Relationship between Deterministic Thinking and Locus of control in Students

Seyyed Jalal Younesi [Ph.D], Javad Kazemi, Mojtaba Abasi Asl, Sajad Sohrabnejad, Mahdieh Naghiyae, Mojtaba Zareie, Farshad

ABSTRACT

Background: One of the most important cognitive distortions is deterministic thinking. Deterministic thinking is a kind of distortion that conclusively considers an event equal to something else. Deterministic thinking is about absoluteness and ignorance probability in incidents and their inferences. Objective: This study was designed to examine the relationship between Deterministic thinking and Locus of control in students. In this correlation study, 100 students from university of Social Welfare and Rehabilitation Sciences in Tehran were selected through purposeful sampling and then answered to Deterministic Thinking questioner, and Locus of control scale. Results: Using Pearson correlation analysis, the results demonstrated that there is no significant relationship between deterministic thinking and locus of control. But it was found that there is significant relationship between subscales of Interaction with others, Absolute control, and prediction of future. Conclusion: The findings have implications for the imminent role of deterministic thinking in sabotaging mental health of students.

INTRODUCTION

The way of thinking is an important component in mental health. Cognitive distortions cause negative and inaccurate viewing of oneself, future and the world in general and to sabotage balance of fear and hope [1]. In other word, according to cognitive approaches, mental health is related to ones perceiving and interpreting the world [2]. In these approaches, perception is determinant of how experienced reality and to manage stress [3]. Aron beck believes that the more ones perception of environment and its reflection in mind is close to reality, the more individual contact and react to events logically and healthy [4]. Psychologists and cognitive sciences professionals and cognitive therapists particularly believe that cognitive distortions to be important in sabotaging of mental health and self-esteem [5]. Cognitive distortions get involved in thoughts and imagery and to keep individual far from the reality [1].

One of the most important cognitive distortions is deterministic thinking [6]. Deterministic thinking is a kind of distortion that conclusively considers an event equal to something else. Deterministic thinking is about absoluteness and ignoring probability in incidents and their inferences [7]. In this distortion interfering conclusions of events are affected by equalization, for instance divorce=misery or failing the exam=misery. As this equalization leads to cognitive rigidity, deterministic thinking could be the mother of all cognitive distortions [8].

In religious perspective, which is sometimes essential to be considered in cognitive therapy for some people [2], deterministic thinking is considered a destructive factor in ruining balance of fear and hope, because it rules out any exception about consequences of bad or good events. Herein there are strong recommendations by the most important religious leaders of Islam to keep the balance of fear and hope as a sign of faith and mental health, for example: Imam Ali [5], and grandsons of great prophet Mohammad, Imam Kazem [5] [9,10,11].

Corresponding Author: Seyyed Jalal Younesi [Ph.D], Clinical Psychologist, University of Social welfare and rehabilitation Sciences, Evin, Tehran, Iran, E-mail: jyounesi@uswr.ac.ir
Deterministic thinking and any prediction about consequences of both good and bad events which makes people too disappointed or too hopeful is rejected in Quran: “sometimes undesirable event may bring you luck and sometimes desired one brings you misfortune” [Quran, 2, 216] [12]. In Islamic discourse there is an expression which emphasizes on impossibility of predicting events. This expression is “Insha Allah” means “If God Wills” and is used by people in western and eastern countries widely. Also this expression rejects deterministic thinking because any consequence of events comes back to the will of God and it is only God who is aware of it [8].

Similarly in scientific approach, in spite of firm experimental reasons, accepting or rejecting hypothesis by P-value of zero is avoided. Mainly because some Scientists believe in no absolute reality and think the sequence of events is not stable from beginning to the end. Creatures and events can not be predicted exactly from their initiating to ending points [13]: “You are not aware of what to be gradually creating in world of creature.” [Quran, 16, 8] [12]. “What is in the earth or sky request from god and every day he to be in position of creating” [Quran,55, 29] [12]. In this philosophy, creation is not finished and new creation is expected so in this ongoing job it is not possible to predict life’s events surely. Even prediction of “God’s will” is not promising in Shiite perspective [14]. This view is called “bada” in Shiite belief which to mean everything can be initiated from being. With praying can change the god’s will.

Deterministic thinking is even related to individual physical health like cancer patients [15]. Also, deterministic thinking is related to hopelessness in patient with cancer [16] and anxiety, depression and general health in people [17]. Considering the psychoanalysis approach, deterministic thinking is related to neurotic defense mechanism such as denial, repression, and also deterministic thinking effect on mature defense mechanism such as catharsis [18].

On the other hand, psychologists believe that locus of control have an important role in mental health.

People who believe that have more control on their fate, have internal locus of control, and others who have external locus of control, believe that their life is controlled by others, fortuity and luck [19].

Locus of control is also used in many contexts like motivation, emotions and progression, and physical health. Researches show that people with internal locus of control have better mental health [20]. Mental health professionals believe that internal locus of control is one of the more confident tool for struggling with stress [21].

Individuals who feel that can effect on their life events [with internal locus of control] have more adjustment, comparing with individuals with external locus of control [22]. Also, individuals with external locus of control, have self-destructive behaviors like smoking, drinking, and addiction, so that external locus of control can predict substance abuse and individual with internal locus of control, rarely commit suicide [23]. Researches show that internal locus of control is one of the adolescent's protective factors against adventurous behaviors. People with internal locus of control have more internal motivation for action and to have more self-esteem. The research show that individuals with external locus of control have more negative ruminations which leads to depression [24].

It is obvious that depressed people to attribute events to luck and fortuity and depression and anxiety is due to lack of felling of perceived control. People with internal locus of control are active, effective, capable to solve problems, have high motivation, and high self-confidence and are successful. On the other hand, people with external locus of control are passive, not motivated, and incapable in problem solving [25]. Individuals with external locus of control, use dependent and avoidant deciding style and to have thoughts and cognitive distortions and wrong attribution style.

**MATERIAL AND METHODS**

In a correlational study 100 students [50 female, 50 male] from university of social Welfare and Rehabilitation Sciences in Tehran were selected through purposeful sampling and answered to Deterministic Thinking Questioner [1], and Locus of control scale [26]. Convergent validity of Deterministic Thinking Questioner with Beck Depression Inventory [BDI] was 33% [P≤0/01]. Also its total reliability which calculated through internal congruent coefficient and reexamination respectively was 82% and 78%. This scale has 36 questions which are graded with likert’s 4-pointed method. It has five subscales: 1. General determinism 2. Determinism in interaction with others 3. Absolute thinking 4. Determinism in Prediction of future 5. Determinism in negative events.

Locus of Control Scale was normalized in Rodehen Islamic Azad university population. It's Cronbach's alpha coefficient was 47% and by using half split method was56%. It's validity and reliability was recalculated and respectively obtained 63% and 75%. Also, it's criterion validity coefficient with Rutter Scale obtained 49%.
RESULTS AND DISCUSSION

In the following table, descriptive indicators [mean, statistic deviation, frequency], Locus of control variable and subscales of Deterministic Thinking are given.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Statistic Deviation</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus of control</td>
<td>15/122</td>
<td>5/00972</td>
<td>100</td>
</tr>
<tr>
<td>Determinism thinking</td>
<td>23/0612</td>
<td>3/36390</td>
<td>100</td>
</tr>
<tr>
<td>Negative events</td>
<td>11/8842</td>
<td>2/90218</td>
<td>100</td>
</tr>
<tr>
<td>Interaction with others</td>
<td>20/1563</td>
<td>2/58875</td>
<td>100</td>
</tr>
<tr>
<td>Absolute thinking</td>
<td>14/5684</td>
<td>2/83088</td>
<td>100</td>
</tr>
<tr>
<td>Prediction of future</td>
<td>12/2474</td>
<td>3/07216</td>
<td>100</td>
</tr>
</tbody>
</table>

To exploring relationship between tendency to internal and external Locus of control and subscales of deterministic thinking, Pearson correlation coefficient was used. Its result is given in the following table.

<table>
<thead>
<tr>
<th>Locus of control</th>
<th>Pearson correlation</th>
<th>Significant</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative events</td>
<td>.427 .289</td>
<td>.388 .221</td>
<td>90</td>
</tr>
<tr>
<td>Prediction of future</td>
<td>.000 .006</td>
<td>.000 .039</td>
<td>90</td>
</tr>
<tr>
<td>Locus of control</td>
<td>.418</td>
<td></td>
<td>90</td>
</tr>
</tbody>
</table>

Results:

As shown in the table, relationship between Determinism in interaction with others and locus of control, is significant. \( r = 0.22, \text{df} = 98, p<0.05 \). So with the increase in Determinism of interaction with others scores, locus of control scores will increase. It means that, the person tend to external locus of control. On the other hand, with the decrease in interaction with others, locus of control scores will decrease and the person has had tendency to internal locus of control.

Relationship between absolute thinking and locus of control was positive and significant \( r = 0.38, \text{df} = 98, p<0.001 \). So with the increase in absolute thinking, locus of control scores will increase, it means that the person tend to external locus of control and with the decrease in absolute thinking, locus of control scores will decrease and the person has had tendency to internal locus of control.

Relationship between Determinism of prediction of future and locus of control was also significant \( r = 0.28, \text{df} = 98, p<0.01 \), so that with the increase in prediction of future, locus of control scores will increase, it means that the person tend to external locus of control and with the decrease in prediction of future, locus of control scores will decrease and the person has had tendency to internal locus of control.

Correlation coefficient between Determinism of negative event and locus of control with maximum 99% confidence was positive and significant \( r = 0.42, \text{df} = 98, p<0.001 \). With the increase in Determinism of negative events scores, locus of control scores will increase, it means the person tend to external locus of control and with the decrease in negative events, locus of control scores will decrease and the person has had tendency to internal locus of control.

Discussion

The results show that there is no significant relationship between deterministic thinking and locus of control totally. But it was found that there is positive and significant relationship between interaction with others and locus control. This means that the more deterministic thinking of interaction with others the more tendency to external locus of control and the less deterministic thinking, the more tendency to internal locus of control.

This indicate that individuals who think more rigidly and deterministically, attribute cause of events to others and environment, and don't accept their responsibility for problems, instead others are responsible for their problems.

On the other hand, individuals who don’t think so rigidly, take responsibility for their behavior and seek the cause of events in themselves. These findings are parallel with Younesi’s findings [1] who found that people who see phenomenon and events absolutely, cannot balance between their fear and hope.

According to Islamic literature, the balance between fear and hope is one of the signs of faith [8]. Also, in Quran we can see emphasis on refraction of deterministic thinking. “What an events that you think is in favour of you, while is detriments of you, and what an events that you think is in detriments of you while is in favour of you.” So, great hope or great disappointment in Quran is not accepted, because lead to fear and anxiety. According to the holy Quran, we shouldn’t be too disappointed because of bad event, and too happy because of good event. Since, in Quran predict of an event in an absolute way is not possible. There is a phrase in Islamic literature which is used in eastern and western countries. The phrase: If God wills is used when people encounter with events. So, the holy Quran disagree with deterministic thinking [7,27].
On the other hand, individuals who think deterministically and have external locus of control, suffer from depression. This finding is parallel with Bahrami and Younesi's findings [7] that showed there is positive and significant relationship between deterministic thinking and depression and with Clark's findings [28] that showed cognitive distortions lead to anxiety and depression, and Younesi and Tooyserkani's findings [17] that showed there is positive and significant relationship between deterministic thinking and level of anxiety.

Our findings show that people with high determinism, have less control on their life, because cause of events is out of their control, and this finding is parallel with Younesi and Hoseinpoor's findings [15] who conclude that deterministic thinking is related to response to treatment in cancer patients, so that patients who had recovered from illness, had low deterministic thinking, and patients whose condition was deteriorating, had high deterministic thinking and also with Mirafzal and Younesi's [16] finding that showed challenging with deterministic thinking in patients with cancer leads to decrease in anxiety and increase in hope. This means that mental health in patient with cancer is an important issue that can be adversely affected by negative anticipation and lead to maladjustment in them.

So breaking deterministic thoughts make clients to pursue their treatment hopefully. As Kelly showed, negative prediction lead to anxiety [29]. Individuals who don't think deterministically, have internal locus of control and they know that cause of events is unstable, changeable, and specifically related to one context and due to their effort.

So, when problems happen, they don't attribute them to total life. Our finding, is congruent with Younesi and Mirafzal's research [1] who found that there is negative relationship between deterministic thinking and hope. That means, the more deterministic thoughts, the less hope, and conversely.

Other findings say that, by increasing deterministic subscales scores, external locus of control's scores increase. It means that people with external locus of control are dogmatist and dissatisfied and think that events are stable and unchangeable. Also, we can mention other researches like, Maghsodzadeh's findings [30] that showed determinism predict couple's communication skills, that is the more deterministic thoughts the less communication skill.

On the other hand, we found that the more absolute thinking, the more external locus of control, which is congruent with Rahanjam's finding [31] that showed deterministic thinking is related to hopelessness.

Other findings indicate that there is negative relationship between deterministic thoughts and forgiveness [32]. Also deterministic thinking is related to defense mechanism, that is the more deterministic thoughts, the more neurotic defense mechanisms like projection, passive aggression, actualize, separation, making worthless, autistic, fantasy, denial, displacement, segregation, dichotomy, rationalizing and somatization, and conversely the less deterministic thoughts, the more mature defense mechanism[18], and the more deterministic thoughts the more obsession, as washing obsession in students with high deterministic thoughts is heightened and they use neutralization defense mechanism more [33].

Conclusion:
In general our research and other's show that deterministic thinking and external locus of control have deleterious role in people's psychosocial life. However our research specifies relationship between deterministic thinking and locus of control, but it doesn't mean a cause and effect relationship. So we recommend to other researchers conducting correlational research to exploring relationship between deterministic thinking and other variable like disappointment, self esteem and sources of self knowledge [34]

ACKNOWLEDGMENT
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