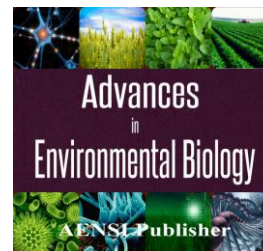




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Important Factors in Engaging in Risky Behavior Among Students: Deterministic Thinking

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ABSTRACT

Background: lack of health or mental health is related to how people receive and interpret the world or their related environment. **Objective:** The purpose of current study was to determine role of deterministic thinking in engagement in risky behaviors among of student. **Results:** Findings demonstrated that there is significant positive correlation between deterministic thinking and risky behavior ($P < 0/05$). Deterministic view in interaction with others (as one of DT factors) has the highest correlation with risky behavior. **Conclusion:** By identifying students at risk for engaging in risky behaviors clinicians can better target intervention and treatment strategies.

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INTRODUCTION

For many young adults, university connotes a time of new found independence during which they explore new relationships, their identity, and different worldviews. At the same time, for many, university marks a period of drastic transition. In addition to adjusting to new surroundings and forging new relationships, university students must face mounting pressures in both the academic and social domains. Such a transition can be stressful, and as a result, risky behaviors may be experienced [1]. Risky behaviors include but are not limited to unsafe sexual practices; aggressive and/or violent behaviors; rule breaking; dangerous, destructive, and/or illegal behaviors, self-injurious behaviors; and alcohol and/or drug use(1). Engagements in these risky behaviors and adjustment difficulties at a young age are particularly problematic because they are associated with many negative outcomes later in life including early pregnancy and adult alcohol dependence or abuse. Factors both within children's environments (e.g., parent substance use) and within the child (e.g., temperament) have been linked with risky behavior [2].

Many researchers have identified four general factors contributing to the high risky behaviors: 1) The character system includes values, attitudes, expectations, and self-concept 2) The social environment System, including parental education, parental occupation and place of residence 3) Perceived environment system, including family, peers and school 4) System behavior, including risky behaviors such as smoking and heavy alcohol consumption. So we can say that risky behaviors are as a result of the interaction of cognitive, emotional and social [3]. Example Results suggested that individuals exhibited decreased engagement in risky behaviors following increases in depressive or anxious symptoms and Negative self-esteem [4, 5]. Also adolescents with poor emotional awareness and regulation [2] and adolescents possessing high levels of maladaptive coping strategies [1] reported greater engagement in risky behaviors following the occurrence of negative events and they had a higher likelihood of using hard drugs. At the same time Adolescents with alcohol use disorders (AUDs) often have major depressive disorder (MDD) [6].

cognitive perspective, lack of health or mental health is related to how people receive and interpret the world or their related environment, in particular [7, 8] In general emotional responses of people are affected by their cognitions, which can lead to bias in the assessment and judgment about issues and events via cognitive

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distortions(9). One of the most important cognitive distortions is deterministic thinking [10]. This type of thinking ignores any possibility or probability in coming to conclusion about the events and result in many cognitive distortions because the issue of conclusion is common to them all. The interpretation of events is affected by this distortion so the events and their consequences may be thought as: $2 \times 2 = 4$. equality may be considered in connection with mathematical science just in mind level not in reality. So it is impossible to find two things that are similar or equal absolutely. Some people use the equality in interpretation of events for example a student who could not pass in his desired field in entrance examination, to feel worthlessness and misery and his thought go to the conclusion that passing the entrance examination is equal to happiness and failing in it is equal to misery The distortion brings about cognitive rigidity and may be the mother of all distortions [8, 9, 11] . Cognitive rigidity is a main reason for depression, anxiety and other psychosocial maladjustments [12, 13].

Studies show that deterministic thinking has a close relation with other psychological variables like anxiety [8], mental health among substance abusers [11] communication skills [14], life expectancy [15], obsession [16], depression [17], forgiveness [18]. Therefore, the more deterministic thinking in individuals , the more depression, anxiety and obsession while the less communicational skills and life expectancy as well as forgiveness can be expected. Considering the role of emotional and cognitive problems (depression, anxiety, stress, ...) in engagement in risky behaviors and On the other hand role of deterministic thinking as an important factor in emotional cognitive problems so The key question will be whether deterministic thinking can be increased involvement with risky behaviors in adolescents? The primary goal of the current study is to examine whether deterministic thinking predict increased engagement in risky behaviors. We hypothesized that individuals who exhibited high levels of deterministic thinking would be more likely than other individuals to engage in risky behaviors

Method:

Study setting and population:

This descriptive analytic study was conducted at Shahid Beheshti University in Tehran, Iran. The target population of this study was undergraduate and postgraduate students and chosen by multistage random sampling (N= 200). The subjects were participated voluntarily in this research, they are asked to complete Younesi and Mirafzal's deterministic thinking questionnaire (2013) and Risk Behavior Survey (2007). 13 subjects are removed from statistical analysis because of partial response and therefore, the final sample of study was decreased to 200 students (72 boys and 52 girls). 75 students from Technical College, 74 students from Faculty of Science and 61 students were from Management College. The average age of all subjects was 22/7 with standard deviation of 2.03.

Study measures:

Deterministic thinking questionnaire- DTQ (2007): is developed with the intention of measuring deterministic thinking based the theories in relation with cognitive theories and Islamic viewpoint and clinical experiences. This scale has 36 questions which are graded with Likert's 4-pointed method (1 for the option of saying I completely agree and 4 for the option of saying I completely disagree). In this way, the increase in the grade of an individual means the increase in the rate of deterministic thinking. For validating the questionnaire in two introductory and conclusive stages of main project, the exploratory, confirmative and convergent factorial analyses have been used. The results of analyzing the main constituents show that the questionnaire is constituted of factors which explain 38 percent of variance on the whole. Those are 1.General determinism 2.Determinism in reaction to others 3.Philosophical absolutism 4.Determinism in future anticipation 5.Determinism in tragic events. The results of the confirmative factorial analysis approved the correctness of the collected data. The validity convergence of the deterministic thinking questionnaire is detected based on its correlation coefficient with the grade of Beck's depression questionnaire. This amount which is obtained from the research sample by the calculation of Pearson correlation coefficient in a group of 100 people was equal to $r = .33$ and statistically is significant at the level lower than 0.01. The validity of the whole scale was equal to (0.821) via internal consistency coefficient and was equal to 0.78 by reassessing (for a week).[10]

Risk Behavior Survey (version 2007): This instrument includes 52 items and it has been developed in 1995 through National College Health Risk Behavior Survey (NCHRBS). The primary version of this instrument includes 96 items assessing youth risk behavior in various domains (Safety, Violence, Suicide, Cigarette Use, Alcohol Use, Illegal Drug Use, Risk Sexual Behavior, Nutrition, and Physical Activity). This instrument has been studied for psychometric characteristics regarding the Iranian society. Research shows that this scale is valid to significantly differentiate between subjects in terms of Safety, Violence, Suicide, Cigarette Use, Alcohol Use, Illegal Drug Use, Nutrition, and Physical Activity. Therefore, it has the needed validity for measuring the domains of risk behavior. For reliability of this instrument, internal consistency method and test-retest method have been utilized. Using internal consistency method, the reliability was calculated 0.87 for 52 items; this suggests a high correlation for the scale. In test-retest method, the developed instrument (52 items)

was administered again after two weeks and the correlation coefficient was calculated for the first and second administration. Findings showed that the reliability of the scale equals 0.86 in this method. To determine the cut-off point, ROC curve was used. The obtained cut-off point (74) is able to differentiate individuals with risk behavior from those lacking risk behavior with 85.5 percent sensitivity and 72.2 percent specificity [19].

Study procedure:

Study data were collected between April and Jan 2014. Approval for the study was given by the Student Research Committee and the Ethical Committee of Shahid Beheshti University. We personally contacted the selected students through the university, after finishing their classes told them of the nature, purposes, benefits and adverse effects of the study, and invited them to participate. We ensured them of confidentiality and answered all related questions they raised. All participants were asked to make 15 min available for completion of the questionnaires. Participation was completely voluntary, with no economic or other motivation, and each participant signed written informed consent for their participation. Statistical package for social science 16.0 (SPSS 16.0) program was used for statistical analysis. The statistical methods include computing mean scores; standard deviation; correlation coefficients and regression analysis.

Results:

A) Demographic data:

Table 1: demographic data.

| Female | Male | Married | Single | Age mean |
|--------|------|---------|--------|---------------|
| 80 | 120 | 50 | 150 | 22.7(SD 2.03) |

B) Descriptive statistics of the research's data:

Table 2: Descriptive statistics of the research's variables (Mean and standard deviation, minimum and maximum of grades).

| selbairav | | sexedni | | | | |
|------------------------|-----------------------------------|---------|-------|-------|---------|---------|
| | | N | Mean | SD | muminim | mumixam |
| Deterministic thinking | Deterministic thinking | 200 | 90.47 | 10.41 | 43 | 116 |
| | denimreted lareneg | 200 | 21.71 | 3.48 | 13 | 31 |
| | denimreted lacihippsolihp | 200 | 20.23 | 3.40 | 7 | 28 |
| | determined of tragic events | 200 | 13.27 | 2.30 | 7 | 24 |
| | noitapicitna erutuf ni denimreted | 200 | 15.37 | 2.13 | 7 | 20 |
| | srehto of noitcaer ni denimreted | 200 | 20.01 | 3.83 | 8 | 32 |
| Risky behavior | | 200 | 40.53 | 9.78 | 22 | 64 |

C) Data analyses:

Table 3: The results of the Pearson correlation test between the deterministic thinking and risky behaviors.

| selbairav | | DT | General DT | DT in interactions Others | Philosophical absolute DT | DT in future anticipation | DT in tragic events |
|----------------|----------------|-------|------------|---------------------------|---------------------------|---------------------------|---------------------|
| Risky behavior | Correlation | .121* | .021* | .202* | .133 | .154** | .60** |
| | Sig (2-tailed) | .031 | .002 | .001 | .167 | .021 | .017 |

** Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

As seen in table number 2 there is a meaningful and positive relation between deterministic thinking and risky behavior among the student of university at the statistical level of ($r=.121$, $P<0.05$), in other word higher deterministic thinking means higher risky behaviors. All the factors have significant positive correlation with risky behaviors with the exception of Philosophical absolute DT. Also the highest correlation is related to the factor of DT in interactions others.

Table 4: Variable entered in regression of model

| Models | R | RS | ARS | SE | F | sig |
|----------------------|--|-----|------|-------|--------|-------|
| Enter | 0.33 | 102 | 0.83 | 9.373 | 10.807 | 0.012 |
| Predictors(constant) | general determined, philosophical determined, determined of tragic events, determined in future anticipation, determined in reaction to others | | | | | |
| Dependent variable | Risky behaviors | | | | | |

As seen in table number 2, factors of deterministic thinking explain 10.2 of the Variance in risk behaviors.

The factor of determined in reaction to others ($\beta = 0.312$) has greatest impact of regression on risky behaviors. So an increase of 1 unit in the grades of determined in reaction to others is equal with increase of 0.0312 unit in risky behavior.

Table 5: Standard and non-standard coefficients for the prediction of mental health by the factors of deterministic thinking in stepwise regression

| Steps | Indexes | | | | |
|------------------------------------|----------------|-------|--------------|-------|-------|
| | Coefficients | | | t | Sig. |
| | Unstandardized | | Standardized | | |
| | B | SE | β | | |
| (Constant) | 29.947 | 3.343 | - | 8.959 | 0.000 |
| determined in reaction to others | 0.841 | 0.256 | 0.312 | 3.287 | 0.01 |
| (Constant) | 24.132 | 4.184 | - | 5.818 | 0.000 |
| determined of tragic events | 0.652 | 0.246 | 0.97 | 2.466 | 0.015 |
| noitapicitna erutuf ni msinimreted | 0.61 | 0.269 | 0.234 | 2.284 | 0.024 |
| denimreted lareneg | 0.280 | 0.300 | 0.89 | 2.044 | 0.012 |
| ihpdenimreted lacihippsol | 0.633 | 0.309 | 0.151 | 2.261 | 0.25 |

Predicted Variable: risky behaviors

Conclusion:

The objective of this research was to determine role of deterministic thinking in engagement in risky behaviors in students. Considering the conducted surveys, it is designated that deterministic thinking is related with the high level of risky behaviors, so that the high level of deterministic thinking among the students of university generates greater engagement in risky behaviors. Furthermore among the various factors of deterministic thinking, determined in reaction to others has the greatest impact on the engagement in risky behaviors. Thus, our hypothesis is confirmed by the data obtained. There are two major explanations for support from the associations between deterministic thinking and risky behavior. First: Our mental health and pathological conditions are related to our perception and interpretation from the reality and cognitive distortions especially deterministic thinking has the highest impact in this area [9, 20-22]. The significant point in cognitive distortion of deterministic thinking is the destructive role of this distortion in disturbing the balance between fear and hope which is the first step for getting depression and anxiety. The balance between these two factors can put us in the road of mental health [10]. Also the distortion brings about cognitive rigidity and may be the mother of all distortions [8]. Cognitive rigidity is a main reason for depression, anxiety and other psychosocial maladjustments [23]. Considering the DT as a cognitive distortion, the results of the study are consistent with previous research findings of the researchers that insist on the role cognitive distortions play in creating anxiety, depression and psychological problems [12, 24, 25]. Another interesting finding of the present study is the correlation found between deterministic view in interaction with others (as one of DT factors) and risky behavior. It seems that people with high deterministic thinking in interaction with others have more anxiety because they tend to predict deterministically the behaviors and intentions of others and to fall in prejudice in social relationships. This notion is supported in the literature emphasizing the role of prejudice in creating anxiety [26], significant correlation between Deterministic Thinking and anxiety among students [8], positive and significant relation between deterministic thinking and the lack of mental health among substance abusers [11]. Other investigations are approving this finding indirectly for example: the more deterministic thinking, the less life expectancy in the students [15], significant positive correlation with immature defense mechanisms among university students [9], negative correlation between DTQ and communicational skills among couples [14] reverse correlation between DTQ and forgiveness scale [18], negative correlation between DTQ and Enrich Marital Satisfaction Scale [17], and positive correlation between DTQ and marital conflicts scale [27].

Two: behaviors Research examining the developmental unfolding of the relationship between psychological problems (depressive or anxious symptoms, poor communicational skills and ...) and risky behaviors suggests a gradual progression from sub threshold depressive/anxious symptoms and infrequent/mild forms of misbehaviors to clinically significant depressive/anxious symptoms and more chronic and severe risky behaviors [1, 28]. As the use of risky behaviors may not address the original event that triggered the negative affect, once the risky behavior dissipates, an individual is apt to return to the same negative affective state from which he/she attempted to escape. Individuals who utilize risky behaviors as a means of reducing negative affective states have the potential of falling into an avoidance trap. More specifically, risky behaviors are positively reinforced because of the temporary relief they provide [29]. Studies have shown individuals who are suffering from psychological problems and possess deficits in emotion regulation strategies, they Show more engagement in risky behavior. For example: [1, 2, 4-6]. And as a result, the feeling of temporary relief may increase the likelihood of individuals using such behaviors in the future. For example, individuals who have a few drinks to "forget about their problems for a while" or break something to "blow off steam" may use such behaviors again in the future as a motivation for reducing negative affective states instead of addressing the issues that triggered depressive or anxious symptoms initially [1, 29]. While risky behaviors may provide temporary relief, they may also result in negative consequences that serve to intensify the initial negative affect leading to an increased probability of engaging in additional risky behaviors [4, 28]. As a result, individuals who possess deficits in emotion regulation strategies may seek alternative means such as risky behaviors to reduce negative emotional states. As university students are amidst a period of exploration and transition, it is likely

that they may experiment with a number of risky behaviors in order to determine which behaviors provide the maximum relief or escape.

At the end as a comprehensive result, on the one hand, DT plays a destructive role in the interactions of people in family and society circumstances and leads to the depression/anxiety symptoms and psychological problems. On the other hand individuals who are suffering from psychological problems and possess problems or deficits in emotion regulation strategies may seek alternative means such as risky behaviors to reduce negative emotional states. So we can conclude that deterministic thinking has an important role the engagement in risky behaviors among of students. These findings may be important to consider with regard to the development of effective prevention and treatment programs. By identifying adults at risk for engaging in risky behaviors as a means of alleviating depressive and anxious symptoms, clinicians can better target intervention and treatment strategies.

It is suggested to investigate the relationship of risky behavior, DT and Sources of self-knowledge including self-observation, social feedback and social comparison [30]. The research show that there is significant correlation between locus of control and DT among students [31] so it is proposed to study the relation between Risky behavior and DT in interaction of locus of control among the students

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