

Egocentrism and Risk-Taking among Adolescents

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Abstract – This study was conducted to attest the correlation between egocentrism and risk-taking as assumed by Adolescent egocentrism theory proposed by Elkind. Analyses indicated that adolescents have average level of egocentrism. Adolescents have low level of risk behaviour and obtained average level of risk perception; late Adolescents have the highest level of egocentrism based on their means. They are also having the highest level of risk behavior but Early Adolescents have the highest level of risk perception; only sex and year level has direct significant difference with egocentrism but all demographic profile used were found to have significant difference with risk behavior and risk perception, and; there is positive correlation between egocentrism and risk behavior but egocentrism was not correlated with risk perception.

Keywords – adolescents, egocentrism, risk-taking behavior, risk-taking perception

I. INTRODUCTION

The desire to study further the field of developmental psychology and hone knowledge of the researchers about adolescent egocentrism brought researchers to conduct this study with a fervent wish to explore the field of developmental psychology, believing that studying this will help a lot including the psychological community.

Current issues in our country involve adolescents. Some of these issues are upright but some are not. As part of adolescent age, the researchers are affected by these matters. They are troubled by different disputes conveyed by adolescents nowadays. They are worried because they can see how some adolescents start commotions and seem to enjoy putting a play for their audience. They love to take risks without noticing the consequences that they may face after the —little playl they did. In view of these behaviors, the authors became interested in discovering why groups of adolescents felt the need to perform in front of crowd with a little concern on the negative remarks and potential penalties they will receive as result of their behaviors.

The authors believe that there are reasons behind those aggressive actions and behaviors conveyed by adolescents. Numerous adolescent psychiatric problems are reported due to abuse and environmental causes. Behind these factors are interpersonal problems that are linked to high level of egocentrism of adolescents (Yamamoto et al., 2008). Egocentrism is a kind of perception that enables a person to only see the world on his own perspectives. He believes that he is the

center of everything and everything only focuses on himself.

This study used the theory developed by Elkind in 1967 and later became a concept in psychology which is adolescent egocentrism that suggests adolescents think they are the center of everyone's attention. Adolescent egocentrism has three aspects: imaginary audience, personal fable, and self-focus. Imaginary audience is the belief that everybody is always looking and observing them all the time that is more than the actual situation. Personal fable is the belief that they are exceptional and special. Self-focus denotes that adolescents' focus is inward or toward the self rather than outward or towards others (Yamamoto et al, 2008). With these components, the authors wanted to prove that egocentrism is linked in the risk-taking behaviors of adolescents. Also, they wanted to determine if adolescents focus more on sociopolitical issues and other aspects as they get older and mature.

Risk-taking behavior is typically conceptualized as a learned behavior, a personality characteristic, or a developmental phenomenon. When regarded as a developmental phenomenon, risk-taking is thought to be the result of cognitive immaturity. That is to say, it is assumed that adolescents are not sufficiently able to assess the risks, the costs and benefits, of engaging in risky behavior. While cognitive-social immaturity is a plausible explanation for risk-taking behavior in adolescence, few adolescent health programs take into account the egocentric dimension of decision making (Greene et al., 2006).

Understanding the egocentric basis of risk-taking behavior may have important implication in explaining the undesirable behaviors of adolescents nowadays. With the theory that links egocentrism and risk taking especially its link with personal fable, the researchers have used and correlated two questionnaires as evidence of the theory. Also, at the end of the study, the researchers wished to propose a new theory that supports the date.

In this light, the respondents of the study were the adolescent students from high school and college. The researchers aim to determine the level of egocentrism and risk taking behavior as well as their correlation in an attempt to understand and explain the observed behaviors of adolescents.

II. OBJECTIVES OF THE STUDY

The study focused on the adolescents in the different schools in Batangas. As points of the study, the researchers established four objectives and these are: (a) to determine the level of egocentrism, risk behavior and risk perception of the participants; (b) identify the adolescent stage where egocentrism and risk taking are high; (c) to correlate egocentrism and risk-taking with the demographic profile of the participants; (d) to correlate egocentrism and risk behavior/perception; (e) to propose an intervention that will help the students in coping their egocentrism and risk-taking level.

Theoretical Basis

The concept of egocentrism that is coined by Jean Piaget in 1967 helped this study to emerge. Egocentrism is a form of centration (Santrock, 2006). According to Piaget, children center their own point of view that they cannot take another's perspectives. This concept is the stepping stone utilized by another psychologist named David Elkind who developed the theory of adolescent egocentrism. It involves the belief that others are preoccupied with the adolescent as he or she believes that he or she is unique and invincible. Egocentrism is believed to be influential in adolescent's risk taking behaviors (Grant, 2007).

Adolescent egocentrism theory proposes that once abstract reasoning emerges, those in early adolescence distort their perceptions of self and others in social contexts (Passer & Smith, 2004).

III. REVIEW OF LITERATURE

Adolescence is derived from the Latin verb, —adolescere, meaning to grow into maturity. It is commonly called as the —period of storm and stress.

During this time, more hormones are produced by the endocrine glands which make the adolescents impulsive in their behavior. Moreover, this stage involves not only biological changes, but also socio-emotional and cognitive changes (Aguirre, et al., 2008). These changes contribute to their attitudes and behaviors that are not easily accepted by the society.

Sedra Spano (2007) said that adolescence is a time of great change for young people when physical changes are happening at an accelerated rate. He added that adolescence is not just marked by physical changes -- young people are also experiencing cognitive, social/emotional and interpersonal changes as well. As they grow and develop, young people are influenced by outside factors, such as their environment, culture, religion, school, and the media.

This study used Steinberg's (1999) classification for adolescent periods, adolescents were divided into early (ages 11-14), middle (ages 15-17) and late (ages 18-21) adolescent age groups (Maynard et al. 2008).

Within the Piagetian theory of cognitive development, egocentrism is broadly defined as a lack of differentiation in subject-object relations that takes a unique form and is reflected in a unique set of thoughts and actions at each stage of mental development (Alberts, 2006).

The book of Dacey and Travers (2004) explains that egocentrism describes the initial world of children. Everything centers on them; they see the world only from their own perspectives. It is a constant companion of cognitive development. It takes the form of inability to differentiate mental constructions from perceptual events (Wadsworth, 2004).

Adolescent egocentrism is the heightened self-consciousness of adolescents (Santrock, 2006). It is a self-absorbed and distorted view of one's uniqueness and importance (Passer and Smith 2004). It means that adolescents perceive others to be watching and noticing them more than the actual case (Santrock, 2005). Papalia et al. (2001) explained the immature characteristics of adolescent thought in the study of Elkind. These immature behaviors and attitudes may stem from young people's inexperienced ventures into abstract thought. These are argumentativeness, indecisiveness, finding fault with authority figures, apparent hypocrisy, self-consciousness, and assumptions of invulnerability.

In the research conducted by Yamamoto et al. (2008), they developed the Japanese version of the AES scale and investigated the relationship between the egocentrism assessed by the AES scale and the self-consciousness assessed by the Japanese version of the

self-consciousness scale. The original version of the AES scale was first translated into Japanese using the forward backward method and examined for factorial reliability and validity. The results demonstrated that the Japanese version of the AES scale shows adequate factorial reliability and validity, but different from the original version the —egocentrism personal fable subscale which measures the feeling that oneself is special and unique was not extracted in the Japanese version. They found a moderate correlation between the non-social focuses of the AES scale and the public self-consciousness subscale of the self-consciousness scale. This correlation suggests that a strong attention of others' view on oneself results in the avoidance of others.

The research of Lesa Rae Vartanian (2005) had offered another door for explaining adolescent egocentrism. The paper revisited the imaginary audience and personal fable constructs of adolescent egocentrism. It was debated that paper-and-pencil instruments do not necessarily measure biased thinking, nor weigh imaginary audience and personal fable. Numerous studies concluded that early adolescence is the stage when egocentrism is at its highest level and declines by late adolescence. On the other hand, many studies also claim that adolescent egocentrism reached its peak by late adolescence.

The research entitled, —The social reality of the imaginary audience: a grounded theory approach authored by Bell and Bromnick that was published in 2003 challenged the traditional approaches to understanding the imaginary audience. In their study, three hundred sixty-one British school children (aged 14 and 15 years) were asked to express their worries and concerns, using grounded theory methodology. Qualitative responses were collated and coded according to emerging categories, with "what other people think" identified as the central concern. In particular, the findings are used to critique Elkind's theory of adolescent egocentrism. Data presented in this study suggest that adolescents worry about what other people think because there are real personal and social consequences. Such concerns are seen as being based in social reality and are not imaginary as Elkind suggested. In conclusion, new methodologies which place young people at the center of the analysis are advocated.

Matthew Tull, PhD in 2009 defined risk taking as a tendency to engage in behaviors that have potential harms and dangers, yet provide opportunities for some outcomes that can be perceived as positive. Marvin Zuckerman in his article in 2005 for *Psychology Today* said that taking risk is not just a behavior instead a

personality. Risk behaviors can be classified into positive and negative (Skaar, 2009). Irwin's definition in 1993 includes behaviors for which there are unknown consequences and the potential for those consequences to have a negative health outcome. Yates defined risk in 1992 as multidimensional and proposed a definition that includes the consideration of potential loss, probability of loss, and significance of the potential loss. These definitions address the potential for adverse outcomes, but fail to address potentially constructive outcomes. Nicole Renee Skaar in 2009 developed a scale entitled Adolescent Exploratory and Risk Behavior Rating Scale (AERRS) that the present study also used. Skaar developed the said scale for her dissertation. It was established using both classical test theory and item response theory methods. It was concluded that the AERRS is a reliable measure that has the potential to become a key assessment that has many potential uses in both academic research and applied settings, such as schools.

The study entitled Adolescent Egocentrism, Risk Perceptions, and Sensation Seeking among Smoking and Non-smoking Youth by Frankenberg (2005) compared adolescents (ages 14 to 18) who have never tried smoking, smoke infrequently, or smoke regularly on three characteristics: adolescent egocentrism, risk perceptions, and sensation seeking. Sensation seeking exhibited the expected result by increasing with smoking experience. Contrary to past research findings, perceptions of sensation seeking and adolescent egocentrism were not related. Relations among egocentrism and evaluation of certain smoking risks varied with the level of smoking. Results are interpreted to suggest that egocentrism's invulnerability component affects risk perceptions at the stage where adolescents decide whether to take up smoking. Teens who smoke regularly appear to have put invulnerability aside and are more realistic about the risk.

IV. METHOD

This section discusses the process and procedures done by researchers to accomplish this study. This division is composed of research design and instruments that were utilized, including the population of the study, and the procedure done.

Research Design

The researchers used quantitative analysis approach. The former involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion (Kothari, 2004). Standardized questionnaires were used as instruments in the study—Adolescent Egocentrism-

Sociocentrism Scale and Adolescent Exploratory and Risk Behavior Rating Scale.

Measures

Two sets of questionnaires were used having 45 items and 50 items in the study. The first set of questionnaire entitled Adolescent Egocentrism-Sociocentrism Scale was developed by Dr. Robert Enright to assess egocentrism among adolescents. It is a revision of the measure reported in the pilot study of Enright et al. The pilot measure was revised to retain items which (a) showed significant relationships with age; (b) minimized sex differences, since egocentrism and sociocentrism are stage-related constructs in the theory; (c) maximized internal consistency of the egocentrism, sociocentrism, and nonsocial constructs. A Likert-type scale is used in which a student reads a statement and decides on a 5-point scale the degree of importance which the statement holds for the subject. Scoring of each item ranges from 1 (no importance) to 5 (great importance). There are a total of 15 egocentrism items, 5 each in the subscales of personal fable, imaginary audience, and general self-focuses. There are also 15 sociopolitical attitudes items and 15 nonsocial activities items, a total of 45 items, which take about 20 minutes to complete. A total score per subscale is obtained by summing the totals per item (1-5) in that subscale. The egocentrism subscale, then, can range from 15- 75, whereas the personal fable subscale can range from 5-25. As a control for order effects, each of the five pages of the AES measure has 3 egocentrism items (1 each in the three subscales of egocentrism), 3 sociopolitical attitudes items, and 3 nonsocial activities. Each of these 9 items is randomly ordered on each page, with rate in terms of its importance as —of great importance, —much importance, —some importance, —little importance, and —no importance. With the help of the scale, egocentrism of the participant was determined. In this study, only egocentrism items were calculated and considered. It did not focus on the sociopolitical attitudes and nonsocial activities.

The second questionnaire is the Adolescent Exploratory and Risk Behavior Rating Scale (AERRS) that was developed based on a review of the literature and present evidence in support of potential predictors and descriptors of various risk behaviors. It was authored by Dr. Nicole Skaar in June 2009. The construction of the instrument was done with the most recent literature on self-report methods considered. Construction of the AERRS began with a thorough review of the risk behavior literature using computerized databases (PsychINFO and ERIC) and

reference lists from the articles obtained from the online index searches. Items were generated based on the literature across various disciplines of psychology and existing risk behavior questionnaires. The risk behavior questionnaires used to develop the present measure were the Youth Risk Behavior Survey (CDC, 2006c), the Adolescent Risk Behavior Questionnaire (Gullone et al., 2000), and the Iowa Youth Survey (Research Institute for Studies in Education, 2006).

The AERRS is comprised of two sections: Part I - participation in risk behavior and Part II - perception of risk for each behavior. The initial version of the instrument contains 43 Likert-type items in each section but later revised and comprises 25 items per section. In the participation section of the AERRS, students were asked to rate how often they participate in each behavior on a scale of 1 (*never*) to 4 (*often*). The perception items look similar to the participation items with risk perception rated on a scale of 1 (*not at all risky*) to 4 (*extremely risky*). The total scores for the AERRS (likely two scales: exploratory risk behaviors and health risk behaviors) 25 are sums of the rating scale item scores with higher scores indicating greater participation in the behavior for the AERRS Part I and perception that the behavior is a higher risk for Part II.

Participants

Participants included 365 students attending public (61.6%) and private high schools and college/university (38.4%) in the province of Batangas. One hundred seventy four (174) of the participants were males and one hundred ninety one (191) were females. One hundred ninety six were high school students and one hundred sixty nine (169) were college students. Most of the participants (69.3%) were from lower class family, 27.4% of them were from middle class and the least number of participants were from the upper class consisting only 3.3%. The students ranged from 11 to 21 years of age, with a mean age of 15.72 years ($SD = 2.51$). They were divided into three age ranges based on Steinberg's classification for adolescent periods in 1999. There were 117 participants from ages 11-14, which is classified as the early adolescents, middle (ages 15-17) was composed of 142 participants and late (ages 18-21), 106 participants. The General Weighted Average of the participants was also considered in the study with mean of 85.76 ($SD=4.06$).

More males (52.3%) participated in the study than females (47.7%). Early adolescents (11-14 years old) were 32%, middle adolescents (15-17 years old) composed the 39% of the total population. Most of the participants were fourth year high school students

(17.8%), followed by third year college (15.6%), first year high school (13.7%), first year college (13.2%), 11.8% were second year students, 10.4% from third year high school, next is the second year college consisting the 9.6% of the total population and lastly, the least number of participants were the fourth year students who only comprised 7.9% of the total population of the study. Most of the participants were from the public schools (62%) consisting of 225 participants and 140 students from private schools (38%). Most of the participants obtained the grade of 84-86 (29.32%) consisting of 107 participants. The participants with a grade of the range of 87-89 with the percentage of 28.42 or 104 participants followed. Next, the highest number of students who joined were having the grade between 81 and 83 consisted of 55 students or 15.07% of the total population. Fourth is the range 78-80 as the GWA that only had 39 participants (10.69%). The participants with grades of 90-92 followed with a percentage of 10.41 (38 students). The next GWA range was between 93 and 95 that only got 3.01% with 11 participants. The last three age ranges were 75-77 (1.37%), 96-98 (1.10%) and 99-100 with 0.55% only or 2 students.

Lower class has the highest percentage which consists of 69.3% (253 participants), followed by middle class which has 27.4% (100 participants), the least number were from the upper class which only has 3.3% or 12 participants.

Procedure

Adolescent Egocentrism- Sociocentrism (AES) and Adolescent Exploratory and Risk Behavior Rating Scale were given to the participants. The respondents were from high school and college. The time to finish completing the AES Scale was 20 minutes. AERRS questionnaire on the other hand took up to 25 minutes. As a support for the outcome of the test, interview with some of the participants followed. Every subscale was compared with age, sex, socioeconomic status, academic grade in school or year level, academic performance and the type of school where the participants currently enrolled as the bases of comparison. At the end, the relationship between adolescent egocentrism and adolescent risk-taking was determined. The researchers also proposed an intervention for the study.

Data Analysis

The data gathered in the study, were analyzed carefully through statistical method. The data that were gathered in the study was computed using mean,

standard deviation, One Way Analysis of Variance (ANOVA) and Pearson's product moment correlation coefficient. Mean scores were obtained to determine the level of egocentrism and risk taking behaviors and perception of adolescents. It is also used together with the standard deviation in computing ANOVA that is used to know if the demographic profiles of the participants affect their level of egocentrism and risk taking. And lastly, Pearson's product moment correlation was utilized to know if the two scales that were used were correlated as well as if these instruments were interrelated with the demographic profile of the participants of the study.

V. RESULTS AND DISCUSSION

Table 1. Level of Egocentrism among Respondents (N = 365)

Egocentrism	Mean	Standard Deviation	Interpretation
Composite	53.51	8.32	Average
Egocentrism			
Personal Fable	17.69	3.56	Average
Imaginary Audience	16.72	3.29	Average
Self-Focus	19.55	3.13	High

Table 1 shows the overall level of Egocentrism and its subscales among respondents. It can be noted that adolescents have average level of egocentrism with mean of 53.51 as well as personal fable and imaginary audience but they have high level of self-focus. Vartanian (2005) discussed and emphasized different results of previous studies. Some of them found heightened imaginary audience and personal fable ideation among middle school students. Some support for the notion that these ideations decline by late adolescence has been found in the form of negative correlations with age but other studies have found no age differences in samples with reasonably broad age ranges. The most common pattern is that females demonstrate greater adolescent egocentrism than do males.

The table shows the overall level of Risk Taking among respondents. It can be noticed that adolescents have low level of risk behaviour and health risk behaviour but obtained high level of health risk perception.

The researchers support the outcome of the study done by Gullone and Moore (2005) that exploratory items were difficult for adolescents to perceive as risky and the health risk items were easier to perceive as risky.

Table 2. Level of Risk-Taking among Respondents (N = 365)

Risk-Taking	Mean	SD	VI
Composite Risk Behavior	43.90	8.19	Low
Health Risk Behavior	19.46	4.55	Low
Exploratory Risk Behavior	24.65	5.39	Average
Composite Risk Perception	70.49	12.94	Average
Health Risk Perception	47.08	8.40	High
Exploratory Risk Perception	23.47	7.40	Average

Students have a greater propensity for participating in behaviors they perceive as less risky and are less likely to participate in behaviors they perceive as more risky.

Table 3 indicates the mean scores of participants based on age. It can be noticed that instead of presenting the actual age of the participants, the researchers divided the participants based on Steinberg’s classification for adolescent periods. The mean scores determine the level of egocentrism and risk taking behavior and perception of the participants. It can be noted that late adolescents have the highest level of egocentrism including its subscales—personal fable with mean of 17.40, imaginary audience, and self-focus with mean of 19.61. It supports the study conducted by Maynard et al (2008) entitled Adolescent egocentrism: a contemporary view wherein they sought to determine whether adolescent egocentrism is displayed during adolescence in the same patterns as when the constructs were first defined in 1967. They empirically revisited the constructs of personal fable and imaginary audience in contemporary adolescents, hypothesizing a decrease in egocentrism with increasing age. Adolescents responded to a self-report measure of adolescent egocentrism. Results revealed significant interactions between age and sex for both imaginary audience and personal fable. The results deviated from the original conceptualization discussed in 1967 and supported more recent findings suggesting the existence of adolescent egocentrism in late adolescence.

The table also included the means for risk-taking of participants based on age. It can be seen that late adolescents have the highest level of risk behavior with mean of 47.11 but early adolescents have the highest level of risk perception.

This result opposes the result of the study conducted by Jeffrey Arnett (2007) entitled,

—REVIEW Reckless Behavior in Adolescence: A Developmental Perspective¹ wherein he concluded that risk taking behaviors decline with age.

Table 3. Mean Scores based on Age (N= 365)

Variables	Age	Mean
EGOCENTRISM		
Composite Egocentrism	Early Adolescent	51.74
	Middle Adolescent	54.15
	Late Adolescent	54.60
Personal Fable	Early Adolescent	16.37
	Middle Adolescent	16.80
	Late Adolescent	17.40
Imaginary Audience	Early Adolescent	15.72
	Middle Adolescent	16.91
	Late Adolescent	17.59
Self-Focus	Early Adolescent	19.53
	Middle Adolescent	19.51
	Late Adolescent	19.61
RISK-TAKING		
Composite Risk Behavior	Early Adolescent	40.53
	Middle Adolescent	44.31
	Late Adolescent	47.11
Health Risk Behavior	Early Adolescent	17.86
	Middle Adolescent	19.40
	Late Adolescent	21.32
Exploratory Risk Behavior	Early Adolescent	23.44
	Middle Adolescent	24.93
	Late Adolescent	25.70
Composite Risk Perception	Early Adolescent	73.65
	Middle Adolescent	72.02
	Late Adolescent	64.88
Health Risk Perception	Early Adolescent	49.67
	Middle Adolescent	48.39
	Late Adolescent	42.41
Exploratory Risk Perception	Early Adolescent	24.36
	Middle Adolescent	23.57
	Late Adolescent	22.35

**Highlighted values have highest means in each scale.*

Peer Influence on Risk Taking, Risk Preference, and Risky Decision Making in Adolescence and Adulthood: An Experimental Study, a research of Margo Gardner and Laurence Steinberg (2005) also had the result which suggests that risk taking and risk decision making were most pronounced in middle and late adulthood.

Table 4 presents the significant differences of egocentrism and risk-taking when grouped according to age. The result suggests that age only affects the level of imaginary audience of adolescents. On the other hand, age has significant difference on risk behavior of and risk perception of adolescents.

Table 4. Comparison of Egocentrism and Risk-Taking when Grouped according to Age (N = 365) $\alpha = 0.05$

Variables	F	p-value	eta ²	VI
Imaginary Audience	2.470	.007	.065	S
Risk Behavior	6.190	.000	.149	S
Health Risk Behavior	4.733	.000	.118	S
Exploratory Risk Behavior	2.984	.001	.078	S
Risk Perception	6.271	.000	.150	S
Health Risk Perception	7.944	.000	.150	S
Exploratory Risk Perception	3.160	.001	.082	S

*S – Significant

Adolescent egocentrism and cognitive functioning during late adolescence, the study conducted by Benker et al. (2005) compared the result they obtained with the result of the researches of Elkind and Bowen in 1979 as well as with Peterson and Roscoe's (1991). They presented studies of female adolescent egocentrism. It is interesting to note that Elkind and Bowen's 12th graders and Peterson and Roscoe's college freshmen were approximately the same age but had different levels of adolescent egocentrism, while their study used primarily college freshmen and sophomores (with a mean age that was two years older) and found an intermediate level of adolescent egocentrism. No difference in the level of adolescent egocentrism was found for age. In addition to this, Maynard et al (2008) showed in the results of their study significant interactions between age for both imaginary audience and personal fable unlike in this study that only showed significant differences in imaginary audience.

The table above displays the significant differences of participants' level of egocentrism as well as risk-taking varying with age as it agree with the study of Margo Gardner and Laurence Steinberg (2005) in which they found out that between adolescence and adulthood there is a significant decline in both risk taking and risky decision making. In addition, their findings suggest that, in some situations, individuals may take more risky decisions when they are with their peers than when they are by themselves. Most importantly, the effects of peer presence on both risk taking and risky decision making vary as a function of age. That is, although the sample as a whole took more risks and made more risky decisions in groups than when alone, this effect was more pronounced during middle and late adolescence than during adulthood. Thus, relative to adults, adolescents are more susceptible to the influence of their peers in risky situations.

Table 5. Comparison of Egocentrism and Risk-Taking when Grouped according to Sex (N = 365) $\alpha = 0.05$

Variables	F	P-value	eta ²	VI
Egocentrism	6.004	.015	.016	S
Personal Fable	5.851	.016	.016	S
Self-Focus	11.051	.001	.030	S
Risk Behavior	7.975	.005	.021	S
Health Risk Behavior	19.505	.000	.051	S
Risk Perception	4.469	.035	.012	S
Health Risk Perception	13.436	.000	.036	S

*S – Significant

Table 5 shows that there is a significant difference when egocentrism and risk-taking were grouped according to sex of the participants. Based on the data presented above, it can be concluded that sex affects the level of egocentrism, personal fable and self-focus of the participants. With this result, we contest the result of the study conducted by Bromnick et al. (2003) wherein they replicated Peterson and Roscoe's (1991) study with female college students and extend their work in several ways. The Peterson and Roscoe study used only females, while this study examined both genders and found that females possessed greater levels of adolescent egocentrism than did males. This supports both Peterson and Roscoe's (1991) and Elkind and Bowen's (1979) contention that females show higher levels of egocentrism at the age of late adolescence age.

Maynard et al (2008) showed in the results of their study significant interactions between sex for both imaginary audience and personal fable unlike in this study that only showed significant differences in personal fable.

The above table also discussed the effect of sex on risk-taking. It can be noted that age has significant difference on risk behavior and risk perception of the participants. Dunbar, et al. (2008) examined the risk behaviors between sexes and said that sexual selection theory predicts that males tend to behave in ways that are more risky than females. With this theory, they explored humans by studying two everyday situations (catching a bus and crossing a busy road). They showed that humans were competent optimizers on such tasks. Nonetheless, single males pursued a more risky strategy than single females by cutting waiting times much finer. Males are also more likely than females to cross busy roads when it is risky to do so. More importantly, males are more likely to initiate a crossing in high risk conditions when there are females present in the immediate vicinity, but females do not show a comparable effect in relation to the number of males

present. These results support the suggestion that risk-taking is a form of —showing off used as mate advertisement.

Gardner and Steinberg (2005) found some interesting gender differences in risk preference. Specifically, males, particularly at younger ages, were more likely than were females to weigh the benefits of risky activities over the costs. Additionally, peer effects on benefit versus cost consideration were greater among males than among females. Although we did not explicitly predict these gender differences, our findings are consistent with several previous studies. Nonetheless, it is interesting that these gender-related differences in risk– benefit consideration did not translate into gender differences on the more direct measures of risk taking or risky decision making.

Table 6. Comparison of Egocentrism and Risk-Taking when Grouped according to Year Level (N = 365) $\alpha = 0.05$

Variables	F	p-value	eta ²	VI
Egocentrism	2.313	.026	.043	S
Personal Fable	2.550	.014	.048	S
Imaginary Audience	4.183	.000	.076	S
Risk Behavior	7.132	.000	.123	S
Exploratory Risk Behavior	2.113	.042	.040	S
Risk Perception	5.914	.000	.104	S
Health Risk Perception	8.272	.000	.150	S
Exploratory Risk Perception	2.945	.005	.055	S

*S – Significant

Table 6 illustrates that there is a significant difference when Egocentrism and Risk-taking were grouped according to year level. It can be seen that year level affects the level of egocentrism, personal fable and imaginary audience of the participants. With the result obtained in this study, the researchers do not support the research conducted by Benker et al. (2005) entitled —Adolescent egocentrism and cognitive functioning during late adolescence wherein they found no significant difference in the level of adolescent egocentrism were found for year level.

It can be seen that year level affects the level of risk behavior, exploratory risk behavior, risk perception, health risk perception and exploratory risk perception of the participants. With the table above, it can be noted that 4th year college students have the highest level of risk behavior. On the other hand and as expected, risk perception scores of 1st year students were very high.

Table 7. Comparison of Egocentrism and Risk-Taking when Grouped according to Type of School (N = 365, $\alpha = 0.05$)

Variables	F	P-value	eta ²	VI
Risk Behavior	6.978	.009	.019	S
Health Risk Behavior	13.494	.000	.036	S
Risk Perception	12.668	.000	.034	S
Health Risk Perception	24.204	.000	.063	S

Table 7 shows the significant difference when Egocentrism and Risk-taking were grouped according to type of school. It can be seen that type of school affects the level of risk behavior, health risk behavior, risk perception, and health risk perception scores of the participants.

Table 8. Comparison of Egocentrism and Risk-Taking when Grouped according to GWA (N = 365, $\alpha = 0.05$)

Variables	F	p-value	eta ²	VI
Self-Focus	2.078	.003	.118	S
Risk Behavior				
Health Risk Behavior	1.565	.052	.091	S
Risk Perception	12.668	.000	.034	S
Health Risk Perception	2.572	.000	.142	S

Table 8 shows that there is a significant difference when Egocentrism and Risk-taking were grouped according to GWA. It was concluded that only Self-Focus was the subscale of egocentrism that has significant difference based on GWA. On the other hand, It also indicates that there is a significant difference when Risk Behavior and Risk Perception and their subscales were clustered based on GWA. It can be concluded that GWA affects the level of health risk behavior and health risk perception scores of the participants.

Table 9. Comparison of Egocentrism and Risk-Taking when Grouped according to Socioeconomic Status (N = 365, $\alpha = 0.05$)

Variables	F	p-value	eta ²	VI
Risk Behavior	6.418	.002	.034	S
Health Risk Behavior	10.847	.000	.057	S
Risk Perception	12.668	.000	.034	S
Health Risk Perception	20.246	.000	.101	S

Table 9 shows the significant differences on Egocentrism and Risk-Taking based on Socioeconomic Status. It was found that socioeconomic status does not

affect the level of egocentrism of adolescents but it affects the level of Risk Perception and Risk Behavior of the participants. It can be seen that socioeconomic status has significant difference on risk behavior, health risk behavior, risk perception, and health risk perception scores of the participants.

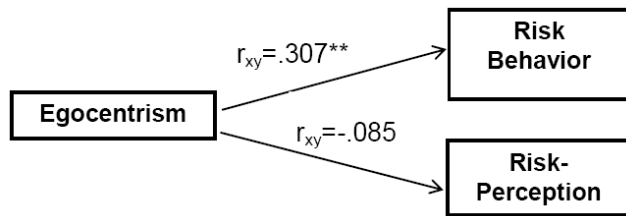


Figure No. 8
Relationship between Egocentrism and Risk-Taking
N = 365

** . Correlation is significant at the 0.01 level (2-tailed).
***Note:** Other variables were found to be not significant and can be viewed in the Appendix section.

The figure presents the correlation between Egocentrism and Risk-Taking. It can be noted that Egocentrism is positively correlated to Risk Behavior ($r_{xy}=.307^{**}$, $p\text{-value}=.000$) at 0.01 level but is not correlated to Risk Perception ($r_{xy}=.307^{**}$, $p\text{-value}=.104$).

The result above supports the study piloted by Aalsma et al (2006) that assessed the relationship among three personal fables (*omnipotence*, *invulnerability*, *personal uniqueness*), narcissism, and mental health variables in a large, cross-sectional sample of adolescents drawn from Grades 6, 8, 10, and 12. In their study, invulnerability which was a part of egocentrism was strongly associated with risk behaviors. They also added that personal uniqueness was strongly associated with depression and suicidal ideation, a relationship that increased with age.

Greene, et al. (2006) said that research on adolescent egocentrism suggests that adolescents experience personal fable which can lead to exaggerated sense of invulnerability. Their study examined relative contributions of sensation-seeking and egocentrism to risk taking behaviors. The result of this study helped the new researchers in proving the relationship between egocentrism and risk-taking behaviors of adolescents.

In the experimental study done by Gardner and Laurence Steinberg in 2005, 306 individuals in 3 age groups—adolescents (13–16), youths (18–22), and adults (24 and older)—completed 2 questionnaire measures assessing risk preference and risky decision

making, and 1 behavioral task measuring risk taking. Participants in each age group were randomly assigned to complete the measures either alone or with 2 same-aged peers. Results indicated that (a) risk taking and risky decision making decreased with age; (b) participants took more risks, focused more on the benefits than the costs of risky behavior, and made riskier decisions when in peer groups than alone; and (c) peer effects on risk taking and risky decision making were stronger among adolescents and youths than adults. These findings support the idea that adolescents are more inclined toward risky behavior and risky decision making than are adults and that peer influence plays an important role in explaining risky behavior during adolescence.

Dacey and Travers (2002) also stated that adolescent egocentrism is the reversion to the self-centered thinking patterns of childhood that sometimes occur in the teen years. It refers to the exaggeration of adolescents in terms of their importance, uniqueness, and severity of social and emotional experiences. Elkind sees two components of this kind of egocentrism. Adolescents who tend to create imaginary audience feel that they are on the center stage and the whole world is inspecting their appearance and actions. Personal fable on the other hand refers to the belief that they are mythical so they exaggerate their abilities and invincibility. This belief can sometimes lead them to risk-taking actions, such as drug use, drunk-driving and premarital sex.

The result of this study supports the research conducted by Juliette Grant (2007) entitled *Egocentricity and Risk taking in Female Adolescents* which examined the link between Elkind's theory of Egocentrism and risk taking in female adolescents. Risk taking and its links to the Personal Fable and the Imaginary Audience were the main focus of the research. She used a qualitative research design to obtain an in-depth understanding of risk taking among a sample group of ten female adolescents. A focus group from a different school was used to help analyze and discuss the data obtained. The results of the study showed that Elkind's theory of adolescent Egocentrism (both the Personal Fable and the Imaginary Audience) are, indeed, influencing factors in female adolescent risk taking.

VI. CONCLUSIONS

Adolescents have average level of egocentrism including personal fable and imaginary audience but they have high level of self-focus. Adolescents have low level of risk behaviour and obtained average level

of risk perception. Late Adolescents have the highest level of egocentrism based on their means. They also have the highest level of risk behavior but Early Adolescents have the highest level of risk perception. Age was found to have significant difference with imaginary audience but not directly with egocentrism. Age was also found to have significant difference with risk behavior and risk perception. When grouped according to sex, egocentrism was found to be significant as well as risk behavior and risk perception. Year level also has an effect to egocentrism, risk behavior and risk perception levels of the participants. Both type of school socioeconomic status were found to have significant difference with risk behavior and risk perception but do not affect the level of egocentrism of participants. GWA has effect only on health risk behavior and health risk perception. There is positive correlation between egocentrism and risk behavior but egocentrism was not correlated with risk perception.

VII. RECOMMENDATIONS

The Filipino adolescents should maintain the average level of egocentrism through considering other attitudes and activities that are only focusing on themselves. Future researchers may utilize other egocentrism questionnaires that are up to date or develop one test applicable in the Filipino context. Future researchers can use qualitative analysis in their study to be able to test if the same result will be obtained and to obtain an in-depth understanding of egocentrism and risk-taking. Future researchers may use another group of participants like the out-of-school youth and compare the results that would be obtained to the results of this study. The proposed intervention can be utilized by different schools in order to help the adolescents cope with their egocentrism and risk behavior level.

REFERENCES

- Aalsma, M. C., Lapsley, D.L., & Flannery, D. J., (2006). —Personal Fables, Narcissism, and Adolescent Adjustment. Retrieved 10 Dec. 2011, from http://www.nd.edu/~dlapsle1/Lab/Articles%20%26%20Chapters_files/Aalsma%20Laps%20Flannery%20Personal%20Fables%20Narcissism%20Adol%20Adjustment.pdf.
- Alberts, Amy, et al (2006). —The Personal Fable and Risk-Taking in Early Adolescence. Retrieved 10 Dec. 2011, from <http://cmapspublic2.ihmc.us/rid=1KLDGKTMK-1S2JK0C-1MP7/Risk%20Taking%20in%20Adolescence.pdf>
- Aguirre, Felissa U. et al. (2008). Introduction to Psychology.pp.91-94.
- Aquino, G.V., & Miranda, N.C. (2003). *Introduction to Psychology 2nd edition*. Metro Manila: National Bookstore
- Bell, J. H., & Bromnick, R. D. (2003). "The social reality of the imaginary audience: a grounded theory approach." *Adolescence*. Retrieved 14 Dec. 2011, from Academic OneFile Web: <http://go.galegroup.com/ps/i.do?id=GALE%7CA109027875&v=2.1&u=lyceumph&it=r&p=AONE&sw=w>.
- Benker, Jennifer, et al. (2005). "Adolescent egocentrism and cognitive functioning during late adolescence." *Adolescence*. Retrieved 14 Dec. 2011 from Academic OneFile. Web: <http://go.galegroup.com/ps/i.do?id=GALE%7CA53870290&v=2.1&u=lyceumph&it=r&p=AONE&sw=w>.
- Dacey, J.S. & Travers, J.F. (2002). *Human Development Across the Lifespan*. New York: McGraw-Hill Companies, Inc.
- Dacey, J.S. & Travers, J.F. (2004). *Human Development Across the Lifespan updated 5th edition*. New York: McGraw-Hill Companies, Inc.
- Dunbar, R.I.M., Pawlowski, B., & Atwal R. (2008). —Sex differences in everyday risk-taking behavior in human. Retrieved 24, February 2012, from <http://www.epjournal.net/wp-content/uploads/ep062942.pdf>
- Frankenberg, K.D. (2004). —Adolescent egocentrism, risk perceptions, and sensation seeking among smoking and nonsmoking youth. *Journal of Adolescent Research*. Retrieved 4, March 2012 from <http://jar.sagepub.com/content/19/5/576.abstract>
- Franzoi, S.L. (2003). *Social Psychology 3rd edition 2003*. New York: McGraw-Hill Companies, Inc.
- Gardner, M. & Steinberg, L. (2005). —Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: an experimental study. Retrieved 23, February 2012, from <http://www.wispsd.org/htm/ATPracGuides/Training/ProgMaterials/Conf2011/AdDev/PInfluence.pdf>
- Goosens, L., Beyers, W., Emmen, M., & van Aken, M.A.G. (2005). —The imaginary audience and personal fable: Factor Analyses and Concurrent Validity of the —New Look Measures. Retrieved 02 Dec. 2011, from [http://faculty.weber.edu/eamsel/classes/adolescence%203140/readings/gossen%20et%20al.%20\(2002\).pdf](http://faculty.weber.edu/eamsel/classes/adolescence%203140/readings/gossen%20et%20al.%20(2002).pdf).
- Grant, J. (2007). —Egocentrism and Risk Taking in Female Adolescents. Retrieved 10 Dec. 2011, from http://wiredspace.wits.ac.za/bitstream/handle/10539/6074/grant_master_research_report_2008.pdf?sequence=1.
- Greene, K., Krcmar, M., Walters, L.H., Rubin, D.L., Jerold, & Hale, L. (2006). —Targeting adolescents risk-taking behaviors; the contributions of egocentrism and sensation-seeking. Retrieved 25 February, 2012 from <http://comminfo.rutgers.edu/~kgreene/research/pdf/jrlofadol2006.pdf>
- Hansen, C., & Myers, A. (2006). *Experimental Psychology 6th Edition*. Singapore: Thomson Asia Pte Ltd.

- Kothari, C.R. (2004). *Research Methodology Methods and Techniques Second Revised Edition*. India: New Age International (P) Limited, Publishers.
- Kuterbach, J. M. (2007, December). "Factor structure of the new imaginary audience scale in a sample of female college students." *College Student Journal*. Retrieved 14 Dec. 2011, from Academic OneFile Web: <http://go.galegroup.com/ps/i.do?id=GALE%7CA172977976&v=2.1&u=lyceumph&it=r&p=AONE&sw=w>.
- Maynard, A. M., Schwartz, P.D., & Uzelac, S. M. (2008). "Adolescent egocentrism: a contemporary view." *Adolescence*. Retrieved 13 Dec. 2011, from Academic One File Web: <http://go.galegroup.com/ps/i.do?id=GALE%7CA189872323&v=2.1&u=lyceumph&it=r&p=AONE&sw=w>.
- Myers, D.G. (2008). *Social Psychology 9th edition*. New York: McGraw-Hill Companies, Inc.
- Papalia, D.E., Wenidkos, S., Olds, R., & Duskin F. (2001). *Human Development 8th edition*. New York: McGraw-Hill Companies, Inc.
- Powlishta, K. K., & Vartanian, L. R. (June 2005). "Demand Characteristics and Self-Report Measures of Imaginary Audience Sensitivity: Implications for Interpreting Age Differences in Adolescent Egocentrism." *Journal of Genetic Psychology*. Retrieved 14 Dec. 2011, from Academic One File. Web: <http://go.galegroup.com/ps/i.do?id=GALE%7CA76759114&v=2.1&u=lyceumph&it=r&p=AONE&sw=w>.
- Santrock, J.W. (2003). *Psychology 7thed*. New York: McGraw –Hill Companies Inc.
- Santrock, J.W. (2005). *Psychology: Essentials, Updated Second Edition*. New York: McGraw –Hill Companies Inc.
- Santrock, J.W. (2006). *Life-Span Development 10th edition*. New York: McGraw–Hill Companies Inc.
- Skaar, N. R. (2009). —Development of the Adolescent Exploratory and Risk Behavior Rating Scale. Retrieved 23, February 2012, from http://conservancy.umn.edu/bitstream/53807/1/Skaar_umn_0130E_10490.pdf
- Smith, R.E., & Passer, M.W. (2004). *Psychology the Science of Mind and Behavior 2nd edition*. New York: McGraw – Hill Companies Inc.
- Spano, S. (2007).—Stages of Adolescent Development. Retrieved 07 March 2012, from http://www.actforyouth.net/resources/rf/rf_stages_0504.cfm
- Tull, Matthew. (2008). —Risk-taking. Retrieved 01 March 2012, from <http://ptsd.about.com/od/glossary/g/risktaking.htm>
- Vartanian, Lesa Rae. (2005). "Revisiting the imaginary audience and personal fable constructs of adolescent egocentrism: a conceptual review." *Adolescence*. Retrieved 02 Dec. 2011, from Academic OneFile Web: <http://go.galegroup.com/ps/i.do?id=GALE%7CA70777828&v=2.1&u=lyceumph&it=r&p=AONE&sw=w>.
- Virola, R. A. (2010). —Statistically speaking. *National Statistical Coordination Board*. Retrieved 4, March 2012 from http://www.nscb.gov.ph/headlines/StatsSpeak/2010/061510_rav_joe.asp
- Wadsworth B.J. (2004). *Piaget's Theory of Cognitive and Affective Development 5th Edition*. Pearson Education, Inc.
- Yamamoto, M., Tomotake, M., & Ohmori, T. (2008).—Construction and reliability of the Japanese version of the adolescent egocentrism-sociocentrism (AES) scale and its preliminary application in the Japanese university students. Retrieved 02 Dec. 2011, from http://medical.med.tokushima-u.ac.jp/jmi/vol55/pdf/v55_n3-4_p254.pdf
- Zuckerman, Marvin. (2005). —Are you a risk taker? *Psychology Today*. Retrieved 27 February 2012, from <http://www.psychologytoday.com/articles/200011/are-you-risk-taker>