



A Multiple Mediator Model for the Association between Religiosity and Suicidal Behavior



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INTRODUCTION

The Interpersonal Theory of Suicide (ITS) posits 3 constructs necessary for suicide (Joiner, 2005; Van Orden et al., 2010) which have been shown to mediate risk factors for suicidal behavior

- Thwarted Belongingness (c.f. Social Integration)
- Perceived Burdensomeness (c.f. Life Meaning)
- Acquired Capability (c.f. Behavioral Regulation)

This study tested whether ITS constructs mediated the protective association between Religiosity and Suicidal Behavior (Colucci & Martin, 2008; Gearing & Lizardi, 2009; Koenig, 2009)

Tested in a full competitive model of proposed mediators, including:

- Social integration (Durkheim, 1951; Pescosolido & Georgianna, 1989)
- Behavioral Regulation (Durkheim, 1961; Tubergen et al, 2005)
- Life Meaning (Frankl, 1967; Kleiman & Beaver, 2013)
- Hope (Kramer, 2002; Petee, 2007)

RESULTS

Table 1. Independent Mean Comparisons between Religiously Unaffiliated and Affiliated (i.e., Christian) Groups

	Atheist/Agnostic/None (n = 128)				Christian (n = 296)				F	p	d
	M	SD	M _{adj}	SE	M	SD	M _{adj}	SE			
Organized RA	1.586	(0.828)	1.599	(0.093)	3.473	(1.144)	3.467	(0.061)	279.454	<.001	1.796
Non-Organized RA	1.297	(0.899)	1.311	(0.126)	2.735	(1.622)	2.728	(0.082)	87.887	<.001	1.007
Intrinsic Religiosity	5.078	(2.872)	5.097	(0.277)	10.122	(3.349)	10.114	(0.182)	226.629	<.001	1.617
SBQ-R	5.273	(3.034)	5.251	(0.213)	4.227	(2.023)	4.237	(0.139)	15.732	<.001	0.426
INQ-TB	21.496	(9.621)	21.545	(0.845)	19.680	(9.394)	19.659	(0.552)	3.457	0.064	
ACSS	40.654	(13.457)	40.797	(1.011)	40.853	(12.183)	40.791	(0.665)	<.001	0.996	
BHS	3.016	(3.603)	3.019	(0.277)	2.333	(2.791)	2.332	(0.181)	4.269	0.039	0.224
MLQ-P	22.748	(6.753)	22.821	(0.522)	26.204	(5.349)	26.173	(0.341)	28.557	<.001	0.576

Note. RA = Religious Activity; SBQ-R = Suicidal Behavior Questionnaire - Revised; INQ-TB = Interpersonal Needs Questionnaire - Thwarted Belongingness; ACSS = Acquired Capability for Suicide Scale; BHS = Beck Hopelessness Scale; MLQ-P = Meaning in Life Questionnaire - Presence. Means adjusted for effects of age, gender and race.

Table 2. Standardized Path Coefficients for the Association between Religiosity and Suicidal Behavior

	Organized Religious Activity				Non-Organized Religious Activity				Intrinsic Religiosity				
	a	b	a>b	% Total % Indirect	a	b	a>b	% Total % Indirect	a	b	a>b	% Total % Indirect	
Overall Effects													
Total		-0.155				-0.045				-0.172			
Total Indirect		-0.081	52.3%			-0.059				-0.096	55.8%		
Multivariate Model													
INQ-TB	-0.070	0.300	-0.021		-0.084	0.295	-0.025		-0.133	0.293	-0.039	22.7%	40.6%
ACSS	-0.035	0.182	-0.006		0.056	0.187	0.010		0.001	0.185	<.001		
BHS	-0.145	0.168	-0.024		-0.097	0.173	-0.017		-0.153	0.171	-0.026		
MLQP	0.294	-0.100	-0.029	18.7%	0.223	-0.125	-0.028	62.2%	0.308	-0.10	-0.031		
Direct													
Univariate Models													
INQ-TB	-0.070	0.410	-0.029		-0.085	0.417	-0.035		-0.133	0.404	-0.054	32.7%	
Direct													-0.111
ACSS	-0.036	0.164	-0.006		0.055	0.174	0.010		0.001	0.171	<.001		
Direct													-0.165
BHS	-0.145	0.358	-0.052	34.9%	-0.100	0.372	-0.037	86.0%	-0.154	0.356	-0.055	33.3%	
Direct													-0.110
MLQP	0.293	-0.287	-0.084	56.4%	0.223	-0.311	-0.069	160.5%	0.308	-0.283	-0.087	52.7%	
Direct													-0.078

Note. All significant paths presented in bold (i.e., the unstandardized bias-corrected bootstrapped 95% confidence interval did not include zero). Organized Religious Activity and Intrinsic Religiosity showed significant Total and Total Indirect effects on report of Suicidal Behavior. In follow-up univariate tests, Hopelessness was a partial mediator of Organized Religious Activity and Intrinsic Religiosity, and a full indirect effect for Non-Organized Religious Activity. Thwarted Belonging was a partial mediator for Intrinsic Religiosity. Meaning in Life was a full mediator/indirect effect for all dimensions of Religiosity.

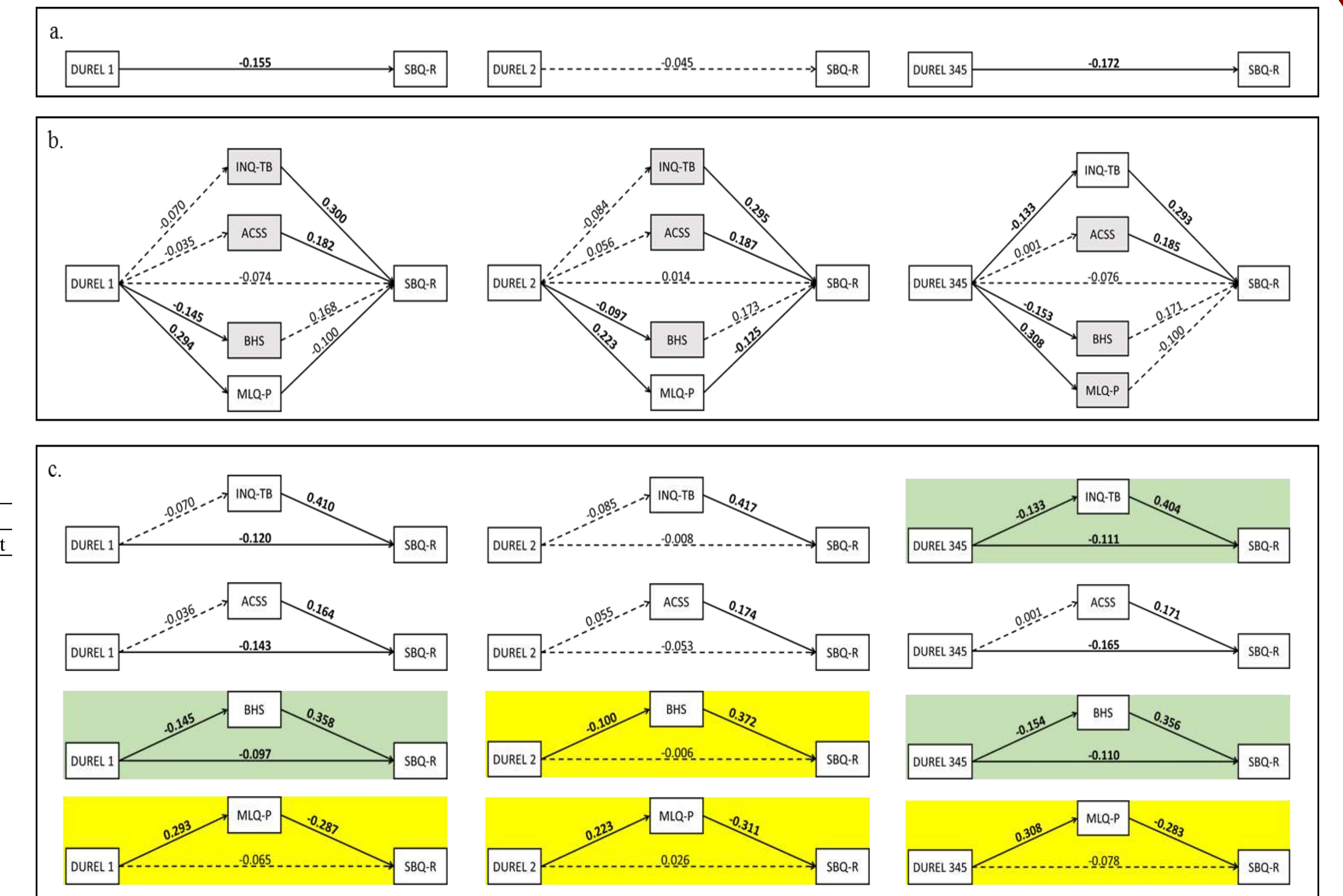


Figure 2. Standardized Path Analysis Models for (a) Total Effects, (b) Multiple Mediating Effects, and (c) Independent Mediating Effects of each dimension of Religiosity on Suicidal Behavior. DUREL1 = Organized Religious Activity; DUREL2 = Non-Organized Religious Activity; DUREL345 = Intrinsic Religiosity; INQ = Interpersonal Needs Questionnaire (-TB = Thwarted Belongingness); ACSS = Acquired Capability for Suicide Scale; BHS = Beck Hopelessness Scale; MLQ = Meaning in Life Questionnaire (-P = Presence); SBQ-R = Suicidal Behavior Questionnaire - Revised. Non-significant paths are dashed. Non-significant mediators are in gray. Independent partial mediation is highlighted in green, full mediation is highlighted in yellow.

Mediation Path Model

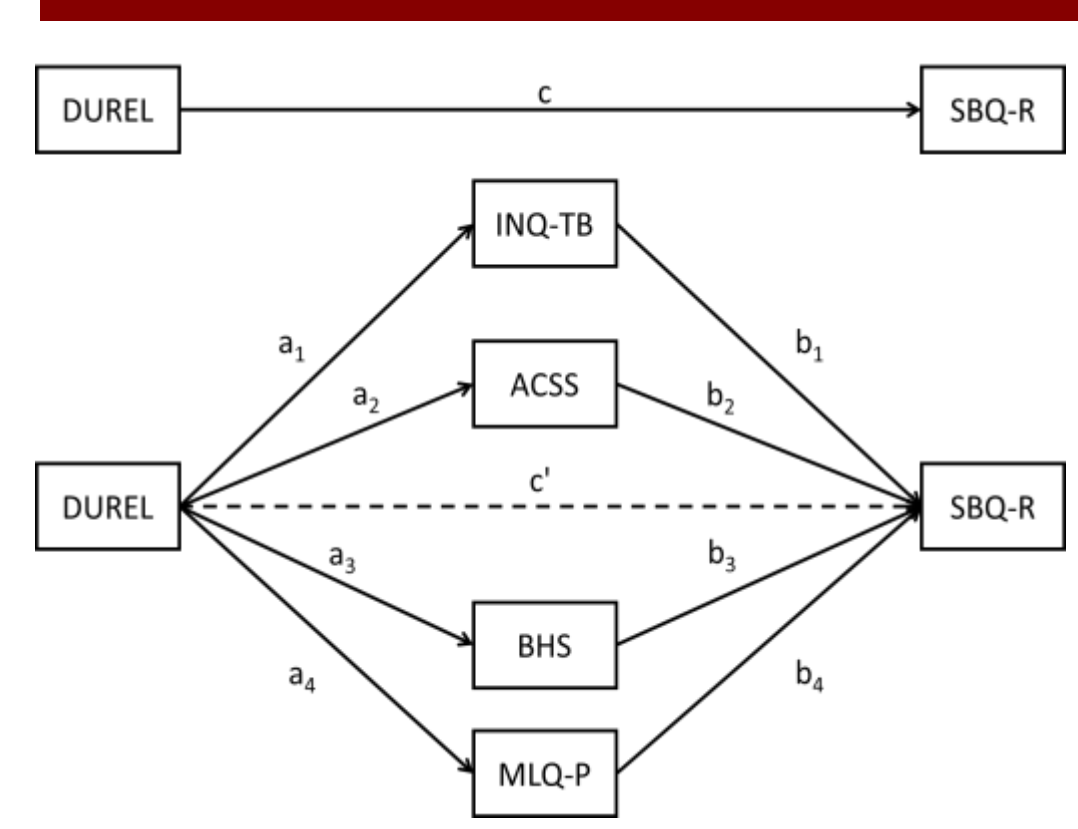


Figure 1. The proposed multiple mediator model of the relationship between Religiosity (i.e., DUREL) and Suicidal Behavior (i.e., SBQ-R). Solid arrows indicate hypothesized significant relationships; dashed arrows indicate hypothesized non-significant relationships. Letters indicate standardized path coefficients. Thwarted Belongingness (i.e., INQ-TB), Acquired Capability (i.e., ACSS), Hopelessness (i.e., BHS) and Meaning (i.e., MLQ-P) are hypothesized to fully mediate the total relationship (path c), such that with their inclusion in the model, the direct relationship (path c') is reduced to non-significance. Each mediator's specific indirect effect (path a_ib_i) is also hypothesized to be significantly different from zero.

Participant Descriptives

	n / M	% / (SD)
Age	18.86	(1.18)
Gender		
Male	136	32%
Female	288	68%
Race		
White/Caucasian	268	63%
Hispanic/Latino	97	23%
Black/African-American	34	8%
Asian/Asian-American	12	3%
Other	13	3%
Religious Affiliation		
Christian	296	70%
Nothing in Particular	78	18%
Agnostic	36	9%
Atheist	14	3%
Total	424	

OBJECTIVES

- To evaluate whether the Interpersonal Theory of Suicide (ITS) can explain, at least partially, the association between a protective factor (i.e., Religiosity) and history of suicidal behavior
- To compare indirect effects of ITS constructs against other competing potential mediators (i.e., Hopelessness and Meaning)

METHOD

- All procedures were reviewed and approved by the Florida State University Institutional Review Board
- After demonstrating and providing informed consent, participants were asked to complete a single battery of self-report questionnaires online (30-45 minutes). Measures included:
 - Duke University Religion Index (DUREL) → Religiosity
 - Interpersonal Needs Questionnaire - Thwarted Belongingness (INQ-TB) → Social Integration
 - Acquired Capability for Suicide Scale (ACSS) → Behavioral Regulation
 - Beck Hopelessness Scale (BHS) → Hope
 - Meaning in Life Questionnaire - Presence (MLQ-P) → Life Meaning
 - Suicidal Behaviors Questionnaire - Revised (SBQ-R) → Suicidal Behavior
- Indirect effects quantified via path analysis and a product-of-coefficients approach (see Preacher & Hayes, 2008) of each dimension of the DUREL (i.e., Organized Religious Activity, Non-Organized Religious Activity, and Intrinsic Religiosity)

DISCUSSION

- Although Religiosity is a significant predictor of Suicidal Behavior, it can be a morally charged and non-malleable trait, limiting its clinical utility
- The proposed mediators, more neutral and malleable psychological constructs, in combination accounted for more than 50% of the association between Religiosity and Suicidal Behavior
- In univariate tests, each of the proposed mediators were predictive of Suicidal Behavior; however, only Hopelessness and Meaning were related to each of the three dimensions of Religiosity. Thwarted Belongingness was related to Intrinsic Religiosity only.
- Meaning in Life was the only construct that fully mediated the association between Religiosity and Suicidal Behavior. Hopelessness and Thwarted Belongingness were additional partial mediators
- The Interpersonal Theory of Suicide is supported by numerous studies regarding its contributory explanation of risk factors; however, it is limited in explaining the effects of Religiosity, a protective factor
- For this population, individual constructs (i.e., Life Meaning and Hope) accounted for the protective relationship of Religiosity on Suicidal Behavior. Interpersonal constructs (i.e., Thwarted Belongingness and Acquired Capability) were generally not related to Religiosity, with the exception of Intrinsic Religiosity

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