relationship between R/S and personality. The findings showed that intrinsic religiosity was positively associated with religious maturity and openness, while religious fundamentalism was negatively associated with openness.

To our knowledge, four systematic reviews have demonstrated a consistent, robust relationship between higher R/S and decreased delinquency and/or crime.[17,18,31,33] However, most scales and validated instruments designed to assess delinquency entail illegal conduct, such as vandalism, propriety destruction, the sale and/or possession of drugs and weapons, and police detention, and violence may not necessarily be associated with delinquent acts. These constructs should be addressed separately. Therefore, there remains a paucity of reviews assessing R/S and interpersonal violence.

Thus, we aimed to fill this gap by investigating the relationship between R/S and interpersonal violence, including domestic violence, and physical and sexual aggression. By evaluating the real impact of R/S on interpersonal violence, our findings may help the design and implementation of preventive strategies to improve public health.

Methods

Study design and protocol registration

This systematic review and meta-analysis followed PRISMA guidelines.[34] The protocol was registered in PROSPERO[35] and is fully available on the National Institute for Health Research – Health Technology Assessment website (https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42018080979).

Eligibility criteria

Inclusion criteria

The main outcome in this review was any physically violent and/or aggressive act perpetrated against another person, i.e., interpersonal violence. According to the World Health Organization, interpersonal violence involves "violence between individuals, subdivided into family and intimate partner violence and community violence. The former category includes child maltreatment; intimate partner violence; and elder abuse, while the latter is broken down into acquaintance and stranger violence and includes youth violence; assault by strangers; violence related to property crimes; and violence in workplaces and other institutions."[36]

Exclusion criteria

Articles assessing violence against property, risk behavior for violence, moral aspects of crime, or crime recidivism were excluded. We also excluded delinquency scales that assessed items of violence along with other criminal behaviors, such as the sale and/or possession of drugs, robbery, vandalism, and property crimes.

Concerning methodology, only studies that were published in peer-reviewed international indexed databases were included, since this type of article has more appropriate and robust scientific evidence. Additionally, manuscripts in languages other than English, Portuguese, or Spanish were excluded.

The PI(E)CO strategy for observational studies

The PICO components for our study were: Patients – general population who committed acts of interpersonal violence, regardless of sex, age, socioeconomic status or nationality; Exposure – individuals with high levels of R/S; Comparison – individuals with low levels of R/S. Outcomes – interpersonal violence outcomes (i.e., domestic violence and physical and sexual aggression).

Type of studies

Since our review investigated whether a relationship exists between R/S and interpersonal violence, only observational studies were assessed. These included: cohort, cross-sectional, and case-control studies.

Type of participants

We included studies investigating individuals who committed any type of violence against other individuals, with no restrictions regarding age, sex, previous history of criminal activity, or setting (e.g., individuals in prisons or reformatories).

Information sources

Seven different databases were used to search for and select publications regarding violent behavior and R/S from inception to November 11, 2020: Sociological Abstracts, Applied Social Sciences abstracts (ASSIA), National Criminal Justice Reference Service (NCJRS), PsycINFO, Scopus, PubMed, and Web of Science. Only publications in English, Spanish, or Portuguese were included. EndNote X4 software was used to search for and select the articles.

Search strategy

A Boolean expression was used to optimize the search for relevant studies according to the main objectives of the review. Pilot experiments were conducted within the databases to ensure the accuracy of the expression. The final version was: (spirit* OR religi* OR faith OR god) AND (violence OR violent behavior OR aggressive behavior OR deviant behavior OR delinquency OR delinquent behavior). The expressions developed for each database are listed in Supplementary Material S1, available online only.

Study selection phases

Article exclusion was performed by two independent reviewers in three phases.

Phase 1

Articles were assessed by title and abstract. Studies were excluded if they used a methodology not reported in the inclusion criteria. Studies were also excluded if they were considered irrelevant to the main theme (i.e., studies on terrorism, political violence, substance abuse, survivors of violence, suicide, genocide, and historical perspectives).

Phase 2

Full texts were obtained through online databases or via email request to the corresponding author and were subsequently read in full by the researchers. Articles that investigated types of interpersonal violence associated with any delinquency outcomes, or assessed attitudes toward violence and the tolerance of violence and/or crime were excluded. Furthermore, articles that assessed R/S combined with other independent variables, such as social support and happiness, were also excluded.

Phase 3

Some articles were excluded due to insufficient statistical data. We contacted the author via email if an article provided insufficient information to allow for inclusion in the meta-analysis. If we received no response after 10 emails, or if they still provided inadequate information, their studies were excluded from further analyses. Additionally, studies assessing the same outcomes and samples in different publications were excluded, including those on homicide and violent acts perpetrated in counties, cities, and/or countries where the researchers used population stratification.

Data collection process

The data were extracted by one researcher (JG), and included articles from Phase 1 were cross-coded by a second independent researcher (PL). Those included in Phase 3 were cross-coded by a different researcher (EM). Discrepancies were resolved by consensus.

Data items

We extracted the following data from the selected articles: authors, year of publication, study design, representativeness of the population, sample size, type of population, sex, age group of participants, and country in which the study was conducted.

Violence was classified into similar types of violent acts: physical aggression (fighting, attacking, assaulting), domestic violence (harming family members, such as children and spouse/partner), and sexual aggression (rape, forced sex). We then described the assessed outcome. R/S type was divided into organizational (i.e., religious affiliation, worship service attendance), non-organizational (i.e., private activities and behaviors such as prayer and reading, listening to, or watching religious content), intrinsic (i.e., commitment, any variable that included importance of religion, regardless of the other items assessed), and spirituality (i.e., spiritual well-being, spiritual intelligence). We then described the assessed outcome for each R/S type. Finally, we defined the results of each outcome as a protective or risk factor when the articles showed a significant or non-significant association with interpersonal violence, respectively.

Risk of bias in individual studies

Since there is no gold standard for quality assessment of observational studies,[37] we used a critical appraisal tool[38] to assess the risk of bias (Supplementary Material S2, available online only). The tool consists of 14 key components of epidemiological or observational studies used by the National Institutes of Health for cohort studies. However, because four items (6, 7, 10, and 13) did not apply to cross-sectional studies, a total of 10 items were used to assess the quality of this specific type of methodological design.

The instrument allows five possible responses for each item: yes, no, cannot determine, not applicable, and not reported. To rate the quality score, we attributed one point for each yes response. We then summed the points of each study and calculated an average. This value served as a cut-off point. Cross-sectional and cohort designs were calculated separately.

Studies scoring above the cut-off were considered to have sufficient methodological quality. The cut-off was determined using the mean of all studies included in this systematic review. To analyze the type of R/S measures used for interpersonal violence outcomes, we classified the eighth item of the scale more conservatively: "For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as a continuous variable)?" We only attributed a yes response if the authors used a previously published valid instrument, rather than single items.

Summary measures

The effect size was determined using the unadjusted Pearson correlation coefficient (*r*) with a 95%CI.

In articles that provided unstandardized beta coefficients, we used them to indicate the effect size. When an article presented the results as an odds ratio (OR), we used a logarithmic formula (ln (OR)/1.81) to convert it to effect size, as validated in a previous study.[39] We requested unstandardized coefficients from authors who presented their results in standardized coefficients. Those who did not respond to our email, did not provide sufficient information, or could not be contacted were excluded from the final meta-analysis. Similarly, articles that only described the association between violence and religiosity using descriptive analyses were excluded.

ProMeta 3.0 (Internovi, Cesena FC, Italy) was used to convert the OR and Cohen's *d* into *r*.

Meta-analysis: synthesis of results and risk of bias across studies

OpenMeta software was used to perform the meta-analysis.[40] Due to the high heterogeneity (I^2), the random effect statistic was selected, and sensitivity analysis consisted of stratifying the studies in different subgroup analyses.[41] We aimed to determine whether the magnitude of the results was influenced by: 1) the interpersonal violence outcome (single item/combined items), 2) religiosity (organizational/non-organizational/intrinsic), 3) age ($<$ 19/$>$ 19 years), 4) the methodology (cross-sectional/longitudinal), 5) the representativeness of the sample (yes/no), and 6) study quality (lower/higher score).

Additionally, a random-effects meta-regression was performed to explore potential differences in the subgroup analyses (Q statistics). By nominating a reference subgroup, the p-value can indicate whether there is a statistically significant difference among the groups.[41] Meta-regression coefficients and 95%CI were reported, and p-values $<$ 0.05 were considered significant.

Results

Study selection

Figure 1 is a flow diagram of the article selection process. The initial search yielded 16,599 articles. In Phase 1, we excluded 16,392 articles, of which 3,984 were duplicates, 11,825 did not meet the inclusion criteria, and 583 had heterogeneous study designs. The 207 articles included in Phase 2 were then read in detail, after which 140 were excluded for not assessing interpersonal violence as a separate outcome from other delinquency and crime variables (122), assessed R/S combined with other independent variables such as social support (10), or assessed the occurrence of violence in countries and cities, rather than among individuals (8).

Of the 67 articles included in Phase 3, the data of 18 were insufficient for inclusion in the meta-analysis. When we attempted to contact these authors, eight could not be reached, six no longer had access to the data, and four did not respond with the information requested. Another six studies were excluded due to reporting only descriptive statistics, stratifying the results by groups (i.e., high vs low religiosity groups), or for sharing the same sample and outcome. Ultimately, 43 studies were included in the final meta-analysis.

Study characteristics and results of individual studies

Table 1 presents the characteristics of the 67 included articles. The publication dates varied between 1985 and 2020, and 56.7% were published in the last decade (2011 to 2020). The studies were from the following regions: North America (76.1%), Asia (10.4%), South and Central America (5.9%), Europe (5.9%), Oceania (2.9%), and the Middle East (1.4%).

Regarding study design, 50 (73.2%) studies were cross-sectional and 17 (26.8%) were longitudinal. A total of 44.8% of the studies evaluated a probability representative sample. The total sample consisted of 269,910 individuals. Regarding outcomes, physical aggression was the most frequently assessed type (83.6% of the articles), followed by domestic violence and sexual aggression (10.4% each). The most frequently investigated R/S type was intrinsic (43.75%), followed by non-organizational (26.25%), organizational (21.25%), and spirituality (8.75%).

A total of 101 outcomes were assessed in the studies: R/S had a significant protective role in 55.4% and the results were non-significant in 38.6%. Six studies found that religious individuals had a significant risk of perpetrating violent acts (5.9% of the sample), of which two analyzed the negative outcomes of religiosity (introjected religious self-regulation and disorganized religiosity). Five of these studies assessed domestic violence, and one examined physical aggression.

Risk of study bias

The risk of study bias is presented in Table 2. The mean quality assessment score for cross-sectional studies was 7.42 (SD, 1.29), with 88% exceeding the cutoff point. The mean score for cohort studies was 11 (SD = 1.28), with only 65% exceeding the cutoff. There was at least one unreported response in 80% of the items in cross-sectional studies, while this occurred in only 28.6% of the cohort studies.

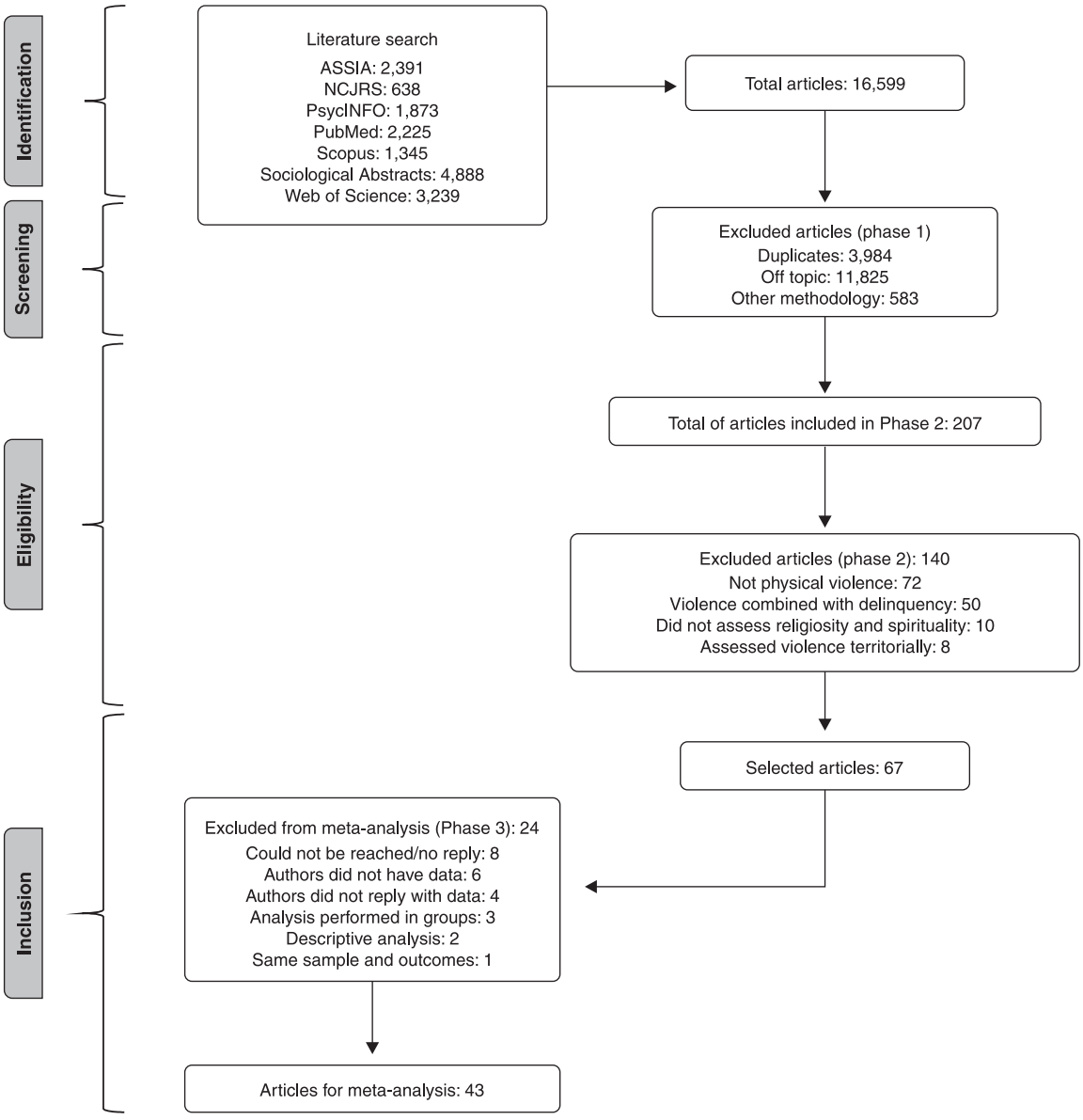

Figure 1 Flow diagram of the article selection process. ASSIA = Sociological Abstract, Applied Social Sciences abstracts; NCJRS = National Criminal Justice Reference Service.

Population recruitment and the inclusion and exclusion criteria (item 4) were similar between design types, with 14% non-reported in the cross-sectional studies and 0% in the cohort studies. Regarding the assessment of exposure levels (item 8), 20 studies (30%) used validated religious/spiritual scales. Validated instruments were used in 38% of the cross-sectional studies but in only 6% of the cohort studies. There was a high score for item 9, which assessed the clarity of the definitions and the reliability of the exposure variables: 48 (96%) for cross-sectional studies and 14 (82.4%) for cohort studies. Outcome assessor blinding was reported in 30% of the cross-sectional studies and in 23.5% of the cohort studies.

Two specific questions for cohort methodology determined whether the exposure of interest was assessed before the outcome (item 6) and whether there was a sufficient timeframe between waves (item 7). Both items were reported by all authors. In 47.1% of the articles, R/S variables were assessed several times during the study period, and only 17.6% of the studies reported dropout rates $>$ 20%.

Synthesis of the results and risk of bias across studies

Of the 67 included studies, 24 were excluded from the meta-analysis. We contacted the authors of 18 of these studies for additional database information. Eight of these authors could not be reached, six no longer had access to the data, and four responded without providing the necessary information. We excluded three articles that analyzed separate age or religious groups and did not

Table 1 Characteristics of studies evaluating the association between violence outcomes and religiosity/spirituality

Author	Type of study	Representative	Sample	Population	Sex	Group age (years)	Country	Violence group	Type of violence	Violence outcome	Type of religiosity/ spirituality	Religious/ spiritual outcome	Results†
Abdalla[42]	Cross-sectional	Yes	4,607	General	Both	15-64	Brazil	Physical aggression	Fighting	Items combined	Organizational	Single item	Protective
Adamczyk[43]	Longitudinal	Yes	2,199	Children and adolescents	Both	7-12th grades	United States	Physical aggression	Fighting, threats	Items combined	Non-organizational	Items combined	Protective
Altschul[44]	Longitudinal	No	845	Mothers	Female	23-26	United States	Domestic violence	Assaulting children	CTSPC	Organizational	Single item	Protective (W1) Protective (W2)
Banyard[45]	Cross-sectional	Yes	2,225	Children and adolescents	Both	7-10th grade	United States	Sexual aggression	Sexual coercion, unwanted sex, rape	Items combined	Spirituality	Single item	Protective
Benda[46]	Cross-sectional	No	1,093	Adolescents	Both	13-20	United States	Physical aggression	Attacking, fighting, threats	Items combined	Non-organizational	Items combined	NS
Benda[47]	Cross-sectional	No	600	Convicted in boot camp	Male	15-24	United States	Physical aggression	Assaults, sexual assaults	Items combined	Intrinsic	Items combined	NS
Benda[21]	Cross-sectional	Yes	3,335	Adolescents	Both	13-18	United States	Physical aggression	Attacking, fighting, rape	Items combined	Spirituality	SWBS	Protective
Bernat[19]	Longitudinal	Yes	2,263	Adolescents	Both	14-20	United States	Physical aggression	Attacking, fighting	Items combined	Organizational	Single item	NS (W1) NS (W2)
Brinkerhoff[22]	Cross-sectional	Yes	1,834	General	Both	> 18	Canada	Domestic violence	Attacking, fighting, threats	CTS	Organizational	Single item	NS NS
Clubb[48]	Cross-sectional	No	6,400	Children and adolescents	Both	9-19	United States	Physical aggression	Attacking, fighting, threats	Items combined	Intrinsic	Single item	NS (attendance) Protective (salience)
Corwyn[49]	Cross-sectional	No	600	Adolescents	Both	13-18	United States	Physical aggression	Attacking, fighting, threats, sexual coercion	Items combined	Non-organizational	Items combined	Protective
Cretacci[50]	Cross-sectional	Yes	6,500	Children and adolescents	Both	10-19	United States	Physical aggression	Fighting, threats	Items combined	Intrinsic	Items combined	Protective (commitment) NS (beliefs)
Cunradi[51]	Cross-sectional	Yes	1,440	General	Both	> 18	United States	Domestic violence	Attacking, fighting, threats	CTS	Non-organizational intrinsic	Single item	NS (non-organizational for male and female) NS (salience for males)Risk (salience for females)
Desmond[52]	Longitudinal	Yes	1,725	Children and adolescents	Both	11-17	United States	Physical aggression	Hitting	Single item	Intrinsic	Items combined	NS
Desmond[53]	Longitudinal	Yes	1,725	Children and adolescents	Both	11-17	United States	Physical aggression	Hitting	Single item	Intrinsic	Items combined	NS
Dick[54]	Cross-sectional	No	20,353	Adolescents	Both	10th	United States	Physical aggression	Attacking	NR	NR	NR	Protective

Continued on next page

Table 1 (*continued*)

Author	Type of study	Representative	Sample	Population	Sex	Group age (years)	Country	Violence group	Type of violence	Violence outcome	Type of religiosity/ spirituality	Religious/ spiritual outcome	Results†
Dyslin[55]	Cross-sectional	No	436	General	Both	17-47	United States	Domestic violence	Assaulting parents	Child physical abuse risk	Organizational intrinsic	RLI	Risk (organizational) NS (intrinsic)
Ellison[56]	Cross-sectional	Yes	13,017	General	Both	> 18	United States	Physical aggression	Hitting	Single item	Organizational	Single item	Protective (once per week or more) NS (times per month or year)
Eshuys[57]	Cross-sectional	No	111	Inmates	Male	38.5 (14.2)	United States	Physical aggression sexual aggression	Number of victims of sexual and non-sexual offenses	Single item	Non-organizational intrinsic	Items combined	Protective (“stayers” vs atheists) NS (other religious groups)
Gonçalves[58]	Cross-sectional	Yes	4,607	General	Both	14-99	Brazil	Physical aggression domestic violence	Attacking, fighting, threats	Items combined	Intrinsic	Single item	Protective (affiliation) Protective (salience)
Hagen[59]	Longitudinal	No	795	Adolescents and young adults	Male	NR	United States	Sexual aggression	Sexual coercion, unwanted sex, rape, threats	SES	Non-organizational	Items combined	Protective (W4)
Hardy[60]	Cross-sectional	No	502	Children and adolescents	Both	10-18	United States	Physical aggression	Attacking, fighting, threats	RPQ	Non-organizational	Items combined	Protective (behavior) Protective (activities)
Hemphill[61]	Longitudinal	No	927	Children and adolescents	Both	10-11	United States and Australia	Physical aggression	Attacking, fighting	Items combined	Organizational	Single item	NS
Holmes[62]	Cross-sectional	Yes	110	Children and adolescents	Male	7-12	United States	Physical aggression	Fighting, threats	Items combined	Organizationalnon-organizational intrinsic	DUREL	NS (organizational and non-organizational) Protective (intrinsic)
Itani[63]	Cross-sectional	Yes	448	Adolescents and young adults	Both	NR	Lebanon	Physical aggression	Fighting, threats	Items combined	Intrinsic	CRS	Protective
Johnson[64]	Longitudinal	Yes	4,834	Children and adolescents	Both	11-21	United States	Physical aggression	Fighting, threats, hitting	Items combined	Intrinsic	Items combined	Protective (W1) Protective (W2)
Karimi[65]	Cross-sectional	No	50	Adolescents	Male	14-17	Iran	Physical aggression	Fighting, threats, hitting	BPAQ	Spirituality	SIS	Protective
Karriker-Jafe[66]	Cross-sectional	Yes	5,118	Children and adolescents	Both	11-16	United States	Physical aggression	Attacking, fighting, threats	Items combined	Intrinsic	Items combined	Protective
Katerndahl[67]	Cross-sectional	No	105	Couples	Both	45.7 (14.7) male 42.9 (14.0) female	United States	Domestic violence	Attacking, fighting, threats	The Conflict Tactics Scale	Non-organizational intrinsic	BMMRS	Risk (religious beliefs incompatibility)
Kingre[68]	Longitudinal	No	544	Adolescents and young adults	Both	18-20	United States	Sexual aggression	Sexual coercion, unwanted sex, rape	SES	Organizational	Single item	Protective

Continued on next page

Table 1 (*continued*)

Author	Type of study	Representative	Sample	Population	Sex	Group age (years)	Country	Violence group	Type of violence	Violence outcome	Type of religiosity/ spirituality	Religious/ spiritual outcome	Results†
Leach[69]	Cross-sectional	No	62	Adolescents and young adults	Both	20.43 (3.11)	United States	Physical aggression	Fighting, threats, hitting	BPAQ	Organizational, intrinsic spirituality	ROS -Revised STS	NS (organizational) Protective (intrinsic and spiritual)
Linville[70]	Cross-sectional	No	235	Adolescents	Both	8-12th grades	United States	Physical aggression	Fighting	Single item	Organizational	Single item	NS
Lynch[71]	Cross-sectional	No	255	General	Male	> 18	United States	Domestic violence	Attacking, fighting, threats	SVAWS	Intrinsic	Religious SRQ	Protective (identified religious self-regulation) Risk (introjected religious self-regulation)
Massarwi[72]	Cross-sectional	No	2,811	Children and adolescents	Both	13-18	Israel	Physical aggression	Attacking, fighting	Items combined	Intrinsic	Items combined	Protective
Michaelson[73]	Cross-sectional	Yes	24,307	Children and adolescents	Both	6-10th grades	Canada	Physical aggression	Fighting, threats	Items combined	Non-organizational	Single item	NS (W1) NS (W2)
Murshid[74]	Cross-sectional	Yes	3,186	General	Male	16-54	Bangladesh	Domestic violence	Attacking, fighting, threats	M-CTS	Organizational	Single item	NS
Padilla-Walker[75]	Cross-sectional	No	1,629	Adolescents	Both	16.08 (1.09)	United States	Physical aggression	Fighting, threats	Items combined	Non-organizational	Items combined	Protective
Park[76]	Longitudinal	Yes	2,895	Adolescents	Both	12-13	United States	Physical aggression	Attacking	Single item	Organizational	Single item	Protective
Peek[77]	Longitudinal	Yes	1,545	Adolescents	Male	Sophomore, junior, senior years	United States	Physical aggression	Assaulting parents	Single item	Intrinsic	Items combined	Protective
Peek[78]	Longitudinal	Yes	817	Adolescents	Male	Sophomore, junior, senior years	United States	Physical aggression	Attacking	Items combined	Organizational	Items combined	Protective (W1) Protective (W2)
Pickering[79]	Cross-sectional	No	865	Adolescents	Both	16.4 (1.2)	United States	Physical aggression	Attacking	Items combined	Non-organizational intrinsic	Items combined	Protective (Bible reading) NS (attendance, salience, relational practice)
Pitel[80]	Cross-sectional	Yes	1,784	Children and adolescents	Both	15.48 (0.45)	Slovakia	Physical aggression	Fighting	Single item	Intrinsic	Single item	NS NS
Pournaghash[81]	Cross-sectional	No	180	Couples	Both	25-45	Iran	Domestic violence	Attacking, fighting, threats	ADV	Non-organizational, intrinsic	Islamic Religious Tendency Scale, items combined	Protective (beliefs, practices, activities) Risk (religious disorganization)
Powell[82]	Cross-sectional	No	521	Children and adolescents	Both	5-11th grades	United States	Physical aggression	Fighting	Single item	Intrinsic	Items combined	Protective
Purwono[83]	Cross-sectional	No	238	Adolescents	Both	15-18	Indonesia	Physical aggression	Attacking, fighting	Items combined	Intrinsic	Items combined	Protective
René[84]	Cross-sectional	No	1,271	General	Both	> 18	United States	Physical aggression	Attacking, fighting	Items combined	Organizational non-organizational	Single item	NS (self-perception and intentionally) Protective (attendance)

Continued on next page

Table 1 (*continued*)

Author	Type of study	Representative	Sample	Population	Sex	Group age (years)	Country	Violence group	Type of violence	Violence outcome	Type of religiosity/ spirituality	Religious/ spiritual outcome	Results†
Resnick[85]	Longitudinal	Yes	13,110	Children and adolescents	Both	7-12th grades	United States	Physical aggression	Attacking, fighting, threats	Items combined	Non-organizational	NR	Protective (female) NR (male)
Sadeghifard[86]	Cross-sectional	No	1,345	Adolescents and young adults	Both	18-28	Iran	Physical aggression	Attacking, fighting, threats	BPAQ	Spirituality	SAI	NS
Salas-Wright[87]	Cross-sectional	No	290	Children, adolescents and young adults	Both	11-25	El Salvador	Physical aggression	Attacking, fighting, homicide	NR	Intrinsic spirituality	CRC, ISS	Protective (religiosity)Protective (spirituality)
Salas-Wright[20]	Cross-sectional	Yes	90,047	Children and adolescents	Both	12-17	United States	Physical aggression	Attacking, fighting	Single item	Intrinsic	Items combined	Protective (attendance) Protective (beliefs) Protective (participation in religious groups)
Salas-Wright[88]	Cross-sectional	No	138	Adolescents and young adults	Female	13-24	United States	Physical aggression	Fighting	Single item	Non-organizational intrinsic	SCSORF	Protective (severe attacks) NS (fights)
Salas-Wright[89]	Cross-sectional	No	236	Children, adolescents and young adults	Both	12-25	United States	Physical aggression	Attacking, fighting	NR	Non-organizational intrinsic	SCSORF	NS
Schuster[90]	Longitudinal	Yes	1,593	Adolescents and young adults	Both	18-30	Chile and Turkey	Sexual aggression	Sexual coercion, unwanted sex, rape	SAV-S	Intrinsic	Single item	Protective (Chileans W1) NS (Chilenas W2 and Turkish W1/W2)
Sealock[91]	Longitudinal	No	298	Adolescents	Both	13-17	United States	Physical aggression	Attacking, fighting, threats	Items combined	Spirituality	Items combined	NS (W1) Protective (W2)
Shepperd[92]	Longitudinal	No	1,162	Adolescents	Both	15-19	United States	Physical aggression	Attacking, fighting, threats	RCRQ	Intrinsic	RCI	Protective (W2) Protective (W3)
Sinha[93]	Cross-sectional	Yes	2,004	Children and adolescents	Both	11-18	United States	Physical aggression	Attacking, fighting	Single item	Intrinsic	Single item	NS (attendance and participation) protective (salience)
Sloane[94]	Cross-sectional	Yes	1,121	Adolescents	Both	13-18	United States	Physical aggression	Fighting	Single item	Non-organizational intrinsic	Single item	NS (non-organizational) protective (intrinsic)
Solinas-Saunders[95]	Cross-sectional	Yes	14,499	Inmates	Both	16-84	United States	Physical aggression	Attacking, fighting	Single item	Non-organizational	Single item	NS
Stevens[96]	Cross-sectional	No	310	Adolescents	Both	13-19	Polynesia	Physical aggression	Attacking, fighting, threats	Proactive-Reactive Aggression Questionnaire	Non-organizational	RCI	Protective
Todhunter[97]	Cross-sectional	Yes	1,507	Adolescents and young adults	Male	18-26	United States	Physical aggression	Attacking, fighting, threats, sexual coercion	NR	Non-organizational	Items combined	NS

Continued on next page

Table 1 (*continued*)

Author	Type of study	Representative	Sample	Population	Sex	Group age (years)	Country	Violence group	Type of violence	Violence outcome	Type of religiosity/ spirituality	Religious/ spiritual outcome	Results†
Tomaszewska[98]	Longitudinal	No	318	Adolescents and young adults	Both	19.7 (1.03)	Poland	Sexual aggression	Sexual coercion, unwanted sex, rape	SAV-S	Intrinsic	Items combined	NS (W1) NS (W2)
Tyler[99]	Cross-sectional	No	172	Adolescents and young adults	Both	19-26	United States	Physical aggression	Attacking, fighting, threats	Items combined	Intrinsic	Items combined	NS
Tzamalouka[100]	Cross-sectional	No	1,122	General	Both	18-65	Greece	Physical aggressionsexual aggression	Attacking, fighting, threats, rape, forced sex	Items combined	Non-organizational	Items combined	Protective (physical aggression) Protective (sexual aggression)
Velazquez[101]	Cross-sectional	No	345	Children and adolescents	Both	1-6th grades	Mexico	Physical aggression	Attacking, fighting, threats	CAS	Organizational	Escala del Ambiente Social Familiar	Protective
Weber[102]	Cross-sectional	No	457	Adolescents and young adults	Both	18-23	United States	Physical aggression	Attacking, fighting, threats	RAS	Intrinsic	FMS	NS
Wolf[103]	Cross-sectional	Yes	3,023	Children	Both	< 12	United States	Physical aggression	Attacking, hitting, threats	PCTSPC	Organizational	Single item	Risk
Yun[104]	Cross-sectional	No	4,864	General	Both	15.15 (1.61)	South Korea	Physical aggression	Attacking, fighting, threats	Items combined	Intrinsic	Items combined	NS

ADV = Domestic Violence Questionnaire; BMMRS = Brief Multidimensional Measure of Religiousness/Spirituality; BPAQ = Buss-Perry Aggression Questionnaire; BPAQ = Buss-Perry Aggression Questionnaire; CAS = Children's Aggression Scale; CRC = Religious Coping Scale; CTS = Conflict Tactics Scale; CTSPC = Parent-Child Conflict Tactics Scale; CTSPC = Parent-Child Conflict Tactics Scales; DUREL = Duke University Religion Index; FMS = Faith Maturity Scale; ISS = Intrinsic Spirituality Scale; M-CTS = Modified Conflict Tactics Scale; NR = not reported; NS = non-significant; RAS = Relational Aggression Scale; RCI = Religious Commitment Inventory; RCRQ = Richardson Conflict Response Questionnaire; RLI = Religious Life Inventory; ROS = Religious Orientation Scale; RPQ = Reactive-Proactive Aggression Questionnaire; SAI = Spiritual Assessment Inventory; SAV-S = Sexual Aggression and Victimization Scale; SCSORF = Santa Clara Strength of Religious Faith Questionnaire; SES = Sexual Experiences Survey; SIS = Spiritual Intelligence Scale; SRQ = Self-Regulation Questionnaire; STS = Spiritual Transcendence Scale; SVAWS = Severity of Violence Against Women Scale; SWBS = Spiritual Well-Being Scale; W1, W2, W3 = Wave 1, 2, and 3.
† Protective and risk results were statistically significant outcomes reported in the articles.

Table 2 Study quality assessment of all included articles using the NIH quality assessment tool for observational cohort and cross-sectional studies

Author	1†	2	3	4	5	6	7	8	9	10	11	12	13	14	Score
Cross-sectional design															
Abadlla[42]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8
Banyard[45]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	Yes	NA	Yes	9
Benda[46]	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	NR	NA	NR	8
Benda[47]	Yes	Yes	NR	Yes	NR	NA	NA	Yes	Yes	NA	Yes	No	NA	Yes	7
Benda[21]	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	10
Brinkerhoff[22]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	Yes	NA	Yes	8
Clubb[48]	Yes	Yes	NR	No	NR	NA	NA	No	Yes	NA	Yes	No	NA	Yes	5
Corwyn[49]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	No	NA	Yes	7
Cretacci[50]	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	10
Cunradi[51]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8
Dick[54]	Yes	Yes	NR	Yes	NR	NA	NA	No	No	NA	No	NR	NA	No	3
Dyslin[55]	Yes	Yes	Yes	Yes	NR	NA	NA	Yes	Yes	NA	Yes	NR	NA	No	7
Ellison[56]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	NR	NA	Yes	8
Eshuys[57]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	NR	NA	No	6
Gonçalves[58]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8
Hardy[60]	Yes	Yes	NR	Yes	NR	NA	NA	No	Yes	NA	Yes	Yes	NA	No	6
Holmes[62]	Yes	Yes	NR	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	NR	NA	Yes	8
Itani[63]	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	10
Karimi[65]	Yes	Yes	NR	Yes	NR	NA	NA	Yes	Yes	NA	Yes	NR	NA	No	6
Karriker-Jafe[66]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	NR	NA	Yes	8
Katerndahl[67]	Yes	Yes	NR	Yes	NR	NA	NA	Yes	Yes	NA	Yes	No	NA	Yes	7
Leach[69]	Yes	Yes	NR	NR	Yes	NA	NA	Yes	Yes	NA	Yes	No	NA	No	6
Linville[70]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	Yes	NA	Yes	8
Lynch[71]	Yes	Yes	NR	Yes	NR	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	8
Massarwi[72]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8
Michaelson[73]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	NR	NA	Yes	8
Murshid[74]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	No	NA	Yes	NR	NA	Yes	7
Padilla-Walker[75]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	NR	NA	Yes	7
Pickering[79]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	NR	NA	Yes	7
Pitel[80]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	Yes	NA	Yes	9
Pournaghash[81]	Yes	Yes	NR	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	9
Powell[82]	Yes	Yes	No	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	7
Purwono[83]	Yes	Yes	Yes	NR	NR	NA	NA	Yes	Yes	NA	Yes	NR	NA	Yes	7
René[84]	Yes	Yes	NR	Yes	NR	NA	NA	No	Yes	NA	Yes	No	NA	Yes	6
Sadeghifard[86]	Yes	Yes	NR	NR	Yes	NA	NA	Yes	Yes	NA	Yes	NR	NA	Yes	7
Salas-Wright[87]	Yes	Yes	NR	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	9
Salas-Wright[20]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	NR	NA	Yes	8
Salas-Wright[88]	Yes	Yes	NR	NR	NR	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	7
Salas-Wright[89]	Yes	Yes	NR	NR	NR	NA	NA	Yes	Yes	NA	Yes	NR	NA	Yes	6
Sinha[93]	Yes	Yes	Yes	Yes	NR	NA	NA	No	Yes	NA	Yes	No	NA	Yes	7
Sloane[94]	Yes	Yes	NR	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	NR	6
Solinas-Saunders[95]	Yes	Yes	No	Yes	Yes	NA	NA	No	Yes	NA	Yes	Yes	NA	Yes	8
Stevens[96]	Yes	Yes	NR	Yes	NR	NA	NA	Yes	Yes	NA	Yes	Yes	NA	Yes	8
Todhunter[97]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8
Tyler[99]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8
Tzamalouka[100]	Yes	Yes	Yes	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	8

Continued on next page

Table 2 (*continued*)

Author	1†	2	3	4	5	6	7	8	9	10	11	12	13	14	Score
Velazquez[101]	Yes	Yes	NR	Yes	NR	NA	NA	No	Yes	NA	Yes	No	NA	Yes	6
Weber[102]	Yes	Yes	NR	NR	NR	NA	NA	Yes	Yes	NA	Yes	NR	NA	Yes	6
Wolf[103]	Yes	Yes	No	Yes	Yes	NA	NA	No	Yes	NA	Yes	No	NA	Yes	7
Yun[104]	Yes	Yes	Yes	NR	Yes	NA	NA	No	Yes	NA	Yes	Yes	NA	Yes	8
Longitudinal design															
Adamczyk[43]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	NR	Yes	Yes	11
Altschul[44]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	NR	Yes	Yes	11
Bernat[19]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	12
Desmond[52]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NR	Yes	Yes	12
Desmond[53]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NR	Yes	Yes	12
Hagen[59]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NR	Yes	No	11
Hemphill[61]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	12
Johnson[64]	Yes	Yes	NR	Yes	NR	Yes	Yes	No	Yes	No	Yes	NR	Yes	Yes	9
Kingre[68]	Yes	Yes	Yes	Yes	NR	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	12
Park[76]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	NR	Yes	Yes	11
Peek[77]	Yes	Yes	NR	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NR	No	Yes	10
Peek[78]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NR	No	Yes	11
Resnick[85]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes	Yes	10
Schuster[90]	Yes	Yes	Yes	Yes	NR	Yes	Yes	No	Yes	No	Yes	NR	Yes	Yes	10
Sealock[91]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes	9
Shepperd[92]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
Tomaszewska[98]	Yes	Yes	Yes	Yes	NR	Yes	Yes	No	Yes	No	Yes	NR	Yes	Yes	10

NA = not applicable; NR = not reported.
† Items assessed according to National Institutes of Health (NIH) scale (available in Supplementary Material S2).

present the results for the total sample, in addition to two others that only provided descriptive analyses. The same religious and interpersonal violence outcomes were assessed using the same sample in two different publications, so we excluded one.

The remaining 43 studies were divided into three groups according to violence outcomes: physical aggression, domestic violence, and sexual aggression. Since some articles assessed more than one violence outcome, including more than one type of religious/spiritual variable, the data were overlapped in the analysis, which resulted in more comparison groups than studies for each outcome.

Sex was not included in the subgroup analyses because the results of most articles were presented as mixed groups of men and women, making it impossible to stratify the samples. Moreover, the subgroup analyses could not be performed by country, since 71.6% of the studies were conducted in the United States.

Physical aggression

The physical aggression analyses included 33 studies and 80 comparisons, totaling 1,221,897 individuals (Figure S1, available as online-only supplementary material). Higher levels of R/S were significantly associated with lower physical aggression (r = -0.12, 95%CI = -0.137 to -0.095). Due to the high heterogeneity (I^2 = 99.16%, $p < 0.001$), subgroup analyses were performed (Table 3).

All investigated subgroups showed statistically significant results with small effect sizes. However, the heterogeneity did not decrease in any of these analyses. Organizational and intrinsic religiosity had similar effect sizes (r = -0.15, 95%CI = -0.20 to -0.09; r = -0.14, 95%CI = -0.19 to -0.10, respectively), and non-organizational religiosity showed a lower effect size than the other two types (r = -0.07, 95%CI = -0.09 to -0.0.5). However, religiosity outcomes for the meta-regression analyses were not significant.

Domestic violence

The domestic violence subanalysis included eight studies and 23 comparisons, resulting in an overall sample of 23,137 individuals. Although less intimate partner violence was not associated with higher levels of R/S (r = -0.05, 95% CI = -0.200 to 0.099) (Figure S2, available as online-only supplementary material), there was significant heterogeneity among the studies (I^2 = 99.70%, $p < 0.001$). Subgroup analyses, however, revealed a significant association among adolescents (r = -0.11, 95%CI = -0.189 to -0.038), with a heterogeneity of 78.99% ($p < 0.005$). Although no significant results were found for articles published until 2009 (r = 0.060, 95%CI = -0.062 to 0.182, p = 0.334) or after 2009 (r = − 0.152, 95%CI = -0.368 to 0.064, p = 0.168), there was a significant difference between older and newer articles of the meta-regression (p = 0.020).

Sexual aggression

Regarding sexual aggression, we analyzed four studies and carried out eight comparisons, totaling 6,025 individuals. There was a significant negative association between sexual aggression and higher R/S, although the effect size was smaller than that of physical aggression (r = -0.05, 95%CI = -0.077 to -0.021) (Figure S3, available as online-only supplementary material). Heterogeneity in this outcome was low and non-significant (I^2 = 13.55%, p = 0.324). All authors used combined items as their interpersonal violence outcome. Most studies assessed intrinsic/spiritual variables (seven of eight comparisons) and investigated adolescents (six of eight comparisons). No significant difference was found between the studies in the subgroup analysis.

Discussion

The results of this systematic review and meta-analysis support the proposition that R/S plays a significant protective role against physical and sexual aggression. Nevertheless, R/S was only associated with less domestic violence among adolescents.

Previous meta-analyses investigating the involvement of religion in delinquency have found a consistently inverse relationship,[17,18] which corroborates our findings. However, these meta-analyses focused on delinquent acts and criminal behavior, rather than exclusively violent acts against others. To our knowledge, this is the first systematic review and meta-analysis to explore the impact of R/S on different aspects of interpersonal violence.

Interestingly, our findings had different effect sizes for different aspects of interpersonal violence. Specifically, it was higher for physical than for sexual aggression and was non-significant for domestic violence outcomes. Previous studies have found that R/S has a larger effect size for victimless crimes (such as tax evasion,[105-107] the selling and consumption of illegal substances,[18] and robbery and vandalism[43,90]) than for crimes involving victims.[18] According to our findings, it seems that the impact of R/S differs depending on the type of interpersonal violence, which could be explained by the complexity involved in domestic and sexual aggression, including barriers to reporting such crimes.[108]

Regarding physical aggression, all subgroup analyses (age, study design, representativeness) were significant, consistently showing that R/S plays a protective role against physical aggression. These findings have strong implications for health care professionals and managers. While no differences were found in religious subgroup analysis in the meta-regression, the effect sizes varied for organizational and intrinsic religiosity vs. non-organizational religiosity. The effect of organizational religiosity can be explained by the social control theory, which contends that the notion of divine punishment/reward combined with the social support of a formal religion can prevent believers from committing crimes.[25,26] The concept of intrinsic religiosity involves the notion of self-control and the rational choice of healthy behaviors and attitudes[27,29] as a result of internal reasoning and self-awareness. However, private non-organizational religiosity seems to have little preventive effect against acts of physical violence. This could be explained by the fact that,

Table 3 Subgroup analyses and meta-regression data for the outcomes: physical aggression, domestic violence, and sexual aggression

	Studies (n)	Comparisons (n)	Sample size for the comparisons (n)	Correlation r	95%CI	p-value	I^2 (%)	Q	Tau-square	Coefficient	95%CI	p-value
Physical aggression												
All studies	33	80	1,221,897	-0.116	-0.137 to -0.095	0.001	99.16	9442.72	0.008	-		
Violence outcome												
Single item	8	21	1,102,332	-0.097	-0.119 to -0.075	0.001	99.11	2242.31	0.002	0.029	-0.041 to 0.099	0.413
Combined items	25	59	119,565	-0.122	-0.181 to -0.063	0.001	99.16	6870.61	0.052	Ref		
Religiosity†												
Organizational	11	17	289,987	-0.150	-0.205 to -0.094	0.001	99.42	2782.31	0.012	-0.017	-0.150 to 0.008	0.079
Non-organizational	14	35	604,719	-0.070	-0.087 to -0.053	0.001	96.51	973.33	0.002	Ref		
Intrinsic	16	27	326,652	-0.145	-0.193 to -0.098	0.001	99.33	3743.22	0.014	-0.068	-0.136 to 0.000	0.052
Age, years												
< 19	19	52	1,161,342	-0.097	-0.113 to -0.081	0.001	98.34	3075.34	0.003	Ref		
Included > 19	14	28	60,555	-0.138	-0.239 to -0.038	0.007	99.44	4872.02	0.072	-0.042	-0.107 to 0.022	0.198
Methodology												
Cross-sectional	25	65	1,195,767	-0.119	-0.143 to -0.096	0.001	99.31	9320.84	0.008	-0.019	-0.099 to 0.061	0.645
Longitudinal	8	14	26,13	-0.099	-0.135 to -0.063	0.001	87.90	107.47	0.004	Ref		
Representative												
Yes	15	37	6,172,91	-0.116	-0.145 to -0.086	0.001	99.59	8821.27	0.008	Ref		
No	18	43	52,277	-0.117	-0.150 to -0.083	0.001	92.94	595.23	0.011	-0.001	-0.063 to 0.061	0.976
Study quality												
Lower score	5	10	15,228	-0.079	-0.112 to -0.045	0.001	68.69	28.74	0.002	0.046	-0.048 to 0.139	0.337
Higher score	28	70	1,206,669	-0.122	-0.144 to -0.099	0.001	99.27	9405.60	0.008	Ref		
Year of publication												
⩽ 2009	9	16	31,592	-0.109	-0.161 to -0.057	< 0.001	94.93	296.06	0.010	Ref		
⩾ 2010	24	63	1,190,305	-0.118	-0.142 to -0.095	< 0.001	99.31	9134.74	0.008	-0.009	-0.086 to 0.069	0.827
Domestic violence/ intimate partner violence												
All studies	8	23	23,137	-0.050	-0.200 to 0.099	0.511	99.70	7362.11	0.131	-		
Violence outcome												
Single item	0	-	-	-	-	-	-					
Combined items	8	23	23,137	-0.050	-0.200 to 0.099	0.511	99.70	7362.11	0.131	-		
Religiosity†												
Organizational	6	10	13,613	-0.038	-0.313 to 0.236	0.784	99.67	2752.09	0.195	Ref		
Non-organizational	3	7	2,861	-0.057	-0.317 to 0.203	0.669	99.65	1726.29	0.120	-0.016	-0.247 to 0.216	0.893
Intrinsic	4	6	6,663	-0.040	-0.230 to 0.150	0.681	99.44	1265.60	0.074	-0.026	-0.267 to 0.215	0.833
Age												
Children	0	-	-	-	-	-	-			-		
Adolescents	2	3	3,319	-0.113	-0.189 to -0.038	0.003	78.99	9.52	0.004	Ref		
Adults	6	20	19,818	-0.041	-0.207 to 0.125	0.627	99.74	7352.41	0.141	0.071	-0.215 to 0.357	0.627
Methodology												
Cross-sectional	7	21	21,447	-0.048	-0.207 to 0.111	0.556	99.72	7358.37	0.136	-		
Longitudinal	1	-	-	-	-	-	-					
Representativeness												
Yes	4	9	17,098	-0.032	-0.298 to 0.235	0.817	99.74	3158.43	0.166	0.027	-0.172 to 0.226	0.789
No	4	14	6,039	-0.062	-0.230 to 0.107	0.475	99.55	2907.74	0.101	Ref		

Continued on next page

Table 3 (*continued*)

	Studies (n)	Comparisons (n)	Sample size for the comparisons (n)	Correlation r	95%CI	p-value	I^2 (%)	Q	Tau-square	Coefficient	95%CI	p-value
Study quality												
Lower score	0	-	-	-	-	-	-					
Higher score	8	23	23,137	-0.050	-0.200 to 0.099	0.511	99.70	7362.11	0.131	-		
Year of publication												
⩽ 2009	3	11	6,878	0.060	-0.062 to 0.182	0.334	96.47	283.59	0.041	Ref		
⩾ 2010	5	12	16,259	-0.152	-0.368 to 0.064	0.168	99.83	6789.46	-0.143	-0.210	-0.387 to -0.033	**0.020**
Sexual aggression												
All studies	4	8	6,025	-0.049	-0.077 to -0.021	0.001	13.55	8.09	0.000	-		
Violence outcome												
Single item	0	-	-	-	-	-	-					
Combined items	4	8	6,025	-0.049	-0.077 to -0.021	0.001	13.55	8.09	0.000	-		
Religiosity												
Organizational	0	-	-	-	-	-	-					
Non-organizational	1	-	-	-	-	-	-					
Intrinsic/Spirituality	3	7	5,516	-0.044	-0.075 to -0.014	0.004	16.65	7.19	0.000	-		
Age[†]												
Children	1	-	-	-	-	-	-					
Adolescents	3	6	3,482	-0.044	-0.075 to -0.014	0.004	16.65	7.19	0.000	-		
Young adults	1	-	-	-	-	-	-					
Methodology												
Cross-sectional	1	-	-	-	-	-	-					
Longitudinal	3	6	3,482	-0.044	-0.075 to -0.014	0.004	16.65	7.19	0.000	-		
Representative												
Yes	2	5	3,164	-0.037	-0.088 to 0.013	0.150	48.24	7.72	0.002	0.008	-0.042 to 0.059	0.743
No	2	3	1,145	-0.079	-0.137 to -0.021	0.007	0.00	0.17	0.000	Ref		
Study quality												
Lower score	2	6	3,291	-0.039	-0.081 to 0.004	0.075	30.04	7.14	0.001	0.014	-0.037 to 0.065	0.594
Higher score	2	2	2,734	-0.057	-0.095 to -0.020	0.003	0.00	0.66	0.000	Ref		

Bold type denotes significant statistical difference.
Ref = reference category.
[†]These analyses include overlap from studies that assessed more than one religiosity criterion.

even though listening to religious music, reading sacred texts, and praying reduce undesirable symptoms,[15] they may be insufficient in some contexts, and thus may not help prevent violence. This is also consistent with socio-psychological and evolutionary theories linking religiosity to prosociality (including variables such as social bonding, social support, and social monitoring).[109,110]

Although sexual aggression had a lower effect size than physical aggression, the subgroup analyses also indicated that R/S played a consistently protective role. Notably, this violence outcome showed the lowest heterogeneity, suggesting that these findings are related to intrinsic religiosity among adolescents. Since adolescents are at greater risk of sexual aggression,[1] more studies have been published involving this specific population.[111] Regarding intrinsic religiosity, this finding reinforces the aforementioned theories about self-control and rational choice.[27,29]

In contrast, the domestic violence meta-analysis showed no association with R/S variables, except among adolescents. This could be attributed to the fact that interpersonal violence is a complex multidimensional concept involving a number of causes.[112] Thus, R/S may not prevent domestic violence due to overlapping influence from the cultural background.[113] There are some explanations for such findings in the literature. First, some cultures and religions can be permissive or tolerant towards domestic violence[114,115] in an effort to minimize the disruption of family units. Previous studies have supported this hypothesis, showing that fear of separation or ostracization may cause women to remain in unhealthy relationships.[116,117] Second, in some cases, clergy may advise victims to resign themselves to the situation, rather than report it to the police, thus perpetuating the cycle of violence.[118] Third, studies in Eastern cultures have found that both men and women agree that men can beat their partner if she refuses sex or retaliates during a fight.[119] Similarly, in Western cultures, approval of corporal punishment for disciplining children is also common among religious conservatives.[118]

Despite these explanations, it should be pointed out that greater awareness about domestic violence has been achieved in recent decades,[119] including the harmful effects of violence on mental health, which may interfere with the relationship between religiosity and domestic violence. This was observed in the meta-regression, since newer articles on this topic showed a trend toward significance for R/S as a protective factor (r = -0.152), unlike older articles (r = 0.060).

In five studies, domestic violence was the only outcome in which religiosity was a risk factor for violence. Three of them found religiosity to be a risk factor when assessing negative variables, such as religious incompatibility,[67] disorganized religiosity,[81] and introjected religious self-regulation.[71] Previous research indicates that negative religious coping is associated with higher levels of depression, anxiety, and alcohol and drug consumption.[120,121] Since the studies that investigated physical and sexual aggression did not assess negative religiosity, we cannot conclude that the risk is associated with domestic violence alone. Future studies should conduct a more detailed investigation of the role of negative religious coping and violence.

Notably, in the subanalyses, the results were only significant for all types of violence among adolescents. This is consistent with the current literature, which indicates that R/S plays a protective role against delinquency in this age group.[17,18,31,33] A meta-analysis by Baier et al.[18] showed that religiosity had a deterrent effect on delinquency among adolescents, which was moderated by the year of data collection, sample size, and the proportion of Whites in the sample. Similarly, Kelly et al.[17] found a small-to-moderate average effect size between religiosity and delinquency, with similar results for church attendance. However, even though they explored heterogeneity through moderators, they found no significant difference among funded studies, sample type, and sample location.

Despite this promising evidence, the heterogeneity was significant in our analysis of both physical aggression and domestic violence, even after stratifying by subgroup. A previous meta-analysis[17] also found high heterogeneity regarding religiosity and interpersonal violence outcomes, which was attributed to possible interference by different mediators.[41] Nevertheless, there was low heterogeneity regarding sexual aggression outcomes in our sample because of three important subgroup similarities: it involved the fewest studies and comparisons, the outcomes were assessed through combined items/validated scales, and most studies investigated intrinsic religiosity and adolescent participants. These facts may have yielded more appropriate results.

The assessment of R/S variables showed a similar trend. Although several valid instruments have been developed to measure various constructs of both violent behavior[122,123] and R/S outcomes,[13,124] we found that they were infrequently used in the included studies, especially those with longitudinal designs. Hence, the consistent use of reliable and valid instruments is needed to elucidate this relationship, especially considering its clinical implications for public health.[31]

Concerning the studies' methodological quality, the mean scores were good for both the cross-sectional and cohort designs. However, grouping separate constructs of R/S within the same variable, such as worship service attendance, salience, and beliefs, can produce invalid results, especially in cross-sectional studies.[125] Furthermore, reported outcome assessor blinding was less than 30% in both designs. The authors rarely declared whether the individual performing the assessment was aware of the exposure status of the participants. This methodological parameter must be prepared in advance when designing a study and is easily manageable due to its simplicity.

Clinical implications

The evidence that R/S plays a protective role against interpersonal violence has clinical implications, both for health care professionals and health managers. Several studies have examined whether, why, and how physicians approach religion and spiritual topics with their patients in

clinical practice.[126-128] While this may significantly influence physical and mental health, physicians seldom address R/S and the beliefs of their patients, except among terminally ill patients.[126] The most cited barriers are that this topic falls outside their scope of practice, they lack appropriate training, and that there are time constraints.[126-127]

Nevertheless, the impact of R/S is present throughout life.[13] R/S can impact human health both positively and negatively.[129] Therefore, strategies and adequate instruments for approaching R/S in clinical practice safely and reliably have been developed in recent years.[128,130,131] Considering the patient's history of R/S and its impact can provide physicians with helpful and tailored preventive strategies. This can reinforce positive religious coping or transform negative religious perspectives into a more constructive condition. Health managers should thus be aware of these findings and train their staff to address these issues in clinical practice.

For example, a previous qualitative study on women incarcerated for murdering their domestic abusers[114] included individuals either raised in a home without religion or in an extremely religious home with rigid and aggressive moral conduct based on a punitive concept of God. It seems that traumatic episodes linked to religious issues are difficult to recover from. Health professionals should address these issues in a patient-centered, individualized, and nonjudgmental approach. The authors proposed an intervention based on spirituality (moral values, faith, and transcendence) to alleviate the convicts' mental suffering. Despite negative prior religious experiences, participants transitioned from negative to positive religious strategies.

Understanding the patients' religious/spiritual background can provide insight into how it relates to their present. Evidence shows that parental religiosity impacts the mental and physical health and behavior of adolescents, both positively and negatively.[132-134] The family religious environment may thus hinder or encourage child development.

Clinical trials designed to prevent interpersonal violence through R/S have ethical limitations. However, some authors are exploring R/S interventions to reduce violence and misconduct in male prisons.[135-137] The results have shown improvement in personal conduct, less fighting, and improved mental health outcomes for those who converted to a religious affiliation. More research is necessary to elucidate the actual long-term impacts on mental health and behavior. Nevertheless, such programs have already been implemented in institutions that can benefit from simple and low-cost interventions.

Future research

Most studies included in this review did not assess R/S as a central explanatory variable. Johnson et al.[31] conducted the first systematic review regarding religiosity and delinquency, finding that although most studies examined religiosity as a central variable, they also investigated only one or two other dimensions of religiosity, mainly worship service attendance and the reported importance of religion.

The cohort studies assessing R/S and violence were designed to investigate nationally representative samples, including several other measures and outcomes during an interview assessment. Therefore, R/S was not previously predicted as an outcome that could impact violence: it was simply addressed as another variable. Future studies on R/S and violence should be designed to clarify this relationship using appropriate instruments for both dependent and independent variables.[138] Even if the researchers choose to assess single questions, they must avoid summing all points in the same score when analyzing the data.

To explore the mechanisms of action of the preventive function of religiosity, future cohort studies should be specifically designed to address the impact of R/S on violence and clarify possible moderators during follow-up research. Furthermore, clinical trials for individuals who exhibit violent traits can help provide insight into whether R/S interventions can help improve rehabilitation by diminishing violent impulses.[139,140] Finally, qualitative studies should also be considered as an avenue for understanding the role of R/S in human nature and how it can help improve behavior.

Limitations

Although 16,599 articles were screened in seven different health science and sociology databases, other relevant studies may have been overlooked. Moreover, we found no studies in languages other than Portuguese, English, and Spanish, but, again, articles in other languages may have been missed.

In addition, although we were able to carry out subgroup analyses, these were limited to age group, sex, measurements of violence, and R/S outcomes. The heterogeneity among studies was relevant, especially regarding the dependent and independent variables.

In conclusion, this meta-analysis found a significant negative association between R/S and physical and sexual aggression. Although R/S showed no effect on domestic violence, the subgroup analysis showed a significant negative association among adolescents. These findings have significant implications for health care professionals worldwide.

Acknowledgements

This study received financial support from Instituto Homero Pinto Vallada (IHPV), São Paulo, Brazil.

JPBG received financial support from the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). GL and HV received financial support from the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).

Disclosure

The authors report no conflicts of interest.

References

1 Butchart A, Mikton C, Dahlberg LL, Krug EG. Global status report on violence prevention 2014. Am J Prev Med. 2016;50:652-9.
2 Madruga CS, Laranjeira R, Caetano R, Ribeiro W, Zaleski M, Pinsky I, et al. Early life exposure to violence and substance misuse in adulthood-the first Brazilian national survey. Addict Behav. 2011; 36:251-5.
3 Jina R, Thomas LS. Health consequences of sexual violence against women. Best Pract Res Clin Obstet Gynaecol. 2013;27:15-26.
4 Garcia-Moreno C. Intimate-partner violence and fetal loss. Lancet. 2009;373:278-9.
5 World Health Organization (WHO). Global status report on violence prevention 2014. 2014 Jan 9 [cited 2022 10 21]. www.who.int/publications/i/item/9789241564793
6 Wiles NJ, Lingford-Hughes A, Daniel J, Hickman M, Farrell M, Macleod J, et al. Socio-economic status in childhood and later alcohol use: a systematic review. Addiction. 2007;102:1546-63.
7 Bordin IA, Duarte CS, Peres CA, Nascimento R, Curto BM, Paula CS. Severe physical punishment: risk of mental health problems for poor urban children in Brazil. Bull World Health Organ. 2009; 87:336-44.
8 Diehl A, Pillon SC, Dos Santos MA, Rassool GH, Laranjeira R. Criminality and sexual behaviours in substance dependents seeking treatment. J Psychoactive Drugs. 2016;48:124-34.
9 Shorey RC, Elmquist J, Anderson S, Stuart GL. The relationship between spirituality and aggression in a sample of men in residential substance use treatment. Int J Ment Health Addict. 2016;14:23-30.
10 Meyer JP, Springer SA, Altice FL. Substance abuse, violence, and HIV in women: a literature review of the syndemic. J Womens Health (Larchmt). 2011;20:991-1006.
11 Wenzel T, Kienzler H, Wollmann A. Facing violence - a global challenge. Psychiatr Clin North Am. 2015;38:529-42.
12 Hughes K, Bellis MA, Hardcastle KA, Butchart A, Dahlberg LL, Mercy JÁ, et al. Global development and diffusion of outcome evaluation research for interpersonal and self-directed violence prevention from 2007 to 2013: a systematic review. Aggress Violent Behav. 2014;19:655-62.
13 Koenig H, King D, Carson V. Handbook of religion and health. 2nd ed. Oxford: Oxford University Press. 2012.
14 Puchalski CM. Spirituality in the cancer trajectory. Ann Oncol. 2012;23 Suppl 3:49-55.
15 Moreira-Almeida A, Koenig HG, Lucchetti G. Clinical implications of spirituality to mental health: review of evidence and practical guidelines. Braz J Psychiatry. 2014;36:176-82.
16 Goncalves JPB, Lucchetti G, Menezes PR, Vallada H. Religious and spiritual interventions in mental health care: a systematic review and meta-analysis of randomized controlled clinical trials. Psychol Med. 2015;45:2937-49.
17 Kelly PE, Polanin JR, Jang SJ, Johnson BR. Religion, delinquency, and drug use: a meta-analysis. Crim Justice Rev. 2015;40:505-23.
18 Baier CJ, Wright BRE. 'If you love me, keep my commandments': a meta-analysis of the effect of religion on crime. J Res Crime Delinq. 2001;38:3-21.
19 Bernat DH, Oakes JM, Pettingell SL, Resnick M. Risk and direct protective factors for youth violence: results from the National Longitudinal Study of Adolescent Health. Am J Prev Med. 2012;43: S57-66.
20 Salas-Wright CP, Vaughn MG, Maynard BR. Religiosity and violence among adolescents in the United States: findings from the national survey on drug use and health 2006-2010. J Interpers Violence. 2014;29:1178-200.
21 Benda BB. The robustness of self-control in relation to form of delinquency. Youth Soc. 2005;36:418-44.
22 Brinkerhoff MB, Grandin E, Lupri E. Religious involvement and spousal violence - the Canadian case. J Sci Study Relig. 1992;31: 15-31.
23 Edwards LM, Haglund K, Fehring RJ, Pruszynski J. Religiosity and sexual risk behaviors among Latina adolescents: trends from 1995 to 2008. J Womens Health (Larchmt). 2011;20:871-7.
24 Koster F, Goudriaan H, van der Schans C. Shame and punishment: an international comparative study on the effects of religious affiliation and religiosity on attitudes to offending. Eur J Criminol. 2009;6:481-95.
25 Hirschi T, Stark R. Hellfire and delinquency. Soc Probl. 1969;17: 202-13.
26 Burkett SR, Ward DA. A note on perceptual deterrence, religiously based moral condemnation, and social-control. Criminol. 1993;31: 119-34.
27 Wright BRE, Caspi A, Moffitt TE, Silva PA. Low self-control, social bonds, and crime: Social causation, social selection, or both? Criminol. 1999;37:479-514.
28 Marcos AC, Bahr SJ, Johnson RE. Test of a bonding/association theory of adolescent drug-use. Soc Forces. 1986;65:135-61.
29 Bock EW, Cochran JK, Beeghley L. Moral messages - the relative influence of denomination on the religiosity-alcohol relationship. Sociol Q. 1987;28:89-103.
30 Grasmick HG, Bursik RJ Jr, Cochran JK. Render unto Caesar what is Caesar: religiosity and taxpayers inclinations to cheat. Sociol Q. 1991;32:251-66.
31 Johnson BR, De Li S, Larson DB, McCullough M. A systematic review of the religiosity and delinquency literature: a research note. J Contemp Crim Justice. 2000;16:32-52.
32 Saroglou V. Religion and the five factors of personality: a meta-analytic review. Pers Individ Dif. 2002;32:15-25.
33 Adamczyk A, Freilich JD, Kim C. Religion and crime: a systematic review and assessment of next steps. Sociol Relig. 2017;78:192-232.
34 Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71.
35 Gonçalves JPB, Lucchetti G, Maraldi EO, Fernandez PEL, Menezes PR, Vallada H. The role of religious/spiritual dimension in perpetrators of violence against other people: a systematic review and meta-analysis. Braz J Psychiatry. 2022 Nov 4. doi: 10.47626/1516-4446-2022-2832. Online ahead of print.
36 Krug EG, Mercy JA, Dahlberg LL, Zwi AB. World report on violence and health. Lancet. 2002;360:1083-8.
37 Sanderson S, Tatt ID, Higgins JP. Tools for assessing quality and susceptibility to bias in observational studies in epidemiology: a systematic review and annotated bibliography. Int J Epidemiol. 2007;36:666-76.
38 National Heart, Lung and Blood Institute (NIH). Quality assessment tool for observational cohort and cross-sectional studies [Internet]. 2014 [cited 2021 Oct 01]. www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools
39 Chinn S. A simple method for converting an odds ratio to effect size for use in meta-analysis. Stat Med. 2000;19:3127-31.
40 Wallace BC, Dahabreh IJ, Trikalinos TA, Lau J, Trow P, Schmid CH. Closing the gap between methodologists and end-users: R as a computational back-end. J Stat Softw. 2012;49:1-15.
41 Higgins J, Thomas J, Chandler J, Cumpston M, Li T, Page M, et al. Cochrane handbook for systematic reviews of interventions version 6.1 (updated September 2020) [Internet]. training.cochrane.org/handbook/archive/v6.1
42 Abdalla RR, Massaro L, de Queiroz Constantino Miguel A, Laranjeira R, Caetano R, Madruga CS. Association between drug use and urban violence: data from the II Brazilian National Alcohol and Drugs Survey (BNADS). Addict Behav Rep. 2017;7:8-13.
43 Adamczyk A. Understanding delinquency with friendship group religious context. Soc Sci Q. 2012;93:482-505.
44 Altschul I, Lee SJ. Direct and mediated effects of nativity and other indicators of acculturation on Hispanic mothers' use of physical aggression. Child Maltreat. 2011;16:262-74.
45 Banyard V, Edwards K, Jones L, Mitchell K. Poly-strengths and peer violence perpetration: what strengths can add to risk factor analyses. J Youth Adolesc. 2020;49:735-46.
46 Benda BB. The effect of religion on adolescent delinquency revisited. J Res Crime Delinq. 1995;32:446-66.
47 Benda BB. Religion and violent offenders in boot camp: a structural equation model. J Res Crime Delinq. 2002;39:91-121.
48 Clubb PA, Browne DC, Humphrey AD, Schoenbach V, Meyer B, Jackson M, et al. Violent behaviors in early adolescent minority youth: results from a "middle school youth risk behavior survey.". Matern Child Heal J. 2001;5:225-35.
49 Corwyn RF, Benda BB. Violent youths in southern public schools in America. Int J Adolesc Youth. 2001;10:69-90.
50 Cretacci MA. Religion and social control: an application of a modified social bond on violence. Crim Justice Rev. 2003;28:254-77.

51 Cunradi CB, Caetano R, Schafer J. Religious affiliation, denominational homogamy, and intimate partner violence among US couples. J Sci Study Relig. 2002;41:139-51.
52 Desmond SA, Soper SE, Purpura DJ, Smith E. Religiosity, moral beliefs, and delinquency: does the effect of religiosity on delinquency depend on moral beliefs? Sociol Spectr. 2009;29:51-71.
53 Desmond SA, Soper SE, Kraus R. Religiosity, peers, and delinquency: does religiosity reduce the effect of peers on delinquency? Sociol Spectr. 2011;31:665-94.
54 Dick SJ, Forsyth CJ, Chen J, Forsyth YA, Biggar RW, Burstein K. School and peers: examining the influence of protective factors on delinquency and age of onset. Deviant Behav. 2018;40:476-83.
55 Dyslin CW, Thomsen CJ. Religiosity and risk of perpetrating child physical abuse: an empirical investigation. J Psychol Theol. 2005;33:291-8.
56 Ellison CG, Anderson KL. Religious involvement and domestic violence among US couples. J Sci Study Relig. 2001;40:269-86.
57 Eshuys D, Smallbone S. Religious affiliations among adult sexual offenders. Sex Abuse. 2006;18:279-88.
58 Gonçalves JPB, Madruga CS, Lucchetti G, Dias Latorre MDR, Laranjeira R, Vallada H. The effect of religiosity on violence: results from a Brazilian population-based representative survey of 4,607 individuals. PLoS One. 2020;15:e0238020.
59 Hagen T, Thompson MP, Williams J. Religiosity reduces sexual aggression and coercion in a longitudinal cohort of college men: mediating roles of peer norms, promiscuity, and pornography. J Sci Study Relig. 2018;57:95-108.
60 Hardy SA, Walker LJ, Rackham DD, Olsen JA. Religiosity and adolescent empathy and aggression: the mediating role of moral identity. Psycholog Relig Spiritual. 2012;4:237-48.
61 Hemphill SA, Heerde JA, Scholes-Balog KE. Risk factors and risk-based protective factors for violent offending: a study of young victorians. J Crim Justice. 2016;45:94-100.
62 Holmes KJ, Lochman JE. The role of religiosity in African American preadolescent aggression. J Black Psychol. 2012;38:497-508.
63 Itani T, Fischer F, Chu JJ, Kraemer A. The prevalence of violent behavior among Lebanese university students: association with behavioral and mental health factors. Am J Health Behav. 2017; 41:693-700.
64 Johnson MC, Morris RG. The moderating effects of religiosity on the relationship between stressful life events and delinquent behavior J Crim Justice. 2008;36:486-93.
65 Karimi J, Mohammadi M. The relationship between spiritual intelligence and aggression among elite wrestlers in Hamadan province of IRAN. J Relig Health. 2020;59:614-22.
66 Karriker-Jaffe KJ, Foshee VA, Ennett ST. Examining how neighborhood disadvantage influences trajectories of adolescent violence: a look at social bonding and psychological distress. J Sch Health. 2011;81:764-73.
67 Katerndahl DA, Obregon ML. An exploration of the spiritual and psychosocial variables associated with husband-to-wife abuse and its effect on women in abusive relationships. Int J Psychiatry Med. 2007;37:113-28.
68 Kingree JB, Thompson M, Ruetz E. Heavy episodic drinking and sexual aggression among male college students: the protective influence of church attendance. J Interpers Violence. 2017;32:604-20.
69 Leach MM, Berman ME, Eubanks L. Religious activities, religious orientation, and aggressive behavior. J Sci Study Relig. 2008;47: 311-9.
70 Linville DC, Huebner AJ. The analysis of extracurricular activities and their relationship to youth violence. J Youth Adolesc. 2005;34:483-92.
71 Lynch KR, Renzetti CM. Alcohol use, hostile sexism, and religious self-regulation: investigating risk and protective factors of IPV perpetration. J Interpers Violence. 2017;35:3237-63.
72 Massarwi AA, Khoury-Kassabri M, Eseed R. The correlation between delinquent peers and perpetration of serious physical violence: religiosity as a protective factor. Child Indic Res. 2019;12: 2051-65.
73 Michaelson V, Donnelly P, Morrow W, King N, Craig W, Pickett W. Violence, adolescence, and Canadian religious communities: a quantitative study. J Interpers Violence. 2021;36:3613-37.
74 Murshid NS, Murshid N. Intergenerational transmission of marital violence: results from a nationally representative sample of men. J Interpers Violence. 2018;33:211-27.
75 Padilla-Walker LM, Bean RA, Hsieh AL. The role of parenting and personal characteristics on deviant peer association among European American and Latino adolescents. Child Youth Serv Rev. 2011;33:2034-42.
76 Park S, Morash M, Stevens T. Gender differences in predictors of assaultive behavior in late adolescence. Youth Violence Juv Justice. 2010;8:314-31.
77 Peek CW, Curry EW, Chalfant HP. Religiosity and delinquency over time - deviance deterrence and deviance amplification. Soc Sci Q. 1985;66:120-31.
78 Peek CW, Fischer JL, Kidwell JS. Teenage violence toward parents - a neglected dimension of family violence. J Marriage Fam. 1985;47:1051-8.
79 Pickering LE, Vazsonyi AT. Does family process mediate the effect of religiosity on adolescent deviance? Revisiting the Notion of Spuriousness. Crim Justice Behav. 2010;37:97-118.
80 Pitel L, Madarasova Geckova A, Kolarcik P, Halama P, Reijneveld SA, van Dijk JP. Gender differences in the relationship between religiosity and health-related behaviour among adolescents. J Epidemiol Community Health. 2012;66:1122-8.
81 Pournaghash-Tehrani S, Ehsan HB, Gholami S. Assessment of the role of religious tendency in domestic violence. Psychol Rep. 2009; 105:675-84.
82 Powell KB. Correlates of violent and nonviolent behavior among vulnerable inner-city youths. Fam Community Health. 1997;20:38-47.
83 Purwono U, French DC, Eisenberg N, Christ S. Religiosity and effortful control as predictors of antisocial behavior in Muslim Indonesian adolescents: moderation and mediation models. Psycholog Relig Spiritual. 2019;11:55-64.
84 René DD, Duane CM, Allen K, Baltzar A, McCoy CB. Protective effects of religion: drug use, HIV risk, and violence research in support of current health policy initiatives. J Addict Nurs. 2001;13: 83-93.
85 Resnick MD, Ireland M, Borowsky I. Youth violence perpetration: what protects? What predicts? Findings from the National Longitudinal Study of Adolescent Health. J Adolesc Health. 2004;35:424. e1-10.
86 Sadeghifard YZ, Veisani Y, Mohamadian F, Azizifar A, Naghipour S, Aibod S. Relationship between aggression and individual resilience with the mediating role of spirituality in academic students - a path analysis. J Educ Health Promot. 2020;9:2-2.
87 Salas-Wright CP, Olate R, Vaughn MG, Tran TV. Direct and mediated associations between religious coping, spirituality, and youth violence in El Salvador. Rev Panam Salud Publica. 2013;34:183-9.
88 Salas-Wright CP, Tirmazi T, Lombe M, Nebbitt VE. Religiosity and antisocial behavior: evidence from young African American women in public housing communities. Soc Work Res. 2015;39:82-93.
89 Salas-Wright CP, Lombe M, Nebbitt VE, Saltzman LY, Tirmazi T. Self-efficacy, religiosity, and crime: profiles of African American youth in urban housing communities. Vict Offender. 2018;13:84-101.
90 Schuster I, Krahé B. Predictors of sexual aggression perpetration among male and female college students: cross-cultural evidence from Chile and Turkey. Sex Abuse. 2019;31:318-43.
91 Sealock MD, Manasse M. An uneven playing field: the impact of strain and coping skills on treatment outcomes for juvenile offenders. J Crim Justice. 2012;40:238-48.
92 Shepperd JA, Miller WA, Smith CT. Religiousness and aggression in adolescents: the mediating roles of self-control and compassion. Aggress Behav. 2015;41:608-21.
93 Sinha JW, Cnaan RA, Gelles RJ. Adolescent risk behaviors and religion: findings from a national study. J Adolesc. 2007;30:231-49.
94 Sloane DM, Potvin RH. Religion and delinquency: cutting through the maze. Soc Forces. 1986;65:87-105.
95 Solinas-Saunders M, Stacer MJ. Prison resources and physical/verbal assault in prison: a comparison of male and female inmates. Vict Offender. 2012;7:279-311.
96 Stevens DL, Hardy SA. Individual, family, and peer predictors of violence among Samoan adolescents. Youth Soc. 2011;45:428-49.
97 Todhunter RG, Deaton J. The relationship between religious and spiritual factors and the perpetration of intimate personal violence. J Fam Violence. 2010;25:745-53.
98 Tomaszewska P, Krahé B. Predictors of sexual aggression victimization and perpetration among Polish university students: a longitudinal study. Arch Sex Behav. 2018;47:493-505.

99 Tyler KA, Kort-Butler LA, Swendener A. The effect of victimization, mental health, and protective factors on crime and illicit drug use among homeless young adults. Violence Vict. 2014;29:348-62.
100 Tzamalouka GS, Parlalis SK, Soultatou P, Papadakaki M, Chliaoutakis JE. Applying the concept of lifestyle in association with aggression and violence in Greek cohabitating couples. Aggress Behav. 2007;33:73-85.
101 Velazquez HA, Pedroza F, Chaine SM, Chaparro A, Torres NB. Risk and proactive factors for aggresive behavior, and its generalization in a sample of Mexican school children. Salud Ment. 2002;25:27-40.
102 Weber D, Robinson Kurpius S. The importance of self-beliefs on relational aggression of college students. J Interpers Violence. 2011;26:2735-43.
103 Wolf JP, Kepple NJ. Individual- and county-level religious participation, corporal punishment, and physical abuse of children: an exploratory study. J Interpers Violence. 2019;34:3983-94.
104 Yun I, Lee J. The relationship between religiosity and deviance among adolescents in a religiously pluralistic society. Int J Offender Ther Comp Criminol. 2017;61:1739-59.
105 Torgler B. To evade taxes or not to evade: that is the question. J Socio Econ. 2003;32:283-302.
106 Khalil S, Sidani Y. The influence of religiosity on tax evasion attitudes in Lebanon. J Int Accounting Audit Tax. 2020;40:100335.
107 Benk S, Budak T, Yüzbaşi B, Mohdali R. The impact of religiosity on tax compliance among Turkish self-employed taxpayers. Religions. 2016;7:1.
108 Fisher BS, Daigle LE, Cullen FT, Turner MG. Reporting sexual victimization to the police and others: results from a national-level study of college women. Crim Justice Behav. 2003;30:6-38.
109 Charles SJ, van Mulukom V, Farias M, Brown J, Delmonte R, Maraldi EO, et al. Religious rituals increase social bonding and pain threshold. PsyArXiv. 2020. [Epub ahead of print]. doi: 10.31234/osf.io/my4hs
110 Norenzayan A, Shariff AF, Gervais WM, Willard AK, McNamara RA, Slingerland E, et al. The cultural evolution of prosocial religions. Behav Brain Sci. 2016;39:e1.
111 Global Burden of Disease Study 2013 Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015;386:743-800.
112 Wolf A, Gray R, Fazel S. Violence as a public health problem: an ecological study of 169 countries. Soc Sci Med. 2014;104:220-7.
113 Fernández M. Cultural beliefs and domestic violence. Ann N Y Acad Sci. 2006;1087:250-60.
114 Schneider RZ, Feltey KM. 'No matter what has been done wrong can always be redone right': spirituality in the lives of imprisoned battered women. Violence Against Women. 2009;15:443-59.
115 Hajjar L. Religion, state power, and domestic violence in Muslim societies: a framework for comparative analysis. Law Soc Inq. 2004;29:1-38.
116 Westenberg L. 'When she calls for help'—domestic violence in Christian families. Soc Sci. 2017;6:71.
117 Zust BL, Flicek Opdahl B, Moses KS, Schubert CN, Timmerman J. 10-year study of Christian church support for domestic violence victims: 2005-2015. J Interpers Violence. 2021;36:2959-85.
118 Ellison CG, Bradshaw M. Religious beliefs, sociopolitical ideology, and attitudes toward corporal punishment. J Fam Issues. 2008;30:320-40.
119 Chapman A, Monk C. Domestic violence awareness. Am J Psychiatry. 2015;172:944-5.
120 Francis B, Gill JS, Han NY, Petrus CF, Azhar FL, Ahmad Sabki Z, et al. Religious coping, religiosity, depression and anxiety among medical students in a multi-religious setting. Int J Environ Res Public Health. 2019;16:259.
121 Parenteau SC. Religious coping and substance use: the moderating role of sex. J Relig Health. 2017;56:380-7.
122 Dahlberg L, Toal S, Swahn M, Behrens C. Measuring violence-related attitudes, behaviors, and influences among youths: a compendium of assessment tools. 2nd ed. Atlanta: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2005.
123 Singh JP, Grann M, Fazel S. A comparative study of violence risk assessment tools: a systematic review and metaregression analysis of 68 studies involving 25,980 participants. Clin Psychol Rev. 2011;31:499-513.
124 Lucchetti G, Lucchetti ALG, Vallada H. Measuring spirituality and religiosity in clinical research: a systematic review of instruments available in the Portuguese language. Sao Paulo Med J. 2013;131:112-22.
125 Vandenbroucke JP, von Elm E, Altman DG, Gøtzsche PC, Mulrow CD, Pocock SJ, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. PLoS Med. 2007;4:e297.
126 Best M, Butow P, Olver I. Doctors discussing religion and spirituality: a systematic literature review. Palliat Med. 2016;30:327-37.
127 Menegatti-Chequini MC, Gonçalves JPB, Leão FC, Peres MFP, Vallada H. A preliminary survey on the religious profile of Brazilian psychiatrists and their approach to patients' religiosity in clinical practice. BJPsych Open. 2016;2:346-52.
128 Lucchetti G, Ramakrishnan P, Karimah A, Oliveira GR, Dias A, Rane A, et al. Spirituality, religiosity, and health: a comparison of physicians' attitudes in Brazil, India, and Indonesia. Int J Behav Med. 2016;23:63-70.
129 Chida Y, Steptoe A, Powell LH. Religiosity/spirituality and mortality. A systematic quantitative review. Psychother Psychosom. 2009;78:81-90.
130 Koenig HG. STUDENTJAMA. Taking a spiritual history. JAMA. 2004;291:2881.
131 Puchalski C, Romer AL. Taking a spiritual history allows clinicians to understand patients more fully. J Palliat Med. 2000;3:129-37.
132 Kim-Spoon J, Longo GS, McCullough ME. Adolescents who are less religious than their parents are at risk for externalizing and internalizing symptoms: the mediating role of parent-adolescent relationship quality. J Fam Psychol. 2012;26:636-41.
133 Petts RJ, Knoester C. Parents' religious heterogamy and children's well-being. J Sci Study Relig. 2007;46:373-89.
134 Bartkowski JP, Xu X, Levin ML. Religion and child development: evidence from the early childhood longitudinal study. Soc Sci Res. 2008;37:18-36.
135 Duwe G, Hallett M, Hays J, Jang SJ, Johnson BR. Bible college participation and prison misconduct: a preliminary analysis. J Offender Rehabil. 2015;54:371-90.
136 Giordano PC, Longmore MA, Schroeder RD, Seffrin PM. A life-course perspective on spirituality and desistance from crime. Criminology. 2008;46:99-132.
137 Hillbrand M, Young JL. Instilling hope into forensic treatment: the antidote to despair and desperation. J Am Acad Psychiatry Law. 2008;36:90-4.
138 Vandenbroucke JP, von Elm E, Altman DG, Gøtzsche PC, Mulrow CD, Pocock SJ, et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. Int J Surg. 2014;12:1500-24.
139 Puchala C, Paul S, Kennedy C, Mehl-Madrona L. Using traditional spirituality to reduce domestic violence within aboriginal communities. J Altern Complement Med. 2010;16:89-96.
140 Duwe G, King M. Can faith-based correctional programs work? An outcome evaluation of the innerchange freedom initiative in Minnesota. Int J Offender Ther Comp Criminol. 2013;57:813-41.