

The relationship between parental religiosity and mental health of pre-adolescents in a community sample: the TRAILS study

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Abstract The purpose of this study is to examine the relationship between parental religiosity, parental harmony on the subject of religiosity, and the mental health of pre-adolescents. In a community-based sample of 2,230 pre-adolescents (10–12 years), mental health problems were assessed using self-report (Youth Self-Report, YSR), parental report (Child Behavior Checklist, CBCL) as well as teacher report (Teacher Checklist for Psychopathology, TCP). Information about the religiosity of mother, the religiosity of father and religious

harmony between the parents was obtained by parent report. The influence of maternal religiosity on internalizing symptoms depended on the religious harmony between parents. This was particularly apparent on the CBCL. Higher levels of internalizing symptoms were associated with parental religious disharmony when combined with passive maternal religiosity. Boys scored themselves as having more externalizing symptoms in case of religiously disharmonious parents. The levels of internalizing and externalizing symptoms in pre-adolescents were not influenced by parental religiosity. Religious disharmony between parents is a risk factor for internalizing problems when the mother is passive religious. Religious disharmony is a risk factor on its own for externalizing problems amongst boys. Parental religious activity and parental harmony play a role in the mental health of pre-adolescents.

The terms ‘religion’ and ‘religiosity’ are used interchangeably.

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Abbreviations

GLM	Generalized linear model
TRAILS	TRacking Adolescents’ Individual Lives Survey
CBCL	Child behavior checklist
YSR	Youth self report
TCP	Teacher’s checklist of psychopathology

Introduction

Religiosity is an important aspect of many individuals’ lives, providing answers to fundamental questions relating

to the meaning of life. By shaping fundamental beliefs and behaviors, religiosity may influence the mental health of individuals. The fourth edition of the Diagnostic and Statistical Manual of Mental Disorders in 1994 introduced a new category because of this, namely V62.89 ‘religious or spiritual problem’ [1]. Throughout the child’s development, the religiosity of the parents is also of importance. Parental religiosity and religious identity serve as important early resources upon which children draw when forming their own religious identity, developing their religious beliefs, and shaping their behaviors.

Few studies have examined the relationship between religiosity and mental health in children prior to adolescence. In a study among more than 2,500 11-year-old pre-adolescents from the two main Christian denominations in West Scotland, the relationship between church attendance and mental health was analyzed [2]. Mental health questions were answered by children, parents, and teachers. Levels of church-attendance were low among those affiliated with the Church of Scotland and relatively high among Catholics. Aggression was found to be less prevalent among weekly attendees of both denominations. Weekly church attendance was associated with better self-esteem, less anxiety and less depression for Catholics and with less self-esteem, more anxiety, and more depression for children with a Church of Scotland affiliation. The only mental health measure to show a similar relationship with church attendance in both denominations was aggression, which was less prevalent among weekly attendees. In addition, aggression was consistently scored by children, parents, and teachers. However, the results on depression showed a lack of parental awareness of depression in their children. It is suggested that the key issue for these results could be whether church attendance is normative within the peer group, as it is for Catholics in this context. Over three-quarters of the studies on the relationship between religion and mental health of adolescents and adults report modest positive effects of religion [3–7]. In contrast, a minority of studies report a negative relationship between religion and mental health. These conflicting results might have been caused by differences in populations studied or differences in defining and measuring religiosity and mental health. No longitudinal studies on the relationship between religion and mental health have been found, which implicates that causality as well as selection could be the underlying mechanism for the associations found between religion and mental health.

Greater parental religiosity also influences general indices of family functioning, and has been related to more cohesive family relationships, greater parenting skills, lower interparental conflicts, and fewer externalizing and internalizing problems among adolescents [8]. Another study suggests that religiosity facilitates family cohesiveness when it is shared among family members. However, if religiosity is not

shared, this disharmony may result in higher levels of adolescent delinquent behaviors [9]. On its own, family discord is a risk factor for various mental health problems like major depressive disorder, substance abuse, and conduct disorders [10–12]. Research involving adolescents indicates that parental religiosity protects girls considerably better than boys against delinquency. The protective effect concerning delinquency tends to diminish as the discord between parents regarding religion increases [13].

Research in pre-adolescents is complicated by the fact that they start to internalize parental standards, like religious beliefs. This process of internalizing religious beliefs is known to be accompanied by a constructive phase of doubt, the so-called ‘quest’ phase [14], which might be accompanied by some anxiety and conflict [15]. In general, as is known for physical maturation, boys also show a slower moral maturation than girls. Religious parents may, thus, meet resistance from boys at an older age [13]. When dealing with healthy religious development, the proportion of internalized religious beliefs increases along with the development of an authentic personality. This leads to the integration of religion in the person’s life and vice versa [16]. The likelihood of a positive transmission of the parents’ religion to their children increases when the parents are actively religious [17, 18] and when parents agree on the subject of religion. In this way, the children do not receive mixed messages about the role of religion in life [19].

The mechanisms by which parents’ religion affects mental health have not yet been conclusively identified. Several possibilities have been suggested [20, 21]. Religion could influence how individuals evaluate occurring life-events and stress, provide meaning, and determine a sense of responsibility and efficacy. Further, religion may entail religious coping skills and hence have a buffering effect on life stress. Next, religion mostly includes prescriptions for a healthy lifestyle, and the embedment in a religious community provides for social support and various psychosocial resources.

This study was designed to extend our knowledge about the role of religion in pre-adolescents and examine main and interactive effects of the religiosity of mother and parental harmony on the subject of religion on mental health problems of pre-adolescents. Since prior work on the relationship between religion and mental health in adolescents and adults led to mixed findings, we did not hypothesize a direction of the effect of maternal religiosity, but hypothesized that religious disharmony would be related to increased levels of problem behaviors. Finally, we hypothesized that the effects of religiosity and religious harmony would differ for internalizing and externalizing behavior problems, and that this difference would vary across gender.

Methods

Study design

The Tracking Adolescents' Individual Lives Survey (TRAILS) is a prospective cohort study of Dutch pre-adolescents (age 10–12 years). The key objective of TRAILS is to chart and explain the development of mental health from preadolescence into adulthood, both at the level of psychopathology and at the levels of underlying vulnerability and environmental risks. As the incidence of emotional and behavioral problems increases substantially in adolescence, pre-adolescents are monitored until the age of 24 using biennial assessments. This report is based on data collected during the first wave of measurements, which ran from March 2001 until July 2002. The survey was approved by the national ethical committee 'Centrale Commissie Mensgebonden Onderzoek'. Informed consent was obtained from all parents after the nature of the study had been fully explained. Children were excluded from the study if they were incapable to participate due to mental retardation or a serious physical illness or handicap; or if no Dutch-speaking parent or parent surrogate was available, and it was not feasible to administer part of the measurements in the parent's language. Of all children approached for enrollment in the study (i.e., selected by the municipalities and attending a school that was willing to participate, $n = 3,145$), 6.7% were excluded because incapability or language problems. A detailed description of the sampling procedure and method is provided in de Winter et al. [19]. In total, 2,230 children (mean age = 11.09, $SD = 0.55$, 50.8% girls) were enrolled in the study (i.e. both child and parent agreed to participate). When looking into the groups of responders and non-responders, it was discovered that they did not differ with respect to gender, parental education, proportion of single-parent families, teacher-rated behavioral problems, or school absence. However, children in the non-response group did need additional help for learning difficulties more frequently [22].

Data collection

Well-trained interviewers visited one of the parents or guardians (mothers, 95.6%) at their homes to administer an interview. They were asked to fill out a questionnaire. Children were measured at school. There they filled out questionnaires, in groups, under the supervision of one or more TRAILS assistants. Further, they were assessed individually. Teachers were asked to fill out a brief questionnaire for all participating TRAILS-children in their class. Measures used in the present study are described in more detail below.

Child mental health

To assess the child's mental health three measures were used: the parent-rated Child Behavior Checklist (CBCL) [23], the Youth Self-Report (YSR) [24] and the Teacher checklist of Psychopathology (TCP). The TCP is developed by the TRAILS team and contains nine descriptions of behaviors, based on the Teacher's Report Form [25]. Response options for each description on the checklist range from 0 = not applicable to 4 = very clearly or frequently applicable. The 'socioeconomic status' variable (SES) was also addressed in TRAILS and is applied in this study as covariate. This item was measured as the average of five items: income level, educational level of both the father and the mother, and occupational level of each parent. The lowest 25% of scores were considered as 'low SES', the highest 25% as 'high SES', and the rest was labeled as 'middle SES'. The internal consistency of these variables is satisfactory (Cronbach's alpha 0.84).

Religion

In TRAILS, three descriptive questions regarding religion were answered by the mother about herself and her husband. The first question was if the mother considered herself as a religious person, the second if she was affiliated with a church or denomination, and the third question was about church attendance. On the base of this information, three variables were constructed: religiosity of the mother, religiosity of the father and parental harmony on the subject of religion. After dichotomizing the three questions to 'yes'/'no' answers, parents were assigned to the category 'no religiosity' (no 'yes' answers), 'passive religiosity' [first and second question answered with 'yes', third question answered with '(almost) never'] and 'active religiosity' (first and second question answered with 'yes', third question answered with 'monthly' or more). Only in case of three missing values, 'religiosity mother' or 'religiosity father' was considered as missing. The variable 'religious harmony' was constructed by comparing the 'religiosity mother' variable with the 'religiosity father' variable, whereas totally similar categorization was considered as parental harmony, leaving all other options as parental disharmony.

Data analysis

The data were analyzed by four multivariate analyses of covariance (MANCOVA's, using the Generalized Linear Model module of SPSS, version 12.0), two with internalizing problem behavior (one for 'religiosity mother', one for 'religiosity father') and two with externalizing problem behavior as dependent variable (one for 'religiosity

mother', one for 'religiosity father'). 'Between-subject factors were 'religiosity mother' (3 levels), 'religiosity father' (3 levels), 'religious harmony' (2 levels) and 'gender' (2 levels). 'Within-subject factors were rater (3 levels: self-report, YSR; parent-report, CBCL and teacher-report, TCP) and scale, with 3 levels for internalizing problem behavior (subscales: 'anxious/depressed', 'withdrawn/depressed' and 'somatic complaints') and 2 levels for externalizing problem behavior (subscales: 'aggression' and 'delinquency'). Socioeconomic status (SES) and parental divorce were included as covariates. Results were considered to be significant when $P < 0.05$. 44 cases were excluded from the analyses as they responded without information on religiosity.

Results

Descriptives of the dependent and independent variables are given in Tables 1 and 2. Scores on internalizing and externalizing problem behavior are reported as mean item values. Active maternal religiosity was present in 21.7% of the sample. In the vast majority of the families (84.2%) there appeared to be religious harmony (Table 3).

Internalizing problem behavior

The MANCOVA analysis with religiosity mother, religious harmony and gender as between-subject factors, and rater and scale as within-subject factors aggregated over all

Table 1 Descriptives of the independent variables

Independent variables	%
Religiosity mother	
Not religious	51.6
Passive religious	26.6
Actively religious	21.7
Religiosity father	
Not religious	56.4
Passive religious	22.1
Actively religious	21.5
Religious harmony	
Disharmonious	15.8
Gender	
Boys	49.0
Divorce	
Divorce of parents	19.2
SES	
Low SES	25.3
Middle SES	49.5
High SES	25.2

Table 2 Descriptives of the dependent variables

Dependent variables	Mean	SD
YSR		
Withdrawn/depressed	0.34	0.29
Physical complaints	0.43	0.31
Anxious/depressed	0.33	0.27
Aggressive	0.33	0.24
Delinquent	0.33	0.17
CBCL		
Withdrawn/depressed	0.25	0.27
Physical complaints	0.20	0.21
Anxious/depressed	0.28	0.25
Aggressive	0.35	0.29
Delinquent	0.13	0.13
TCP		
Withdrawn/depressed	0.71	0.99
Physical complaints	0.57	0.86
Anxious/depressed	0.69	0.95
Aggressive	0.61	0.98
Delinquent	0.26	0.70

Table 3 Descriptives of dependent variables by independent variables

Independent variables	Dependent variables	Mean	SD
Religiosity mother	YSR internalizing	0.29	0.22
	YSR externalizing	0.21	0.17
	CBCL internalizing	0.20	0.17
	CBCL externalizing	0.18	0.17
	TCP internalizing	0.51	0.66
	TCP externalizing	0.33	0.63
Religiosity father	YSR internalizing	0.28	0.20
	YSR externalizing	0.20	0.16
	CBCL internalizing	0.17	0.15
Religious harmony	CBCL externalizing	0.17	0.16
	TCP internalizing	0.45	0.61
	TCP externalizing	0.28	0.53
	YSR internalizing	0.36	0.24
	YSR externalizing	0.27	0.19
	CBCL internalizing	0.23	0.19
Religious harmony	CBCL externalizing	0.23	0.20
	TCP internalizing	0.63	0.73
	TCP externalizing	0.40	0.73

raters and all subscales showed a marginally significant interaction effect of religiosity mother by harmony [$F(2,1476) = 3.000, P = 0.050$].

Since there were no interaction effects of the between-subject and within-subject factors, post hoc analyses were performed on internalizing symptoms aggregated over all

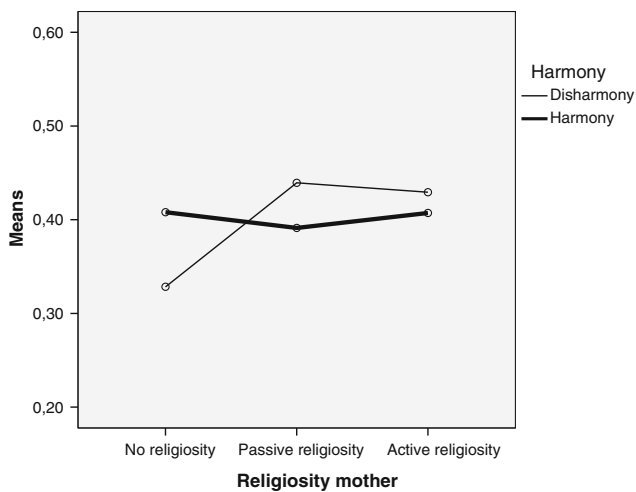


Fig. 1 Estimated marginal means of internalizing symptoms

raters and all subscales. Basically, the interaction effect of the between-subject factors indicate that the influence of maternal religiosity was dependent on the presence or absence of religious harmony. This complex effect is illustrated in Fig. 1 for internalizing symptoms aggregated over all raters and all scales.

As shown in Fig. 1, the level of internalizing problem behavior was not significantly influenced by maternal religiosity, as long as parents are mostly in harmony on the subject of religion. However, when parents disagreed on the subject of religion, passive maternal religiosity was associated with significantly higher levels of internalizing problem behavior when compared with ‘no maternal religiosity’ [$F(1,183) = 3.987, P = 0.047$], while active maternal religiosity was not associated with significantly higher levels of internalizing problem behavior when compared with ‘no maternal religiosity’ [$F(1,101) = 2.454, P = 0.120$]. When comparing harmonious and disharmonious parents, no significance was shown in case the mother was not religious [$F(1,745) = 3.406, P = 0.065$], passive religious [$F(1,214) = 0.082, P = 0.774$] or active religious [$F(1,145) = 2.883, P = 0.092$].

In a next set of post hoc analyses, we attempted to further characterize the interaction effects of religiosity mother by religious harmony in terms of rater and subscale. The YSR and TCP did not show any significant results of internalizing problem behavior. There was a significant effect of religiosity mother on the CBCL [$F(6,3462) = 2.218, P = 0.039$], reflecting higher internalizing problem scores in case of passive or active maternal religiosity compared to no maternal religiosity. The CBCL showed also a religiosity mother by harmony interaction effect [$F(6,3462) = 2.275, P = 0.034$]. The scale ‘withdrawn/depressed’ showed a religiosity mother by harmony interaction effect [$F(2,1752) = 5.272,$

$P = 0.005$], while the scale ‘anxious/depressed’ showed a religiosity mother effect [$F(2,1753) = 3.277, P = 0.038$], reflecting higher scores on the scale ‘anxious/depressed’ in case of passive or active religiosity. There was no main effect of religious harmony ($P > 0.05$).

The MANCOVA analysis with religiosity father, religious harmony and gender as between-subject factors, and rater and scale as within-subject factors aggregated over all raters and all subscales showed neither significant interaction effects, nor significant main effects.

In summary, the influence of maternal religiosity was dependent on the presence or absence of religious harmony. Internalizing symptoms increased significantly when parents disagreed on religion in combination with passive religious mothers when compared to not religious mothers. This effect was only found on the CBCL, and more specifically on the subscales withdrawn/depressed and anxious/depressed. Paternal religiosity had no significant effects on the level of internalizing symptoms in pre-adolescents.

Externalizing problem behavior

The MANCOVA analysis with religiosity mother, religious harmony and gender as between-subject factors, and rater and scale as within-subject factor did not show any significant interaction effect. There was a main effect of gender [$F(1,1495) = 111.251, P < 0.001$] with boys having overall more externalizing problem behaviors than girls. There were several interaction effects of between-subject and within-subject factors, indicating that the effects of the between-subject factors were specific to certain raters and/or subscales of externalizing problems. We found a harmony by scale effect [$F(1,1495) = 5.297, P = 0.021$], a harmony by rater by scale effect [$F(2,1494) = 3.186, P = 0.042$], and a maternal religiosity by rater by scale [$F(4,2990) = 2.995, P = 0.018$]. Further post hoc analyses were performed to localize these interaction effects of harmony. Analyses on the YSR showed a main gender effect [$F(1,1809) = 60.622, P < 0.001$]. However, when testing boys separately, a significant main harmony effect was established [$F(1,885) = 6.899, P = 0.00$] showing less externalizing symptoms in case of religious harmony, whereas analyses of the girls’ scores did not show significant effects. This harmony effect for boys was significant on both subscales aggression and delinquency (respectively, $F(1,890) = 6.049, P = 0.014$ and $F(1,890) = 5.611, P = 0.018$). Analyses on the CBCL and TCP did not show any significant results.

The MANCOVA analysis with religiosity father, religious harmony and gender as between-subject factors, and rater and scale as within-subject factor did not show a significant interaction effect. There was a main effect of

gender [$F(1,1495) = 112.134, P < 0.001$] with boys having overall more externalizing problem behaviors than girls. There were several interaction effects of between-subject and within-subject factors, indicating that the effects of the between-subject factors were specific to certain raters and/or subscales of externalizing problems. We found a religiosity father by scale effect [$F(2,1495) = 3.239, P = 0.039$] and a religiosity father by rater by scale effect [$F(4,2990) = 2.990, P = 0.018$]. Further post hoc analyses were performed to localize the religiosity father by scale interaction effect. However, no significant results were reached at the YSR, CBCL, and TCP. In summary, boys reported less externalizing symptoms on the YSR in case of religious harmonious parents. Paternal religiosity had no significant effects on the level of internalizing symptoms in pre-adolescents.

Discussion

In this paper, the relationship between the religiosity of parents, religious harmony, and mental health problems among pre-adolescents has been examined.

First, we hypothesized that religious disharmony would be related to increased levels of problem behavior. These data showed that the influence of maternal religiosity on internalizing symptoms was dependent on the presence or absence of religious harmony, and this was particularly apparent on the CBCL. Internalizing symptoms increased significantly when parents disagreed on religion in combination with passive religious mothers, compared to nonreligious mothers. Boys reported more externalizing symptoms on the YSR in case of religious disharmonious parents. Religiosity of father did not influence the level of internalizing and externalizing symptoms. These findings are in line with our hypothesis.

Second, we hypothesized that effects of religiosity and religious harmony might differ for internalizing and externalizing behavior problems, and might differ for boys and girls. Effects of religiosity and religious harmony did differ for internalizing and externalizing behavior problems, in terms of main effects and interactions effects, as well as in gender and rater. Our data showed also that effects of religiosity and religious harmony were gender specific in case of externalizing behavior problems, but not in internalizing behavior problems. Our second hypothesis was confirmed because of these results.

We will now discuss these results more in detail in the following sections: differences in effects of maternal and paternal religiosity as well as religious harmony, gender effects and rater effects (respectively, on the YSR, CBCL, and TCP).

Considering the differences in effect of maternal and paternal religiosity as well as religious harmony, both internalizing and externalizing symptoms were influenced by religious harmony. Only in case of internalizing symptoms, passive religiosity of mother played a role, while religiosity of father did not play a role at all. Literature indicates that it is of importance which parent is active or passive religious in adolescent's religiosity [18]. Concerning the role of passive religious mothers in the mental health of pre-adolescents in this study, one could say that passive religiosity is associated with a less clear religious orientation and less religious commitment. By consequence, children could be left with confusion on the matter of religion, which could result in more internalizing problem behavior. It could be that the pre-adolescents of the passive religious mothers have difficulty in finding a role model to identify with on the subject of religion. This corresponds with the developmental stage of pre-adolescents. At the age of 10–12 years, pre-adolescents are expected to be mostly dependent on the religious context of the parents, while they start with developing their own opinions and choosing their own ways. On the subject of religiosity, this development could play a role, for example in thinking about existential questions and in asking questions about religion. This beginning of the 'quest' phase might be accompanied by some anxiety and conflict [15]. In this sample, pre-adolescents of passive religious mothers and of parents who disagree on the subject of religion, could have some extra difficulties because of the combination of a less clear religious orientation, possibly accompanied with confusing messages about the role of religion in life. Seen in this way, the pre-adolescents of this sample, in their specific age-related development, are more vulnerable to internalizing problem behavior because of some instability in their religious context. When parents are disharmonious on the subject of religion, this could—on its own—be a source of conflict and uncertainty, generating mental health problems [3, 4, 8].

Gender effects were only reported on externalizing problem behavior, and only in relation to religious harmony of the parents. Our data showed that boys scored themselves as having more externalizing symptoms in case of religious disharmony. Regnerus [13] showed that religious disharmony between parents eliminates most of the protective effect of religiosity of parents on delinquent behavior in adolescents.

Finally, different rater effects are being reported in this study. Boys reported themselves as having more externalizing symptoms in case of religious disharmony of their parents (YSR), while mothers reported more internalizing symptoms in case of the combination of passive religiosity of the mother and religious disharmony (CBCL). Abbotts et al. [2] also reported different rater effects (children,

parents and teachers). They found quite consistent results concerning children, parents and teachers in scoring aggression, but a lack of parental awareness of depression in their children. This was not the case in our study, as the mothers scored more internalizing symptoms (especially depression). A possible explanation for this difference could be that the mothers of the study of Abbotts et al. [1] were weekly church attenders, while the mothers of our study were passive religious. This difference could reflect uncertainty in passive religious mothers, causing higher scores on internalizing behavior in their children.

We did not focus on the more general mechanisms in the domain of parenting and family functioning that may be involved in the associations between religiosity of parents and religious harmony and problem behaviors of their children. Religious attitudes and harmony may be correlated with proximal factors as parental personality characteristics, problem solving strategies, affective family climate, and family interactions that influence childrens' adaptation and level of functioning. These should be addressed in future studies.

This study has certain limitations. We could only use a global construct for religion. The 'religious harmony' variable is mainly based on the information provided by the mother. This could be the cause of some biases. All results displayed rather small effects, indicating that these effects only partly explain the observed variance. Although three covariates were included, more covariates and mediators concerning the religious context of pre-adolescents have yet to be investigated.

This study is unique compared to other studies because of the age of the participants as well as the fact that this study is based on a community-based sample. Religiosity of mother and harmony of parents on the subject of religiosity both turned out to influence internalizing problem behavior. Externalizing problem behavior was related to religious disharmony between parents. From these results, it becomes clear that religiosity is an important correlate in the mental health of pre-adolescents. Further research needs to be conducted to investigate the religious context of pre-adolescents and to chart confounders and mediators in the relationship between religion and mental health. Longitudinal research is necessary to investigate the developmentally direction of the relationship between religion and mental health.

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Conflict of interest None.

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