



Valuing Risk: Endorsed Risk Activities and Motives Across Adulthood

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Abstract

This study used content analysis of survey responses to help understand attitudes regarding taking risks across the adult lifespan. A sample of 842 U.S. adults ages 18–92 were asked to report their *personal philosophy* of taking risks, and what risks they felt people their age should take more often. Thematic categories were identified to classify the range of risk activities and explicit motives for taking risks. Responses were coded, and frequencies of those risk activities and motives were compared between young adults (ages 18–29), middle adults (30–59), and older adults (60+). Logistic regression was used to identify linear and curvilinear trends. Interpreting results within a lifespan developmental task framework, we concluded that risk taking may be valued as a way to create opportunities during young adulthood, a means to capitalize on those opportunities in middle adulthood, and as a strategy for managing resources and well-being in late adulthood.

Keywords Risk attitudes · Adulthood · Lifespan development · Risk studies · Risk beliefs

Introduction

Risk taking involves engaging in behaviors that entail a chance of loss (Furby and Beyth-Marom 1992). There is a paradox with respect to risk taking in both everyday life and academic research. On the one hand, people are encouraged to take risks to grow and develop. There is the old adage that “nothing ventured, nothing gained.” One has to risk the possibility of unpleasant consequences to maximize one’s potential in life. In this framing, risk taking is an important and necessary part of achieving potential. Yet at the same time, risk taking is often equated with dangerous activities (e.g., substance use) and thus viewed as something to be avoided. This latter focus on the hazards of risk taking is especially prominent in the social and behavioral sciences, and is certainly important. However, there is the possibility that problem-based literature may inadvertently restrict the focus to maladaptive behaviors and overlook the full range of motivations behind risk taking. The current study was designed to explore why people feel they should take risks,

using an open-ended format to allow respondents to define risks for themselves, and without imposing any preconceptions regarding the nature of those risks.

Age and Risk

Evidence from various disciplines supports the idea that risk assessment and preferences vary by age. One prominent topic concerns how and why risk acceptance and behavior appear to be particularly high in adolescence before declining into adulthood (Romer 2003). For example, research on sensation seeking consistently finds that tendencies to seek novel and intense experiences peak in the years between childhood and adulthood (e.g., Arnett 2005; Shulman et al. 2015; Zuckerman 2007). Zuckerman and Kuhlman (2000) argued that a preference for novelty was likely adaptive at some point in evolutionary history but is now often directed toward activities that prove dangerous or maladaptive in the contemporary environment. Steinberg (2010) and others have more recently argued that elevated risk behavior during adolescence can be explained by differential maturation of brain structures during this period of the lifespan.

Still, risk taking is not confined to youth, and the psychological and social process that contributes to risk taking might not always be associated with harmful outcomes. Further, the interpretation of risk attitudes and differences across the lifespan may depend on how risks are defined.

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Some researchers have argued that exact nature and direction of association between risk tolerance and age is dependent on measurement method and domain (Mather et al. 2010; Mata et al. 2011). Results from the DOSPERT risk preference survey instrument (Blais and Weber 2006) show that age differences depend in part on which domain of risk is isolated. Among adults aged 18–93, scores on that measure indicate that attitudes toward recreational, ethical, and health risks decline with age, whereas financial and social risk taking attitudes show curvilinear trends (Rolison et al. 2013). Importantly, taking some kinds of risks could be considered functional and even necessary at certain times of life. For example, qualitative studies of college students suggest that they consider some types of experimentation and risk taking to be purposeful means of exploration and identify development (Dworkin 2005; Ravert and Gomez-Scott 2015).

The Importance of Heuristics, Values, and Goals Across the Lifespan

In addition to acknowledging that developmental considerations play a role in risk perception and behavior, research increasingly recognizes that people do not necessarily weigh all relevant factors before acting, nor weigh them equally. Increasingly, decision-making models acknowledge that human decisions and behavior seldom operate in a completely rational way, free from emotion, biases, and situational influences (e.g., Slovic et al. 2005; Loewenstein et al. 2001). It is not necessarily efficient and practical to weigh all sides before acting, and individual's actions may instead rely heavily on heuristics, or mental shortcuts. Therefore, uncovering the types of heuristics individuals hold across the lifespan regarding risk taking may be important in order to most fully understand risk perception and behavior.

Values, or beliefs about the degree of worth or importance attributed to something, may represent one such mental shortcut that guides behavior. Ritter and Freund (2014) argue that values “can also be seen as providing clear and simple rules that enable people to shortcut decisional or evaluative processes” and serve as “a kind of heuristic” (p. 281). Accordingly, values serve as criteria for evaluation, and influence one's choice of actions, things, or situations (Schwartz 2006). Further, some values may tend to vary by age. For example, in research on values held by adults across 20 countries, Schwartz (1992, 2006) found age to be positively associated with some values, including security and conformity, but negatively associated with others including stimulation and achievement.

General age-related differences in values and goals, then, may help explain some risk attitudes and behaviors across adulthood. A lifespan developmental perspective asserts that people progress through a series of relatively

predictable stages, each with a unique set of needs and developmental “tasks.” Classic developmental work by Erikson and Erikson (1998), Havighurst (1972), and others suggest that individuals face different tasks or challenges as they move through adulthood. When thinking about developmental tasks, it is convenient to distinguish between early adulthood, middle adulthood, and older adulthood. In a synthesis of the lifespan developmental literature, Hutteman et al. (2014) proposed a model in which developmental tasks (considered as predictable patterns of occurrences that individuals might be expected to bring about and master) both influence, and are influenced by, personality change over the lifespan. From that perspective, domains of romantic relationships, family life, job life, social life, and physical change provide the context for specific tasks within early, middle, and late adulthood.

Other scholars have worked to identify predictable psychosocial changes across the lifespan in terms of goal desires and pursuits. Hoppmann et al. (2008) found that adolescents and young adults reported more autonomy and social acceptance goals (e.g., be independent, avoid loneliness) than mid- and late-adults, who more-frequently cited generativity and emotion-relation goals (e.g., help others, maintain emotions). Likewise, Brandtstädter et al. (2010) have argued that aging would generally involve a transition from more *extrinsic* goals, those geared toward future gain, toward more *intrinsic* goals, because future benefits come to hold less weight than benefits that hold immediate importance and meaning. Given that normative tasks and goals appear to change across the lifespan, it seems plausible that the types of risks individuals value and endorse may vary accordingly across developmental stages.

Opportunities for reaching various goals may also vary across the lifespan. According to the Motivational Theory of Lifespan Development, (Heckhausen et al. 2010), individuals will try to select and shape their contexts to pursue their objectives. Heckhausen argues that across the lifespan, “opportunities to strive for specific goals emerge, peak, decline, and disappear” (p. 11). For a given objective (e.g., establish a career), the *goal choice* phase involves identifying and weighing opportunities, followed by *goal-engagement* and possible attainment, before the developmental deadline for that particular goal passes. From this perspective, the types of risks that individuals value may depend in part on the tasks and goals of their particular life stage. Given that young, middle, and older adulthood involves a progression of exploring, establishing, and adjusting, in terms of romantic relationships, family life, job life, social life, and physical changes (Hutteman et al. 2014), salient risk activities and motivations for undertaking them might change to reflect those changing life tasks.

The Current Study

This study follows from a premise that (a) people hold heuristics regarding what types of risks are worthwhile, (b) those heuristics might be expected to align with values and goals that are most salient during a particular period in the lifespan, and (c) asking people directly about their attitudes is a useful way to examine age-related differences in the degree and types of risks people value across the lifespan. We chose a method of directed content analysis (Hsieh and Shannon 2005) of survey responses to evaluate these ideas. Content analysis involves using a coding system to systematically analyze and quantify text or other communication messages (Elo and Kyngäs 2008). Our approach was based in a prior content analysis study of risk attitudes among U.S. college students (Ravert and Gomez-Scott 2015). In that study, participants completed a survey reporting their “philosophy of taking risks,” and which specific risks they felt people their age should take more often. Four thematic categories of reasons to take risks were identified; (a) for satisfaction: for enjoyment or, (b) to avoid missing out on opportunities (e.g., “you’ll never know what you missed.”), (c) for achievement and personal gain, and (d) for personal growth (e.g., “to learn about yourself.”). The current study used similarly worded survey items and used these previously established thematic categories as a starting point for analysis.

Method

Sample and Data Collection

Following IRB approval, a panel of 1029 US adults (ages 18–91, mean age 47.8) responded to an online survey implemented by a national market research company. The company (GFK KnowledgePanel®) distributed invitations to a sub-sample of its active panel participant pool of more than 55,000 US adults who had been recruited using probability-based address sampling. The researchers paid a fee to the company to include a set of questions in a panel survey, and then were provided the resulting dataset. For non-internet households who agree to participate, the company provided internet access to reach a more representative sample.

Two open-ended survey questions were included for purposes of this study. The first was worded, “People have different beliefs about taking chances and risks in life. What is your personal philosophy on taking risks?” The second question was worded, “What risks do you think people your age should take more often, and why?” Demographic information (age, gender, ethnicity) for each participant was included in the dataset.

Data Preparation and Analysis

Of the 1029 surveys, researchers identified and removed any cases that did not include a legitimate, codable response for at least one of the open-ended questions, resulting in 842 (81.8%) usable responses. Textual responses from those 842 surveys were imported into Dedoose qualitative software for thematic coding. Cases were identified only by ID number; age and other demographic information were not included to avoid bias in coding.

Content analysis involves the analysis of communications through coding and quantifying units of text to identify trends or patterns (Vaismoradi et al. 2013), with the first step requiring “unitizing” (Krippendorff 2004, p. 83), or identifying the textual units to be analyzed. In the current study, the first author went through the text of each survey response case by case and highlighted two types of text: (a) lines in which the respondent included an specific action that should be engaged in, hereafter referred to as “endorsed risk activities,” and (b) lines in which the respondent included a reason, or justification for taking risks, and hereafter referred to as “risk motives.” Each instance was marked as a separate unit of analysis, such that responses from any individual respondent might be coded as including from zero to multiple *risk endorsement motive* units and zero to *multiple risk activity* units.

This initial process of unit identification was followed by a process of establishing a set of thematic categories that captured the content found in those units. This involved reviewing the set of *endorsed risk activity* units (lines of text containing a reason for taking risks), to identify key terms that captured key concepts. The next step involved merging and revising that list into a set of exhaustive and mutually exclusive thematic categories, meaning that each unit (line of text) would fit into one, and only one, of the categories. Thematic category generation was repeated for the *risk motive* units, with one exception. Whereas no preconceived set of categories was used for endorsed risk activity units (meaning it was a fully inductive process), we used the set of categories identified by Ravert and Gomez-Scott (2015) as a starting point for establishing the risk motive categories and amended those categories when additional ones were needed to accommodate the data.

Following establishment of thematic categories, each individual unit was coded into its respective category. Because respondents might have listed several endorsed risk activities or risk motives, codes were assigned to each unit (not a single code per respondent). For example, if a respondent stated two reasons to take risks, each of those texts was marked as separate coding units and each assigned a thematic category code. Coders were blind to respondent age (and other demographic data) during this activity. To establish reliability, a random set of 15% ($n = 57/375$)

of risk motive units and 15% ($n=77/506$) of endorsed risk activity units were coded by a second rater, resulting in Cohen's Kappa of .89 and .88, respectively, both considered adequate.

The next phase of the content analysis involved "reducing" (Krippendorff 2004, p. 83), which refers to applying a chosen statistical or analytic technique to content analysis data to sum up trends or findings. This involved quantifying the proportion of responses coded into each category, and then comparing those frequencies across three age groups. In this step, results of coding were imported into SPSS Version 21.0. For each respondent, the dataset contained the number of units coded into each of the thematic categories. This allowed descriptive analysis and comparison of categories across age groups. Whereas there is no universally accepted scheme by which to categorize adult life stages, we chose to group participants into the categories of 18–29, 30–59, and 60+, as used by developmental scholars including Havighurst (1972), and more recently Hutteman et al. (2014). These age-based categories represent different phases of adulthood involving a relatively unique set of developmental tasks shaped by a combination of physical, cultural, and individual influences. Reflective notes were kept throughout the study regarding the data collection, analysis and interpretation process, including analysis decisions and observations, so that they could be reviewed during the data analysis and interpretation process (Vaismoradi et al. 2016).

Descriptive analysis was conducted to determine the number and proportion of cases coded each endorsed risk reason and risk activity thematic category by age group. A set of six logistic regression analyses were also conducted to identify linear and/or curvilinear trends across age within each category of endorsed risk motive. To do so, we entered gender and age in the first step, and added a quadratic age variable in the second. If the coefficient failed to reach significance, we present coefficients only from the previous step containing the linear age term. Only statistically significant effects are reported for the regression analyses.

Results

A total of 1029 panel participants were invited to complete the survey. Of those, 112 did not complete the survey items, and 75 wrote a response that either failed to address the question or was otherwise deemed uncodable due to insufficient context (e.g., "no opinion," "job," "are you serious?"). Thus, usable responses were returned by 842 individuals, for a completion rate of 81.8%. By age group, the response rate was 75.8% (169/223) of 18- to 29-year olds originally invited (referred herein as "young adults"), 79.4% (439/533) of 30- to 59-year olds (referred herein as "middle adults"), and 88.7% (234/273) of ages 60+ (referred herein as "older adults"). Table 1 presents respondent characteristics by age group.

Endorsed Risk Activities

We identified and coded all instances of text in which the respondent cited an activity as a risk that should be taken more often. Of 842 respondents, 60.1% ($n=506$) included at least one such endorsed risk activity in their answer. Among young adults, 72.2% ($n=122$) provided at least one endorsed activity, compared with 64.0% ($n=281$) of middle adults, and 44.0% ($n=103$) of older adults. χ^2 analysis indicated that these proportional differences were statistically significant, $\chi^2(2, N=842)=38.34, p<.001$, with older adults less likely to include an endorsed risk activity than young adults or middle adults (who did not differ significantly from each other). Table 2 presents the types of specific risks endorsed, along with examples and proportions found among each of the three age groups.

The most common endorsed risk activity (18.1% of all responses) was coded as *vocationallacademic*, involving the pursuit of academic, career, or professional achievement opportunities. Examples included returning to school, starting a business, joining the military, "getting a degree in an area they love," and running for political office.

The second most common endorsed risk activity (16.5%) was categorized as *novel activities*. These responses endorsed taking risks characterized as experiencing something new or adventurous. Travel was a common topic in this category (e.g., "see the world," "explore

Table 1 Sample characteristics by age group

Characteristic	Total sample ($n=842$)	Young adults ages 18–29 ($n=169$)	Middle adults ages 30–59 ($n=439$)	Older adults ages 60+ ($n=234$)
Response rate	842/1029 (81.8%)	169/223 (75.8%)	439/533 (79.4%)	234/273 (88.7%)
Mean age	47.8 (SD=17.5)	23.8 (SD=3.4)	45.4 (SD=8.9)	69.6 (SD=6.3)
Women	399 (47.4%)	84 (49.7%)	204 (46.5%)	111 (47.4%)
White non-Hispanic	653 (77.6%)	118 (69.8%)	329 (74.9%)	206 (88.0%)

Table 2 Endorsed risk activities and proportions by age group

Type	Young adult <i>n</i> (%)	Middle adult <i>n</i> (%)	Older adult <i>n</i> (%)	Total <i>n</i> (%) ^a	Example
Vocational-academic	51 (30.2)	95 (21.6)	6 (2.6)	152 (18.1)	“Going back to school” “Finding a new career”
Novel activities	29 (17.2)	70 (15.9)	40 (17.1)	139 (16.5)	“Travel to exotic locations” “Try new things”
Financial	15 (8.9)	67 (15.3)	21 (9.0)	103 (12.2)	“Buying something you have always wanted” “Financial investments”
Manage relationships	20 (11.8)	47 (10.7)	16 (6.8)	83 (9.9)	“Talk to strangers” “Putting themselves out there in relationships”
Intrapersonal	27 (16.1)	39 (8.9)	13 (5.6)	79 (9.4)	“Being themselves” “Following their dreams”
Health action	5 (3.0)	22 (5.0)	18 (7.7)	47 (5.3)	“Changing diet” “A new medication”
Take a stand	14 (8.3)	16 (3.6)	10 (4.3)	40 (4.8)	“Stand up for what they believe is right” “Giving of themselves to others and society”
Change residence	5 (3.0)	9 (2.1)	5 (2.1)	19 (2.3)	“Relocation” “Willingness to move to other areas”
Activities of daily life	0 (0.0)	2 (0.5)	9 (3.8)	11 (1.3)	“Just walking around” “Getting out in the winter”

^aThe *n* (%) represents the number and percent of all 875 respondents who responded and were included in analysis, whether or not they provided a specific reason in their response

new places”), with other examples including trying new foods, singing in public, and taking a hot air balloon ride.

Risk activities coded as *financial* (12.2%) captured a need to make investments, or to otherwise take more risks in one’s financial dealings. Examples included being more aggressive in the stock market, buying a house, car, or making other large purchases. Whereas responses in this category typically involved taking risks for potential financial gain, several responses noted that people should be willing to take the risk of *ignoring* finances. For example, one respondent wrote, “they should be willing to give up their financial security for a better quality of life and happiness.”

Responses coded in the *manage relationships* category (9.9%) stressed the importance of taking a risk to establish, maintain, or end relationships. Common examples included taking chances to meet new people or getting to know them better. Responses in this category sometimes specified communication activities such as having open discussions, and “telling the person they love that they love them even if they might be rejected.” Whereas most examples in this category involved taking risks to initiate or develop relationships, taking the risk of ending poor or abusive relationships was mentioned as well.

Intrapersonal risks (9.4%) were focused on knowing, expanding, or being true, to one’s self. Examples included citing a need for people to risk being themselves, to be honest and sincere, and not to worry whether “they fit in.” Responses also expressed a need for people to follow their dreams, and “challenge themselves.”

Responses coded as endorsing risk taking as a means to *health action* (5.3%) implied that maintaining general health involves taking risks. Respondents endorsed taking actions to remain physically fit or keep up a healthy diet. Some respondents described medical activities, such as trying new medications or remedies, going to see the physician or dentist, and undertaking risky medical procedures (e.g., “get your knees, hips, eyes repaired”).

Activities coded as *take a stand* (4.8%) involved taking the risk to act on one’s beliefs or in service to others. Examples include, “speaking out about injustices,” and, “fighting for the rights of older Americans.” Responses in this category also included a small set of cases that endorsed taking action based in religion or spirituality.

Responses coded as taking the risk to *change residence* (2.3%) involved exiting one’s current living condition or into a new residence. Some respondents endorsed taking the risk of leaving home to live independently, or relocating to a new neighborhood or state, “away from where you grew up.”

The category *activities of daily life* (1.3%) involved endorsement of actions that might be typically considered routine activities, but that respondent perceived as involving uncertainty and risk. Responses in this category included activities such as driving, flying on airplanes, or in one case, “just getting out of bed and walking around.”

Risk Motives

Given our primary focus on understanding the value placed on taking risks across adulthood, we also identified and

coded all instances when participant responses provided an explicit reason, or *motive* for taking risks. The coding of these risk motives was independent of coding for risk activities. As an example of the distinction between activities and motives, textual response worded, “travel to new and exotic places” would have been coded as an endorsed risk *activity*, whereas a response worded, “take them to learn about yourself” reflects a reason to take risks and therefore would have been coded as a risk *motive*. Likewise, “go rock climbing” was coded as a risk activity, whereas “before your body can’t handle it anymore” was coded as a risk motive. Within the 842 responses, 375 (44.5%) of respondents included at least one motivation to take risks. The remaining responses either did not include a discernible reason in their response, or stated that they did not endorse taking any risks. Motives were included by 50.9% ($n=86$) of young adult respondents, 46.2% ($n=203$) of middle adult respondents, and 36.8% ($n=86$) of older adult respondents. Chi-square analysis indicated a significant difference across age groups $X^2(2, N=842)=9.02, p<.05$ (Pearson $\chi^2=9.02, p=.017$), with a z test of group proportions indicating that young adults were more likely to report a motive than older adults.

A set of six thematic categories were found to capture the motives cited by participants for taking risks. Table 3 presents these motives, examples, and proportions of respondents within the three age groups who provided responses coded into each category.

Overall, the most frequently cited motive was *achievement*, included in 18.9% of all responses. These statements stressed taking risks to gain advantage, or for the associated rewards, for example to, “get ahead in life” or to “get what one deserves,” with respondents sometimes stressing the importance of weighing potential gains and losses or that risks are worth taking when “the results will pay off later.”

Around eleven percent (11.3%) of respondents endorsed taking risks in order to *avoid missing out*, either because the opportunities would not always be available, or because the outcome would otherwise go unknown. Examples include, “you only live once,” and, “you’ll never know if you missed something.”

Responses coded into the *satisfaction* category (10.8%) involved taking risks for pleasure or excitement. Examples included cases where respondents described engaging in activities because they were enjoyable, fun, or a way to feel alive.

Responses coded into the *personal growth* category (7.2%) involved taking risks to learn new things, to push one’s self and meet one’s fullest potential. Respondents endorsed taking risks to challenge themselves, and as an essential part of growth. One respondent wrote that, “otherwise we’ll never know where we need to improve or the areas we’re strong in.”

Taking risks for *wellness* (5.8%) focused on a need to take risks to meet one’s basic needs now or in the future. Respondents expressed a need to engage in activities that may seem risky but that might maximize health and well-being, for example because they “are good for you,” or “keep your mind alert.”

A small proportion of cases (1.4%) endorsed taking risks for reasons of *moral obligation*. This category referred to cases when the respondent endorsed taking risks necessary to meet a higher cause or principle, including religious or spiritual reasons. For example, one respondent considered taking risks necessary because, “it will finally cause things to change.”

Table 3 Risk motives: reasons cited for taking risks and proportions by age group

Reason	Young adult n (%)	Middle adult n (%)	Older adult n (%)	Total n (%) ^a	Example
Achievement	35 (20.7)	94 (21.4)	30 (12.8)	159 (18.9)	“Getting ahead in life” “Personal and professional elevation”
Avoid missing out	31 (18.3)	49 (11.2)	15 (6.4)	95 (11.3)	“Might miss out on something good” “You only have one life”
Satisfaction	11 (6.5)	59 (13.4)	21 (9.0)	91 (10.8)	“Makes life much more interesting” “Should do something you enjoy”
Personal growth	18 (10.7)	34 (7.7)	9 (3.8)	61 (7.2)	“To test your personal limits” “Learn and evolve”
Wellness	3 (1.8)	24 (5.5)	22 (9.4)	49 (5.8)	“For keeping as fit as possible” “To improve your mental well-being”
Moral obligation	8 (4.7)	2 (0.5)	2 (0.9)	12 (1.4)	“Something I feel strongly about” “There are times you have to take a risk to make a change”

^aThe n (%) represents the number and percent of all 842 respondents who responded and were included in analysis, whether or not they provided a specific reason in their response

Age-Related Trends

After identifying thematic categories, a set of binary logistic regression analyses were conducted to identify possible linear or curvilinear associations between age and each endorsed risk activity. Gender was controlled in these analyses and reported when significant. Results indicated a significant curvilinear age effect for vocational-academic activities ($\chi^2(3) = 112.80, p < .001$; Wald = 14.64, $p < .01$, $[AGE]^2$ Exp(b) = .998), indicating that the likelihood of endorsing that risk activity increased into middle adulthood, then decreased in older adulthood. A similar curvilinear trend was found for financial risk activities ($\chi^2(3) = 21.82, p < .001$), with the likelihood of endorsing that activity peaking in middle adulthood (Wald = 10.10, $p = .001$, $[AGE]^2$ Exp(b) = .999), and higher among males (Wald = 8.66, $p < .01$, Exp(b) = .518). Endorsing intrapersonal risk activities decreased with age ($\chi^2(2) = 11.00, p < .01$; Wald = 10.47, $p = .001$, Exp(b) = .977). In contrast, health actions ($\chi^2(2) = 11.08, p < .01$; Wald = 10.05, $p = .001$, Exp(b) = 1.03), and activities of daily life ($\chi^2(2) = 24.42, p < .001$; Wald = 13.52, $p < .001$, Exp(b) = 1.17), increased with age. No significant gender or age effects were found for the novel activities, manage relationship, take a stand, or change residence outcomes. Table 3 presents the proportion of respondents citing each risk motive by age group, and those findings are also illustrated in Fig. 1.

A set of binary logistic regression analyses were also conducted to assess possible linear or curvilinear associations between age and each risk motive. Gender was controlled in these analyses and reported when significant. Results for the achievement risk motive indicated a significant effect of gender and age, ($\chi^2(3) = 19.81, p < .001$), with males more likely to endorse that reason to take risks (Wald = 4.45, $p < .05$, Exp(b) = .683). The trend in age was curvilinear, indicating a

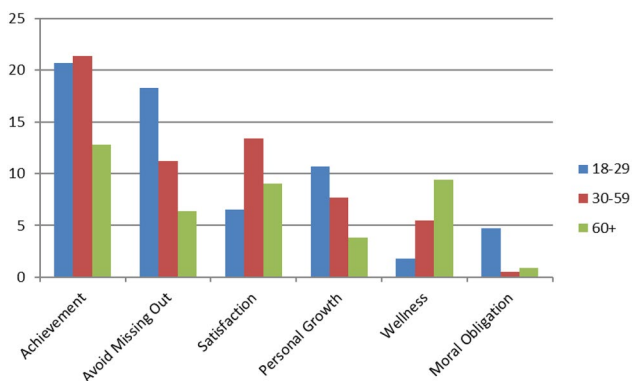


Fig. 1 Risk motives: percentages of reasons cited within each age group ($n = 842$). Y axis reflects the percent of respondents within each age group who provided a survey response that was coded as providing a reason for taking risks

peak during middle adulthood (Wald = 7.31, $p < .01$, $[AGE]^2$ Exp(b) = .999). Results were significant for the “avoid missing out” and “personal growth” risk motives ($\chi^2(2) = 22.44, p < .001$), and ($\chi^2(2) = 6.78, p < .05$), indicating that younger respondents were most likely to cite both of those reasons (Wald = 18.72, $p < .001$, Exp(b) = .971, and Wald = 5.89, $p = .05$, Exp(b) = .981, respectively). Likelihood of providing a “wellness” risk motive increased with age ($\chi^2(3) = 23.51, p < .001$; Wald = 19.85, $p < .001$, Exp(b) = 1.042). A curvilinear age effect was found for the “moral obligation” motive ($\chi^2(3) = 11.41, p = .01$; Wald = 6.60, $p = .01$, $[AGE]^2$ Exp(b) = 1.002), indicating that the likelihood of citing that motive was lowest in middle adulthood. Findings for the “satisfaction,” risk motives were not significant.

Discussion

The current study used content analysis of open-ended text responses to examine risk taking attitudes and motivations across adulthood. Whereas an abundance of research from various disciplines has studied risk preferences and biases using researcher-based measures and paradigms, the qualitative nature of our study allowed respondents to define risks in their own terms, thus generating a useful corpus of perspectives. Results provide insights regarding the types of activities that adults consider to be risky but worth taking, and reasons they considered those risks to be worthwhile.

From lifespan framework, development is conceptualized as a life-long process (e.g., Baltes et al. 1980; Havighurst 1972; Arnett 2000), such that the progression through adulthood might be generally viewed as a shifting mosaic of different developmental tasks. Young adulthood commonly involves a focus on autonomy, self-exploration, establishing relationships and getting started on an occupation, then in middle adulthood tasks involve establishing and maintaining family, civic involvement, and employment, finally in older adulthood tasks involve adjusting to retirement, health, and family changes. Our analyses suggest ways that risk attitudes might reflect these general developmental tasks of adulthood.

Indeed, the age-related differences in risk preferences identified in the current study appear largely consistent with developmental literature on attitudinal and psychosocial change across the adult lifespan. Schwartz (2006) postulated that “opportunities, demands, and constraints associated with life stages may cause age differences in values” (p. 7). For example, an emphasis on achievement values (e.g., establishing one’s self in work and family) may give way to more focus on security and conformity in older adulthood. Research on the selection-optimization-compensation model of lifespan development finds that young adults are primarily oriented toward growth, whereas older adults are

more focused toward maintaining functions and resources (Ebner et al. 2006). Hutteman et al. (2014) argue that personality changes across adulthood reflect, in part, responses to changing developmental demands across those life phases. In their framework, young adulthood involves establishing tasks, such as finding a mate and social group, mid-adulthood involves tasks such as maintaining and mastering new roles, and late adulthood involves adjusting to physical and social changes.

Motives for taking risks provided by our respondents followed a similar trajectory to these lifespan theoretical perspectives. Among young adults, we found high endorsement of taking risks related to vocational-academic options and personal growth, along with concern to seize opportunities before they were gone. This finding is consistent with a view of the twenties as a unique time of possibilities, self-focus, and exploration (Arnett 2000). In contrast, middle adults were more likely to endorse taking risks related to achievement, financial success, and satisfaction. Older adults were most likely to endorse risks for purposes of health maintenance and satisfaction, and recognized a need to take risks in activities of daily life. Taken as a whole, young adult respondents most frequently endorsed risks that involved establishing opportunities, whereas middle adults stressed the importance of achievement-based risks, and older adults endorsed risks related to maintaining well-being.

An important aspect of this study is its use of open-ended responses. Whereas studies on risk preference or behavior typically use researcher created measures, our approach relied on respondents self-defining activities that they considered to involve risk. In that sense, we were not comparing calibrated risk scores across age groups, but instead allowing respondents to report on activities they consider to involve risk. Some activities that respondents in our sample cited as being risky (e.g., “enter dialogue with those who challenge their beliefs,” “be willing to downsize”) might not be captured in commonly used measures or hold obvious risks. Nonetheless, these activities could be viewed by individuals as risky, holding potential loss to their reputations, sense of security, or well-being.

One area where the use of open-ended method choice may be particularly relevant regards novelty-seeking. Consistent with prior research, we found the highest overall level of risk endorsement among young adults, in that they cited a higher proportion of endorsed risk activities than middle or older adults. Those young adult respondents differed from older respondents largely in terms of the elevated emphasis younger respondents placed on vocational-academic, intrapersonal risks, personal growth, and avoidance of missing out. However, we found the themes of novelty equally distributed between young, middle, and older adults, even though risk literature frequently discusses experimentation and novelty-seeking as common characteristic of youth (e.g., Steinberg

et al. 2008; Zuckerman 2007). Although we did not find differences in frequencies using open-ended responses, our results suggest that *reasons* for novelty-seeking may vary by age group. For the young adults, the novel experiences in the current study frequently appeared to reflect a means of *exploring*, whereas among older adults it is more often tended to be a means of keeping active, and in that sense *maintaining* quality of life.

The use of open-ended responses also may explain why our category “health action” looks quite different than existing health risks constructs that focus on self-endangering behaviors. For example, in the widely used DOSPERT domain-based measure of risk attitudes (Blais and Weber 2006), “health risk” is represented by scores on a set of items that focus on health hazards (e.g., alcohol use, sex, dangerous driving). Our open-ended methodology, however, generated a theme focused on taking risky actions to maintain or improve one’s health, most common among older adults and consistent with the medical risk domain identified by Butler et al. (2012). Additionally, some older adults described aspects of daily life (e.g., “going for a walk,” “using technology”) that do not hold obvious chance of loss, but that they considered necessary risks for maintaining health and connection. In this way, the range of risks reported in our study could be useful in developing risk-related measures that best match the way risk is experienced across the adult lifespan.

Limitations

Our study has several limitations related to the sample and methodology. First, although the panel of respondents was created through a recruitment process involving address-based sampling, it is possible that the sample is not fully representative of U.S. adults or cultures. Whereas Schwartz (2006) provides evidence that similar values are found across countries, he also acknowledges that the degree of importance placed on particular values can vary between cultures, based on characteristics of the society (e.g., focus on self-direction vs. conformity). Cohort and age are also inexorably confounded in our cross-sectional design (Elder and Rockwell 1979). Although we privileged age in our interpretations, cohort effects are possible. It is possible that sociocultural context of older adults in our sample differs in some respects from younger cohorts. Further, our analysis focused on general age-related trends in risk attitudes and values across the sample, without considering individual differences in risk-related dispositions and behaviors (e.g., Grable and Rabbani 2014; Zuckerman 2007).

The use of qualitative methods to examine age-related differences may be considered both a strength and limitation. We used inter-coder testing, process notes, and quantification as methods to increase reliability, validity, and trustworthiness (Golafshani 2003). Still, our qualitative methods

involve thematic coding and therefore only represent one possible way that the data could have been categorized and interpreted. Likewise, the age groupings we chose to use (18–29, 30–59, and 60+) represent only one of the many ways to categorize life phases. Whereas this scheme is consistent with that used by Havighurst (1972), Hutteman et al. (2014), and others (e.g., Lawton et al. 1992; Webster et al. 2014), we acknowledge that other possibilities exist.

The study is limited based on its use of self-report and the specific wording of the survey items used. Questions assessed attitudes toward risk taking and did not measure actual behavior. It is notable that previous research has demonstrated an association between individuals' risk attitudes and actual behavior (Dohmen et al. 2011). But association is far from perfect. The responses we received do not necessarily represent risks that respondents actually engage in, and may not capture all of their reasons to take risks. Further, citing specific activities in a given life phase might not only reflect the degree to which that activity is consistent with developmental tasks of the life stage, but also the actual chance of loss associated with that behavior for someone that age (e.g., older adults might cite going for long walks as a risk activity based on a higher likelihood of falls among their age group).

We also acknowledge that including alternative questions, such as having participants, "list risks you regret having taken," would likely elicit a different set of responses equally valid and relevant to developmental theory and practice. Our questions were designed to illicit respondents' beliefs regarding which risks *should* be taken and for what reasons, so that findings are limited in that respect.

Implications and Future Research

Working to understand risk perceptions and behavior is a long-standing topic in social science research. Whereas a great deal has been learned from methods using experimental tasks and close-ended measures, methods that involve asking individuals directly what risks they value and feel they should take or avoid are not as widespread. The current study took such an approach. Our analysis supports that a lifespan perspective might be useful in understanding how risks are perceived across adulthood—whereby risk taking might hold particular value as a means to create opportunities in young adulthood, to capitalize and achieve success in middle adulthood, then to maintain and optimize resources in older adulthood. This developmental framework might be incorporated into literature on well-being and behavior across the lifespan.

Our use of qualitative methods, allowing participants to define risks, rather than relying on researchers' conceptualization, has meaningful implications for future research. The results from the present study may aid in further

identifying types of activities individuals experience as being *risky* but consider necessary for growth, achievement, and health. Willingness to have one's beliefs challenged, or removing oneself from problematic relationships, as reported by study participants, may be considered not only risky but also adaptive paths to well-being. Adaptive and maladaptive risk behaviors both certainly exist, and it may be important to find ways to measure and distinguish them, with care not to over-emphasize problems to the exclusion of adaptive risk taking. Qualitative and growth-focused risk research may help to stimulate development of measures that reflect a wider range of risk attitudes and preferences even more firmly grounded in the range of individual's experiences and efforts to achieve and maintain well-being.

Of note, the current results do not support a seemingly common folk theory that youth involves a hedonic attraction to risk taking that will inevitably give way to comprehensive risk aversion with age. Younger adults in the study did indeed project the highest degree of overall risk valuation in their responses (in terms of number of activities endorsed), as consistent with existing literature. They also cited a wide range of motives, arguably consistent with developmental tasks, and with relatively low emphasis on personal gratification compared with middle and older adult. Thus, the picture of how age is associated with risk taking is complicated. We adopt the view that risk taking is a normative aspect of life that can have both positive and negative consequences and may be best understood when viewed through the lens of lifespan developmental framework that emphasizes different tasks at different times in adulthood.

In conclusion, our findings demonstrate that attitudes about risk are nuanced and may be related to developmental tasks. Lifespan frameworks (e.g., Carstensen 1995; Heckhausen et al. 2010) and evolutionary models as well (e.g., Ellis et al. 2012), assert that individuals shift toward different goals as they age. Our findings suggest that risk taking orientations across adulthood might uniquely involve: (a) valuing risks that maximize goal choice in young adulthood (e.g., going on dates, accepting a job internship outside of one's chosen field to "try it out"), (b) valuing risks to attain goal choice in mid-adulthood (e.g., asking for a promotion even if doing so seems risky), and finally, (c) emphasizing risks focused on preserving well-being in late adulthood (e.g., staying active or having surgery in order to reserve resources and maintain quality of life). Future research might examine the possibility that specific risk-related values and motives are adaptive and conducive to well-being depending on the individual's life stage.

Compliance with Ethical Standards

Conflict of interest The authors have no conflicts of interest to report.

Ethical Approval The authors confirm that the research presented in this article met the ethical guidelines, including adherence to the legal requirements, of the United States and received approval from the Institutional Review Board at University of Missouri.

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