Published in final edited form as:

Educ Gerontol. 2014 November 1; 40(11): 825–833. doi:10.1080/03601277.2014.900263.

Age Differences in Adaptive Decision Making: The Role of Numeracy

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Abstract

The primary purposes of the present study were to examine age differences in adaptive decision making and to evaluate the role of numeracy in mediating the relationship between age and adaptive decision making. Adaptive decision making was assessed by the Cups task (Levin, Weller, Pederson, & Harshman, 2007). Forty-six younger (18 to 24 years old) and 37 older adults (61 to 89 years old) completed the Cups task. In addition, the Numeracy Scale (Lipkus, Samsa, & Rimer, 2001) was used to measure individual numeric ability. Adaptive decision making was operationalized by the Expected Value sensitivity (i.e., the product of probability and outcome magnitudes) across the gain and the loss domains. Older adults had significantly lower Expected Value sensitivity than young adults. In addition, older adults demonstrated significantly lower numeracy than younger adults. Finally, numeracy partially mediated the relationship between age and adaptive decision making. It is suggested that older adults' declined decision making may be partially due to their declined numeric abilities. Implications were discussed in numeracy education and public policies concerning older adults.

The majority of decisions in everyday life are made under uncertainty, no matter whether they are financial decisions in a turbulent economy or medical decisions involving life or death consequences. Being able to make adaptive decisions under risky conditions is important for individuals of all ages, but especially for older adults as they have shorter time to compensate for potential losses (Mather, 2006). Thus, it is important to study aging and adaptive decision making.

AGE DIFFERENCES IN ADAPTIVE DECISION MAKING

In past literature, risky decision making typically refers to decisions in which the outcome is unknown but the probabilities associated with each possible outcome are known. One of the most robust findings in risky decision making is that losses loom larger than gains (Kahneman & Tversky, 1979). That is, individuals are more likely to take a risk to avoid potential losses than to achieve potential gains. Using a classic framing study, the "Asian disease problem," Tversky and Kahneman (1981) found that individuals showed risk aversion when they were presented with the gain frame (i.e., preferred a sure option of saving 200 out of 600 people to a risky option of taking a one-third chance of saving all 600

people). However, when presented with the loss frame, individuals showed risk seeking (i.e., preferred the risky option of a one-third probability that nobody will die to a sure loss of 400 people).

There were mixed results for age differences in risky decision making in the gain vs. the loss domains. Some studies (Mata, Josef, Samanez-Larkin, & Hertwig, 2011; Mayhorn, Fisk, & Whittle, 2002) suggested no age differences in framing effects between younger and older adults. In contrast, other studies found greater framing effects for older adults than for younger adults (Kim, Goldstein, Hasher, & Zacks, 2005; Weller, Levin, & Denburg, 2011). One study (Mikels & Reed, 2009) found smaller framing effects with age. In a recent chapter of *Handbook of the Psychology of Aging*, Peters, Dieckmann, and Weller (2011) concluded that older adults demonstrated stronger effects of framing than younger adults in risky decision making.

Although studies differed in how to define adaptive decision making, there were increasing research interests in aging and adaptive decision making. Mata, Schooler, and Rieskamp (2007) found that both younger and older adults were able to adjust their information search and strategies as a function of environmental structure. Wood, Busemeyer, Koling, Cox, and Davis (2005) claimed that older adults were adaptive decision makers because both younger and older adults learned to choose from advantageous decks after initial learning trials in the Iowa Gambling Task (IGT, Bechara, Damasio, Tranel, & Damasio, 1997). However, other studies showed age-related decline in adaptive decision making in at least some older adults (Denburg, Tranel, & Bechara, 2005). Denburg, Recknor, Bechara, and Tranel (2006) further demonstrated that older adults with deficits in the IGT displayed a lack of discriminatory anticipatory skin conductance responses during the IGT. Henninger, Madden, and Huettel (2010) also found decreased decision quality of older adults compared to younger adults.

A limitation of the typical risky decision making research is that risky or sure choices are objectively equivalent. That is, the expected value of risky and sure options is exactly the same (Tversky & Kahneman, 1981). So there is nothing wrong to take the risk or choose the sure option. Tversky and Kahneman (1992) suggested that both domains (gain vs. loss) and probability magnitudes influenced risky decision making. However, there are few studies that systematically manipulate domain, probability, and outcome magnitudes. The present study used the Cups task (Levin et al., 2007) to examine age differences in adaptive decision making. Younger and older adults were asked to make a series of choices between a sure option of \$1 and the risky option with a certain probability (represented by the number of cups) of winning/losing multiple dollars or no dollars in the gain/loss trials. The Cups task not only has the advantage of separating gain vs. loss domains, but it also manipulates probability levels and outcome magnitudes within one task. In addition, adaptive decision making can be operationally defined as the Expected Value sensitivity (EV sensitivity; the product of probability and outcome magnitudes). Thus, it is advantageous to take the risk when the EV of the risky choice exceeds the value of the sure option. Meanwhile, it is disadvantageous to take the risk when the EV of the risky choice is less than the value of the sure option. Weller and colleagues (Weller et al., 2011) used the Cups task to examine the developmental trajectory of risk taking for gains and losses from ages 5 to 85. They found

that risk-taking decreased across the lifespan in the gain domain, whereas risk taking was relatively constant across ages in the loss domain.

THE ROLE OF NUMERACY BETWEEN AGING AND ADAPTIVE DECISION MAKING

The studies that have explored contributing mechanisms underlying aging and decision making have mostly focused on executive functioning, processing speed, and memory (Brand & Markowitsch, 2010; Henninger et al., 2010; Mata et al., 2007). For example, Henninger et al. (2010) found that age effects on decision quality were mediated by individual differences in processing speed and memory. Brand and Markowitsch (2010) also demonstrated that age-related reductions in executive functions contributed to decision making impairments in the IGT.

Only a few studies examined the role of numeracy in everyday decision making and medical decision making for older adults (Hibbard, Slovic, Peters, Finucane, & Tusler, 2001; Finucane & Gullion, 2010; Wood et al., 2011). For example, Hibbard et al. (2001) found that older adults committed more errors in interpreting numerical information from tables and figures. Wood and colleagues (Wood et al., 2011) found that older adults performed worse than younger adults across choice conditions on Medicare Part D tasks, and numeracy was significantly correlated with performance across the lifespan. In addition, numeracy remained a significant contributor to performance even after controlling for measures of cognitive abilities (e.g., executive functioning, working memory, intelligence, and education).

Recent judgment and decision making literature also recognizes the important role of numeracy in judgments and decisions. Peters (2012) pointed out that individuals' numeracy ability was beyond merely comprehending numerical information. Numeracy was associated systematically to psychological mechanisms. Specifically, greater numeracy was associated with less susceptibility to framing effects and greater sensitivity to different levels of numerical risk (Peters, Hibbard, Slovic, & Dieckmann, 2007; Reyna, Nelson, Han, & Dieckmann, 2009). Significant age-related declines in numeric abilities had been demonstrated in both cross-sectional and longitudinal studies (Peters, 2008; Schaie & Zanjani, 2006). Thus, it is reasonable to expect that numeracy would at least partially mediate age differences in adaptive decision making.

THE PRESENT STUDY

The primary purposes of the present study were to examine age differences in adaptive decision making and to evaluate the role of numeracy in mediating the relationship between age and adaptive decision making. Adaptive decision making was defined by the EV sensitivity across the gain and the loss domains in the Cups task (Levin et al., 2007). Both younger and older adults completed the Cups task on a computer. Individual numeric ability was measured by a commonly used scale in medical decision making, the Numeracy Scale (Lipkus et al., 2001). Based on the previous research, three hypotheses were made:

Hypothesis 1: Older adults would have lower EV sensitivity than younger adults.

Hypothesis 2: Older adults would demonstrate lower numeracy than younger adults.

Hypothesis 3: Numeracy would partially mediate age differences in EV sensitivity.

METHOD

Participants

Eighty-four adults participated in the current experiment. There were 46 younger adults (14 female, age range 18 to 24 years old, $M = 19.37$, $SD = 1.42$) participating in a large midwest University in exchange for course credits. Thirty-eight older adults (27 female, age range 61 to 89 years old, $M = 75.46$, $SD = 7.98$) were recruited through local communities and were compensated \$5 for their time. Participants were screened with questions regarding prior history of stroke, neurological or psychiatric disorder, head injury, and dementia. One older participant was excluded because of a recent stroke. The final sample consisted predominantly of Caucasians (83.1%). Younger and older participants did not differ significantly in years of education. However, younger adults rated themselves ($M = 3.31$, $SD = 0.65$) healthier than older adults ($M = 2.93$, $SD = 0.61$) on a 4-point Likert scale of health status (1 = *Poor*, 2 = *Fair*, 3 = *Good*, and 4 = *Excellent*): $t(81) = 4.28$, $p < .001$.

Measures

The Cups Task—The current study used the Cups task (Levin et al., 2007) to assess adaptive decision making across the gain vs. the loss domains. The Cups task was conducted on a computer. It consisted of 54 trials representing 3 trials each of all combinations of two levels of domain (gain, loss), three levels of probability (.20, .33, or .50) and three levels of outcome magnitude (two, three, or five dollars) for the risky option, compared to one dollar for the sure option. Gain trials involved the choice between a sure option of \$1 and the risky option with a certain probability of winning multiple dollars or no dollars. Loss trials involved a sure loss of \$1 and the risky option of a certain probability of losing multiple dollars or no dollars. The number of Cups (two, three, or five) was used to visualize the probability of gain or loss (.50, .33, or .20, respectively). Participants selected a cup from either the risky choice or the sure option. The resulting amount of money was added to (or subtracted from) the participant's account displayed at the bottom of the screen.

Some combinations of probability and magnitude created equal EV for the risky and the sure options: $.20 \times 5$, $.33 \times 3$, and $.50 \times 2$ on both gain and loss trials. Some combinations were risk advantageous in that the EV for the risky option is higher ($.33 \times 5$, $.50 \times 3$, and $.50 \times 5$ on gain trials) or lower ($.20 \times 2$, $.20 \times 3$, $.33 \times 2$ on loss trials) than the sure gain or loss of one dollar. Still, some combinations were risk disadvantageous in that the EV for the risky option was lower ($.20 \times 2$, $.20 \times 3$, $.33 \times 2$ on gain trials) or higher ($.33 \times 5$, $.50 \times 3$, and $.50 \times 5$ on loss trials) than the sure gain or loss of one dollar. Gain and loss trials were presented as blocks and counterbalanced across participants.

The Numeracy Scale—The Numeracy Scale developed by Lipkus et al. (2001) was selected to measure individuals' numeric ability. The Numeracy Scale consists of 11 items that require conversions between proportions, percentages, and decimals, as well as computations and understanding of probability. Following is an example question: "The

chance of getting a viral infection is .0005. Out of 10,000 people, about how many of them are expected to get infected?" Numeracy scores were calculated by the number of correct answers and ranged from 0 to 11 points.

Design and Procedure

The present study used a 2 (Age Group: younger vs. older adults) $\times$ [2 (Domain: gain vs. loss)] mixed design. The age group was a between-subjects factor and the decision domain was a within-subject factor. Each participant was tested by an experimenter on a one-on-one basis. First, participants completed the Cups task on a computer. Then, they filled out the demographic questionnaire (with health screening questions) and performed the numeracy scale. Finally, participants were fully debriefed and thanked for their participation.

RESULTS

Age Differences in Adaptive Decision Making

A 2 (Age Group: younger vs. older adults) $\times$ [2 (Domain: gain vs. loss)] MANOVA was conducted on risky choices. The two main effects were significant: $F(1, 81) = 7.08, p < .01$, partial $\eta^2 = .08$ for the domain effect and $F(1, 81) = 4.09, p < .05$, partial $\eta^2 = .05$ for the age group effect. However, the Age Group $\times$ Domain interaction effect was not significant. For the domain effects, both younger and older adults demonstrated "a preference shift": making more risky choices in the loss domain ($M = 15.89, SD = 7.78$) than in the gain domain ($M = 13.93, SD = 6.70$). In addition, younger adults made more risky choices ($M = 16.12, SD = 8.69$) than older adults ($M = 13.41, SD = 8.78$).

To further decompose the domain effect, separate t tests by age group were performed on risk advantageous (RA), equal risk advantageous and disadvantageous (EQ), and risk disadvantageous (RD) choices. In the gain domain, older adults were significantly less likely than younger adults to take risks when risk taking was advantageous: $t(81) = 4.08, p < .001$. In the loss domain, there were no significant age differences in risk taking for RA, EQ, and RD trials. Please see Table 1 for means and standard deviations of RA, EQ, and RD choices by younger and older adults across the gain and the loss domains.

To test Hypothesis 1 on age differences in adaptive decision making, an EV sensitivity index was created by subtracting the proportion of RD choices from the proportion of RA choices for the gain and the loss domains. A 2 (Age group: younger vs. older adults) $\times$ [2 (Domain: gain vs. loss)] MANOVA was conducted on EV sensitivity. There were significant main effects for age group ($F(1, 81) = 20.40, p < .001$, partial $\eta^2 = .20$) and for domain ($F(1, 81) = 53.19, p < .001$, partial $\eta^2 = .40$). More importantly, there was a significant Age Group $\times$ Domain interaction ($F(1, 81) = 4.45, p < .05$, partial $\eta^2 = .05$). Please see Figure 1 for the Age Group $\times$ Domain interaction effect on EV sensitivity. Separate t -tests were used to test age differences in EV sensitivity in the gain vs. the loss domains. Older adults were significantly less sensitive ($t(81) = 4.08, p < .001$) than younger adults to EV in the gain domain ($M = .13, SD = .31$ for older adults and $M = .44, SD = .33$ for younger adults), but not in the loss domain ($M = -.16, SD = .24$ for older adults and $M = -.07, SD = .37$ for younger adults).

Age Differences in Numeracy

In order to test Hypothesis 2, a One-Way ANOVA by age group (younger vs. older adults) was conducted to examine age differences in numeracy. There were significant age differences in numeracy ($F(1, 81) = 16.16, p < .001$). Older adults ($M = 6.54, SD = 2.12$) had lower numeracy than younger adults ($M = 8.39, SD = 2.06$).

The Mediation Role of Numeracy

The Sobel test was used to test whether numeracy mediated age effects on EV sensitivity (Sobel, 1982). Age group was first regressed on EV sensitivity ($\beta = -.45, p < .001$). Then, age group was regressed on numeracy ($\beta = -.41, p < .001$). Finally, both age group and numeracy were regressed on EV sensitivity. The relationship between age and EV sensitivity was reduced but still significant ($\beta = -.33, p < .01$) controlling for numeracy ($\beta = .30, p < .01$). Thus, supporting Hypothesis 3, numeracy partially mediated age effects on EV sensitivity in the gain domain (Sobel $t = -2.31, p < .05$).

DISCUSSION

The current study had two primary purposes. The first purpose was to test age differences in adaptive risk taking as a function of domain, probability, and outcome magnitudes. Supporting the notion of “losses looming larger than gains” (Tversky & Kahneman, 1981), the classic preference shift effect was found for both younger and older adults. However, older adults were found less likely than younger adults to take risks, especially when it was advantageous to do so in the gain domain. Adaptive decision making was operationalized as the EV sensitivity. Older adults demonstrated significantly lower EV sensitivity than younger adults in the gain domain but not in the loss domain. Consistent with the findings of Weller et al. (2011), it is suggested that loss aversion is relatively stable across the lifespan, whereas adaptive decision making decreases with age especially in the gain domain. The present study used the Cups task to examine age differences in adaptive decision making as a function of domain, probability, and outcome magnitudes. The findings added to our understanding of age differences in adaptive risk taking across the gain and the loss domains.

The second primary purpose of the current study was to test the role of numeracy in mediating the relationship between age and adaptive risk taking. It was found that numeracy partially mediated age differences in EV sensitivity. This finding extended previous research (Henninger et al., 2010; Mata et al., 2007) that mostly focused on the roles of cognitive measures (e.g., processing speed) in decision making and suggested that numeracy may play an important role in decision making independent of general cognitive measures (Brooks & Pui, 2010; Wood et al., 2011). As Peters (2012) pointed out, individuals' numeric ability may not only affect their understanding of the numerical information but also influence their decision making. Levin and colleagues (e.g., Levin et al., 2007) designed the Cups task to ensure that even a five-year-old could understand probability illustrated by the number of cups. However, successful completion of the Cups task requires more than merely understanding the probabilities of gains vs. losses. In the present study, participants needed to compare EVs of the risky vs. the sure options and be able to apply the decision rules

consistently. Older adults demonstrated significantly lower numeracy than younger adults, and individuals' numeracy partially mediated age differences in EV sensitivity. Future research needs to further examine the potential mechanisms underlying the age-related changes in numeracy.

The contribution of the current study may be acknowledged with limitations in mind. First, the current study used an extreme age group design. Comparisons between younger and older age groups may not reveal the complete developmental trajectories of adaptive decision making across the lifespan. However, the results of the current study were consistent with the findings of Weller et al. (2011) suggesting differential age-related trajectories of decision making for gains and losses among individuals from ages 5 to 85. Second, this study was cross-sectional in nature. Younger and older adults came from different cohorts and may differ in many other ways affecting adaptive decision making (e.g., numeracy education, values of money, exposures to economic hardship, etc.). Longitudinal designs are necessary to investigate age-related changes and test the causal mechanisms underlying aging and adaptive decision making.

The current study has implications in older adults' decision making. Finucane and Gullion (2010) used everyday decision making tasks such as reading nutrition tables and choosing health care plans to measure adult decision making competence. They found that numeracy was a significant predictor of adults' decision making competence. Results of the current study also indicated that age-related declines in decision making may be partially due to their declined numeric abilities. It is suggested that training numeracy skills among older adults may help them improve their adaptive decision making. However, to our best knowledge, no research has been conducted to examine the possible mechanisms underlying age differences in numeracy. Could age-related decline in numeracy be simply due to "use or lose it"? Alternatively, is age-related decline in numeracy largely due to age-related decline in fluid intelligence? Brooks and Pui (2010) suggested that numeracy tapped different construct from general mental ability. Wood and colleague (Wood et al., 2011) also found that numeracy remained significant in predicting decision making after controlling for intelligence and education. Future studies are needed to find out why numeric abilities decrease as individuals grow older and to provide theoretical guidance for designing interventions to improve numeracy and decision making of older adults.

Acknowledgments

The authors would like to thank Dr. Irwin Levin and Dr. Joshua Weller for sending us the Cups task.

References

- Bechara A, Damasio H, Tranel D, Damasio AR. Deciding advantageously before knowing the advantageous strategy. *Science*. 1997; 275:1293. [PubMed: 9036851]
- Brand M, Markowitsch HJ. Aging and decision-making: A neurocognitive perspective. *Gerontology*. 2010; 56(3):329–324.
- Brooks ME, Pui SY. Are individual differences in numeracy unique from general mental ability? A closer look at a common measure of numeracy. *Individual Differences Research*. 2010; 8:257–265.

- Denburg NL, Recknor EC, Bechara A, Tranel D. Psychophysiological anticipation of positive outcomes promotes advantageous decision-making in normal older persons. *International Journal of Psychophysiology*. 2006; 61:19–25. [PubMed: 16426691]
- Denburg NL, Tranel D, Bechara A. The ability to decide advantageously declines prematurely in some normal older persons. *Neuropsychologia*. 2005; 43:1099–1106. [PubMed: 15769495]
- Finucane ML, Gullion CM. Developing a tool for measuring the decision-making competence of older adults. *Psychology and Aging*. 2010; 25:271–288. [PubMed: 20545413]
- Henninger DE, Madden D, Huettel SA. Age-related cognitive decline predicts changes in risk preference. *Psychology and Aging*. 2010; 25:262–270. [PubMed: 20545412]
- Hibbard JH, Slovic P, Peters E, Finucane ML, Tusler M. Is the informed-choice policy approach appropriate for Medicare beneficiaries? *Health Affairs*. 2001; 20:199–203. [PubMed: 11585167]
- Kahneman D, Tversky A. Prospect theory: An analysis of decision under risk. *Econometrica*. 1979; 47(2):263–292.
- Kim S, Goldstein D, Hasher L, Zacks RT. Framing effects in younger and older adults. *The Journals of Gerontology: Psychological Sciences*. 2005; 60:215–218.
- Levin IP, Weller JA, Pederson AA, Harshman LA. Age-related differences in adaptive decision making: Sensitivity to expect value in risky choice. *Judgement and Decision Making*. 2007; 2(4): 225–233.
- Lipkus IM, Samsa G, Rimer BK. General performance on a numeracy scale among highly educated samples. *Medical Decision Making*. 2001; 21(1):37–44. [PubMed: 11206945]
- Mata R, Josef AK, Samanez-Larkin GR, Hertwig R. Age differences in risky choice: A meta-analysis. *Annals of the New York Academy of Sciences*. 2011; 1235:18–29. [PubMed: 22023565]
- Mata R, Schooler LJ, Rieskamp J. The aging decision maker: Cognitive aging and the adaptive selection of decision strategies. *Psychology and Aging*. 2007; 22:796–810. [PubMed: 18179298]
- Mather, M. A review of decision-making processes: Weighing the risks and benefits of aging. In: Carstensen, LL.; Hartel, CR., editors. *When I'm 64: Committee on aging frontiers in social psychology, personality, and adult developmental psychology*. Washington, DC: National Academies Press; 2006. p. 145–173.
- Mayhonn CB, Fisk AD, Whittle JD. Decisions, decisions: Analysis of age, cohort and time of testing on framing of risky decision options. *Human Factors*. 2002; 44:515–521. [PubMed: 12691361]
- Mikels JA, Reed AE. Monetary losses do not loom large in later life: Age differences in the framing effect. *Journal of Gerontology: Psychological Sciences*. 2009; 64:457–460.
- Peters, E. Numeracy and the perception and communication of risk. In: Tucker, WT.; Ferson, S.; Finkel, AM.; Slavin, D., editors. *Annals of the New York Academy of Sciences. Strategies for risk communication: Evolution, evidence, experience*. Vol. 1128. New York, NY: The New York Academy of Sciences; 2008. p. 1–7.
- Peters E. Beyond comprehension: The role of numeracy in judgments and decisions. *Current Directions in Psychological Science*. 2012; 21:31–35.
- Peters, E.; Dieckmann, NF.; Weller, J. Age differences in complex decision making. In: Schaie, KW.; Willis, SL., editors. *Handbook of the psychology of aging*. Amsterdam, The Netherlands: Elsevier Academic Press; 2011. p. 133–151.
- Peters E, Hibbard JH, Slovic P, Dieckmann NF. Numeracy skill and the communication, comprehension, and use of risk and benefit information. *Health Affairs*. 2007; 26:741–748. [PubMed: 17485752]
- Reyna VF, Nelson W, Han P, Dieckmann NF. How numeracy influences risk reduction and medical decision making. *Psychological Bulletin*. 2009; 135:943–973. [PubMed: 19883143]
- Schaie, KW.; Zanjani, FAK. Intellectual development across adulthood. In: Hoare, C., editor. *Handbook of adult development and learning*. New York, NY: Oxford University Press; 2006. p. 99–122.
- Tversky A, Kahneman D. The framing of decisions and the psychology of choice. *Science*. 1981; 211(4481):453–458. [PubMed: 7455683]
- Tversky A, Kahneman D. Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk Uncertainty*. 1992; 5:297–323.

- Weller JA, Levin IP, Denburg NL. Trajectory of risky decision making for potential gains and losses from ages 5 to 85. *Journal of Behavioral Decision Making*. 2011; 24:331–344.
- Wood S, Busemeyer J, Kolling A, Cox CR, Davis H. Older adults as adaptive decision makers: Evidence from the Iowa gambling task. *Psychology and Aging*. 2005; 20:220–225. [PubMed: 16029086]
- Wood S, Hanoch Y, Barnes A, Liu P, Cummings J, Bhattacharya C, Rice T. Numeracy and Medicare Part D: The importance of choice and literacy for numbers in optimizing decision making for Medicare's prescription drug program. *Psychology and Aging*. 2011; 26:295–307. [PubMed: 21553984]

FIGURE 1.

Age differences in EV sensitivity across the gain and the loss domains.

TABLE 1

Means and Standard Deviations of Risky Choices in the Gain and the Loss Domains

Risky Choices	Younger Adults	Older Adults
Gain Domain:		
RA	7.07 (1.84)	4.76 (3.24)
EQ	4.78 (1.75)	4.11 (2.84)
RD	3.09 (2.25)	3.62 (2.64)
Loss Domain:		
RA	5.26 (2.38)	4.74 (2.70)
EQ	5.85 (2.46)	4.76 (2.99)
RD	5.89 (3.26)	5.49 (3.47)

Note. RA = Risk advantageous; EQ = Equal risk advantageous and disadvantageous; RD = Risk disadvantageous.