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Article

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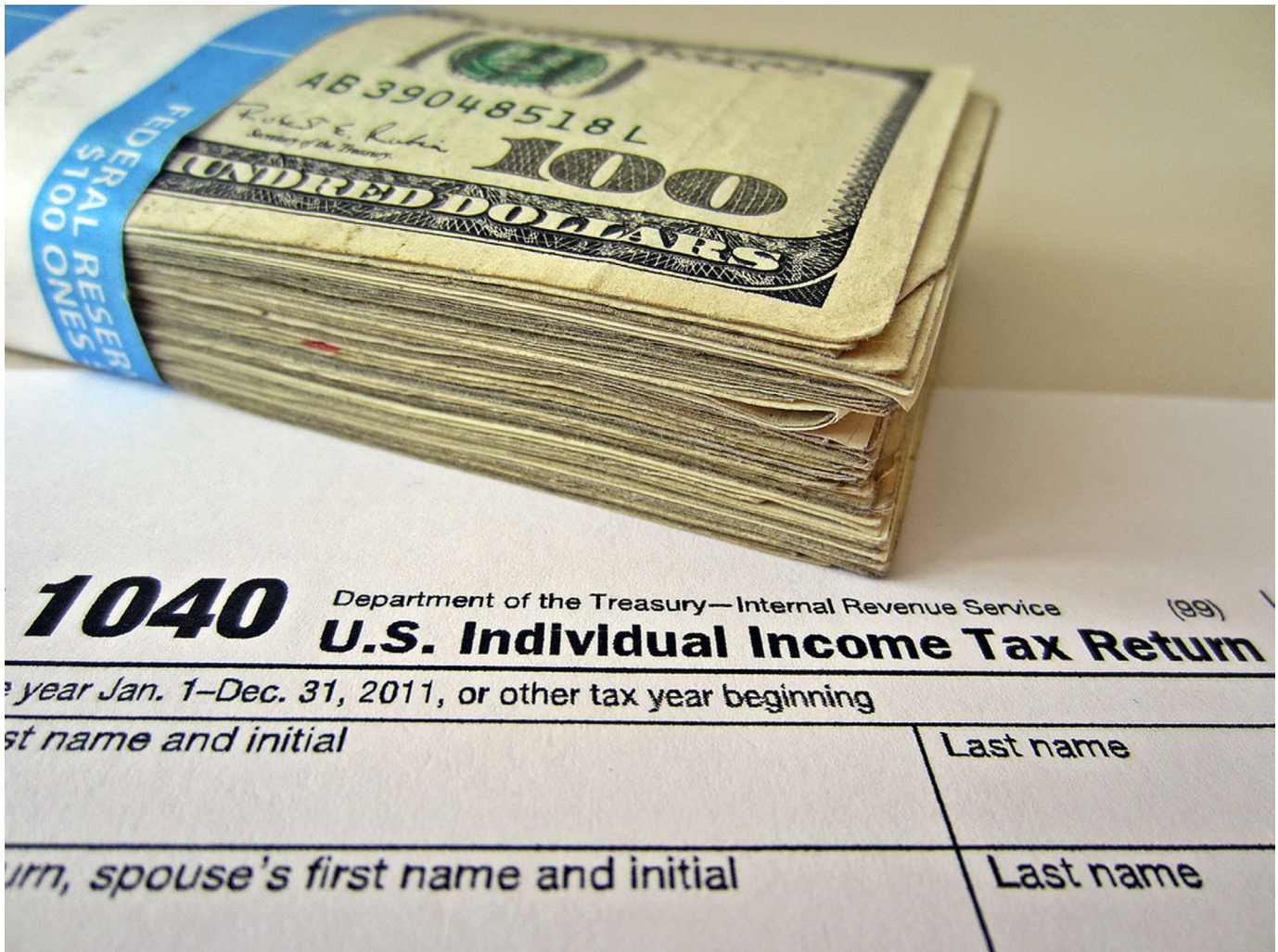
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GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

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Financial and ethical risk-taking by young adults: A role for family dynamics during childhood

Shelia M. Kennison^{1*}, Erin E. Wood¹, Jennifer Byrd-Craven¹ and Megan L. Downing¹

Abstract: The research tested the hypothesis that childhood relationships with parents were related to risk-taking by young adults. Prior research has shown that risk-taking by young children is related to their interactions with mothers and fathers. Few studies have examined how family relationships during childhood are related to risk-taking by young adults. We assessed risk-taking using the domain-specific risk-taking scale (DOSPERT), which measures five domains of risk-taking: ethical, financial, health, recreational, and social. We also assessed sensation-seeking, a personality trait that has been shown to be a predictor of risk-taking and family dynamics, using a measure that quantifies positive and negative childhood relationships with each parent. The three key results were (1) negative mother interactions predicted men's financial risk-taking; (2) negative father interactions and disinhibition predicted men's ethical risk-taking; and (3) women's ethical risk-taking was predicted by negative father interactions, low positive mother interactions, and boredom susceptibility. Implications for identifying young adults most at-risk for ethical and financial risk-taking are discussed.

Subjects: Adolescent Development; Behavioral Sciences; Risk

Keywords: ethical risk-taking; financial risk-taking; young adults; family dynamics; sex differences



Shelia Kennison

ABOUT THE AUTHORS

Shelia Kennison received her PhD in Cognitive Psychology from the University of Massachusetts, Amherst. In addition to numerous research reports, she is the author of the textbook *Introduction to Language Development* published by Sage in 2013 and the forthcoming *Psychology of Language* to be published by Palgrave in 2017.

Erin E. Wood and Megan Dowling are graduate students in the Experimental Psychology PhD program at Oklahoma State University. Erin's interests are primarily in developmental psychology, specifically the role of parenting on child development. Megan's interests are primarily in the area of social psychology, specifically sex and gender differences in cooperation.

Jennifer Byrd-Craven received her PhD in Evolutionary Psychology from the University of Missouri in Columbia. Her research focuses on the impact of social dynamics on the activity of the stress response systems, which are known to be affected by the quality of the parent-child relationship.

PUBLIC INTEREST STATEMENT

Financial and ethical risk-taking by young adults can lead to dire life consequences, including going into significant debt without the means to repay the debt and also engaging in illegal activities. Our results showed that both types of risk-taking were related to childhood relationships with parents. For men, higher levels of negative interactions with their mothers during childhood predicted higher amounts of financial risk-taking and higher levels of negative interactions with their fathers predicted higher amounts of ethical risk-taking as did the personality trait of enjoying being out of control. For women, higher amounts of ethical risk-taking were predicted by higher levels of negative interactions with their fathers, along with lower positive interactions with their mothers and the personality trait of being prone to boredom. These results may be useful in identifying those young adults mostly likely to engage in financial and ethical risk-taking.

1. The role of family dynamics in risk-taking by young adults

Parents are one of the major influences on the socialization of children (Kohlberg, 1969; Maccoby, 1992; Piaget, 1932/1977; Walker & Hennig, 1999). Identifying and understanding the influence of the parent-child relationship on the behavior of children has the potential to lead to successful methods of reducing adverse behaviors. An example of one such adverse behavior is risk-taking. Risk-taking in adolescents and young adults is a major public health concern (DiClemente, Santelli, & Crosby, 2009; Eaton et al., 2010; Patton et al., 2012). Prior research has suggested that parents play an important role in framing the psychosocial context, thus shaping children's views about risk-taking and influencing the extent to which children engage in risk-taking (Chisholm, Quinlivan, Petersen, & Coall, 2005; Quinlan, 2007). A life-history perspective offers a potential explanation of how parental behavior may be translated into risk-taking behaviors in emerging adulthood (Del Giudice, 2009). Risk-taking behaviors are particularly apparent at certain developmental choice points, with the transition from adolescence to adulthood being a critical juncture (Daly & Wilson, 1996; Hill, Ross, & Low, 1997). Much of the prior research has focused on risk-taking in young children. The focus of the present research was to investigate the possibility that young adults' risk-taking can be predicted from their childhood relationships with parents.

Belsky and colleagues have documented the critical role of parenting in shaping children's future outcomes (Belsky, Houts, & Fearon, 2010; Belsky, Jaffee, Sligo, Woodward, & Silva, 2005). Negative parent-child interactions during childhood have been related to earlier menarche (Belsky, Steinberg, & Draper, 1991) and short-term reproductive strategies (Ellis, Schlomer, Tilley, & Butler, 2012), including sexual risk-taking and earlier child-bearing (Byrd-Craven, Geary, Vigil, & Hoard, 2007). Positive parent-child interactions during childhood have been related to later menarche, less sexual risk-taking, and delayed in child-bearing (Ellis, 2004; Ellis & Bjorklund, 2012).

Few prior studies have investigated the relationship between childhood parent-child relationships on the broad range of risk-taking behaviors that can lead to adverse outcomes for individuals as well as society (Nelson & Padilla-Walker, 2013). Studies focusing on children have documented that parents play a role in children's risk-taking. Morrongiello and colleagues have found that the fact that boys take more risks than girls is related to parent socialization practices (Morrongiello & Dawber, 1999, 2000; Morrongiello & Hogg, 2004; Morrongiello, Midgett, & Stanton, 2000; Morrongiello, Zdzieborski, & Normand, 2010). Other researchers have also noted that parents respond more negatively to risk-taking by daughter than sons (Clearfield & Nelson, 2006; Endendijk et al., 2013; Galligan & Kuebli, 2011; Pratt, Arnold, Pratt, & Diessner, 1999). These effects are likely compounded by the fact that boys have been found to be more likely, cross-culturally, to engage in risk-taking behaviors (Geary, Byrd-Craven, Hoard, Vigil, & Numtee, 2003).

Morrongiello et al. (2000) showed that for children as young as 10 years of age, there were already sex differences in the tendency to engage in risk-taking. Differences in boys' and girls' risk-taking appear to be due, at least in part, to the fact that parents are more accepting of risk-taking by sons than by daughters. Morrongiello and Dawber (2000) found that mothers, more than fathers, are involved in moderating and preventing certain risk-behaviors (Morrongiello & Dawber, 2000). Previous research has shown that mothers have a pronounced level of influence on the socialization of children in areas such as verbal expression, independence, and help-seeking behavior (Clearfield & Nelson, 2006). However, there has been much disagreement on the level of influence fathers have on child socialization (Endendijk et al., 2013).

Recent research has shown that there is a link between having close, positive relationships with older adults, including grandparents, during childhood and the risk-taking as young adults (Hughes, Bolar, & Kennison, 2016; Kennison & Ponce-Garcia, 2012). The research extends early work showing that young adults with more ageist attitudes take more risks than other because taking risks may be a way for young adults to feel strong and invulnerable when experiencing death anxiety (Popham, Kennison, & Bradley, 2011a, 2011b). Kennison and Ponce-Garcia (2012) found that young adults who

had close, positive relationships with grandparents or older adults during childhood had lower levels of ageism and took fewer risk in daily life than others.

The purpose of the present research was to test the hypothesis that parent-child relationships during childhood would be related to risk-taking later in life, specifically during early adulthood. Support for the hypothesis has been observed in the area of sexual risk-taking (Huebner & Howell, 2003). We hypothesized that the relationship between parent and child during childhood may predict risk-taking, broadly defined. In the study that we report, we assessed six domains of risk-taking: health, which includes sexual risk-taking, recreational, social, ethical, and financial using Weber and colleagues' domain-specific risk-taking (DOSPERT) scale (Blais & Weber, 2001, 2006; Figner & Weber, 2011; Weber, Blais, & Betz, 2002). Risking-taking involves decisions and processes that vary according to the domain. These processes might involve not only an assessment of the situation and the benefits or costs of the decision, but also the specific personality and characteristics of the person making the decision (Blais & Weber, 2001, 2006; Figner & Weber, 2011; Weber et al., 2002). Research using the DOSPERT has shown that risk-perceptions and/or risk-propensity were related to self-reported risk-taking (Blais & Weber, 2006) and risk-taking behavior in a laboratory task (Zimmerman, Shalvi, & Bereby-Meyer, 2014).

We also hypothesized that while some types of risk-taking may be related to the parent-child relationship during childhood, others may not be. Prior research has shown that health-related risk-taking (e.g. risky sexual behavior, drinking alcohol, and using drugs) can be influenced by individuals other than parents such as peers (Albert, Chein, & Steinberg, 2013; Chein, Albert, O'Brien, Uckert, & Steinberg, 2011; Lansford, Dodge, Fontaine, Bates, & Pettit, 2014; Smith, Chein, & Steinberg, 2014). During adolescence, risk-taking that has negative consequences is more likely to occur if one is with peers than when alone (Albert et al., 2013). In contrast, other research has shown that the social norms of peers did not predict young adults' financial risk-taking, but those associated with parents did (Xiao, Tang, Serido, & Shim, 2011).

In this paper, we report a study that investigated the relationships between young adults' risk-taking and their relationships with parents during childhood in a sample of 360 young adults. We hypothesized that we would find higher risk-taking in men than women and that those reporting more negative relationships with parents would report higher levels of risk-taking than others. Because of prior research with children showing that some aspects of children's behavior are influenced differently by the same-sex parent and the opposite sex parent, we hypothesized that some, but not all, types of risk-taking may be related to participants' relationships with parents during childhood.

2. Method

2.1. Participants

The sample included 360 undergraduates (203 women, 157 men) who were recruited from a Department of Psychology SONA system. Students were enrolled in psychology and speech communication courses at a large public university in the Midwestern region of the United States. Participants received course credits in exchange for participation. Women were on average 19.52 years old ($SD = 3.39$). Men were on average 19.66 years old ($SD = 1.63$). 79.4% of the sample was European-American, not of Hispanic origin; 5.6% was African-American; 6.7% was Native American; 3.1% was Hispanic, 1.7% was Asian American, and 2.8% was "more than one category."

2.2. Materials

All participants completed a survey in which they were asked questions about their risk-taking, personality traits, family dynamics, and demographics (i.e. sex, age, and family income during high school). Risk-taking was measured using the 30-item DOSPERT (Blais & Weber, 2006). The DOSPERT assesses risk-taking in five domains: ethical risk-taking (i.e. cheating, lying, and illegal activity), financial risk-taking (i.e. risking lending, risking ventures, and gambling), social risk-taking (social faux pas and imprudent interactions with superiors), health-related risk-taking

(i.e. drug use and carelessness regarding personal safety), and recreational risk-taking (i.e. risk related to sports and other leisure activities). Participants were asked to rate their likelihood of engaging in specific behaviors using a seven-point rating scale ranging from 1 (*Extremely Unlikely*) to 7 (*Extremely Likely*). In prior research, the internal consistency of the DOSPERT has been moderate to high ($\alpha = .71-.86$). In the present student, the internal consistency was moderate to high: (1) ethical ($\alpha = .83$), (2) financial ($\alpha = .84$), (3) social ($\alpha = .71$), (4) health ($\alpha = .76$), and (5) recreational ($\alpha = .84$).

We assessed sensation seeking using Zuckerman, Eysenck, and Eysenck's (1978) SSS-V Scale. The scale's 40 items represent four dimensions of sensation seeking: (1) thrill and adventure seeking (TAS, i.e. affinity for carrying out activities involving danger or speed); (2) experience seeking (ES, i.e. affinity for novel experiences and unconventional lifestyles); (3) disinhibition (DIS, i.e. affinity for feeling out of control through drug and/or sexual experiences); and (4) boredom susceptibility (BS, i.e. aversion of people or activities that are boring). The Cronbach alphas for the data collected in this research were: TAS (.78), DIS (.76), ES (.72), and BS (.74).

Family dynamics was measured using Skinner, Johnson, and Synder's (2005) parenting questionnaire, which assesses adults' relationships with their mother and father. The scale captures six dimensions of relationship with each parent when they were growing up as well as their relationship now. The six dimensions are warmth (e.g. "My father and I do special things together." $\alpha = .79$), structure (e.g. "My mother's expectations for me are clear." $\alpha = .65$), autonomy support (e.g. "My father expects me to say what I really think." $\alpha = .75$), rejection (e.g. "Sometimes I feel like my mother thinks I'm difficult to like." $\alpha = .71$), chaos (e.g. "My father changes the rules a lot at home." $\alpha = .67$), and coercion (e.g. "I often get into power struggles with my mother." $\alpha = .77$). As in prior research (Byrd-Craven, Auer, Granger, & Massey, 2012; Kennison & Byrd-Craven, 2015), we created four composite variables, two for each parent representing positive and negative relationship dynamics. Positive mother and father variables were created by summing the scores for the warmth, structure, and autonomy support for each parent. Negative mother and father variables were created by summing the scores for rejection, chaos, and coercion for each person. The Cronbach alphas for the four composite variables were: positive father ($\alpha = .79$), positive mother ($\alpha = .79$), negative father ($\alpha = .85$), and negative mother ($\alpha = .87$).

2.3. Procedure

After we obtained IRB approval for the research from Oklahoma State University, we posted an announcement of the study on the Department of Psychology's SONA system. Volunteers were able to access and to complete the study online. The first page of the survey provided participants with information about the study and an invitation to participate and an option to decline participation, if desired. The participant information sheet provided information about the participants' rights as a human research participant and contact information for the Oklahoma State University IRB and contact information for researchers from which additional information about the study could be obtained, if desired. Participants were instructed that they could skip any question that they did not want to answer. For the study, we obtained a waiver of documentation of consent (i.e. obtaining a signature) from the IRB because the study was deemed no greater than minimal risk and because data could be kept anonymous, protecting participants from having their identities linked to their responses. All participants received the same version of the survey with questions provided in the following order: sensation-seeking, family dynamics, and demographic questions.

3. Results

Responses were first analyzed to determine the type of parent-child relationships that were represented in our sample. We found that the majority of participants were raised by their biological parents. For women, 190 out of 203 reported having a biological father as their primary male caregiver; 13 reported having a different type of primary male caregiver (e.g. adoptive father,

step-father, grandfather, or uncle); 197 out of 203 reported having a biological mother as a primary female caregiver; six reporting having a different types of female caregiver (e.g. adoptive mother, step-mother, grandmother, or aunt). For men, 150 out of 157 reported having a biological father as their primary male caregiver; 7 reported having a different type of primary male caregiver (e.g. none, adoptive father, step-father, grandfather, or uncle); 153 out of 154 reported having a biological mother as a primary female caregiver; 4 reporting having a different types of female caregiver (e.g. adoptive mother, step-mother, grandmother, or family friend).

Second, we computed the descriptive statistics for the key variables in the study: five DOSPRT risk-taking subscales (i.e. ethical, financial, health, social, and recreational), the four sensation-seeking personality subscales (i.e. disinhibition, boredom susceptibility, thrill and adventure seeking, and experience seeking), and four parent-child relationship variables (i.e. positive mother, positive father, negative mother, and negative father). Because prior research has shown sex differences in risk-taking (Kennison & Messer, *in press*), men's and women's responses were analyzed separately. Table 1 displays the descriptive statistics for the variables of interest. In order to determine whether men's and women's responses differed, we conducted a series of *t*-tests. The results showed that men reported greater likelihood of risk-taking than women in three of the five categories of risk-taking: ethical risk-taking, $t(351) = -5.16, p < .001$; financial risk-taking, $t(340) = -7.56, p < .001$; health risk-taking, $t(345) = -2.79, p = .006$; recreational risk-taking, $t(345) = -1.54, p = .12$; and social risk-taking, $t < 1$. Negative father scores were significantly higher for men than for women, $t(336) = -3.08, p = .002$. There were no significant differences for men and women for positive father, negative mother, or positive mother, $ts < 1.2, p > .20$. Disinhibition was higher in men than women, as was experience-seeking and boredom susceptibility. Thrill and adventure seeking did not differ significantly for men and women, $t < 1$.

Relationships among pairs of variables were investigated in a series of Pearson's product-moment correlation analyses. We report correlations for men, women, and overall. A summary of these correlational analyses are displayed in Table 2. The family dynamics variables were significantly related to three types of risk-taking: (1) ethical risk-taking for men and women; (2) financial risk-taking for men; (3) health/safety risk-taking for men; and (4) recreational risk-taking for women and also to three of the four subscales of sensation-seeking. Sensation-seeking subscales were significantly related to risk-taking, as shown in prior studies (Hughes et al., 2016; Kennison & Messer, *in press*; Kennison & Ponce-Garcia, 2012; Popham et al., 2011a, 2011b).

Because prior research has shown that sensation-seeking predicts risk-taking (Popham et al., 2011a), we investigated whether family dynamics explained any variance in addition to that explained by sensation-seeking. We carried out a series of multiple regression analyses each using the hierarchical approach in which sensation-seeking subscales were independent variables used to predict a particular type of risk-taking in Step 1 and in which sensation-seeking and the four family dynamics composite variables were independent variables in Step 2. The results showed that family dynamics significantly explain additional variance for ethical and financial risk-taking for men [ethical: $F(4,102) = 6.68, \text{adjusted } R^2 = .23, \Delta R^2 = .19$ and financial: $F(4,102) = 6.38, \text{adjusted } R^2 = .18, \Delta R^2 = .19$] and ethical risk-taking for women, $F(4,149) = 2.84, \text{adjusted } R^2 = .15, \Delta R^2 = .06$. For men, the significant predictors of ethical risk-taking were disinhibition, $\beta = .23, p < .03$, and negative father, $\beta = .29, p < .05$. The only significant predictor of financial risk-taking was negative mother, $\beta = .30, p < .05$. For women, the analysis for ethical risk-taking had three significant predictors: boredom susceptibility, $\beta = .23, p < .02$, negative father, $\beta = .24, p < .01$, and positive mother, $\beta = -.22, p < .04$ (Table 3).

Table 1. Summary of descriptive statistics for men and women

	Men						Women					
	Mean	SD	Min	Max	Skewness	Kurtosis	Mean	SD	Min	Max	Skewness	Kurtosis
DOSPRT-E	15.80	7.37	6.00	42.00	.79	.26	12.11	6.04	6.00	42.00	1.50	2.84
DOSPRT-H	21.26	7.38	6.00	42.00	.05	-.14	19.10	7.02	6.00	42.00	.30	.12
DOSPRT-R	25.60	9.18	6.00	42.00	-.19	-.78	24.05	9.41	6.00	42.00	-.08	-.82
DOSPRT-F	19.50	7.80	6.00	42.00	.26	-.26	13.69	6.42	6.00	42.00	.90	1.20
DOSPRT-S	28.29	5.79	6.00	42.00	-.32	.73	27.67	6.21	10.00	42.00	-.46	.40
TAS	6.99	2.72	.00	10.00	-.60	-.66	6.71	2.62	.00	10.00	-.66	-.39
ES	4.85	2.11	.00	10.00	.00	-.51	4.40	1.98	.00	9.00	.06	-.53
DIS	4.57	2.57	.00	10.00	.23	-.91	3.69	2.65	.00	10.00	.42	-.74
BS	2.94	1.98	.00	8.00	.61	-.34	2.37	1.72	.00	7.00	.56	-.38
Positive father	2.30	2.07	2.75	12.00	-.99	1.04	9.23	2.56	.00	12.00	-.96	.17
Negative father	6.01	2.24	2.00	12.00	.71	.01	5.27	2.12	2.75	12.00	1.05	.50
Positive mother	9.90	1.75	3.00	12.00	-1.25	2.53	9.60	2.43	.00	12.00	-1.30	1.48
Negative mother	5.72	2.06	3.00	12.00	.83	.06	5.58	2.30	.00	12.00	.63	-.31

Notes: TAS = thrill and adventure seeking; ES = experience seeking; DIS = disinhibition; BS = boredom susceptibility.

Table 2. Summary of correlations results for men (lower half of matrix) and women (upper half of matrix)

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13
1. DOSP-E	–	.61**	.12	.51**	.18**	–.13	.24**	–.23**	.14	.07	.16*	.27**	.33**
2. DOSP-F	.58**	–	.20**	.40**	.33**	.06	.06	–.06	.04	.14	.14	.13	.14*
3. DOSP-S	.05	.14	–	.29**	.45**	.00	–.05	–.14	.06	.30**	.44**	.18*	.18*
4. DOSP-H	.59**	.44**	.24**	–	.40**	–.09	.17*	–.14	.10	.18*	.40**	.54**	.38**
5. DOSP-R	.22**	.26**	.40**	.56**	–	.05	–.01	.03	–.01	.71**	.39**	.17*	.27**
6. POS father	.06	.30**	.03	–.02	.04	–	–.39**	.55**	.20**	.05	–.14*	–.08	–.14
7. NEG father	.39**	.26**	.07	.21*	.06	–.15	–	–.11	.38**	–.05	.10	.11	.12
8. POS mother	.17*	.26**	.07	.00	.01	.63**	.01	–	.44**	–.03	–.28**	–.18*	–.25**
9. NEG mother	.34**	.24**	.08	.26**	.03	–.19*	.70**	–.24**	–	.09	.19**	.12	.09
10. TAS	–.00	.12	.30**	.35**	.72**	.04	.07	.08	–.01	–	.45**	.15*	.19**
11. ES	.08*	.01	.23**	.24**	.29**	–.09	.16	–.07	.17*	.29**	–	.46**	.33**
12. DIS	.34**	.22**	.07	.60**	.22**	.03	.15	.19*	.16	.24**	.30**	–	.46**
13. BS	.16*	.10	.02	.14	–.01	–.01	.19*	–.14	.20*	.03	.20**	.24**	–

Notes: Lower half of the matrix provides results for men and upper half provides results for women. DOSP-E = ethical risk-taking; DOSP-F = financial risk-taking; DOSP-H = health-related risk-taking; DOSP-S = social risk-taking; DOSP-R = recreational risk-taking; POS = positive; NEG = negative; TAS = thrill and adventure seeking; ES = experience seeking; DIS = disinhibition; BS = boredom susceptibility.

* $p < .01$.

** $p < .001$.

Table 3. Summary of hierarchical multiple regression results predicting ethical risk-taking for men and women

		Men (n = 157)						Women (n = 203)					
		β	t	sr ²	R	R ²	ΔR	β	t	sr ²	R	R ²	ΔR
Step 1					.31	.06	.10*				.37	.11	.14*
	DIS	.32	3.18	.09*				.18	1.93	.02			
	TAS	-.08	-.85	.006				.03	.34	<.001			
	ES	-.002	-.02	<.001				-.05	-.49	.001			
	BS	.01	.10	<.001				.26	2.92	.05*			
Step 2					.53	.23	.19				.44	.15	.06
	DIS	.23	2.37	.04*				.18	1.92	.02			
	TAS	-.09	.95	.01				.04	.49	.001			
	ES	-.07	-.72	.004				-.10	-1.00	.01			
	BS	-.01	-.06	<.001				.23	2.57	.04*			
	Positive father	.07	.62	.003				.08	.87	.004			
	Negative father	.29	2.04	.03*				.24	2.67	.04*			
	Positive mother	.14	1.06	.01				-.22	-2.11	.02			
	Negative mother	.19	1.32	.01				-.08	-.84	.004			

Notes: ES = experience seeking; DIS = disinhibition; BS = boredom susceptibility; TAS = thrill and adventure seeking.
 * $p < .001$.

4. Discussion

The present research investigated whether parent-child relationships during childhood predicted risk-taking by young adults. The study utilized the DOSPERT (Blais & Weber, 2006) to assess five domains of risk-taking: (1) health-related risk-taking; (2) recreational risk-taking; (3) social risk-taking; (4) ethical risk-taking; and (5) financial risk-taking. As in prior research (Kennison & Ponce-Garcia, 2012; Popham et al., 2011a, 2011b), the present results showed that men reported significantly higher levels of risk-taking than women. The present results supported the hypothesis that parent-child relationships during childhood would predict risk-taking in young adults, but just in two of the five types of risk-taking—ethical risk-taking in men and women and financial risk-taking in men. Men’s ethical risk-taking was predicted by negative father interactions and disinhibition, one of the four aspects of sensation-seeking. Women’s ethical-risk-taking was predicted by negative father interactions, low positive mother interactions, and boredom susceptibility, one of the four aspects of sensation-seeking. Men’s financial risk-taking was predicted only by negative mother interactions. These results suggest that during childhood parent-child interactions may serve as a cue as to the relevant costs and benefits of risk-taking behavior (Del Giudice, 2009; Xiao et al., 2011), and our results show that this type of behavioral calibration appears to be domain-specific. Notably, these effects were found despite the fact that the vast majority of the sample (i.e. 94%) reported being raised by their biological parents, demonstrating that natural variations in parental behavior occurring within a nuclear family context can have long-lasting consequences on important developmental outcomes (Table 4).

Our results are consistent with prior research showing that the quality of the parent-child relationships can play a role in the adult child’s risk-taking. Nelson and Padilla-Walker (2013) aimed to identify different types of young adults based on their risk-taking behavior and how their trajectory from adolescence to adulthood varied. The measures used in this prior research differed a great deal from the present research. Most importantly, their measure of risk-taking did not assess financial

Table 4. Summary of hierarchical multiple regression results predicting financial risk-taking for men and women

	Men (n = 157)							Women (n = 203)						
	β	t	sr ²	R	R ²	ΔR		β	t	sr ²	R	R ²	ΔR	
Step 1				.23	.02	.06					.19	.04	.04	
	.21	2.10	.04*					.08	.83	.004				
	.16	.60	.003					.11	1.08	.008				
	-.04	-.42	.002					.00	.001	.000				
	.01	.11	<.001					.08	.83	.004				
Step 2				.49	.18	.19*					.24	.004	.02	
	.09	.86	.01					.07	.71	.003				
	.07	.71	.004					.01	.99	.006				
	-.08	-.86	.01					-.001	-.01	<.001				
	.004	.05	<.001					.08	.01	.006				
	.17	1.39	.01					.17	1.59	.02				
	.11	.74	.004					.12	1.18	.01				
	.23	1.63	.02					-.11	-.94	.01				
	.30	1.99	.03*					-.03	-.25	<.001				

Notes: ES = experience seeking; DJS = disinhibition; BS = boredom susceptibility; TAS = thrill and adventure seeking.
 *p < .001.

and ethical risk-taking. In addition, their measure of risk-taking did not include as many categories of risk-taking as the present research, and the questions used to assess parent-child relationships covered only the positive aspects of those relationships. The approach taken in the present research provides a more complete understanding of how positive and negative aspects of the parent-child relationship during childhood may be related to a broad range of risk-taking behaviors.

The fact that parent-child relationships did not predict three of the five types of risk-taking may be interpreted in multiple ways. It may be that social, recreational, and health-related risk-taking are less susceptible to the influence of childhood family dynamics and more influenced by the influence of peers. Prior research has shown that peers play an important role in the types of risk-taking classified as health/safety risking in the present research (Albert et al., 2013; Chein et al., 2011; Lansford et al., 2014; Smith et al., 2014). We suspect that different types of risk-taking are influenced to varying extents by family versus non-family relationships. Future research is needed to determine the different contributions of parent and peer relationships on risk-taking. Reducing risk-taking in young adults may be achieved by generally improving parent-child relationships through more efforts to provide new parents with information how to increase positive aspects of the parent-child relationship (e.g. warmth, structure, and autonomy support) and that decrease negative aspects of the parent-child relationship (e.g. rejection, coercion, and chaos).

There are several limitations of the research. The correlational design prevents a strictly causal interpretation of the results. Parent-child relationships may cause differences in risk-taking in young adults. On the other hand, risk-taking by young adults may be related to their childhood behaviors, which in some cases may be the impetus for negative parent-child interactions. In recent research by Massey-Abernathy and Byrd-Craven (2016), a relationship with a harsh or inconsistent father moderated the relationship between Machiavellian personality traits and physiological response to seeing another's distress. Those high in Machiavellian personality traits appeared to be more resistant to the impact of harsh fathering on autonomic nervous system responses to other's distress, while those lower in these traits and who also experienced harsh fathering showed enhanced responding to witnessing distress in others. Thus, interactions between child temperament and parenting styles are important. A second limitation is the fact that the sample was college students, who are likely to have different risk-taking tendencies and family dynamics than other populations, such as older adults and those of the same age who are not enrolled in college. A third limitation relates to how risk-taking was measured in the present study. We assessed individuals' likelihood that they would engage different types of risk-taking behavior. It is possible that in future research in which actual risk-taking is assessed different results would be obtained. Lastly, because 94% of the sample reported being raised by their biological parents, it is not clear how well the present results will generalize to other types of populations.

In sum, the present research adds to the literature showing that relationships during childhood are related to contemporary behaviors in young adults. Negative relationships with father predicted ethical risk-taking for both men and women. Women's ethical risk-taking was also predicted by positive mother relationship. Negative mother relationships predicted financial risk-taking for men. Future research is needed to determine how parent and peer relationships during childhood are related to different types of risk-taking by young adults.

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