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The Relationship Between Emotional Intelligence And Alcohol Use Among Students at
Minnesota State University - Mankato

By

Ganisher Davlyatov

A Thesis Submitted in Partial Fulfillment of the Requirements for

Master of Science

In

Health Science

Community Health Education

Minnesota State University, Mankato

Mankato, Minnesota

July 2013

The Relationship Between Emotional Intelligence And Alcohol Use Among Students at
Minnesota State University - Mankato

Ganisher Davlyatov

This thesis has been examined and approved by the following members of the thesis
committee.

Dr. Margaret Murray-Davis

Dr. Roy Kammer

Dr. John Seymour

Dedicated to my Dad.

(1950-2012)

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Abstract

The Relationship Between Emotional Intelligence And Alcohol Use Among Students at Minnesota State University - Mankato

Ganisher Davlyatov, M.S. Minnesota State University, Mankato, 2013

The purpose of this study was to examine the role of emotional intelligence, gender, fraternity/sorority membership, and residence on alcohol use among undergraduate students enrolled in spring semester, 2013 at Minnesota State University, Mankato. The relationship between emotional intelligence and alcohol use was studied. Moreover, the effect of gender, fraternity/sorority membership, and residence on alcohol use was determined.

Participants were 390 students of Minnesota State University, Mankato. A quantitative cross-sectional online survey was conducted to collect data regarding students' emotional intelligence status and alcohol use through Schutte Self Report Inventory (SSRI) for emotional intelligence (Schutte, Malouff, Hall, Haggerty, Cooper, Golden, & Dornheim, 1998), and Alcohol Use Disorders Identification Test (AUDIT) for alcohol consumption (World Health Organization [WHO], 2012). An inverse relationship was found between emotional intelligence and alcohol use. Alcohol use was more common among male students. Results from the stepwise multiple regression analysis indicated that managing own emotions, being male, and living off-campus were predictors of alcohol use. Emotional intelligence didn't vary between different genders, and fraternity/sorority membership had no effect on emotional intelligence or alcohol use.

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Chapter One: Introduction

According to World Health Organization (WHO) reports (2011), alcohol is the world's third largest risk factor for disease burden. Also, it is the leading risk factor in the Western Pacific and the Americas and the second largest in Europe with 320,000 young people between the ages of 15 and 29 dying annually from alcohol-related causes, which is 9% of all deaths in that age group (WHO, 2011).

The Substance Abuse and Mental Health Services Administration (SAMHSA) reports that alcohol abuse among younger population is believed to contribute to psychosocial impairment, leading to social consequences and setting the foundation to the potential alcohol use in adulthood (2006).

Background of the Problem

Alcohol use patterns differ in various settings and college students are more likely to abuse alcohol by having more occasions of heavy drinking, defined as five or more drinks in a row, within the past 30 days than non-college adolescents of the same age (40% vs. 35%) (Johnston, O'Malley, Bachman, & Schulenberg, 2006). In a 2005 Substance Abuse and Mental Health Services Administration's (2006) nationwide survey of college students, 44.8 percent of students were classified as "binge" drinkers — consuming five or more drinks on at least one occasion in the past 30 days. Additionally, the study findings identified that 19.5% of college students, aged 18-22, were heavy drinkers compared to 13.0% of people in the same age group who were not enrolled in college. Studies show that heavy alcohol use by college students can result in various alcohol-related problems, such as increased chances of risky behavior, property damage,

sexual assault cases, unprotected sex, lowered GPAs, and lowered income potential (Williams, Powell, & Wechsler, 2002).

Researchers have focused on finding ways to understand the underpinnings of alcohol use (Burrow-Sanchez, 2006) so that they could link them to the theoretical predictors. Consequently, several social theories have been applied to alcohol abuse, such as the social cognitive theory (Bandura, 1986), self-determination theory (Deci & Ryan, 1985), the theory of reasoned action (Fishbein & Ajzen, 1975), and the ecological systems theory (Bronfenbrenner, 1979).

The theory of emotional intelligence (Bar-On, 2006; Goleman, 1995; Salovey & Mayer, 1990) has been developed and studied during last two decades. Today there is sufficient information to consider emotional intelligence as a predictor of:

- social interactions and competence (Tsujino & Oyama-Higa, 2007);
- management and leadership styles (Cherniss, Extein, Goleman, & Weissberg, 2006);
- happiness (Furnham & Christoforou, 2007);
- social competence and positive coping styles (Mavroveli, Petrides, Rieffe, & Bakker, 2007); and
- cooperativeness or disruptiveness in school settings (Petrides, Sangareau, Furham, & Frederickson, 2006).

However, there are few studies relating emotional intelligence to alcohol use among college students (Coelho, 2012; Riley & Schutte, 2003; Trinidad & Anderson, 2002). Further, results of these studies can not be generalized as they had small samples and most of them utilized convenience sampling.

The principle of emotional intelligence (EI) is known as a skill that allows individuals to recognize, to manage, and to understand the emotions in self and others (Mayer & Salovey, 1997). Notably, Bar-On's study (2006) explains EI's concepts – social competence, self-awareness, impulse control and empathy – as a framework, which will safeguard youth against risky behaviors. Further, it is supposed that impaired emotional execution precludes individuals from effectively managing negative feelings, leading to inadequacy in dealing with stressful situations (Ciarrochi, Deane, & Anderson, 2002).

Statement of the Problem

Alcohol use among college students is a risky behavior that often begins in adolescence (Hallfors, Cho, Brodish, Flewelling, & Khatapoush, 2006) and may lead to health and social consequences (Burrow-Sanchez, 2006). Social, environmental, and mental health factors related to alcohol use among college students are amply documented in literature (Ballon, Courbasson, & Smith, 2001; Harrow et al., 2006; Kelly, Blacksinn, & Mason, 2001; Weaver et al., 2001). Nevertheless, research studying the ability to perceive, understand, use, and manage emotions, and its implications for alcohol use among college students is limited. Thus, more studies are needed to link emotional intelligence to alcohol abuse among college students. I will study the relationship between emotional intelligence and different levels of alcohol use among college students at MSU Mankato.

Need for the Study

Based on the previous research on EI, it is proposed in this study that a higher level of emotional intelligence would make college students less likely to use alcohol.

Additionally, there are several factors that make this age group vulnerable to alcohol use, such as:

1. risky behaviors and experimentation is common,
2. independence from parental control, and
3. life stressors, such as problems at college, problems with family, problems with friends.

It is thought that emotional intelligence helps students handle abovementioned stressful situations. Thus, the aim of this study was to understand whether emotional intelligence can be a protective mechanism against alcohol use by investigating the relationship between alcohol use and emotional intelligence. This research can also contribute to specific safe-alcohol-use campaigns among college students.

Research Questions

Four research questions will be examined in this study.

1. Is there a relationship between emotional intelligence and alcohol use among students at Minnesota State University, Mankato?
2. Does being a Fraternity/Sorority member affect emotional intelligence and alcohol use scores?
3. Does being male/female affect emotional intelligence and alcohol use scores?
4. Which emotional intelligence constructs can be used to predict alcohol use among college students?

Limitations

Five limitations apply to this study.

1. The literature review pertains to adolescents in general and may not specifically represent the studied group.
2. The sample is restricted to college students of Minnesota State University, Mankato, thus the results cannot be generalized.
3. Alcohol use and emotional intelligence scores are identified by self-report questionnaires.
4. For convenience purposes, only undergraduate students are studied.
5. The study is limited by the use of an online survey.

Delimitations

Three delimitations apply to this study.

1. The study is limited to Minnesota State University, Mankato students.
2. The study is limited to those students who agree to participate in the survey.
3. The survey questions are simple, and easy to understand.

Assumptions

Three assumptions are made with respect to this study.

1. All participants can read and understand the survey questions
2. All participants will respond truthfully.
3. The emotional intelligence scale will measure the four constructs of emotional intelligence.

Definition of Terms

Eight definitions apply to this study.

Alcohol. Ethyl alcohol, or ethanol, is an intoxicating ingredient found in beer, wine, and liquor. Alcohol is produced by the fermentation of yeast, sugars, and starches (Centers for Disease Control and Prevention [CDC], 2012).

Alcohol dependence. At least three of the following: tolerance; withdrawal symptoms; impaired control; preoccupied with acquisition and/or use; persistent desire or unsuccessful efforts to quit; sustains social, occupational, or recreational disability; use continuous despite adverse consequences.

Alcohol abuse. At least one of the following: fails to fulfill occupational or social obligations due to drinking; use occurs physically hazardous situations or lead to recurrent legal problems; use continuous despite persistent social or interpersonal problems.

Harmful drinking. Clear evidence that alcohol is causing physical or psychological harm; nature of the harm is clearly identifiable; alcohol use has persisted at least one month or has occurred repeatedly over the past 12-month period; subject does not meet criteria for alcohol dependence.

Hazardous drinking. Quantity or pattern of use that places patients at risk for adverse consequences.

Heavy drinking. Quantity or pattern of use that exceeds a defined threshold (WHO, 1999).

Emotional intelligence. The ability to perceive emotions accurately, to utilize emotions, to understand emotions, and to regulate emotions with the purpose of assisting and guiding thinking and action (Mayer & Salovey, 1997).

Standard drink. Contains roughly 14 grams of pure alcohol, which is found in: 12 ounces of regular beer, which is usually about 5% alcohol; 5 ounces of wine, which is typically about 12% alcohol; and 1,5 ounces of distilled spirits, which is about 40% alcohol (National Institute for Alcohol Abuse and Alcoholism [NIAAA], 2012)

Summary

The goal of this study was to explore the relationship between emotional intelligence and alcohol use, and to identify which subset of emotional intelligence can be used to predict alcohol use among college students at Minnesota State University, Mankato. The Alcohol Use Disorders Identification Test and Schutte Self Report Emotional Intelligence Test were used as research instruments. Chapter two will include a review of the literature related to the study.

Chapter Two: Review of the Literature

Introduction

The purpose of this study was to examine the relationship between emotional intelligence and alcohol abuse among Minnesota State University, Mankato students.

Based on previous research, emotional intelligence can be used:

- 1) in predicting mental and physical wellbeing in college students (Extremera & Fernandez-Berrocal, 2006);
- 2) in influencing mood behaviors (Furnham & Christoforou, 2007);
- 3) in identifying the quality of social interactions in adolescents and young adults (Mavroveli et al., 2007); and
- 4) in understanding general life outcomes (Bar-On, 2006).

Google Scholar Engine, CIHNAL Plus Full Text, MEDLINE, and PsychINFO were used for the literature review utilizing key words and phrases to obtain relevant studies pertaining to emotional intelligence. Key terms included emotional intelligence, alcohol abuse, alcohol use college students, and emotional intelligence, emotional learning, emotional intelligence college students, and emotional intelligence drug use.

This chapter will review published literature on emotional intelligence and recent studies in college drinking. Additionally, emotional intelligence and its role in predicting problem behavior, specifically alcohol use will be analyzed.

College Drinking

Alcohol use is culturally rooted in the college experience in the United States. (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998). Alcohol is the most common substance used by college students as over 80% of college students consume

alcohol at least once a year (Johnston, O'Malley, Bachman, & Schulenberg, 2006).

Among college students alcohol is the drug of choice (O'Malley & Johnston, 2002), and it has been considered as a normative experience, or a rite of passage (Presley, Meilman, & Leichliter, 2002). However, the trend has recently changed and alcohol drinking is now perceived as a public health concern (Barnett & Read, 2005). Dowdall (2009) claims college drinking is one of the most important problems today's college students face.

From the historical perspective, Straus and Bacon's College Student Drinking study (1953) was one of the significant breakthroughs, which showed high prevalence of college drinking and its relationship with poor academic and social performance. The results got public attention and ushered the establishment of national projects: Monitoring the Future Study by the University of Michigan in 1975 (Johnston, O'Malley, & Bachman, 1988), Core Alcohol and Drug Survey by the United States Department of Education's Fund for the Improvement of Postsecondary Education in 1989 (Presley, Meilman, & Lyerla, 1994), College Alcohol Study by Harvard School of Public Health in 1992 (as cited in Wechsler & Nelson, 2008), and Task Force on College Drinking by NIAAA in 2002 (College Drinking Prevention, 2012).

These studies have strengthened Straus and Bacon's stance. For example, Harvard School of Public Health College Alcohol Study (1997) found that 43% of college students were heavy drinkers, consuming 4 or more drinks per occasion for women and 5 or more for men.

Nevertheless, there were some differences among genders. Presley, Meilman, and Cashin (1996) found that 26.4% of men and 9.6% of women consumed 10 or more drinks in a week. Likewise, differences in alcohol consumption were identified among different

ethnic groups. For example, O'Malley and Johnston's study (2002) found that Caucasian students were the heaviest drinkers; African American students the lowest; and Hispanic students in the middle.

Additionally, according to the Monitoring the Future study (O'Malley & Johnston, 2002), being at college is one of the risk factors of alcohol drinking. Although college students drank less in their high school years than their non-college peers, they were likely to drink more than non-college peers after high school (O'Malley & Johnston, 2002).

To summarize, Presley and associates (2002) identified three factors contributing to misuse of alcohol among college students:

- 1) organizational variables, such as, institution type, athletics, and Greek organizations;
- 2) physical variables, for example, residence type, institution size, geographic region and rate of high-risk drinking; and
- 3) campus variables, for example, pricing and number of locations where alcohol can be purchased.

On the other hand, Baer (2002) proposed three personality constructs as predictive of college drinking: impulsivity/dis-inhibition; extraversion/sociability; and neuroticism/emotionality. In his review, Baer (2002) found a doubling of alcohol diagnoses among students with anxiety disorders.

Consequences of Alcohol Use in College Students

A number of serious personal, interpersonal relationship, academic, and legal problems for college students are ascribed to alcohol use (Leonard & Senchak, 1993).

Particularly, it is a major factor in violent crimes, and sexual aggression and injuries among college students. For example, motor vehicle injuries are a leading cause of death among college students (Wechsler et al., 1998).

Later studies discovered similar patterns. The CORE Alcohol and Drug Survey (Perkins, 2002) revealed that 26% of drinkers performed badly on an exam, and 33% missed a class during the last year as a consequence of drinking. Likewise, 1997 College Alcohol Survey data (Wechsler et al., 1998) found that 23% of drinkers had unplanned sex activity, and 11% of students reported not using contraception when they drink. Additionally, 1996 CORE Alcohol and Drug Survey data (Perkins, 2002) showed that 35% of college drinkers got involved in an argument of fight when drinking.

Psychological Correlates of Alcohol Use in College Students

Alcohol use can be studied from many perspectives. For example, Donovan and Jessor (1983) stated that drinking behaviors are associated with psychological variables. More specifically, some researchers suggest anxiety and depression are the most common and damaging mental disorders in college students (Deykin, Levy, & Wells, 1987), because these symptoms are directly linked to alcohol use (Pullen, 1994). Students who are suffering from depression and anxiety may choose to use alcohol to relieve symptoms. Similarly, Robins and Reiger (1991) reported that alcohol use is related to depression and anxiety symptoms. Thus, it is a chain reaction where both alcohol use and depression impact each other. Pullen indicates (1994) that psychological status associated with alcohol use consists of stress, depression, anxiety, psychological distress and so on. Therefore, he concludes, alcohol use can be an easy way of dealing with unpleasant

situations that incite depression. Moreover, as alcohol lessens tension, sometimes it is also used to reduce tension (Pullen, 1994).

Similarly, self-esteem can be an issue to focus on as a safety measure against alcohol use, because lack of self-esteem is positively linked to alcohol use (Huber, 1985). For example, Walitzer and Sher (1996) examined the relationship among gender, self-esteem, and DSM-III alcohol use disorder diagnoses in a sample of 217 men and 240 women over 4 years. The results support that low self-esteem plays a particularly important etiological role in alcohol problems in women relative to men. Furthermore, the study provides strong evidence for prospective prediction from year 1 self-esteem to year 4 alcohol use disorder diagnosis for women, but not for men. However, there was almost no evidence to suggest that alcohol use predicts later self-esteem (Walitzer & Sher, 1996).

Emotional Intelligence

Although the term emotional intelligence became popular after the publication of best-seller book *Emotional Intelligence* by Daniel Goleman (1995), the role of emotions and their impact on the lives of humans has been debated for centuries. The ancient Greeks regarded logic and reason as being superior to emotions (Payne, 1986) while the Romantic Movement embraced emotions and promoted emotional expression through the arts (Solomon, 2000). Now, researchers know the significance of emotions and have developed models to study how emotions affect thinking and behavior (Bar-On, 2006; Goleman, 1995; Salovey & Mayer, 1990).

Models of Emotional Intelligence

Mayer and Salovey Emotional Intelligence Ability Model. Mayer and Salovey (1997) defined EI as the ability to perceive emotion, integrate emotion to facilitate thought, understand emotions, and regulate emotions to promote personal growth (see Table 1). Further, they included the idea that emotions provide information which contribute to how we interact with other people (Lyusin, 2006). This construct allows people to find out the meaning of the emotions, to define their relevance to one another, and to use that emotional data as the basis for those reflections that lead to decision making (Lyusin, 2006).

Mayer and Salovey proposed four branches of EI:

- identifying emotions;
- using emotions to make thinking more effective;
- understanding emotions; and
- guiding emotions (Lyusin, 2006).

Table 1

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) branches and tasks

Branch	Task Description
Perceiving emotions	Identifying emotions in faces
	Identifying emotions reflected in landscapes and designs
Using emotions	Comparing emotions to other tactile and sensory stimuli
	Identifying emotions that would best facilitate a type of thinking
Understanding emotions	Identifying which situations increase or decrease emotional intensity
	Identifying how emotions evolve and change over time, and how basic emotions blend to form more complex emotions
Managing emotions	Explaining how to maintain or change one's feelings in a hypothetical situation
	Explaining how to manage others' emotions so that a desired outcome is achieved

Note. From *Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) Version 2.0*, by Mayer, J., Salovey, P., & Caruso, D., 2002, Toronto: Multi-Health Systems.

Bar-On Emotional Intelligence Mix Model. Reuven Bar-On (1997) defined EI as being concerned with understanding oneself and others, relating well to people, and adapting to and coping with the immediate surroundings in order to succeed while dealing with environmental demands (see Table 2).

The model contains five components:

- the ability to recognize, understand and express emotions and feelings;
- the ability to recognize feelings in others and empathize with them;
- the ability to manage and control emotions;
- the ability to adjust to change and resolve problems; and
- the ability to create positive effect and be self-motivated (Bar-On, 2006).

Table 2

Five Dimensions of the Bar-On Emotional Quotient Inventory

Dimensions	Abilities/Description
Intrapersonal	Awareness of one's own emotions Capacity to express one's emotions
Interpersonal	Capacity to maintain relationships with others Capacity to recognize emotions in others
Stress Management	Capacity to tolerate stress Capacity to control one's impulses
Adaptability	Capacity to solve problems and test reality Capacity to be flexible in the face of change
General Mood	Presence of general happiness Overall optimism

Note. From *The Emotional Quotient Inventory (EQ-i): Technical manual*, by Bar-On, R., 1997, Toronto: Multi-Health Systems.

Goleman Emotional Intelligence Personality Model. Goleman (1995) viewed EI as a set of emotional characteristics involving competencies, which theoretically claims that people can learn the skills in order to increase their EI.

The constructs of Goleman model are:

- social awareness;
- self-awareness;
- self-regulation;
- self-motivation; and
- social skills (Goleman, 1995)

The Relationship of Emotional Intelligence to Problem Behaviors

There have been several studies linking EI to deviant behaviors and health problems, such as depression (Fernandez-Berrocal, Alcaide, Extremera, & Pizarro, 2006), general well-being and social competence (Mavroveli et al., 2007), peer relationships (Petrides et al., 2006), and domestic abuse (Winters, Clift, & Dutton, 2004). Further, researchers have found an inverse relationship between EI and substance use (Mayer, Salovey, & Caruso, 2004). According to Qualter, Gardner, and Whiteley (2007), low self-esteem, anxiety, and having greater tendency to alcohol are linked to low trait EI. Likewise, Qualter, Whiteley, Hutchinson, and Pope (2007) found that high school students with high trait EI scores are less likely use alcohol. Moreover, Chan (2005) identified a positive correlation between high EI and decreased likelihood of drinking, mainly by viewing alcohol use as a poor form of coping with stress. Brown, Chiu, Neill, Tobin, and Reid (2012) demonstrated EI's another usage – as an indicator of addiction

treatment success. 103 drug rehabilitation center residents were assessed for one month. As residents' addiction level lessened, EI scores improved.

Summary

This chapter reviewed literature about prevalence and consequences of college drinking, emotional intelligence from historical perspective, and focusing on EI, it examined studies which specifically explored the linkage between high EI and drinking.

All in all, the literature reviewed shows a relationship between high EI and lower alcohol use among individuals. The studies also proved that EI can be and should be tested in different settings.

Chapter Three: Research Methodology

Introduction

The purpose of this study was to explore the relationship between emotional intelligence (EI) and alcohol use among selected college students, 18 to 25 years of age. EI is an ability of individuals to be self-aware of emotions, and to be able to manage emotions in self and others (Mayer & Salovey, 1997). Based upon research in a variety of settings, a negative relationship has been shown between EI and alcohol use scores (Chan, 2005; Mayer, Salovey, & Caruso, 2004; Qualter, Gardner, et. al., 2007).

This chapter describes the study design, expected sample of participants, ethical considerations, instrumentation for data collection, methodology of data collection, and data analysis.

Research Design

Quantitative, non-experimental, cross-sectional, correlational design approach was used to identify the possible relationship between EI and alcohol use among college students. Quantitative design is useful when knowledge and facts are measurable (Cottrell & McKenzie, 2011).

The reasons for choosing a cross-sectional method are:

- the data could be collected at once, by questionnaire, from students in a college setting, thus a cross-sectional correlational design was suitable for this study.
- it enabled examination of EI constructs in regard to their predictiveness of alcohol use.
- a relationship between two or more variables, that is, EI and alcohol use was explored among college students (Triola, 2008).

According to Burns and Grove (2001), the reasons for adopting non-experimental research approaches are:

- a number of human characteristics or independent variables that are not subject to experimental manipulation or randomization;
- some variables cannot be ethically manipulated; and
- situations being studied demand the exploration of the phenomenon in question in a more natural manner in order to produce more realistic results.

Trinidad and Anderson (2002) found negative correlations between EI and alcohol use among adolescents. They hypothesized that people with high scores on EI may be able to endure peer pressure. Thus, this relationship will be explored in this study given that the alcohol use is widespread among college students.

The independent variables of this study were gender, age, fraternity/sorority membership, and constructs of emotional intelligence – identifying emotions, using emotions to make thinking more effective, understanding emotions, and guiding emotions. The dependent variable was alcohol use among college students.

This study was conducted in compliance with guidelines for the protection of human participants established by, and with approval of, the Institutional Review Board (IRB) at Minnesota State University, Mankato.

Sample and Setting

Participants. Email accounts of all undergraduate college students at Minnesota State University, Mankato, ages 18 to 25, were set by Information Technology Services. There were no selection criterion, thus students could be from all genders, and all ethnicities. The students received message with informed consent where the benefits and

risks of participating in the study, and confidentiality rights were explained. All procedures were performed in compliance with Minnesota State University, Mankato IRB guidelines (see Appendix A).

Instruments

Online survey was used to get information about the participants' drinking habits and attitudes, thoughts, behaviors, and the like pertaining to the topic. The data collection instruments were selected as follows:

The SSRI. Schutte Self Report Inventory (SSRI) has 33 items designed to measure the people's ability to problem-solve situations of emotional charge utilizing the Salovey and Mayer (1990) model of EI. The SSRI is a Likert type scale in which respondents rate themselves about emotions, from 1 to 5 where 1 means "strongly disagree" and 5 means "strongly agree" (Schutte et al., 1998). Although SSRI taps more into personality traits, it correlates with measures related to the concept of EI (Schutte et al., 1998) and has been believed a valid and reliable scale (Brackett & Mayer, 2003). The SSRI is based on the model of Salovey and Mayer (1990), and as suggested by Petrides and Furnham (2000), Ciarrochi, Chan, and Bajgar (2001), and Saklofske, Austin, and Minski (2003), SSRI will assess the four factors of the EI:

- perception of emotions;
- managing emotions in the self;
- social skills or managing others' emotions; and
- utilizing emotions

Validity and reliability of the SSRI. The reliability and validity of self-report measures have been tested by several studies (Brackett & Mayer, 2003; Brackett, Rivers,

Shiffman, Lerner, & Salovey, 2006; Schutte et al., 1998;). Schutte and associates (1998) identified that the SSRI shows an internal consistency, set by Cronbach's alpha of 0.90 for the 33-item scale, and Brackett and Mayer (2003) achieved the reliability of $\alpha=.93$.

Further, Schutte and associates (1998) obtained the test-retest reliability of 0.78 among college students. Discriminant and convergent validity was evaluated by O'Connor and Little (2003) in this comparison with the *Mayer-Salovey-Caruso Emotional Intelligence Test* (MSCEIT). Based on these data, it was concluded that the SSRI is an appropriate and reliable tool for the study. Furthermore, the test author was contacted for permission to use this instrument.

The AUDIT. The Alcohol Use Disorders Identification Test (AUDIT) published by the World Health Organization (WHO) (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), is a self-report questionnaire, frequently used in healthcare screenings and epidemiological studies of alcohol use. The WHO allows free review, abstract, translation, and reproduction of the tool (WHO, 2012). There are 10 questions composing three domains: hazardous alcohol use; dependence symptoms; and harmful alcohol use (see Appendix E), and each question has a possibility for five responses ranging from 0 to 4.

Validity and Reliability of the AUDIT. Hays, Merz, and Nicholas (1995) established the validation of the AUDIT by high correlations with the CAGE ($r = .78$) and Bohn, Babor, and Kranzler (1995) with the Michigan Alcohol Screening Test across gender differences ($r = .88$).

CAGE questions:

1. Have you ever felt you needed to Cut down on your drinking?

2. Have people **A**nnoyed you by criticizing your drinking?
3. Have you ever felt **G**uilty about drinking?
4. Have you ever felt you needed a drink first thing in the morning (**E**ye-opener) to steady your nerves or to get rid of a hangover?

Additionally, Hays, Merz, and Nicholas (1995) reported high correlations between the AUDIT and measures of drinking consequences, alcohol-induced negative mood states, and reasons for drinking. Likewise, Sinclair, McRee, and Babor (1992) examined the test-retest reliability of the AUDIT among drinkers with different levels of alcohol use and found a strong correlation of $r = .86$.

Procedures

First of all, demographical data were gathered on a separate instrument. Then the participants were given Schutte Self Report Inventory (SSRI), followed by alcohol use disorders identification test (AUDIT). Minnesota State University, Mankato IRB permission was obtained to perform the study.

Data Collection

The data were collected in late March, 2013 by using Information Technology Service. The questions were set in SurveyMonkey and all undergraduate students received e-mail messages with the link to the online survey. An email was sent out on March 28, 2013. It invited students to voluntarily participate in the research by completing the questionnaire. In order to participate in the survey, participants were required to be at least 18 years old. The purpose of the study, potential risks to the participants, and the rights of the participants were stated immediately following the age requirement. The information about confidentiality of the study and the right of the

participants to exit the survey at any time were provided to all participants. Following the introduction and description of the study's purpose, a URL address was provided for students to access the online survey. Instructions to access the survey for participation in the study was provided in the e-mail (see Appendix A).

The survey closed on April 4, 2013. Results obtained from completed SurveyMonkey questionnaires were sent to the researcher in anonymous, aggregate form to maintain confidentiality.

Data Analysis

The findings were analyzed by using descriptive statistics, Chronbach's alpha reliability analyses, Pearson's correlational analyses, stepwise multiple regression analyses and T-test. Descriptive statistics was used to compute frequency count(s), percentage and means as appropriate to describe students' age, gender, fraternity/sorority membership, alcohol use and EI scores. Questionnaires used in this study had established reliability and validity – SSRI (Brackett & Mayer, 2003; Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Schutte et al., 1998;), and AUDIT (Hays, Merz, & Nicholas, 1995). This analysis was conducted to measure the internal consistency of the scales. The Pearson correlation coefficient provides the means of establishing the relationship between two variables measured in the interval or ratio scale (Copas, 1983). Thus, Pearson's correlational analysis was conducted in the study to assess the relationship between the variables of emotional intelligence, alcohol use, and the demographic variables. Multiple regression analyzes separate and collective contributions of two or more independent variables to the variation of the dependent variable. Stepwise multiple regression analysis was utilized in the study to determine the predictive value of various

independent variables. It was used to identify which EI subset could be used to predict alcohol use. Additionally, T-tests were performed to see whether being male/female, and fraternity/sorority member affect EI and alcohol use scores.

Summary

This chapter provided description of the research methods that were used to collect and analyze data so that research questions could be answered. The sample selection process, the methodology, and the selection of subjects were discussed. Instruments were reviewed through a full analysis of the literature supporting their validity, reliability and appropriateness.

Chapter Four: Results and Discussion

Introduction

This study was undertaken to determine the relationship between emotional intelligence and alcohol use among college students at Minnesota State University, Mankato. Demographic characteristics of the participants, and the results related to research questions are described in this chapter.

Demographics and Characteristics of the Participants

According to the University Registrar's Office, there were 11380 undergraduate students, ages 18 to 25, enrolled in spring semester 2013 at Minnesota State University, Mankato. These students were invited electronically to participate in the study. A total of 485 students attempted the survey. Out of 485 students, 482 were eligible because three students indicated their ages as 13, 16, and 26. However, only 390 students completed the survey. Thus, a total of 390 of 11,380 students who were invited to participate responded to the survey. This number met the established minimum number of student responses, according to Krejcie and Morgan (1970), to be representative of undergraduate students at MSU – Mankato.

The demographic characteristics of the students participating in this study are presented in Table 3. More females ($n = 276, 57.30\%$) than males ($n = 205, 42.50\%$) participated in the study. One person's gender (.2%) was indicated as non-male/female. The mean age of the participants was 21.10 years (standard deviation = 1.57). Participants were also asked about their fraternity/sorority membership, and residence types (see Table 3).

Table 3

Demographic Characteristics of the Sample

Characteristic	<i>n</i>	%	<i>M (SD)</i>
Age	459		21.09 (1.66)
Gender	482		
Male	205	42.50	
Female	276	57.30	
Other	1	.20	
Fraternity/Sorority membership	477		
Yes	151	31.70	
No	326	68.30	
Residence	478		
On-campus	84	17.60	
Off campus	396	82.40	

Internal Consistency for Emotional Intelligence Scale and Subscales

The Cronback's alpha coefficient for Emotional Intelligence scale was .92, and Emotional Intelligence subscales ranged from .69 to .82. and reveal that the scales were internally consistent (see Table 4). Similar results have been determined in the works of Schutte and others (1998), Austin, Saklofske, Huang, & McKenney (2004), Bastian, Burns, and Nettelbeck (2005), Guastello and Guastello (2003). Internal consistency for Emotional Intelligence subscales also have equivalent results to previous studies (Ciarrochi et al., 2001, 2002).

Table 4

Cronbach's Index of Internal Consistency (α) for Emotional Intelligence Scale and Subscales

Scale	<i>n</i> of Items	<i>M</i> (<i>SD</i>)	α
EI Total	33	121.62 (17.31)	.92
Perception	10	35.31 (4.90)	.69
Own Emotions	9	33.21 (5.50)	.81
Social Skills	8	30.45 (5.22)	.82
Use Emotions	6	22.55 (3.88)	.76

Research Question One

1) Is there a relationship between emotional intelligence and alcohol use among students at Minnesota State University, Mankato? Based on previous studies (Qualter, et al., 2007), it was hypothesized to reveal an inverse relationship between emotional intelligence and alcohol use among college students. Therefore, a 1-tailed correlation was performed. The results from this correlation analysis, as presented in Table 5, revealed a significant inverse relationship between emotional intelligence and alcohol use ($r = -.19$). Likewise, emotional intelligence subscales were analyzed in regard to their correlation with alcohol use. With a little variance among them, all were significantly inversely correlated with alcohol use. While perception was the most significant ($r = -.20$), utilization of emotion was weaker than others ($r = -.13$). This indicates that a student who drank less scored higher on emotional intelligence. Likewise, a student who scored less on emotional intelligence tended to consume more alcohol. Although this correlation cannot be and should not be used to claim that one leads to other, cause-and-effect relationship can be determined in future studies.

Table 5

Pearson Correlation Coefficients (r) Between Variables

Variable

Variable	Alcohol Use r	Perception r	Own Emotions r	Social Skills r	Use Emotions r	Total r
Alcohol Use	1	-.20*	-.19*	-.18*	-.13*	-.19*
Perception		1	.72*	.71*	.62*	.87*
Own Emotions			1	.76*	.66*	.91*
Social Skills				1	.66*	.90*
Use Emotions					1	.82*
EI Total						1

*p < .01.

Research Question Two

2) Does being a Fraternity/Sorority member affect emotional intelligence and alcohol use scores? Independent sample t-tests were used to compare the mean alcohol use and emotional intelligence by fraternity/sorority membership (see Table 6). Mean alcohol use, total emotional intelligence scale and emotional intelligence subscales were studied separately. According to independent t-test results, fraternity/sorority membership didn't affect alcohol use among undergraduate students. There was not a significant difference in alcohol use between members and nonmembers. Independent t-test results of mean total emotional intelligence scale and its subscales, similarly, revealed that fraternity/sorority membership had no effect on emotional intelligence. Therefore, there were not meaningful differences in emotional intelligence scales by fraternity/sorority membership. Virtually, fraternity/sorority members didn't differ from nonaffiliated students in their alcohol use and/or emotional intelligence.

Unlike many studies (Lo & Globetti, 1995; Sher, Bartholow, & Nanda, 2001) that showed higher level of alcohol use among Greek organizations in comparison with nonmembers, this study revealed no significant difference between these two groups. This outcome cannot disprove "Greek effect" and may be the result of strict on-campus regulations, alcohol unavailability and sociocultural preferences of local students. Unfortunately, there is no literature to which this finding can be compared.

Table 6

Independent Sample t-tests Comparing Mean Alcohol Use and Emotional Intelligence Scores by Fraternity/Sorority Membership

Scale	Member <i>M (SD)</i>	Non-Member <i>M (SD)</i>	<i>t</i> -value
Alcohol Use	18.66 (6.86)	17.47 (5.61)	1.84
Perception	34.80 (5.26)	35.53 (4.74)	-1.33
Own Emotions	33.03 (5.80)	33.29 (5.37)	-.41
Social Skills	29.95 (5.28)	30.67 (5.19)	-1.25
Use Emotions	22.40 (4.02)	22.61 (3.82)	-.49
EI Total	120.44 (18.21)	122.12 (16.93)	-.85

Research Question Three

3) Does being male/female affect emotional intelligence and alcohol use scores? Independent sample t-tests were used to compare the mean alcohol use and emotional intelligence score by gender (see Table 7). Mean alcohol use, total emotional intelligence scale and emotional intelligence subscales were studied separately. According to the test, there was a significant difference in alcohol use by gender. Male students (mean=19.59) rated significantly higher than female students (mean=16.51) on alcohol use scale. This finding had been tested and proven in similar studies (Wechsler et al., 2002). There have been various explanations for this variance. Marshall, Kingstone, Boss, and Morgan (1983) related it to gender differences in alcohol metabolism. Borsary and Carey (2006), however, stated that alcohol plays an important role in facilitating interpersonal relationships for men while women's interactions with friends tend to be more supportive and intimate than men's, thus they rely on alcohol less than men.

The independent sample t-tests of mean emotional intelligence score and its subgroups' scores revealed that emotional intelligence didn't vary according to gender (see Table 7). Therefore, there was no difference in emotional intelligence scores between male and female students.

Table 7

Independent Sample t-tests Comparing Mean Alcohol Use and Emotional Intelligence Scores by Gender

Scale	Male <i>M (SD)</i>	Female <i>M (SD)</i>	<i>t</i> -value
Alcohol Use	19.59 (6.67)	16.51 (5.11)	5.32*
Perception	35.07 (4.99)	35.47 (4.84)	-.79
Own Emotions	33.06 (5.66)	33.31 (5.40)	-.44
Social Skills	29.38 (5.27)	31.15 (5.08)	-3.31
Use Emotions	22.26 (3.94)	22.73 (3.84)	-1.15
EI Total	119.94 (17.59)	122.71 (17.08)	-1.50

* $p < .01$.

Research Question Four

4) Which emotional intelligence constructs can be used to predict alcohol use among college students? Multiple regression method analyzes the separate and collective contribution of two or more independent variables to the variation of the dependent variable. Thus, a stepwise multiple regression method was used in this study to determine the predictive value of different independent variables. In this study, multiple regression was conducted on the variables of four emotional intelligence constructs to predict alcohol use. Then, stepwise multiple regression was utilized to allow for ordering of the variables and to show the growth of variance added by each independent variable to the total variance of the multiple regression equation.

a) Emotional intelligence constructs predictors of alcohol use. The results of the stepwise multiple regression analysis of the emotional intelligence variables predicting alcohol use are provided in Table 8. Among four constructs of emotional intelligence, managing own emotions was the best predictor of alcohol use ($R^2 = .032$). Students who scored lower in emotional intelligence construct – managing own emotions – were more likely to consume alcohol.

Table 8

Emotional Intelligence Predictors of Alcohol Use

Variable	R^2	B
Own Emotions	0.032	-.19*

* $p < .01$.

b) Demographic variables and total emotional intelligence predictors of alcohol

use. The results of the stepwise multiple regression analysis of demographic and total emotional intelligence scores predicting alcohol use are presented in Table 9. When demographic variables and total emotional intelligence scores were regressed against alcohol use, three variables (gender, residence, and total emotional intelligence) entered into equation and accounted for 11.6% of the variance. All of the variables contributed significantly ($p < .01$) to the prediction of alcohol use. Being male was the best predictor ($R^2 = .063$) of alcohol use followed by total emotional intelligence ($R^2 = .028$), and living off-campus ($R^2 = .025$). The students who were male and/or scored lower on emotional intelligence test, and/or living off-campus were more likely to consume alcohol. The difference in alcohol consumption by residence type could be the result of strict university rules and on-campus alcohol unavailability. Unfortunately, there is no literature to which this finding can be compared.

Table 9

Demographic and Total Emotional Intelligence Predictors of Alcohol Use

Variable	Step	R ²	R ² change	B
Gender	1	.068	.063	-.247*
Total EI	2	.101	.091	-.180*
Residence	3	.130	.116	.170

* $p < .01$.

Summary

This study was undertaken to determine the relationship between emotional intelligence and alcohol use among undergraduate students at Minnesota State University, Mankato. It revealed that there was a significant inverse relationship between emotional intelligence and alcohol use ($r = .19$). Fraternity/sorority membership's effects on emotional intelligence and/or alcohol use were studied among students. The findings concluded that there was no meaningful variance between members and nonmembers in their alcohol consumption and/or emotional intelligence scores. When emotional intelligence was studied by gender, no significant difference was revealed between male and female students. However, male students (mean = 19.59) rated significantly higher than female students (mean = 16.51) on alcohol use scale. With regard to alcohol use prediction, managing own emotions was a significant variable ($R^2 = .032$). Being male, however, could predict alcohol use more significantly ($R^2 = .063$) followed by total emotional intelligence ($R^2 = .028$), and living off-campus ($R^2 = .025$).

The conclusions and recommendations of the study will be discussed in Chapter Five.

Chapter Five: Conclusions and Recommendations

Introduction

This study was designed to examine the relationship between emotional intelligence and alcohol use among undergraduate students at Minnesota State University, Mankato in March, 2013. Other factors that were studied included gender, residence type, and fraternity/sorority membership.

Conclusions

The results of this study lead to the following conclusions:

1. There was a significant inverse relationship between emotional intelligence and alcohol use scores (.19). The students who scored higher on emotional intelligence drank less than the students who scored lower on emotional intelligence test. Similarly, the students who drank more often scored less on emotional intelligence test. Although statistically significant, the difference may not be high enough to have a practical meaning.
2. Fraternity/sorority membership didn't affect emotional intelligence and/or alcohol use scores. There was no significant difference between members and nonmembers in emotional intelligence scores. In contrast to popular "Greek effect," affiliated students in this study were not different in their alcohol consumption than nonaffiliated students.
3. Gender, specifically being male, proved to affect alcohol use among college students. Male students drank significantly more than female students. However, there was no difference between genders in emotional intelligence scores.

4. Managing own emotions proved to be the only useful construct in alcohol use prediction ($R^2 = .032$) in comparison with other three emotional intelligence constructs (perception of emotions, managing others' emotions, and utilization of emotions). Although statistically significant, because of weak prediction rate, it may not be appropriate to use it practically to predict alcohol use.
5. Gender proved to be a strong predictor of alcohol use ($R^2 = .063$). Male students were more likely to consume alcohol compared to female students. Similarly, the students who live off-campus were more likely to drink alcohol than the students who live on-campus.

Recommendations for School Administrators and Health Educators

The present study has recognized the importance of emotional intelligence variables in determining the type of safe-drinking programs targeting college students. Other variables that influence type of safe-drinking program chosen were gender, and fraternity/sorority membership. This study attempted to determine whether there was a relationship between emotional intelligence and alcohol use, whether fraternity/sorority membership and/or gender affected alcohol use and emotional intelligence, and which emotional intelligence could be used to predict alcohol use among college students at Minnesota State University, Mankato. With this knowledge, school administrators could install proper policies, and health educators could design and implement these concepts into their safe-drinking programs. Health educators could try to make their target population emotionally intelligent by teaching them how to understand, cope and utilize emotions, how to manage stress, and how to let other people understand their emotions. The study showed that male students were more likely to drink alcohol, as Borsary and

Carey (2006) stated, to facilitate interpersonal relationships. Therefore, health educators might develop targeted programs for male students to train them how to utilize alternative methods of bearing interpersonal relationship. Moreover, health educators could design their programs targeting off-campus and on-campus students separately where off-campus students might need additional attention.

Recommendation for Further Studies

In consideration of the findings of this study, the following recommendations are made for future studies.

1. Replicate this quantitative study with similar sample using other forms of emotional intelligence and alcohol use tests, and also replicate the study in other colleges in Mankato.
2. Repeat a similar study as a qualitative study to further investigate emotional intelligence constructs, and residence and gender's role in alcohol consumption.
3. Conduct an experiment on a selected sample using emotional intelligence training.
4. Investigate the absence of "Greek effect" on Minnesota State University, Mankato undergraduate students with an interview based study.

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Appendix

Appendix A
Survey Consent form

Survey Consent form

You are requested to participate in research that will be supervised by Principal Investigator, Dr. Margaret Murray-Davis, on relationship between emotional intelligence and alcohol abuse among college students at MSU Mankato, age 18 to 25. This online survey should take about 8 to 10 minutes to complete. Participation is voluntary and responses will be kept anonymous. However, whenever one works with email/the internet, there is always the risk of compromising privacy, confidentiality, and/or anonymity. Despite the possibility, the risks to your physical, emotional, social, professional, or financial well-being are considered to be minimal. Although there are no direct benefits to you as a result of your participation in this research, there are benefits of this research to society. The results of this research will provide insights for the emotional intelligence and alcohol abuse studies. Although you will not be compensated for participating in this study, your completion of this survey will be greatly appreciated. You have the option to not respond to any questions that you choose. Even if you agree to participate, you can withdraw from participation at any time. Participation or nonparticipation will not impact your relationship with Minnesota State University, Mankato. Submission of the completed survey will be interpreted as your informed consent to participate and that you affirm that you are at least 18 years of age. Individual responses to the survey will not be reported and access to the data will be limited to Dr. Margaret Murray-Davis and Ganisher Davlyatov.

If you have any questions about the research, please contact Dr. Margaret Murray-Davis via email at marge.murray-davis@mnsu.edu. If you have questions about the treatment of human subjects, contact the IRB Administrator at 507-389-2321. If you would like more information about specific privacy and anonymity risks posed to online surveys, please contact the Minnesota State University, Mankato Information and Technology Services Help Desk (507-389-6654) and ask to speak to the Information Security Manager.

If you are concerned about your alcohol use or emotional status, please contact Counseling Center, 245 CSU, MSU Mankato or call 507-389-1455.

Please print a copy of this page for your future reference.

MSU IRB LOG # 433790-4

Date of MSU IRB approval: 02/23/2013

Appendix B
Demographic Data form

Demographic Data form

This survey is geared to explore alcohol use and emotional intelligence among college students. The results will solely be used for research purposes and participants' personal information will not be shared with other parties. Please answer the questions to the best of your ability.

Please underline your answer when needed.

Gender: Male Female Other

Age: _____

Marital status: Single Married Separated Divorced Widowed

Racial/Ethnic group: African/American Asian American Hispanic/Latino
White/Caucasian Native American Biracial

Religious affiliation: Agnostic Atheist Buddhist Catholic Protestant
Hindu

Jewish Mormon Muslim Other _____

Major: _____

Class year: Freshman (First-year) Junior Sophomore Senior

Member of a sorority or fraternity? Yes No

Employment status: # hours per week _____ Not employed

Residence: On-campus Off campus

Thank you for your time and effort.

Appendix C

Alcohol Use Disorders Identification Test

Alcohol Use Disorders Identification Test

Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-3 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 or 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you had been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year
Total					

Appendix D

Schutte Self Report Emotional Intelligence Test

Schutte Self Report Emotional Intelligence Test

Directions: Each of the following items asks you about your emotions or reactions associated with emotions. After deciding whether a statement is generally true for you, use the 5-point scale to respond to the statement. Please circle the “1” if you strongly disagree that this is like you, the “2” if you somewhat disagree that this is like you, “3” if you neither agree nor disagree that this is like you, the “4” if you somewhat agree that this is like you, and the “5” if you strongly agree that this is like you.

There is no right or wrong answer. Please give the response that best describes you.

1 = strongly disagree 2 = somewhat disagree 3 = neither agree nor disagree
4 = somewhat agree 5 = strongly agree

Questions	1	2	3	4	5
1. I know when to speak about my personal problems to others.					
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.					
3. I expect that I will do well on most things I try.					
4. Other people find it easy to confide in me.					
5. I find it hard to understand the non-verbal messages of other people.					
6. Some of the major events of my life have led me to re-evaluate what is important and not important.					
7. When my mood changes, I see new possibilities.					
8. Emotions are one of the things that make my life worth living.					
9. I am aware of my emotions as I experience them.					
10. I expect good things to happen.					
11. I like to share my emotions with others.					
12. When I experience a positive emotion, I know how to make it last.					
13. I arrange events others enjoy.					
14. I seek out activities that make me happy.					
15. I am aware of the non-verbal messages I send to others.					
16. I present myself in a way that makes a good impression on others.					
17. When I am in a positive mood, solving problems is easy for me.					
18. By looking at their facial expressions, I recognize the emotions people are experiencing.					
19. I know why my emotions change.					
20. When I am in a positive mood, I am able to come up with new ideas.					
21. I have control over my emotions.					
22. I easily recognize my emotions as I experience them.					

Questions	1	2	3	4	5
23. I motivate myself by imagining a good outcome to tasks I take on.					
24. I compliment others when they have done something well.					
25. I am aware of the non-verbal messages other people send.					
26. When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself.					
27. When I feel a change in emotions, I tend to come up with new ideas.					
28. When I am faced with a challenge, I give up because I believe I will fail.					
29. I know what other people are feeling just by looking at them.					
30. I help other people feel better when they are down.					
31. I use good moods to help myself keep trying in the face of obstacles.					
32. I can tell how people are feeling by listening to the tone of their voice.					
33. It is difficult for me to understand why people feel the way they do.					