

# Religiosity and Depression: Ten-Year Follow-up of Depressed Mothers and Offspring

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## ABSTRACT

**Objective:** This study examines maternal religiosity as a protective factor against depression in offspring. **Method:** Sixty mothers and 151 offspring were independently assessed over the course of a 10-year follow-up. Maternal and offspring religiosity were assessed on the basis of self-report of the importance of religion, the frequency of attendance of religious services, and religious denomination. Depression was assessed using the Schedule for Affective Disorders-Lifetime version. Maternal bonding style was assessed through offspring report on the Parental Bonding Instrument. A series of logistic regressions were run to predict offspring depression status, taking into account maternal religiosity, offspring religiosity, and mother-offspring concordance of religiosity. **Results:** Maternal religiosity and mother-offspring concordance of religiosity were shown to be protective against offspring depression, independent of maternal parental bonding, maternal social functioning, and maternal demographics. **Conclusion:** Maternal religiosity and offspring concordance with it may protect against depression in offspring. *J. Am. Acad. Child Adolesc. Psychiatry*, 1997, 36(10):1416-1425. **Key Words:** religiosity, depression, mothers, offspring.

Data on the effects of maternal risk factors (such as maternal depression, maternal temperament, or parenting style) on offspring depression status are available (Hammen, 1992; Mufson et al., 1990; Parker, 1993; Weissman et al., in press). Studies, to our knowledge, have not looked at maternal religiosity (broadly defined in the literature to encompass those variables related to religious attendance or belief) as a protective factor against depression in offspring. This is somewhat surprising considering that several studies have found depressive symptoms to be inversely associated with religiosity in women (Atkinson and Malony, 1994;

Koenig, 1993). It would seem reasonable that maternal religiosity might protect against offspring depression. It also would seem reasonable that maternal religiosity might be associated with offspring religiosity and that mother-offspring concordance of religiosity might protect against depression in offspring.

We had a unique opportunity as part of Weissman's study of offspring at high and low risk for depression (Weissman et al., 1987, in press) to examine (1) whether religiosity is protective against prevalence of depression in mothers, (2) whether offspring religiosity is protective against prevalence of depression in offspring, (3) whether maternal religiosity is protective against prevalence of depression in offspring, and (4) whether mother-offspring concordance of religiosity is protective against prevalence of depression in offspring. In this study, offspring of depressed and nondepressed parents were followed for 10 years, during which time the offspring developed and were assessed for religiosity and frequency of depression. Using the 10-year follow-up data on offspring, we were able to assess offspring's depression status as an outcome of offspring religiosity, maternal religiosity, and mother-offspring concordance of religiosity. Because the relationship between

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religiosity and depression has been shown with greater consistency among women than among men (Koenig, 1992), we limit our analysis to mothers and offspring.

## METHOD

### Subjects

Subjects were mothers and offspring who participated in a 10-year follow-up study of offspring at high and low risk for depression. An extensive description of the sample has been published elsewhere (Weissman et al., in press). In 1982 (time 1), the original sample of 91 mothers and 220 offspring were asked to report on their religious denomination and were independently assessed for a lifetime history of major depressive disorder (MDD) using the Schedule for Affective Disorders and Schizophrenia-Lifetime version (SADS-L) (Endicott and Spitzer, 1978) and the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) (Orvaschel et al., 1982), respectively. In 1984 (time 2), the sample was reassessed using the same methods as at time 1. Ten years later (in 1992), of these subjects 73 mothers and 158 offspring were again independently assessed for depression using the SADS-LA (SADS-L modified for the study of anxiety disorders) (Mannuzza et al., 1986) and asked to report on the three questions on religiosity from the demographic section of the SADS-L. The SADS-L assesses religiosity based on (1) religious denomination, (2) frequency of attendance of religious services, and (3) the degree to which religion is considered to be important. Our analysis concerns the sample interviewed at all three points in time (i.e., time 1, 2, and 10), which includes 60 (82%) of 73 mothers and 151 (95%; 86 daughters and 65 sons) of their 158 offspring who reported on their religious denomination. Thirteen mothers and seven offspring were excluded from the analysis because they had not reported on their religious denomination.

There was no significant difference in the mean age of the 60 mothers included in this analysis compared with the mean age of the 13 mothers from the overall sample not included in this analysis. There was a higher lifetime rate of depression at time 1 among the 60 mothers included in this analysis (60%) compared with the 13 mothers excluded from this analysis (26%) ( $\chi^2 = 10.7$ ,  $df = 1$ ,  $p < .001$ ).

There were no significant differences in mean age or in lifetime rate of depression at time 1 between the 151 offspring included in this analysis and the 7 offspring from the overall sample not included in this analysis.

### Assessments

Maternal and offspring religiosity were measured through responses to three questions on religiosity from the SADS-L: (1) degree of importance (highly important/moderately important, slightly important, or not at all important) at time 10; (2) frequency of attendance at church, synagogue, or other religious service (at least once a month/less than once a month) at time 10; and (3) current religious denomination at time 1 and again at time 10. These three dimensions of religiosity and cutoff scores on each dimension are consistent with previous research on religiosity and depression (Koenig, 1992). We used maternal time 1 report of religious denomination for the benefit of a longitudinal design, but offspring time 10 report of religious denomination for an assessment of offspring religiosity at a time of greater maturity. Maternal and off-

spring reports on the three questions on religion were blindly and independently collected.

Time 1 maternal lifetime clinical status (MDD versus no MDD) was based on the SADS-L structured clinical interview (Endicott and Spitzer, 1978), which yielded Research Diagnostic Criteria diagnoses. Time 1 offspring lifetime clinical status (MDD versus no MDD) was based on the K-SADS structured clinical interview (Orvaschel et al., 1982), which yielded *DSM-III* diagnoses. Time 10 maternal and offspring clinical status was based on the SADS-LA semistructured clinical interview (Mannuzza et al., 1986), which yielded *DSM-III-R* diagnoses. Time 10 maternal and offspring diagnosis of MDD was based on the presence or absence of an episode of MDD between time 1 and time 10. Interviewer's assessment of offspring clinical status was blind and independent of interviewer's assessment of maternal clinical status.

Time 1 maternal social functioning was based on maternal report on the Social Adjustment Questionnaire (Weissman and Bothwell, 1976), which assesses social functioning on a 7-point scale (impairment  $> 2 \geq$  good functioning) in each of five domains: work, leisure, extended family, marital functioning, and parenting. Higher scores indicate impairment.

Maternal parenting was measured through offspring report on the Parental Bonding Instrument (Parker et al., 1979). The Parental Bonding Instrument measures parenting along two dimensions, caring and overprotection. Cutoff scores were based on previously established norms (Parker, 1984) (high maternal care  $> 27 \geq$  low maternal care; high maternal overprotection  $> 13.5 \geq$  low maternal overprotection). On the basis of these cutoff scores, the subject's report on his or her mother was placed in one of four quadrants.

Time 1 maternal socioeconomic status (SES) was based on maternal report and categorized according to the Hollingshead (1965) 5-point, 2-factor index which combines levels of education and occupation into a single score.

Time 1 assessment of maternal demographic variables includes her income, job status, educational status, ethnicity, number of children, and divorce status.

### Analysis

Analyses were first conducted to determine whether each of three measures of maternal religiosity was an independent protective factor (meaning negatively associated without implying causality) against prevalence of time 10 maternal depression (meaning the rate of mothers with at least one episode of MDD between time 1 and time 10). Odds ratios were calculated using logistic regression with time 10 maternal depression as the outcome variable and the three variables of maternal religiosity as the predictors. Separate models were initially constructed for each predictor variable. Subsequently, the full set of independent variables were simultaneously fit to a single model. The full model was then run, controlling for each of the maternal demographic variables and maternal social functioning variables found to be associated with maternal religiosity.

Logistic regression analyses were then conducted with (1) time 10 offspring depression as the outcome variable and the three measures of offspring religiosity as the predictors, and (2) time 10 offspring depression as the outcome variable and the three measures of maternal religiosity as the predictors, controlling for maternal bonding style, maternal social functioning, and maternal demographics.

The degree of concordance between maternal religiosity and offspring religiosity was analyzed using both logistic regression and Cohen's  $\kappa$ .

A variable of mother-offspring concordance for each of the three religiosity variables was constructed (1 = concordant, 0 = not concordant). For example, an offspring who reported being Catholic and whose mother reported being Catholic was given a score of 1 for mother-offspring concordance of religious denomination.

Logistic regression analyses were then repeated with time 10 offspring depression as the outcome variable and the three variables of mother-offspring concordance of religiosity as the predictors, controlling for maternal bonding style, maternal social functioning, and maternal demographics.

## RESULTS

Demographic characteristics of the 60 mothers and 151 offspring were assessed. Of the 60 mothers who at time 1 reported on religious denomination, the mean age at time 10 was 54.5 years, 85% of the mothers had graduated from high school, 53% were of higher SES (levels I, II, and III) as measured by the Hollingshead, 60% (36/60) of the mothers had a time 1 lifetime diagnosis of MDD, and 10% (6/60) were of Western European descent, 27% (17/60) were of Italian descent, and 63% (37/60) were of Eastern European descent. Twenty-three percent (14/60) of the mothers had had at least one episode of MDD between time 1 and time 10; for 86% (12/14) it was a recurrence and for 14% (2/14) it was an incidence (meaning a first episode).

Of the 151 offspring who at time 10 reported on religious denomination, the mean age at time 10 was 27.6 years and 54% of the offspring had graduated from high school. At time 1 43% (39/86) of the daughters and 28% (19/65) of the sons had a lifetime diagnosis of MDD. Thirty-one percent of the daughters (27/86) had had at least one episode of MDD between time 1 and time 10; for 59% (16/27) it was a recurrence and for

41% (11/27) it was an incidence. Eleven percent of the sons (7/65) had had at least one episode of MDD between time 1 and time 10; for 42% (3/7) it was a recurrence and for 58% (4/7) it was an incidence.

Overall 68% (41/60) of the mothers and 23% (35/151) of the offspring reported that religion was highly important at time 10. Overall 67% (40/60) of the mothers and 37% (60/151) of the offspring reported frequent attendance of religious services at time 10. Overall 70% (42/60) of mothers and 62% (92/151) of offspring reported being Catholic, 20% (12/60) of mothers and 18% (28/151) of offspring reported being Protestant, 7% (4/60) of mothers and 4% (6/151) of offspring reported being Jewish, and 3% (2/60) of mothers and 6% (11/151) of offspring reported being spiritual but not in affiliation with any denomination. Among offspring, 4% (6/151) reported being of other faiths and 5% (7/151) reported being agnostic.

The demographic characteristics of the 60 mothers by variables of religiosity are shown in Table 1. There were no significant associations between maternal SES, maternal income, maternal job status, or maternal educational level and any of the three religious variables. There was a statistically significant lower rate of divorce among mothers who frequently attended religious services and a statistically significant lower rate of poor social functioning among mothers who reported that religion was highly important. Among mothers, there was a statistically significant association between ethnicity and both religious importance ( $\chi^2 = 9.6$ ,  $df = 2$ ,  $p < .01$ ) and religious denomination ( $\chi^2 = 13.9$ ,  $df = 2$ ,  $p < .001$ ) such that compared with Eastern Europeans,

**TABLE 1**  
Demographic Characteristics of the Sample of Mothers ( $N=60$ ) by Variables of Maternal Religiosity

	Importance of Religion		Frequency of Attendance		Denomination	
	Highly ( $n = 41$ )	< Highly ( $n = 19$ )	> Monthly ( $n = 40$ )	< Monthly ( $n = 20$ )	Catholic ( $n = 42$ )	Protestant ( $n = 12$ )
Rate (%) of time 1 maternal MDD	59	58	60	60	62	58
Maternal higher SES (% levels I, II, & III)	46	53	47	45	42	58
Maternal income (% >\$20,000)	54	63	55	60	56	64
Maternal job status (% >clerical level)	19	15	15	25	20	16
Maternal education (% graduate high school)	83	90	87	80	82	88
Marital status (% divorced)	28	27	23	40*	23	24
Poor social functioning (%)	11	24*	15	15	14	12
No. of children	3.8	3.4	3.8	3.5	3.8	3.6

Note: SES = socioeconomic status.

\* $p < .05$ .

**TABLE 2**  
Odds Ratio of Time 10 Maternal MDD if Mother States Religion Is Highly Important, Frequently Attends Religious Ceremony, or Is Catholic Compared With Protestant, Controlling for Time 1 Maternal MDD

	Maternal MDD (Time 10)			Maternal MDD (Time 10)		
	OR	CI	$\chi^2$ <sup>a</sup>	OR <sup>b</sup>	CI	$\chi^2$ <sup>a</sup>
States religion highly important (time 10)	0.19	0.07–0.5	10.5***	0.07	0.02–0.4	10.3***
Frequently attends religious ceremony (time 10)	0.83	0.3–2.1	0.1	4.7	1.0–22.7	3.9*
Catholic compared with Protestant (time 1)	0.21	0.07–0.7	7.0**	0.14	0.04–0.5	8.2**

Note: MDD = major depressive disorder; OR = odds ratio; CI = confidence interval.

<sup>a</sup>Wald's  $\chi^2$  statistic of significance for multivariate logistic regression.

<sup>b</sup>Adjusted model: time 10 maternal MDD = time 10 maternal report of religious importance, time 10 maternal frequency of attendance, time 1 maternal religious denomination, and time 1 maternal MDD.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .005$ .

Western Europeans and Italians were more likely to consider religion to be highly important and Italians were more likely to be Catholic.

Both among mothers and among offspring, there were no significant associations between time 1 lifetime diagnosis of MDD and personal report on any of the three religious variables.

Both among mothers ( $\kappa = .43$ ,  $SE = .08$ ) and among offspring ( $\kappa = .33$ ,  $SE = .07$ ), there was moderate concordance between the importance of religion and frequent attendance of religious services, suggesting that those subjects who considered religion to be important were more likely to attend religious services frequently. Both among mothers ( $\kappa = .01$ ,  $SE = .09$ ) and among offspring ( $\kappa = .04$ ,  $SE = .05$ ), there was no concordance between the importance of religion and denomination (Catholic or Protestant), suggesting that whether a subject considered religion to be important was not associated with the subject's denomination. Among mothers ( $\kappa = .11$ ,  $SE = .09$ ) there was little concordance, and among offspring ( $\kappa = .01$ ,  $SE = .07$ ) there was no concordance, between frequent attendance of religious services and denomination (Catholic or Protestant), suggesting that whether a subject frequently attended religious services was not associated with the subject's denomination.

#### Maternal Religiosity and Maternal Depression

Overall the findings support the hypothesis that maternal religiosity is protective against maternal MDD. The odds of maternal MDD at time 10 are

presented in Table 2. Compared with a mother for whom religion was not highly important, a mother for whom religion was highly important was 81% less likely to have MDD at time 10. Compared with a mother who was Protestant, a mother who was Catholic was 79% less likely to have MDD at time 10. There was no significant relationship, however, between prevalence of maternal MDD at time 10 and frequency of attendance of religious services.

The adjusted odds ratios show that after controlling for the decreased risk of time 10 maternal MDD associated with religious importance and denomination, there was an increased risk of time 10 maternal depression associated with maternal frequent attendance. Note, however, that the association between maternal MDD and frequent attendance may be a statistical artifact of the small number of mothers ( $n = 7$ ) who considered religion to be highly important but who did not frequently attend religious services.

Decreased risk of time 10 maternal MDD remained significantly associated with religious importance and denomination after controlling for those risk factors associated with maternal religiosity, namely divorce status, ethnicity, and social functioning.

#### Offspring Religiosity and Offspring Depression

Overall the findings do not support the hypothesis that offspring religiosity is protective against offspring MDD. There were no significant associations between offspring depression status at time 10 and any of the three measures of offspring religiosity.

### Maternal Religiosity and Offspring Depression

Overall there is a marginally significant trend in the data which supports the hypothesis that maternal religiosity is protective against offspring MDD. Compared with a daughter whose mother did not consider religion highly important, a daughter whose mother considered religion highly important was 60% less likely to have MDD at time 10 (odds ratio [OR] = 0.40, 95% CI = 0.1 to 1.2, Wald's  $\chi^2 = 2.7$ ,  $p = .09$ ). However, this association was only marginally significant among daughters and was not significant among sons. The association between maternal religious importance and daughter depression remained at approximately the same level of magnitude and statistical significance when controlling for maternal bonding style, maternal social functioning, maternal SES, maternal income, maternal job status, maternal education status, parental divorce, ethnicity, and number of children in the family.

Compared with a son whose mother was Protestant, a son whose mother was Catholic was 78% less likely to have MDD at time 10 (OR = 0.22, 95% CI = 0.04 to 1.3, Wald's  $\chi^2 = 2.8$ ,  $p = .09$ ). However, this association was only moderately significant among sons and was not significant among daughters. The association between maternal religious denomination and son depression remained at approximately the same level of magnitude and statistical significance when controlling for maternal bonding style, maternal social functioning, maternal SES, maternal income, maternal job status, maternal education status, parental divorce, ethnicity, and number of children in the family.

There was no association between maternal frequency of church attendance and offspring depression status at time 10.

### Maternal Religiosity and Offspring Religiosity

Overall the degree of mother-offspring concordance of religiosity ranged from small to moderate. Overall the degree of mother-offspring concordance of the importance of religion ( $\kappa = .12$ , SE = .05) and frequency of attendance of religious services ( $\kappa = .28$ , SE = .07) was small, while the degree of mother-offspring concordance of denomination ( $\kappa = .60$ , SE = .10) was moderate (assessed among offspring of mothers who were either Catholic or Protestant).

The odds of offspring religiosity as predicted by maternal religiosity are presented in Table 3. Compared with a daughter whose mother did not consider religion to be highly important, a daughter whose mother considered religion to be highly important was more than eight times more likely to consider religion to be highly important. There was no significant association between mother report of religion as highly important and son report of religion as highly important.

Compared with an offspring of a mother who did not frequently attend religious services, an offspring of a mother who frequently attended religious services was more than five times more likely to attend church frequently. There was no difference in the magnitude or significance of this association between daughters and sons.

A daughter was approximately three times more likely to be of the same religious denomination as her

**TABLE 3**  
Odds Ratio of Mother-Offspring Concordance (Time 10) on Report of Religion as Highly Important, Frequent Attendance of Religious Ceremony, or Denomination

	Mother-Daughter Concordance (Time 10) ( $n = 86$ )			Mother-Son Concordance (Time 10) ( $n = 66$ )		
	OR	CI	$\chi^2$ <sup>a</sup>	OR	CI	$\chi^2$ <sup>a</sup>
Mother-offspring concordant on religion highly important (time 10)	8.6	1.1-69.6	4.1*	1.65	0.4-7.0	0.5
Mother-offspring concordant on frequent attendance (time 10)	5.7	1.9-17.4	9.3***	5.4	1.1-26.8	4.2*
Mother-offspring concordant on denomination (time 10) <sup>b</sup>	2.9	1.9-4.5	21.8***	4.8	2.3-9.8	18.1***

Note: OR = odds ratio; CI = confidence interval.

<sup>a</sup>Wald's  $\chi^2$  statistic of significance for multivariate logistic regression.

<sup>b</sup>Odds ratios calculated among offspring of mothers of all reported denominations.

\* $p < .05$ ; \*\*\* $p < .005$ .

**TABLE 4**  
Odds Ratio of Offspring MDD (Time 10) Given Mother–Offspring Concordance on Report of Religion as Highly Important, Mother–Offspring Concordance on Report of Frequent Attendance of Religious Ceremony, or Mother–Offspring Concordance of Denomination, Controlling for Maternal MDD (Time 1) and Offspring MDD (Time 1)

	Daughter MDD (Time 10) ( <i>n</i> = 86)			Son MDD (Time 10) ( <i>n</i> = 66)		
	OR <sup>a</sup>	CI	$\chi^{2b}$	OR <sup>a</sup>	CI	$\chi^{2b}$
Mother–offspring concordant on religion highly important (time 10)	2.00	0.8–5.2	2.1	0.58	0.1–3.6	0.3
Mother–offspring concordant on frequent attendance (time 10)	0.50	0.2–1.3	2.1	0.79	0.2–3.9	0.1
Mother–offspring concordant on denomination (time 10)	0.29	0.1–0.8	5.8*	0.16	0.02–1.0	3.7*

*Note:* MDD = major depressive disorder.

<sup>a</sup>Univariate model: time 10 offspring depression = time 1 offspring depression, time 1 maternal depression, and time 10 mother–offspring concordance of religiosity variable. Odds ratios calculated among offspring of mothers of all reported denominations.

<sup>b</sup>Wald's  $\chi^2$  statistic of significance for multivariate logistic regression.

\**p* < .05.

mother rather than to be of a different religious denomination or to ascribe to none at all (assessed among daughters of mothers of all reported denominations). A son was approximately five times more likely to be of the same religious denomination as his mother rather than to be of a different religious denomination or to ascribe to none at all (assessed among sons of mothers of all reported denominations).

#### Mother–Offspring Concordance of Religiosity and Offspring Depression

Overall the findings partially support the hypothesis that mother–offspring concordance of religiosity is protective against offspring MDD. The odds of offspring MDD at time 10 as predicted by mother–offspring concordance of religiosity are presented in Table 4. There were no significant associations between offspring MDD at time 10 and mother–offspring concordance of religious importance or mother–offspring concordance of frequency of attendance of religious services. Compared with a daughter without mother–offspring concordance of denomination, a daughter with mother–offspring concordance of denomination was 71% less likely to have MDD at time 10. Compared with a son without mother–offspring concordance of denomination, a son with mother–offspring concordance of denomination was 84% less likely to have MDD at time 10.

The association between offspring depression and mother–offspring concordance of religious denomination remained statistically significant both among daughters and among sons when controlling for maternal bonding style, maternal social functioning, maternal SES, maternal income, maternal job status, maternal education status, ethnicity, and number of children in the family. The association between daughter depression and mother–daughter concordance of religious denomination became marginally statistically significant (OR = 0.36, 95% CI = 0.1 to 1.2, Wald's  $\chi^2 = 3.14$ , *p* = .07) when controlling for parental divorce, but the association between son depression and mother–son concordance of religious denomination remained significant when controlling for parental divorce.

#### DISCUSSION

Our analyses suggest that (1) among mothers, religious importance and Catholicism are protective against prevalence of MDD; (2) among offspring, religiosity is not associated with prevalence of MDD; (3) maternal religious importance and maternal Catholicism are marginally significantly associated with decreased prevalence of MDD in offspring; (4) mother–offspring concordance of religiosity ranged from small to moderate; and (5) mother–offspring concordance of denomination is associated with decreased prevalence of MDD in offspring.

### Maternal Religiosity and Maternal Depression

The findings of this study concerning mothers are consistent with previous research which shows a relationship between religiosity and depression status among women. Specifically, the association between decreased prevalence of maternal MDD and report of religion as being important is consistent with previous research which has shown among women an inverse relationship between depressive symptoms and report of religion as being important (Atkinson and Malony, 1994; Koenig, 1993). This study builds on previous research, however, in that depression status was assessed on the basis of a clinical diagnosis, the data were taken from a 10-year longitudinal study, a protective effect of maternal denomination on prevalence of maternal MDD was shown, and this protective effect of maternal denomination was shown through a longitudinal design.

It is noteworthy that in this sample the association between maternal religiosity and prevalence of maternal depression did not seem to be mediated by social support. More specifically, the association between decreased rate of maternal depression and maternal religiosity was not found to be mediated by marital status or social functioning. Furthermore, maternal depression was not found to be associated with the religiosity variable involving potential social support, namely frequency of attendance of religious services. To the contrary, frequent attendance of religious services was associated with an increased rate of maternal depression when controlling for religious importance and religious denomination, suggesting that depressed women may seek social support through attendance of religious services but that exclusively the social support derived through attendance of religious services is not protective against depression. However, whether social support mediates the association between maternal religiosity and maternal depression status could not be fully tested, as the study did not include a direct assessment of social support.

### Offspring Religiosity and Offspring Depression

Whereas maternal religiosity was protective against time 10 maternal depression, there was no significant association between offspring religiosity and time 10 offspring depression. We propose three possible explanations for this discrepancy in the association

between personal religiosity and time 10 depression status between mothers and offspring.

The first explanation is that time 10 maternal depression falls at a later point in the lifetime course of depression than time 10 offspring depression. Whereas 86% of time 10 maternal depressions were recurrences, only 59% of time 10 daughter depressions were recurrences and only 42% of time 10 son depressions were recurrences. If personal religiosity is more protective against recurrence of depression than against incidence (meaning a first episode) of depression, then we would expect to see a greater protective effect of religiosity among mothers than among offspring. In other words, religiosity may not protect against ever having depression, but rather may protect against the number of episodes of depression. Unfortunately, data from our sample cannot be used to address this question as it does not include a sufficient number of mothers with a time 10 incidence of depression.

A second explanation for the difference in the association between personal religiosity and time 10 depression between mothers and offspring is that personal religiosity may develop or strengthen in adult development. The mothers in the study were on average 27 years older than the offspring, allowing for the possibility that personal religiosity may have been more developed in mothers than in offspring. The findings lend some support to this explanation in that at time 1, when mothers were 10 years younger, there was no significant association between time 1 maternal depression and maternal religious denomination. However, this study cannot fully address this possibility as the data do not include measures of time 1 maternal religious importance or time 1 maternal frequency of attendance of religious services. That personal religiosity develops in adulthood, and that therein is strengthened the association between personal religiosity and decreased rate of depression, is supported by previous research (Koenig, 1992).

The third explanation for the difference in association between personal religiosity and time 10 depression between mothers and offspring is a cohort effect related to the growing secularization of U.S. culture. This argument suggests that offspring who reported religion to be highly important, or who considered themselves to be Catholic, were comparing themselves to a more secularized norm than that used by the mothers. In other words, compared with those mothers who considered themselves to be high in

religiosity, those offspring who considered themselves to be high in religiosity may in actuality have been lower in religiosity. The data from this study cannot be used to address this possibility, however, because there exists no indirect measure of religiosity which might be compared with reported religiosity.

#### Maternal Religiosity and Offspring Depression

A marginally significant trend in the data suggests that maternal religiosity potentially may protect against offspring depression. Although we know of no published research that directly relates to these findings, we hypothesize two potential explanations. The first is that maternal religiosity informs the character of maternal child-rearing and shapes the home environment. Although the data show no association between maternal religiosity and maternal social functioning or maternal bonding style, it is possible that maternal religiosity affects the mother-offspring relationship and the home environment in ways not included in these constructs.

A second potential explanation is that regardless of offspring religiosity, protective elements of maternal religiosity may be transmitted to the offspring. If indeed personal religiosity develops with adult development, then maternal religiosity may serve as a marker for a less mature but present form of religiosity in offspring.

The findings further suggest that the protective effect of maternal religiosity on offspring depression may vary by gender. Whereas maternal report of religious importance was moderately significantly protective against depression in daughters, maternal denomination (namely Catholicism) was moderately significantly protective against depression in sons. We know of no published research that directly addresses this potential gender difference. However, previous research has shown that compared with young men, young women are more likely to report that religion is important (Donahue, 1995) and more likely to derive social adjustment through religiosity (Feldman et al., 1995). If, compared with a son, a daughter is more likely to benefit from her own regard of religion as important, it would seem to make sense that she might also be more likely to benefit from having a mother who regards religion as important. The marginally significant association between maternal denomination and depression status found among sons, but not found among daughters, is consistent with previous research

by Wilson and Sherkat (1994) which found religious practice to be more dependent on family observance among men than among women.

#### Mother-Offspring Concordance of Religiosity and Offspring Depression

The findings suggest that mother-offspring concordance of religious denomination may protect against offspring depression. These findings might be interpreted within the context of theory posited by Kent (1990), who holds that it is the "joint effect" of religious identity and family identity, rather than simply the effect of religious identity, which protects against psychopathology offspring. Broadened beyond Kent's construct of offspring identity, the findings suggest that offspring affiliation with religious denomination may be protective against offspring depression only insofar as it involves (1) the mother-offspring relationship and/or (2) the transmission of religiosity from mother to offspring.

We propose two potential explanations of why the findings show an association between mother-offspring concordance of religious denomination and offspring depression but no significant association between offspring religious denomination and offspring depression. The first potential explanation is that mother-offspring concordance of religious denomination may imply that the mother introduced religion into the development of the offspring. If so, compared with religion assumed in adulthood, religion introduced during child development may have a more profound protective effect against depression. The second hypothesis is that compared with offspring who simply reject affiliation with religious denomination, those offspring who reject maternal religious denomination may be particularly rejecting or more absolute in their rejection of affiliation with a religious denomination. Broader rejection of religious denomination may imply a greater likelihood of rejecting those elements of religion that are protective against depression.

It might be argued that the association between mother-offspring concordance of religious denomination and offspring depression status is an artifact of the more fundamental association between mother-offspring bonding and offspring depression. The data, however, do not support this argument in that the association between mother-offspring concordance of religious denomination and offspring depression remained significant when controlling for maternal bonding style.



The findings suggest that the protective effect of mother-offspring concordance of denomination against offspring MDD may be attenuated by parental divorce among daughters (when controlling for parental divorce the association becomes marginally statistically significant), but not among sons. Although substantial research has identified divorce as a risk factor for offspring depression, future research might investigate how divorce in some way disrupts or undoes the resiliency derived through mother-offspring concordance of denomination. It may be that divorce specifically adversely affects the "joint effect" of religious identity and family identity.

#### Discrepancy With Previous Research

At first glance, our results may seem to contradict previous findings which suggest that (1) depression status might be associated with frequency of attendance of religious services (Gibson et al., 1990; Koenig, 1992) and (2) offspring depression status might be associated with offspring personal religiosity (Koteskey et al., 1990). The discrepancies between these findings and the findings of previous research, however, may be explained by differences in methodology. Whereas in previous research depression status has been assessed in terms of depressive symptoms, depression status in this study was assessed by clinical diagnosis. The social avoidance frequently associated with clinical MDD (compared with that associated with simply symptoms of depression) may preclude mothers from attending religious services and reaping the related benefits. Similarly, the social impairment associated with offspring clinical MDD (beyond that associated with simply symptoms of depression) may hamper the development of offspring religiosity that might have come through joining a religious community. Clinical depression, in other words, may hamper the development or fulfillment of personal religiosity.

#### Study Limitations

There are several limitations to these findings due to the study design. First, because of the distribution of denominations in this sample, the analyses in which denomination is tested as a protective factor concern only Catholics and Protestants. The association between depression and the myriad of other religious denominations is not addressed in this study. Second, the range of ethnic origins represented in this sample is

limited to descendants of Western Europeans, Italians, and Eastern Europeans. These findings, therefore, cannot necessarily be generalized to the effects of religion in ethnic groups that are not represented in this sample. Third, the sample size of mothers in each denomination was quite small, suggesting that to be regarded as valid, the findings need to be replicated in a larger sample. Finally, although the data are taken from a 10-year longitudinal study, a portion of the findings are from a cross-sectional design, namely the association between time 10 prevalence of depression and report on religious importance and frequency of attendance of religious services, among both mothers and offspring. The findings, therefore, cannot be used to distinguish between the interpretation that depression drives women away from religiosity versus the interpretation that religiosity protects women against depression. It is important to clarify, however, that the limitation of the cross-sectional piece of the design does not immediately pertain to the association between maternal religiosity and offspring depression status nor to the association between mother-offspring concordance of religiosity and offspring depression status.

#### Conclusion

The findings suggest that maternal religiosity and concordance of mother-offspring religiosity may protect against offspring depression. From a clinical perspective, prognosis of children at risk for depression might be improved by the presence of maternal religiosity and particularly the presence of mother-offspring concordance of religiosity.

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