

Cognitive Emotional Regulation Strategies and Locus of Control Among Substance Users

Shashvat Shanker^{1*}, M.N. Kirmani²

Abstract

Substance use is among the major health concern that creates significant disability in a person's mood and behavior, which leads to poor health and loss of productivity. Increasing substance use is associated with various short and long-term effects which affect how they deal with stress, regulate their emotions, decision making, and overall quality of life. The current research aims to Examine relationship between cognitive emotional regulation strategies and locus of control among substance users to highlight the need for understanding and managing the issues effectively. The measures used were (i) CAGE Questions Adapted to Include Drug Use (Ewing, 1984) to examine substance use issues, (ii) Cognitive emotion regulation questionnaire (CERQ) to examine cognitive emotional regulation strategies, and (iii) Internality, powerful others, and chance scales to examine locus of control. Purposive sampling was used to gather the data after obtaining permission from the management and participants. Descriptive statistics percentage, and Pearson correlation were used to examine the variables and relationship between cognitive emotion regulation strategies and locus of control in substance users. The research findings revealed that there are significant relationships between the variables of cognitive emotional regulation strategies and internal, external (powerful others and chance) locus of control. Mental health experts need to understand the cognitive emotional regulation strategies and locus of control to make an effective treatment plan for catering to the emerging mental health needs of substance users.

Keywords: Substance users, cognitive emotional regulation, loss of control, addiction psychology, mental health

INTRODUCTION

Substance use is a significant public health issue because it disrupts people's moods, thoughts, and behaviors. The term "substance use" refers to using substances, including tobacco, alcohol, prohibited substances, prescription drugs, inhalers, solvents, etc. The symptoms of substance use disorders might be mental, physical, or behavioral. The use of substances can have a variety of immediate, indirect, and long-term impacts. The use of one or more particular substances, how and how much of them are taken, the individual's health, and other variables usually influence these consequences. Increasing substance

*Author for Correspondence

Shashvat Shanker

E-mail: shashvat972@gmail.com

¹Assistant Professor, Department of Clinical Psychology, Amity University (AICP), Haryana, India

²Associate Professor, Department of Clinical Psychology, Amity University (AICP), Haryana, India

Received Date: May 02, 2024

Accepted Date: June 04, 2024

Published Date: July 04, 2024

Citation: Shashvat Shanker, M.N. Kirmani. Cognitive Emotional Regulation Strategies and Locus of Control among Substance Users. International Journal of Behavioral Sciences. 2024; 1 (2): 1–9p.

use is associated with various short and long-term effects which affect how they deal with stress, regulate their emotions, decision making, and overall quality of life. Substances such as nicotine, cocaine, marijuana, and others have an impact on the limbic system of the brain, which is responsible for the reward system. Emotions and instincts are influenced by this region of the brain. The drug releases a large amount of dopamine, a neurotransmitter that aids in mood and pleasure regulation. People may choose to use substances because they enjoy how they feel and believe they can control the amount and frequency with which they use them. The use of substances alters the

social functioning of people by disrupting their interaction with the environment and their ability to fulfill their roles in work, social activities, and relationships with others, partners, and family. Many people with drug problems will say that since they do not know they are abusing drugs, there is no problem, so understanding how many drugs a patient takes and how often they take them is also vital. The tremendous pressures of social shame, emotional stress, and legal consequences can lead to cover-ups; therefore, clinicians must be aware of this to cope.

Emotional regulation is an individual's capacity to oversee or deal with a situation adequately. Individuals unknowingly utilize feeling direction systems to adapt to troublesome circumstances. Past research has clearly shown the critical role of emotion regulation in adaptation and managing stressful life events (Gross, 1998, 2002) [1]. Previous research has suggested that individuals mostly use cognitive ways of handling emotionally arousing information as a way to regulate emotions (Gross, 2015) [2]. Cognitive Emotion Regulation (CER) is people's conscious mental technique to gain emotionally exciting information. CER is understood as the cognitive framework of an individual after experiencing an emotionally arousing event (Garnefski et al., 2001, 2002) [3,4] and is different from similar constructs such as coping, which are processes occurring over a longer period or other types of regulatory strategies.

The Locus of control is an essential aspect of personality that denotes a person's perception of the root cause of events in their life, which determines people's attitudes and behavior (Rotter, 1966) [5]. Such behavior is largely determined by "reinforcement" and through unforeseen circumstances such as rewards and punishments. Control is orientation or belief in whether the results of our actions depend on what we do; that is the orientation toward internal control or on events outside our personal control, that is the orientation to an external control. It is important to note that the locus of control is a dynamic process that changes over time, no one can have 100% external or internal control, and conversely, most people are on a continuum between two extremes. Levenson (1973) [6] distinguishes three sources of control one internal and two externals, powerful others, and the other controlled by chance. Researchers found that people with high internal control scores tended to perform better, predict better health outcomes, job satisfaction, academic success, lower stress, and promote positive thinking (Keith et al., 1986; Gianakos, 2002; Lee et al., 2015). It is crucial to remember that the inside is not always good, and the outside is not always bad, contributing to the success or failure of a person. In some cases, having external milestones can be very helpful, especially if someone is not qualified in a particular area.

Control theory of psychopathology proposes that behavior can be explained as the attempt of an individual to maintain certain specific perceptions of their internal and external environment (Mansell, 2005) [7]. Self-regulation of behavior provides useful insights to explain the role of self-regulation and how it can become maladaptive in psychological disorders (Carver CS 1994) [8]. Conflict occurs to satisfy the demands of life and society life and in the generation of new goals, but the conflict over time becomes more distressful by using counterproductive psychological processes. Substance use is a response to the fear of failure that helps us avoid the pressures of achievement or avoid punishment by generating and maintaining a sense of indifference to social standards of quality to achieve goals that correspond to the approved quality of life, as drugs seem to reduce our performance anxiety (Misra, 1980) [9]. People start using substances when they feel uncomfortable; temporary relief is desirable. The cognitive framework emphasizes the role of inner thoughts and beliefs in developing maladaptive behavior. When the effect wore off, individuals returned to the same competitive culture and again turned to enhancers for a sense of pleasure, euphoria, and happiness. The most important need is spontaneous, childish, and impulsive happiness (Clements & Simpson, 1978) [10]. The existential theory of drug dependence explains that people who become dependent on substances are usually those who lack a sense of creative self-pleasure and sensory perception, have lost the ability to induce the natural arousal of childhood through play and sports, the ability to create natural euphoria, and upon experimentation with substances, tend to use them in more quantities as a passive means of pleasure or euphoria or to remove the stress, anxiety of dysphoric lifestyle (Greaves, 1974) [11].

The locus of control and cognitive-emotional regulation techniques were the main topics of this study because addiction psychology heavily relies on these variables. The findings fill the literature gap and may be used as a protective factor for physical, mental and social health. Substance use creates significant disability in a person's mood and behavior, leading to productivity loss. Many substance users encounter unpleasant mood shifts that affect their day-to-day activities and quality of life. In other words, substance functions as a reward and activates the individual's behavior. The disagreeable changes can be based on cognitive strategies (adaptive or maladaptive) and can be influenced by the locus of control, which can activate or inhibit the behavior. This information can further be used to treat and improve patient health by providing psychological interventions to individuals so they can understand their problems and learn new ways to cope with the situations and problems they face in their day-to-day life.

METHODOLOGY

Aim

To determine how substance users' locus of control and cognitive emotion regulation strategies relate to one another.

Objectives

1. To examine the relationship between cognitive emotion regulation strategies and internal locus of control in substance users.
2. To examine the relationship between cognitive emotion regulation strategies and external locus of control in substance users.

Hypothesis

1. There will be a positive relationship between adaptive cognitive emotion regulation strategies and internal locus of control in substance users.
2. There will be a positive relationship between maladaptive cognitive emotion regulation strategies and external locus of control in substance users.

Sample: Purposive sampling techniques were used. The sample comprised 108 participants.

Inclusion Criterion

- Participants with CAGE – AID scores represent significant substance use problems.
- Individuals consuming substances for more than one year.
- Age range 21 to 40 years.
- Types of substance: cigarette/ tobacco, alcohol, and any other substance (category not mentioned).

Exclusion Criterion

- Quantity of substance used.
- Other sociodemographic variables

Research Design

The study was based on an exploratory research design. The design aimed to develop a working hypothesis from an operational point of view. The major focus was on developing insight and understanding the significance of relationships between the variables used in the study. Within the design review of concerning literature was done to formulate the research problem and develop an operational view of variables.

Tool Used

1. *Socio-Demographic data:* This is used to collect information about patients' age, gender, preference of substance they use, and duration they consume the substance in a month.

2. *CAGE Questions Adapted to Include Drug Use*: CAGE is derived from the four questions Cut down, Annoyed, Guilty, and Eye-opener with only two answers (semantic differential scale) "no" and "yes," with a higher score being an indication of substance use problems. CAGE has high test-retest reliability (0.80-0.95) and moderate correlations (0.48-0.70) with other tools available for screening (Ewing, 1984); (Dhalla & Kopec, 2007) [12,13].
3. *Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2006)*: The Cognitive Emotion Regulation Questionnaire (CERQ) is a multidimensional questionnaire constructed to identify the cognitive emotion regulation strategies an individual use after having experienced negative events or situations. It consists of 18 items distributed under nine subscales. The Cronbach alpha reliability coefficients for adaptive and maladaptive cognitive emotion regulation subscales are 0.91 and 0.87, respectively. The CERQ makes it possible to identify individual cognitive strategies and compare them to norm scores from various population groups (Garnefski & Kraaij, 2006) [14].
4. *Internality, Powerful Others, and Chance Scales*: The IPC scale is a three-dimensional questionnaire to identify the locus of control, which includes Internal, Powerful Others, and a Chance subscale. Internal means individuals take responsibility for their behavior, and chance distinguishes between two types of external influences on the basis that those who view things are beyond their control and think differently from those who believe in an orderly world ruled by powerful others. This scale consists of 24 items distributed under three subscales rated on a 6-point Likert scale. Internal consistency for all LOC dimensions was satisfactory with Cronbach's alpha above 0.70, and the goodness of fit index was 0.053, 0.951, and 0.937 for internal, chance, and powerful other subscales (Kourmoussi et al., 2015) [15].

Procedure

Participants in this study included a range of age groups, genders, substance usage patterns, and daily dosage counts. Consent forms were given to participants via a variety of offline and online channels, together with instructions on how to rate and a description of the study, and this data was gathered from self-rated surveys. The instructions for collecting information were followed as per their respective manuals. To get the results, the data was gathered and sorted in accordance with the study's inclusion criteria.

Ethical Considerations

1. Participants and the administration of the de-addiction facility were guaranteed confidentiality, and that no participant information would be revealed in the dissertation or any follow-up publications without consent.
2. We obtained informed consent from each individual.
3. The participants were advised that if they required psychological assistance, they might get in touch with the researcher.
4. We obtained permission from all reputable authors to utilize the questionnaires.
3. *Methods of Data Analysis*: The statistical data was arranged by using SPSS (Ver. 26), descriptive statistics, and Pearson correlation method to explore the association among all the variables used in the study.

RESULTS

Table 1 represents frequency distribution of demographic variables in (N = 108) substance users. The sample examined was predominantly males 88 contributing to (81.5%) and 20 females contributing to (18.5%) of sample population.

Table 1. Frequency distribution of demographic variables in substance users.

Demographic Variables	n	%
Gender		
Male	88	81.5

Female	20	18.5
Type of Substances		
Cigarette/tobacco	15	13.9
Alcohol	19	17.6
Any other psychoactive substance	26	24.10
Cigarette/ tobacco, alcohol, any other substance	48	44.4
Days in month consume substance		
1 to 5 days	21	19.4
5 to 10 days	17	15.7
More than 10 days	70	64.8
CAGE - AID		
Significant substance uses problems	108	100
Low or nil substance use problems	0	0

Note: $N=108$

Most of the participants ($N = 48$, contributing 44.4%) endorsed that they consume cigarette/ tobacco, alcohol, and any other substance, participants ($N = 26$, 24.10% participants reported that they consume other psychoactive substance, participants ($N = 19$, contributing 17.6%) reported that they consume alcohol and ($N=15$, contributing 13.9%) consume cigarette/ tobacco.

Most of the participants ($N = 70$, contributing 64.8%) endorsed that they consume substances more than ten days in a month, participants ($N = 17$, contributing 15.7%) reported that they consume substances five to 10 days in a month and participants ($N = 21$, contributing 19.4%) reported that they consume substances one to five days in a month.

CAGE-AID examined revealed that ($N = 108$, contributing 100%) have substance use problems.

Table 2. Pearson Correlation among cognitive emotion regulation, internal and external locus of control in substance users.

Variables	Internal	External Chance	External Powerful others
Acceptance	.034	.094	.339**
Positive refocusing	.302**	.094	.100
Refocus on planning	.083	.017	-.065
Putting into perspective	.146	.285**	-.105
Positive reappraisal	.320**	.000	-.088
Self-blame	.091	.159	.561**
Other Blame	-.299**	.268**	.189
Catastrophizing	-.076	.262**	.353**
Rumination	-.089	.339**	.278**

* $p < .05$, ** $p < .01$

Note. $N = 108$

Table 2 represent Pearson correlation among cognitive emotion regulation and internal locus of control in substance users which suggests positive relationship among all adaptive cognitive emotion regulation acceptance, positive refocusing ($p < .01$), refocus on planning, putting into perspective, positive reappraisal ($p < .01$) and one maladaptive emotion regulation strategy self-blame. It also represents internal locus of control is negatively correlated with three maladaptive cognitive emotion regulation strategies catastrophizing, rumination and other blame ($p < .01$). Hence the alternate hypothesis is partially accepted.

Table also represent Pearson correlation among cognitive emotion regulation and external (chance) locus of control in substance users which suggests positive relationship among all adaptive and maladaptive cognitive emotion regulation strategies acceptance, positive refocusing, refocus on planning, putting into perspective ($p < .01$), positive reappraisal, self-blame, other blame, catastrophizing and rumination. Moreover, Pearson correlation among cognitive emotion regulation and external (powerful others) locus of control in substance users suggests positive relationship among two adaptive cognitive emotion regulation strategies acceptance ($p < .05$), positive refocusing and all maladaptive four cognitive emotion regulation strategies self-blame ($p < .01$), other blame, catastrophizing ($p < .01$) and rumination ($p < .01$). Furthermore, negative relationship among three adaptive cognitive emotion regulation strategies refocus on planning, putting into perspective ($p < .01$), positive reappraisal. Hence the alternate hypothesis is partially accepted.

DISCUSSION

Pearson correlation was used to test the hypothesis the result suggested a significant positive relationship among cognitive emotion regulation strategies positive refocusing ($r = .302$, $p < .01$), positive reappraisal ($r = .320^{**}$, $p < .01$), and negative relationship with other blame ($r = -.299^{**}$, $p < .01$) with internal locus of control which suggest that substance user's internal locus of control helps them to use adaptive cognitive emotion regulation strategies by refocusing thinking about joyful and pleasant issues instead of thinking about the actual event, using adaptive process by which stressful events are re-construed as valuable, or beneficial or it refers to thoughts of creating a positive meaning to the event in terms of personal gains, and negative relationship with other blame suggest that internal controls help them to avoid putting the blame for what they have experienced on the environment or another person. Previous findings also support these findings that individuals with a high internal locus of control believe their interactions with their environment will produce better health outcomes, job satisfaction, and academic success. Internal control is associated with help-seeking, better thinking, and reduced work stress. People with strong inner control are not only psychologically protected from some life shocks, but they are also less likely to experience increased happiness or well-being after positive events which they predict or expect from their inner control (Buddelmeyer & Powdthavee, 2016) [16]. Internal locus of control indicates better mental health and better academic performance of foreign students (Damirchi et al., 2018) [17]. The Locus of control of patients with substance addiction tends to become more internal during treatment which is associated with better treatment outcomes (Caputo, 2019) [18]. Some studies also provide other evidence that internal control, when associated with maladaptive cognitive emotion strategies, can be harmful such as in self-blame, individuals feeling responsible for negative life events and thinking responsible for various negative behavioral consequences (Podder et al., 2016) [19]. Internal scale is closely correlated with various psychopathological symptoms, which may indicate that certain types of pathology are associated with a lack of belief in internal control (Brosschot et al., 1994) [20].

Pearson correlation was used to test the second hypothesis and result suggested a significant positive relationship among cognitive emotion regulation strategies putting into perspective ($r = .285^{**}$, $p < .01$), other blame ($r = .268^{**}$, $p < .01$), catastrophizing ($r = .262^{**}$, $p < .01$) and rumination ($r = .399^{**}$, $p < .01$) with an external (chance) locus of control which suggest that substance user's chance control helps them to use adaptive cognitive emotion regulation strategy by refocusing thinking about joyful and pleasant issues instead of thinking about the actual event but use more maladaptive cognitive emotion regulation strategies that they put the blame for what they have experienced on the environment or another person, assumes that the worst will happen which prompts them to jump to worst possible conclusion and cognition focusing on negative content, generally past and future, and results in emotional distress. The external locus of chance scale score appears to be significantly correlated with depressive indicators, sleep issues, and social deprivation, marked by more psychosocial problems and reports high social anxiety.

Cognitive emotion regulation strategies acceptance ($r = .399^{**}$, $p < .01$), self-blame ($r = .561^{**}$, $p < .01$), catastrophizing ($r = .353^{**}$, $p < .01$), and rumination ($r = .278^{**}$, $p < .01$) are positively correlated

with external (powerful others) locus of control which suggest that substance user's powerful others control helps them to use adaptive cognitive emotion regulation strategies by analyzing the reality of a situation, recognizing a process or condition often a negative or uncomfortable situation without attempting to change it or protest it but use more maladaptive cognitive emotion regulation strategies that they blamed self for negative consequences or experiences, assumes that the worst will happen which prompts them to jump to worst possible conclusion and cognition focusing on negative content, generally past and present, and results in emotional distress. Powerful another scale of external control uses passive strategies such as avoidance, depressive response, less aggressive problem solving, mitigated response, and, albeit to a lesser extent, comfort perception. External controls can help to significantly reduce alcohol use during treatment, and even patients with a high internal locus of control benefit considerably from external controls, as alcohol use during treatment is associated with the resumption of alcohol use after residential treatment, external controls can enhance treatment outcomes, especially for those patients with a low internal locus of control, who demonstrated the highest risk for alcohol use during treatment. Smoking cessation is associated with a more external locus of control, while some previous studies have shown that successful attempts to quit smoking and maintenance of abstinence are associated with an internal locus of control (Lassi et al., 2019) [21].

Dependence is associated with significant experiences of loss of control, but unidimensional controlling beliefs do not capture these events; this can be why the IE Rotter scale does not show differences between substance users and independent people. The study proved that both professional and personal encounters with drug dependency influence how someone perceives management or control in a drug-associated situation (Ersche et al., 2012) [22]. The information indicated that dependent substance users have a greater inner sense of control to manage substance use or recovery than those with non-dependent. External monitoring can improve treatment outcomes and help patients with low levels of internal control who are at risk. Strong external control can complement high internal control to improve the prevention of alcohol use during treatment. Substance use is a response to the fear of failure that helps us avoid the pressures of achievement or avoid punishment by generating and maintaining a sense of indifference to social standards of quality to achieve goals that correspond to the approved quality of life, as drugs seem to reduce our performance anxiety. The belief that a person feels powerless to influence the environment and cope with stress is serious cognitive distortion for substance users. One consequence is a strong sense of inferiority or self-esteem, a well-known clinical manifestation among substance users. Of course, external or internal sources of stress cause conflict, being anxious is uncomfortable, and there must be a way to reduce the anxiety; unfortunately, some consume substances. The substance effects are short-lived, and these temporary gains convert into long-term losses. Successful drug treatment requires a multimodal approach to resolve cognitive distortions, teach interpersonal skills, help substance users cope with pain or anxiety, and encourage self-confidence and self-control. The control theory of psychopathology explains that conflict between control systems is a major factor in psychopathology. Conflict occurs to satisfy the demands of life and society and in the generation of new goals, but the conflict over time becomes more distressful by using counterproductive psychological processes. Support is required to decrease use of maladaptive strategies and to manage the conflict between control systems so they can incorporate the ability to act, be effective, influence their own life, and assume responsibility for their behaviors.

CONCLUSION

Health is a major concern for everyone, and everyone strives to seek better health results by engaging in various activities. Human beings are actively hedonistic, pleasure-seeking, stimulating freaks. Sometimes individuals indulge themselves in maladaptive regulating mechanisms to deal with distress as they act as rewards, such as psychoactive substances. Engaging in substance use to manage the distress of daily living creates a significant disability, and the individuals are not able to identify alternatives to induce that euphoria or pleasure in themselves. With help and support from powerful others (parents, mental health professionals, and other authority figures), they can identify and eliminate the use of negative cognitions such as catastrophizing, ruminations, others' blame, and self-blame. Also, they can incorporate the ability to act, be effective, influence their own life, and assume responsibility

for their behaviors. To be healthy, individual must believe in freedom and self-determination to accept the fact that he is controlled by forces outside himself that are making them vulnerable with this acceptance, they will respond better to controlling forces that reinforce them and can naturally cope with distress. Hence health can be improved by decreasing use of maladaptive cognitive regulation, resolving conflict between locus of control, mindfulness, and existential thinking.

The present findings of the present study have led to certain findings:

- The substance user's internal locus of control has significant positive relationship with adaptive cognitive emotion regulation strategies positive refocusing and positive reappraisal.
- The substance user's internal locus of control has significant negative relationship with maladaptive cognitive emotion regulation strategy other blame.
- Substance user's external locus of control chance has significant positive relationship with adaptive cognitive emotion regulation strategy putting into perspective.
- The external locus of control likelihood of substance users is significantly positively correlated with maladaptive cognitive emotion regulation methods, such as blaming, ruminating, and catastrophizing others.
- A substance user's external locus of control powerful others has significant positive relationship with adaptive cognitive emotion regulation strategy acceptance.
- Substance user's external locus of control powerful others has significant positive relationship with maladaptive cognitive emotion regulation strategies self-blame, catastrophizing and rumination.

Limitations

- There was no interview data in the study, therefore it relied solely on self-report measurements and high diversity among the participants.
- The participants were sent forms and asked to fill out the questionnaires, their rating honesty can only be presumed and not guaranteed.
- The sample was not collected via random sampling and there is a possibility that it could have reduced the generalizability of the findings.
- Another limitation of this study is that confounding variables were not controlled for, such as the traumas they have suffered, financial status, quantity of psychoactive substances.

Future Research Suggestions

- Many sociodemographic variables such as family type, interests, negative life events, could be interesting to see if they are related to substance use.
- Types of psychoactive drugs can be looked at and seen if similar results are shown thus increasing the generalizability of research.
- A larger sample with a wider range of demographic variables could provide more information on the factors that influence substance use. Further research could investigate if the same results could be seen in other geographical regions.
- The honesty of the answers that the participants give in the questionnaires cannot be guaranteed, hence the need of more studies that involve clinical interviews could validate the findings.

REFERENCES

1. Gross JJ. The emerging field of emotion regulation: An integrative review. *Review of general psychology*. 1998 Sep;2(3):271–99.
2. Gross JJ. Emotion regulation: Current status and future prospects. *Psychological inquiry*. 2015 Jan 2;26(1):1–26.
3. Garnefski N, Kraaij V, Spinhoven P. Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual differences*. 2001 Jun 1;30(8):1311–27.

4. Garnefski N, Van Den Kommer T, Kraaij V, Teerds J, Legerstee J, Onstein E. The relationship between cognitive emotion regulation strategies and emotional problems: comparison between a clinical and a non-clinical sample. *European journal of personality*. 2002 Sep;16(5):403–20.
5. Rotter JB. Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied*. 1966;80(1):1.
6. Levenson H. Perceived parental antecedents of internal powerful others, and chance locus of control orientations. *Developmental psychology*. 1973 Sep;9(2):260.
7. Mansell W. Control theory and psychopathology: An integrative approach. *Psychology and Psychotherapy: Theory, Research and Practice*. 2005 Jun;78(2):141–78.
8. Carver CS, White TL. Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: the BIS/BAS scales. *Journal of personality and social psychology*. 1994 Aug;67(2):319.
9. Misra RK. Statistical comparisons of several growth curves of the von Bertalanffy type. *Canadian Journal of Fisheries and Aquatic Sciences*. 1980 Jun 1;37(6):920–6.
10. Clements JE, Simpson R. Environmental and behavioral aspects of glue sniffing in a population of emotionally disturbed adolescents. *International Journal of the Addictions*. 1978 Jan 1;13(1):129–34.
11. Greaves G. Toward an existential theory of drug dependence. *The Journal of Nervous and Mental Disease*. 1974 Oct 1;159(4):263–74.
12. Ewing JA. Detecting alcoholism: the CAGE questionnaire. *Jama*. 1984 Oct 12;252(14):1905–7.
13. Dhalla S, Kopec JA. The CAGE questionnaire for alcohol misuse: a review of reliability and validity studies. *Clinical and Investigative medicine*. 2007 Feb 11;30(1):33–41.
14. Garnefski N, Kraaij V. Cognitive emotion regulation questionnaire–development of a short 18-item version (CERQ-short). *Personality and individual differences*. 2006 Oct 1;41(6):1045–53.
15. Kourmoussi N, Xythali V, Koutras V. Reliability and validity of the multidimensional locus of control IPC scale in a sample of 3668 Greek educators. *Social Sciences*. 2015 Nov 9;4(4):1067–78.
16. Buddelmeyer H, Powdthavee N. Can having internal locus of control insure against negative shocks? Psychological evidence from panel data. *Journal of economic behavior & organization*. 2016 Feb 1;122:88–109.
17. Damirchi ES, Ghazivaloyi FE, Shishegaran SA, Mohammadi N. Comparison of the Cognitive Emotion Regulation, Locus of Control and Meaning in life in Native and Non-Native Students. *Journal of Pizhūhish dar dīn va salāmat*. 2018 Nov 4;4(5):5–16.
18. Caputo A. Addiction, locus of control and health status: A study on patients with substance use disorder in recovery settings. *Journal of Substance Use*. 2019 Nov 2;24(6):609–13.
19. Podder P, Mukherjee T. A study on cognitive emotion regulation and locus of control in LGBT. *IOSR Journal of Humanities and Social Science*. 2016;21(12):1–9.
20. Brosschot JF, Gebhardt WA, Godaert GL. Internal, powerful others and chance locus of control: Relationships with personality, coping, stress and health. *Personality and individual Differences*. 1994 Jun 1;16(6):839–52.
21. Lassi G, Taylor AE, Mahedy L, Heron J, Eisen T, Munafo MR. Locus of control is associated with tobacco and alcohol consumption in young adults of the Avon Longitudinal Study of Parents and Children. *Royal Society open science*. 2019 Mar 27;6(3):181133.
22. Ersche KD, Turton AJ, Croudace T, Štöchl J. Who do you think is in control in addiction? A pilot study on drug-related locus of control beliefs. *Addictive disorders & their treatment*. 2012 Dec 1;11(4):195–205.