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Intergenerational Transmission of Religiosity and the Reduction of Thai Adolescent Risk Behaviors

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Abstract

This study examines the mechanism of intergenerational transmission of Buddhist religiosity in relation to adolescents' risk-taking behaviors in Thailand. Self and parental reports of risk behaviors from national representative samples of 3,795 pairs of parents and adolescent(s) in 2-parent families from the 2011 National Survey on Social Conditions and Culture in Thailand are employed. Path analysis and Structural Equation Modeling are used for the data analysis. Parental religiosity (Parental Mindful Self-Conduct and Parental Mindful Altruism) is fully mediated through adolescent religiosity, and adolescent self-control (Moral Emotional Self-Guidance System, MESGS) to reduce adolescent risk behaviors, controlling for socio-demographic characteristics. Mid-adolescence is the ideal age at which most optimal religious value transmission occurs, making it the most protective age against risk-taking behaviors. However, late adolescence and youth are the most vulnerable stages for risk-taking. The study also uncovers the pattern of risk-taking through adolescents' key developmental stages.

Keywords

Adolescent risk behavior; Buddhism; family socialization; religiosity; family processes; intergenerational transmission

Introduction

Risk-taking behaviors are a leading cause of morbidity and mortality among adolescents worldwide (World Health Organization, 2017a). A global estimate of 1.2 million deaths among adolescents in 2015 were attributed to drunk or reckless driving, interpersonal violence, unintentional injuries, and unsafe sex with high rates of sexually transmitted diseases and unintended pregnancy (Sirirassamee & Sirirassamee 2015; WHO, 2017a). An escalating trend of risk-taking behaviors exhibited by Thai adolescents in 2015 was found to be disturbingly high. These behaviors included over consumption of alcohol (25%), troubles or physical violence with family/friends (15%), truancies resulting from drinking alcohol (11%), tobacco use (10%), drug use (5.3%), and gambling (11.9%) (Sirirassamee & Sirirassamee 2015; WHO, 2017b). Research over the past 20 years indicates that adolescents worldwide are likely to engage in multiple risk-taking behaviors. Some risk-taking behaviors may be considered innocuous or developmentally experimental but are still associated with the same negative outcomes as other, more directly life-threatening risk-taking behaviors (Casey et al., 2011; Miller, Naimi, Brewer & Jones, 2007). The ostensibly harmless risk behaviors, therefore, should not be underestimated for their potentially severe consequences. Linked with these risk behaviors were emotional/distress indicators of feelings of loneliness (9.7%), suicidal

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ideation/attempts (13.3%), and perceived parental misunderstandings of Thai adolescents' problems and worries (28.1%) (WHO, 2017b).

The family plays a crucial role in shielding adolescents from risk-taking behaviors, as a fundamental resource of developmental and moral values (Ryan & Connell, 1989). A large body of research over the past 30 years has primarily focused on such secular issues as quality of parent-child relationship (Kim-Spoon, Longo & McCullough, 2012), parenting styles, and techniques (Grusec 2002; Padilla-Walker, Fraser & Harper, 2012), parental attachment (Magoon & Ingersoll, 2006), and personal as well as social-contextual conditions (Grolnick, Deci & Ryan, 1997). Some important empirical findings such as proactive parenting and parental monitoring have shown promise, but have had limited effects. The pertinent question of whether spirituality might foster the emergence of a self-guiding system or self-control factor that buffers risk-taking involvement remains unanswered.

Religious training is proposed in social control theory to deter delinquency through the development of moral values on the basis of the strong bonds one forms to society: attachment (affective ties formed with significant others, e.g., parents), commitment (investment made to achieve the socially valued goals), involvement (participation in conventional activities that lead toward the goals), and belief (acceptance of the moral validity of norms and laws) (Hirschi & Stark, 1969). Youths with these stronger elements of bonds are less likely than those with weaker bonds to expend their time and resources in pursuits that are deleterious to themselves and to others (Wiatrowski, Griswold & Roberts, 1981; Matsueda & Heimer, 1987).

Intergenerational Transmission of Religiosity

Although evidence of a religious influence on adolescents' risk-taking behaviors is inconclusive (Baier & Wright 2001), substantial research has pointed to its predominantly protective effects possibly through self-control, role modeling, and social-organizational ties (Miller, 2005). Parents to a large extent influence their children to internalize their core religious values through role-modeling (Flor & Knapp, 2001) and positive parent-child attachment (Wiatrowski et al., 1981). Parental religious behaviors conducted as part of family socialization are a foundation for children to model. The degree of parent-child religious congruence and externalization of religious behaviors may contribute to positive parenting and family interactions (Mahoney, Pargament, Tarakeshwar & Swank, 2008). Indeed, the more religious value congruence between adolescents and parents, the less likely adolescents will engage in risk-taking (Pearce & Haynie, 2004). However, parents transmitting religious values and practices to their children with low parent-adolescent attachment may lead to an increase in adolescent negative outcomes, particularly when parents rely upon negative religious coping, using religion in negative ways to cope with stressful life events (Dumas & Nissley-Tsiopinis, 2006; Kim-Spoon et al., 2012). Collectively, these empirically grounded perspectives underpin the importance of studying how parental religiosity intergenerationally influences adolescent religiosity and discourages risk-taking. Regnerus (2003) tested the intergenerational model of religious influence and found significant direct and indirect effects on risk-taking behavior.

Buddhism and Self-Regulation

Buddhism is professed by over 95% of Thais (Chamratrithirong et al., 2013). While most of the major world's religions are categorized as belief systems, Buddhism is recognized as an education system, which focuses on the Law of Karma and developing mindfulness through key practices (Ajahn Jayasaro, 2011). Mindfulness (or *Sati* in Pali) is the ability to be non-

judgmentally aware in the present moment of an object of focus such as in-breath and out-breath, or of the responses of the mind toward contact with daily stimuli through sense perceptions such as cognitions, emotions, perceptions, intentions, and observe the impermanence of these states, or the wandering of the mind from these objects (Keng, Smoski, & Robins, 2011; Ajahn Jayasaro, 2011). The key practices include: 1) offering food to monks to diminish selfishness, and imbue with the joy of giving; 2) observance of the five key Buddhist precepts (no killing, stealing, adultery, lying, or intoxication) as a framework within which the dynamics of our cognitions and emotions toward our corresponding actions are observed; and 3) meditation (Ajahn Jayasaro, 2013). Each of these practices has its own meditative quality, which affects the brain areas implicated in effective self-control, and self-regulation in both affective and cognitive domains (McCullough & Willoughby, 2009), leading to emotional balance (Ajahn Sumedho, 1992), a sense of gratitude, and attachment to parents. Religious practices in the Buddhist frame can potentially lead to a self-regulatory mechanism that guides ones to act and behave prudently and in prosocial manner. Mindfulness meditation as part of the Buddhist practices has gained worldwide attention for its array of applications from cognitive behavioral therapy (Klingbeil et al., 2017) to enhancement of neurocognitive processes fundamental to self-regulation (Kaunhoven & Dorjee, 2017).

The potential for developing a self-guidance system during adolescence is theoretically and empirically supported by insights in neuroscience. Neurobiological perspective posits that the underlying cause of adolescents' risk–taking is the dominance of the brain's socio-emotional over cognitive control systems, strongest during mid-adolescence. This predisposes them to seek gratification in rewarding, yet risky acts under peer influences, as the brain is most sensitive to social and emotional stimuli, making mid-adolescence most vulnerable to risk-taking (Steinberg, 2008). Evidence in neuroscience demonstrates potentials of the meditative states of such religious practices as meditation, and prayer in fostering self-regulation, emotion regulation, and impulse control, which translates into a repertoire of skillful actions to avoid temptations (Leary, Adams & Tate, 2006). The meditative states are shown to activate the same parts of the brain implicated in the cognitive control system responsible for executive functioning, attention/conflict monitoring, and cognitive control (Kerns et al., 2004). Studies over the past 15 years indicate that mindfulness meditation attenuates emotional arousal (Herwig, Kaffenberger, Jäncke, & Brühl, 2010; Lutz et al., 2016), and leads to better emotional regulation (Guendelman, Medeiros & Rampes, 2017; Hollis-Walker & Colosimo, 2011) and emotional stability (Taylor et al., 2011). Self-regulation may hold a key to explain how Buddhist practices buffer adolescents against risk behaviors (McCullough & Willoughby, 2009).

The Current Study

Despite an increase in research on religiosity and adolescent risk behaviors, considerable gaps exist in our overall understanding of the psychosocial processes contributing to protective pathways against adolescent risk-taking involvement. This framework advances beyond merely assessing the direct influence of religiosity on adolescent outcomes. To date, no systematic examination that taps into religion's potentials for developing such internal resources as self-guidance system as a protective mechanism of the intergenerational pathway of religiosity to prevent adolescent risk-taking behaviors has been conducted. This study aims to shed light on the intergenerational transmission model of Buddhist religiosity between parents and adolescent children aged 13-24 years in two-parent, Thai families to lessen risk-taking behaviors, exploring also the potential mediating roles of the adolescents' religious behaviors (Adolescent Religiosity) and their self-control (Adolescent Moral Emotional Self-Guidance System, MESGS). Based on the gap of empirical knowledge (Chamratrithirong et

al., 2013), this study will also identify level of adolescents' risk-taking across their life stages as a result of familial religious dynamics, and pinpoint the ideal age for optimal familial religious socialization.

Methods

Data

Data are from the 2011 National Survey on Social Conditions and Culture in Thailand conducted by the National Statistical Office of Thailand (NSO). The initial nationally representative sample was made up of 69,918 individuals aged 13 and over. This study focuses on Thai adolescents aged 13-24 (n=3,795) who resided in two-parent families. Their data was merged with the corresponding data of parents residing in the same household. This study was IRB approved (COA. No. 2016/09-098), Institute for Population and Social Research, Mahidol University.

Measurement

Exploratory factor analysis in SPSS with Varimax rotation was used to reduce sets of observed variables into five underlying latent variables. Confirmatory factor analysis (CFA) in MPlus with mean and variance-adjusted weighted least squares estimation was used to establish all measurement models. Criteria to assess the model fit include $\chi 2/df \leq 5$, RMSEA<0.05, CFI, TLI ≥0.9 (Hoyle, 2012). Fit indices, including factor loadings of all manifest indicators, for each of the five separate CFAs, and internal consistency coefficients (α) are shown in Table 1.

Table 1: Goodness of fit measure for CFA

	Adolescent risk behavior	Adolescent MESGS	Adolescent Religiosity	Parental Mindful Self-Conduct	Parental Mindful Altruism
Factor loading (MIN, MAX) [a]	(.516, .974)	(.756, .902)	(.510, .876)	(.707, .931)	(.555, .994)
Internal consistency coefficient (α)	.641	.762	.58	.797	.735
$\chi 2/df$ (p-value) [b]	2.055 (.151)	2.691 (.067)	25.122 (<.001)	17.799 (<.001)	
N, Degree of freedom	3,613, 1	576, 2	3,793, 1	3,795, 16	
RMSEA (90% CI)	.017 (.000, .051)	.054 (.000, .112)	.080 (.055, .108)	.067 (.060, .073)	
CFI	1.000	.997	.989	.996	
TLI	.998	.992	.936	.993	

RMSEA = Root Mean Squared Error Approximation; CFI= Comparative Fit Index; TLI = Tucker-Lewis; CI = confidence interval; df = degree of freedom

[a] *Factor loadings of all items of questions are standardized, and significant (p< .001).*

[b] *A nonsignificant $\chi 2$ (chi-square) is not expected, as it's affected by large sample sizes.*

'*Adolescent risk behavior*' is measured by adolescent and parental responses to assess the following behaviors: 1) wandering around, 2) going to bed and waking up late, 3) gambling, and 4) venturing into night entertainment venues. Variables were coded 1 for engaging regularly or sometimes, and 0 if not. The CFA model fits the data well.

'*Adolescent Moral-Emotional Self-Guidance System (MESGS)*' is measured by responses to whether adolescents had been: 1) Attending to those who have offered benevolence out of gratitude; 2) Admitting mistakes and apologizing for their part in the wrongdoings; 3) Putting one's needs second to others' needs; and 4) Sincerely forgiving those who feel remorseful for their wrongdoings; (1=always, 6=never). Variables were recoded 1 if actions were always or mostly conducted, and 0 if the actions were sometimes, rarely, or never conducted. The CFA model demonstrates a good fit (see Table 1). Based upon the concept of Personal Intelligence, characterized as the capability to organize emotions, awareness, and self-control within the social sphere, and express in the outer world these inner qualities through choices and behaviors, MESGS is an indicator of adolescents' moral-emotional self-guidance system (Mayer, Panter & Caruso, 2017). This guidance system is conceptualized as an internal resource consisting of a sense of awareness triggered through social stimuli, which in turn, activate self-regulation and self-control to guide, adjust, or change their behavioral responses to fit with their desired goals (self-regulation) (McCullough & Boker, 2007), or to counteract or override a prepotent response, derived from a behavioral tendency, or strong emotion, or an emotionally-driven motivation such as assaulting someone out of anger (self-control), and possibly turning it into forgiveness (Vohs & Baumeister, 2016). The MESGS is a measure of whether an adolescent can effectively regulate a range of socio-cognitive and emotional stimuli into a set of morally and socially valued behaviors (Mayer et al., 2017). The MESGS is hypothesized to be developed by virtue of Buddhist practices, and is expected to help steer adolescents away from involving in risk behaviors.

'*Adolescent Religiosity*' is measured by the following Buddhist practices: 1) Chanting; 2) Giving alms to monks; 3) Observing the five key Buddhist precepts; and 4) Meditation. Each variable was coded 1 if conducting the practices and 0 if never, or conducted once in a while. Religiosity refers to the formal, institutional, and outward expression of the sacred in such forms as religious practices (Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006; Miller & Thoresen, 2003). The CFA model demonstrates an acceptable fit.

Exploratory Factor Analysis suggested 2 separate factors of parental religiosity: '*Parental Mindful Self-Conduct*' and '*Parental Mindful Altruism*'. The CFA model comprising these two factors fits the data well.

'*Parental Mindful Self-Conduct*' is measured by parents' responses to items capturing father's and mother's observance of the five precepts, and meditation. Each variable was coded 1 for yes and 0 if the practices were never conducted, or conducted once in a while.

The practices of chanting, offering alms to monks, observance of the five key Buddhist precepts and meditation are spiritual training that cultivates mindfulness, tranquility, and emotional balance and undermines negative mental states, e.g., fear, anxiety. Chanting refers to an act of chanting Buddhist verses in Pali, which instills Buddhist teachings and prepares the mind for meditation. A mind that is mindful, peaceful, and stable is conducive to successfully taking on ordinary life responsibilities through insight that guides one's choices (Ajahn Jayasaro, 2013). Observance of the five key Buddhist precepts keeps speech and actions within appropriate boundaries, maintaining balance in society through harmonious human interactions, and serving as a foundation for the more refined practice of meditation (Phra Brahmagunabhorn, 2003). These core Buddhist practices promote a sense of mindfulness, as

a major part of the self-control that guides ones to make choices in daily life through insights (Ajahn Jayasaro 2013).

'Parental Mindful Altruism' is measured by items regarding father's and mother's giving alms to monks and chanting. Each variable was coded 1 if yes and 0 if the practices were never conducted, or only once in a while.

Control variables include gender (1=Male, 0=Female), Adolescent age groups (13-14, 15-17, 18-21, 22-24, representing early, middle, late adolescence, and youth respectively), Parent/Adolescent Educational Attainment (1=primary education, 2=secondary, 3=higher), Parent age (27-39, 40-49, 50 and over), Parent Occupation (1=Managerial & Professional, 2= Clerical & service, 3=Laborers, 4=Unemployed), and Residential Area (Bangkok & Central, North, Northeast, and South). Ownership of 12 household items with binary responses was employed as a proxy for wealth. Principal Component Analysis was used to summarize these 12 items, yielding 3 components. Component 1, with the highest initial eigenvalue (25.36%), is measured by the widest range of most expensive household items, which are most commonly owned, so was selected to represent wealth. To determine an individual placement on the factor structure of Component 1, a factor score weighted by regression coefficients was calculated, giving higher weighting to the more expensive items. The distribution of all factor scores from lowest to highest is divided into tertiles with scoring of 1 assigned to the first tertile representing 'low-income class', scoring of 2 assigned to the second tertile representing 'middle class', and scoring of 3 assigned to the third tertile representing 'upper-middle class'. Dummy variables for each category were created with 'low-income class' as a reference.

Data Analyses

Structural equation modeling for latent path analysis implemented in Mplus 6.11 (Muthén and Muthén, 2012) was employed to examine standardized path coefficients of both direct and indirect effects of each factor specified a priori in the model, taking into account parental and adolescent socio-demographic characteristics (Figure 1). Maximum Likelihood estimation with Robust Standard Errors (MLR) was used due to the non-normally distributed data.

- Hypothesis I: Parental Mindful Self-Conduct and Parental Mindful Altruism will each exert a significantly positive effect on Adolescent Religiosity, controlling for parental socio-demographic characteristics.
- Hypothesis II: Adolescent Religiosity will exert a significantly positive effect on Adolescent MESGS.
- Hypothesis III: Adolescent MESGS will eventually exert a significantly negative effect on adolescent risk behaviors, taking into account parental and adolescents' socio-demographic characteristics, Parental Mindful Self-Conduct and Parental Mindful Altruism.
- Hypothesis IV: Parental Mindful Self-Conduct and Parental Mindful Altruism will each exert a significant and direct effect on adolescent risk behaviors even after controlling for MESGS, parental and adolescents' socio-demographic characteristics.

Standardized regression coefficients (β) are estimated as path coefficients, which express the size and direction of the effect of the independent variables on the specific dependent variables (Taylor, MacKinnon & Tein, 2008).

Results

Over 55% of adolescents interviewed were male, most of whom (36%) were in mid-adolescence (Table 2). The majority of fathers (53%), and mothers (56%) were between 40-49 years. About 57% of adolescents had, at the time of the interview, a secondary level of education, while the majority of their fathers (61%) and, mothers (66%), obtained a primary education. The most common type of occupation of fathers (63%) and, mothers (52%) was "Laborers", and approximately one-third of the families resided in the central part of Thailand.

Table 3 shows religious practices of parents and adolescents: chanting, alms offerings to monks, observance of the five precepts, and meditation. Parental religiosity is shown to be higher than adolescents' for all practices. Giving alms to monks is most commonly practiced by both adolescents and parents, and meditation is the least prevalent.

Table 2. Percentages of Demographic and Socioeconomic Characteristics of 3,795 adolescents aged 13-24 and their parents in Thailand, 2011 (N=3,795)

Demographic characteristics	**Adolescent**	**Father**	**Mother**
Sex			
Female	45.5		
Male	54.5		
Age group			
13-14	22.4		
15-17	35.5		
18-21	26.7		
22-24	13.1		
Age group			
27 -39		10.1	22.6
40-49		53.1	55.8
50 and over		36.8	21.6
Socioeconomic Characteristics			
Occupations			
Managerial & Professional		11.5	7.3
Clerical & service		21.6	27.1
Laborers		63.4	51.8
Unemployed		3.5	13.8
Education attainment			
Primary	37.0	60.8	65.9
Secondary	56.6	24.9	21.3
Higher	6.2	14.0	12.5
Regions of households			
Bangkok			5.7
Central			33.2
North			19.8
Northeast			26.3
South			15.0

Table 3: Percentages of 3,795 adolescents aged 13-24 and their parents who conducted each type of Buddhist practices in Thailand, 2011

Level of practice	Chanting			Giving alms to monks			Observing the 5 precepts			Meditation		
	A	F	M	A	F	M	A	F	M	A	F	M
Practiced it (1)	43.2	50.5	60.8	58.3	71.8	84.4	17.5	23.6	27.3	9.7	11.0	14.2
Never practiced it (0)	56.8	49.5	39.2	41.7	28.2	15.6	82.5	76.4	72.7	90.3	89.0	85.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3,793	3,793	3,795	3,793	3,793	3,795	3,793	3,793	3,795	3,793	3,793	3,795

Note: The total number of cases may not be equal because of refusal to answer particular questions. All religious practice variables are recoded into binary scales. A, F, M = Adolescent, Father, Mother.

The result of structural equation modelling for latent path analysis is shown in Figure 1. The model fits the data well [$\chi 2/df=3.46$ (N=3,779, df=56), RMSEA=0.026, CFI=0.926, TLI =0.897]. The findings endorse Hypothesis I with highly significant results regarding the transmission of religiosity between parents and adolescents. Controlling for the effects of Parental Mindful Self-Conduct and socio-demographic characteristics, a one-unit increase in the Parental Mindful Altruism score is associated with an increase in the score on Adolescent Religiosity by .336 (p<.001). A one-unit increase in Parental Mindful Self-Conduct score is associated with a .403 increase in the score on Adolescent Religiosity (p<.001) when the effects of Parental Mindful Altruism, and socio-demographic characteristics are accounted for. This shows that both types of parental religiosity have significant, positive, and independent effects on Adolescent Religiosity.

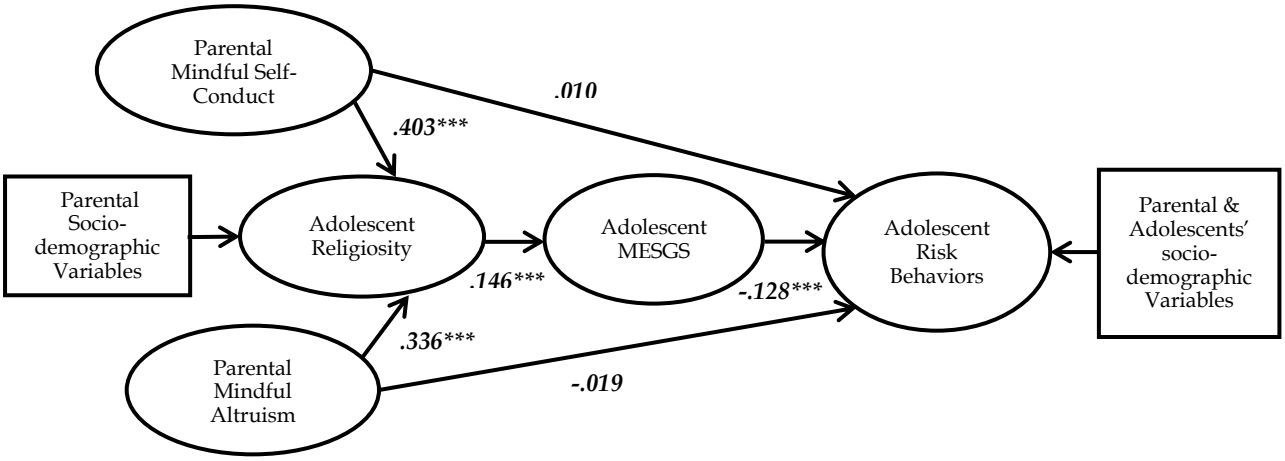
Regarding demographic variables, only fathers' age had a significant association with Adolescent Religiosity. Adolescent children whose fathers were in the young or middle age groups (27-39 or 40-49) scored .061 (p<.01), and .084 (p<.001) higher on Adolescent Religiosity respectively than those whose fathers were 50 and over.

The findings confirm Hypothesis II in that Adolescent Religiosity was found to exert a significantly positive influence on Adolescent MESGS: a unit increase in Adolescent Religiosity score is associated with an increase in MESGS score of .146 (p<.001), which means that adolescents who perform religious practices are more likely to have higher moral-emotional self-regulatory maturity, as measured by MESGS.

The estimated effect of MESGS on risk behaviors was examined, accounting for the direct effects of both types of parental religiosity and adolescents' as well as parental socio-demographic characteristics (Hypotheses III & IV). The findings support Hypothesis III in that Adolescent MESGS is found to have a statistically significant and negative influence on Adolescent risk behaviors. A unit increase in the score on MESGS is associated with a decrease in score on risk behaviors of .128 (p<.01), illustrating the protective effect of MESGS. Hypothesis IV, however, was not supported. The direct effects of Parental Mindful Self-Conduct and Mindful Altruism on Adolescent risk -behaviors are not significant.

A comparison of levels of risk behaviors across adolescent life stages shows a dramatic spike during the transition from mid to late adolescence, and this pattern continues well into youth. During mid-adolescence, the score was .152 higher on Adolescent risk behaviors than the score at early adolescence (p<.001). In late adolescence and youth, the Adolescent risk behavior score rose to .249 (p<.001) and .247 (p<.001) higher than that at early adolescence respectively.

Figure 1: The full path model elucidating the underlying mechanism of intergenerational transmission of religiosity, and its effect on adolescents' risk behaviors with standardized path coefficients indicating the predictive effect of each factor among 3,795 pairs of adolescents and their parents in Thailand (2011), Moral Emotional Self-Guidance System (MESGS). The path coefficients are statistically significant at $^{**}p<.01$, $^{***}p<.001$.



Direct, Indirect, and Total Effects

The direct effects of Parental Mindful Self-Conduct and Mindful Altruism on adolescent risk behaviors are statistically non-significant, (.010, -.019), controlling for adolescents' MESGS, and socio-demographic characteristics; however, the indirect effects of paths 1 and 2 are statistically significant, suggesting that intergenerational transmission of parental religiosity (Parental Mindful Self-conduct and Parental Mindful Altruism) is fully mediated by Adolescent Religiosity and Adolescent MESGS.

The findings fully endorse Adolescent Religiosity and MESGS as mediators instrumental in the chain of influence of religiosity transmitted intergenerationally to reduce the likelihood of adolescents' involvement in risk behaviors (Table 4).

Table 4: Direct effects and specific indirect effects of Parental Mindful Self-Conduct and Parental Mindful Altruism on Adolescent risk behaviors through Adolescent Religiosity and MESGS, total indirect effect, and total effects

Type	Source	Path coefficients
Direct effect	Parental Mindful Self-Conduct → Adolescent Risk Behaviors	.010
	Parental Mindful Altruism →Adolescent Risk Behaviors	-.019
Specific indirect effect	Parental Mindful Self-Conduct →Adolescent Religiosity → Adolescent MESGS → Adolescent Risk Behaviors (Path1)	-.008**
	Parental Mindful Altruism →Adolescent Religiosity → Adolescent MESGS → Adolescent Risk Behaviors (Path2)	-.006**
Total indirect effect		(-.008) + (-.006) = -.014**
Total effect	Total indirect effect + direct effects	(-.014) + .010 + (-.019) = -.023

*** p<.05, Source: 2011 Survey on social conditions and culture, NSO, Thailand*

Discussion

This study fills a key gap in the literature by examining familial religious socialization in relation to adolescents' risk-taking behaviors through path analysis. The findings endorse the fully mediated paths of influence through the two statistically significant and sequentially linked mediators as an underlying mechanism. Path 1 indicates that Parental Mindful Self-Conduct is mediated through Adolescent Religiosity, and MESGS to decrease risk-taking behaviors. Path 2 demonstrates that Parental Mindful Altruism is also mediated through Adolescent Religiosity and MESGS with a significantly negative effect on Adolescent risk-taking behaviors. However, no direct effect of either Parental Mindful Self-Conduct or Parental Mindful Altruism was found. These findings emphasize the importance of religious practices of parents, as they operate through adolescents' own religious adherence and their self-control/guidance system, as a mechanism to protect against adolescent risk-taking. This result is consistent with prior studies (Barton, Snider, Vazsonyi & Cox, 2014; Flor & Knapp 2001) emphasizing concrete religious behaviors expressed by parents as a significant factor for children to internalize and externalize parental religious values. It appears that parental religious transmissions influencing adolescents to emulate religious practices may contribute to harmonious family climate, which, in turn, facilitates role-modeling.

Role-modeling contributes to familial religious socialization consistent with social control theory, which suggests parental attachment is an element of socialization that allows role modelling to operate through affective tie to prevent adolescents' delinquency or risk-taking (Miller, 2005). Parent-adolescent affective and emotional bonds may be formed through religious practices as a shared family activity, which, in turn, facilitate role modeling. Religious practices have a potential to enhance the ability of parents to non-judgmentally be present with their children with compassion, full attention, and emotional awareness and to appropriately address the daily challenges with wisdom in line with mindful parenting. Consistent with a study on mindful parenting, this quality is likely to further strengthen parental attachment as a foundation for the development of adolescent self-control/guidance to prevent themselves to be led astray by their habitual, hedonistic impulses for risk-taking (Abar, Carter, & Winsler, 2009; Duncan, Coatsworth & Greenberg, 2009). The nuanced role-modelling unique to traditional Thai culture may wield its influence through parental authority perceived by adolescents. Thai children are inculcated at an early age with a sense of obedience, politeness, deference, and gratitude toward parents (Klausner, 1993). In Thai culture, gratitude extends the concept of reciprocal filial piety, which refers to emotionally and spiritually attending to one's parents out of gratitude (Li, Zou, Liu, & Zhou, 2014). Thai children are socialized with an emphasis placed on developing 'passive acquiescence' to parental or senior authority, a trait described as "nonassertive individualism", and is a corollary of contextualized socialization that may facilitate role modeling with a sense of obedience and respect, and plays a distinctive role in how religious values are internalized.

A second key finding is that Adolescent Religiosity exerts a significantly positive influence on MESGS in limiting risk-taking behaviors. The finding confirms the utility of Buddhist practices in developing the self-guidance system during adolescence despite the inherent imbalance of the brain's Socio-emotional and Cognitive control system (Steinberg, 2008). This finding extends Social Control theory by positing that adolescents' internal guiding system nurtured through religious practices and favorable familial conditions holds the key to discouraging risk-taking. Consistent with several studies, the development of this internal guidance may be possible when there is a presence of a degree of parental attachment, family warmth, and harmony (Kim-Spoon et al., 2012; Mahoney et al., 2008; McCullough & Willoughby, 2009). The internal guiding system may also, in turn, influence adolescents to

have positive moral values reflected in their commitment and involvement toward their socially valued goals and corresponding actions (Hirschi & Stark, 1969; Wiatrowski et al., 1981). The adolescents' MESGS represents a capability to regulate socio-cognitive and emotional domains, manifested in such higher-order, pro-social actions as forgiveness, or admitting mistakes which, according to Attributional theory, means changing their perspectives and interpretations of a situation (Weiner, 1982), plausibly due to the cultivated mindful quality of the self-guiding system. The self-control function of the guiding system may also reinforce prudence and mature judgment through wisdom, which assists adolescents in considering the pros and cons of engaging in risk behaviors. This may also occur as a corollary of the emergence of filial piety, which in the traditional Thai context, includes deference and gratitude. The sense of filial piety distinctive in Thai culture may be instrumental in self-regulation important when adolescents make decisions during exciting, emotionally-charged moments (Guendelman et al., 2017; Herwig et al., 2010).

A third key finding challenges the prevailing neurobiological theory that suggests early and mid-adolescence as the time for the most unruly behaviors (Dusek, 1987; Milkman & Wanberg, 2012; Steinberg, 2008). Instead, a unique pattern of adolescents' risk-taking across their developmental stages was found. The probability of engaging in risk behaviors is lowest at mid-adolescence, peaks in late adolescence and continues into youth. Mid-adolescence is the stage at which risk-taking behaviors begin, but adolescents are protected against these behaviors through the significantly protective effects of MESGS nurtured by familial religious socialization. The most plausible explanation for this pattern may lie in the socialization tug-of-war between the Thai parenting style, parental attachment, and peer pressures. A nuanced deference toward parental figures is a highly respectable and culturally sanctioned value, which might contribute to the optimal religious values transmission at mid-adolescence when adolescents start experiencing risk-taking at a very low rate while still being highly attached to their parents. However, the Thai parenting style is generally unduly protective, which may lead to an excessively high degree of parental dependency and passive acquiescence (Klausner, 1993), characterized by constrained growth in 'well-balanced independence', and self-confidence. Religious role modeling with a high degree of parental dependency and a strong sense of deference may partly contribute to the optimal condition at mid-adolescence for MESGS to exert its most beneficial effects while peer pressure is kept at minimum, setting the stage for a delay in risk-taking behaviors among Thai adolescents. It is plausible that what effectively buffers adolescents against risk behaviors at mid-adolescence can be partly attributed to fear of punishment, associated with strong parental attachment. Mid-adolescence has optimal conditions to safeguard adolescents from risk-taking behaviors through MESGS, and presents a crucial opportunity for the 'well-balanced independence' to be fully cultivated, which should be nurtured through execution of tasks with parents' guidance, encouraging children to discern the true value of tasks (Phra Brahmagunabhorn, 2011). This vital part of socialization allows self-confidence, and self-respect to thrive, providing growth in protective wisdom, which may help carry over the protective effects of adolescent MESGS from mid-adolescence to late adolescence and youth to curtail high rates of risk-taking behaviors associated with these phases of development.

The study's limitations should be considered. Causality may not be deduced, as the study is cross-sectional; reverse relationship is still a possibility. However, the findings are conceptually consistent with the model of religious value transmission through role modeling. Buddhist practices require consistency derived from life experiences, making the reverse relationship less likely, and the reduction in the likelihood of engaging in risk-taking a consequence rather than a determinant. One of the strengths of the study is the measurement of adolescents' risk-taking behaviors, through both self- and parent-report, maximizing candid responses on such sensitive issues. The findings may not be applicable in other

cultures, as different countries may have unique, culturally grounded features, including child rearing, or religious practices, which may differentially play their role in the intergenerational transmission of religiosity. Nevertheless, similar path of influence involving the conduct of religious practices and the consequent emergence of such internal, moral resources as self-control/guidance may be applicable in cultures with similar nature of religious practices. Other family arrangements should be explored in future studies, which may include a longitudinal design for a more robust picture of cause-effect relationships.

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