Comparison of Personality of Alcoholics & Drug Addicts versus Non-Alcoholics & Non-Drug Addicts

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Abstract: *The present study is a comparative study of personality type of alcoholics and drug addicts and personality type of non-alcoholics and non drug addicts. In order to test the hypotheses, samples on addicts and no-addicts are collected from various rehabilitation centres in Mumbai and Pune. Samples were restricted to only male. For the analysis purpose, 2x2 factorial ANOVA and t-test has been used. For measuring personality type, Eysenck personality questionnaire has been used. Psychoticism and Neuroticism found to be significantly higher in alcoholics and drug addicts as compared to non alcoholics and non drug addicts. Further, extraversion found to be significantly lower in alcoholics and drug addicts as compared to non alcoholics and non drug addicts.*

Keywords: Personality, Addicts, Psychoticism, Neuroticism, Extraversion

1. Introduction

Addiction is a health, social, cultural and economic issues and problem which has prejudiced the future development of the countries. Addiction is a health, social, cultural and economic issues and problem which has prejudiced the future development of the countries. In addition to physical and mental problems for addicted individuals, it would also endanger the socio-economic and political status of countries [11]. A number of research articles and studies have examined the relationship between personality and physical & mental health in literature. The purpose of the current study is to compare, examine and measure the personality of alcoholics & drug addicts with non-alcoholics & non-drug addicts. The structure of current study is designed that attempts to compare the personality of alcoholics & drug addicts and non alcoholics & non drug addicts.

2. Concept of Personality and Addiction

2.1 Addiction

There are many different perspectives exists on "addiction". Some experts see addiction as a "family disease" [41] or even as an attachment disorder, where chemical relationships are substituted for human ones [19]. Others perspectives can range from viewing addiction as impairment in affect regulation [28] to understanding it from a Buddhist standpoint as an exacerbated form of the desire for pleasure and aversion to pain that everyone experiences to some degree [29], [33]. Alexander [2] in his research paper discussed that how the definition of "Addiction" has been altered to suit respective events. They wrote - The word "addiction" has too many meanings. This is partly because it contains a fundamental ambiguity. For centuries, "addiction" referred to the state of being "given over" or intensely involved with any activity. The ambiguity lay in the value

attached to this state; addiction could be either tragic or enviable, or somewhere in between. As well, a second meaning emerged in the 19th century, and now coexists with the earlier one. The new meaning is more restrictive than the traditional one in three ways; it links addiction to harmful involvements with drugs that produce withdrawal symptoms or tolerance. Both the traditional and restrictive meanings survived into the present. In the ensuing uncertainty about its meaning, some authorities now wish to replace "addiction" with substitute terms like "drug dependence", "substance abuse", etc.

Many of the habits that pervade everyday life can be properly described as addictive. While the degree of addictiveness varies from activity to activity and person to person, habits such as smoking, drinking, eating, and a host of others often meet the two conditions required for addiction: reinforcement, in that the more you partake of the activity, the more you want to partake; and tolerance, in that the more that you partake of the activity, the lower your future utility given the amount of future consumption [6]. Multiple theories have been suggested in the literature to describe addiction. Four major approaches (theories) have been discussed in the brief. The first concentrates on the neurobiological effects of drugs. The second theory is psychological. It concentrated on behavioural models and individual differences. The third approach is socio-cultural. It concentrated on the cultural and environmental factors that make drug dependence more likely. The final approach is Bio-psychosocial Theory. This theory postulates that substance misuse is the net result of a complex interaction between a combination of biological, psychological, social, and spiritual determinants.

2.2 Personality

The term "Personality" has many definitions. "Personality" can be defined as a dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviors

in various situations [34]. The word "personality" originates from the Latin persona, which means mask. Personality may also refer to the patterns of thoughts, feelings and behaviors consistently exhibited by an individual over time that strongly influence our expectations, self-perceptions, values and attitudes, and predicts our reactions to people, problems and stress [42] [31].

There are many possible ways of defining and interpreting "personality", dependent on which method is used. Personality is the more or less stable and enduring organization of a person's character, temperament, intellect, and physique, which determines his unique adjustment to the environment. Character denotes a person's more or less stable and enduring system of cognitive behaviour ("will"); Temperament, his more or less stable and enduring system of affective behaviour ("emotion"); Intellect, his more or less stable and enduring system of cognitive behaviour ("intelligence"); Physique, his more or less stable and enduring system of bodily configuration and neuro-endocrine endowment [15]. Within psychology two classic definitions are often used. Personality is a dynamic organisation, inside the person, of psychophysical systems that create the person's characteristic patterns of behaviour, thoughts and feelings [4]. More or less stable, internal factors that make one person's behavior consistent from one time to another and different from the behaviour other people would manifest in comparable situations [8].

Sigmund Freud (1856–1939) had begun to write about psychoanalysis by the early years of the twentieth century, which he described as 'a theory of the mind or personality, a method of investigation of unconscious process, and a method of treatment'. This theory emphasizes the influence of the unconscious, the importance of sexual and aggressive instincts, and early childhood experience on a person. Freud discovered that mind is like an iceberg and we have limited conscious awareness [26].

Freud developed a number of hypothetical models to show how the mind (or what he called the psyche) works:
- A topographic model of the psyche – or how the mind is organized;
- A structural model of the psyche – or how personality works;
- A psychogenetic model of development – or how personality develops.

Gordon Allport (1897–1967) made the first comprehensive attempt to develop a framework to describe personality using traits. Allport & Odbert used Webster's New International Dictionary to identify terms that describe personality. Gordon Allport believed that "central" traits make up the major characteristics of most personalities [3].

Eysenck began with a theory of personality which he based on two supertraits – extraversion– Introversion and Neuroticism– stability [16]. In subsequent work Eysenck proposed psychoticism as another dimension of personality [17]. Eysenck viewed the supertraits of extraversion and neuroticism as independent, and believed that different personalities arise from differing combinations of the two supertraits. According to him, people who are high in both

neuroticism and extraversion tend to exhibit quite different traits than someone who is low in both, or a combination of low and high. So people who are high on both extraversion and neuroticism tend to be touchy and aggressive, whereas people who are high on extraversion and low on neuroticism tend to be carefree and sociable. In his work in 1982 on Psychoticism, people scoring high on Psychoticism are described as: 'egocentric, aggressive, impersonal, cold, lacking in empathy, impulsive, lacking in concern for others and generally unconcerned about the rights and welfare of other people'. Like Cattell, Eysenck developed a questionnaire designed to measure his supertraits – the Eysenck Personality Questionnaire, or EPQ [12].

3. Survey of Literature

There are various studies focusing on the relationship between addiction and personality of individual. The purpose of this section is to review those studies that have yielded significant findings and have application to this paper.

Personality has been studied in a number of different ways. Some psychologists have developed broad theories to explain the origin and make-up of personality and other have focused only on one or two issues such as the influence of heredity or environment on personality. However, the aim of the present paper is to examine the relationship between addiction and personality. A number of researchers studied in the past to evaluate the relationship between addiction and personality. The first move towards finding the causal relationship between addiction and personality is the search for personality correlates of addiction. There are three major dimensions of personality, P (Psychoticism), E (Extraversion) and N (Neuroticism); these are uncorrelated with each other, and cover deferent areas of personality [14]. It is particularly the Psychoticism dimension that has been found to be correlated with addictive behaviour, and hence a few words may be useful in introducing it. The underlying theory states that there is a dimension of personality which relates to a person's liability to functional psychosis [13]. Psychoticism measures a dispositional variable; P has to be combined with stress to produce actual psychiatric symptoms. Below are summary of some studies done in literature to explore the relationship between addiction and personality.

Gossop [25] tried to investigate the personality differences between oral and intravenous drug addicts. He found that the both groups scored highly on the neuroticism and psychoticism dimensions, though oral users were found to have significantly higher scores on both of these scales. Eysenck [13] attempted to answer certain questions and criticisms concerning the concept of psychoticism (P) as a dimension of personality. He tried to address certain points like (1) Is it reasonable to talk about psychosis as a unitary concept, rather than about separate, unrelated disorders (schizophrenia, manic-depressive disorder)? (2) Is such a concept generalizable to form a continuum of 'psychoticism' with normality? (3) Is psychoticism related to psychopathy rather than to psychosis? (4) What methodology can be used to answer questions like those raised above to make answers more compelling than the suggestive naming of

psychometric factors? He found that an experimental approach must be combined with a psychometric one to obtain answers which go beyond the sterility often associated with a purely correlational approach, as suggested by Cronbach [9].

Teasdale [39] obtained the scores on the PEN Inventory (Psychoticism, Extraversion & Neuroticism Inventory) from four groups of drug-users. They were compared with the scores from a control group (group of apprentices who had completed the Inventory non-anonymously). They found that the all four groups were significantly higher on Psychoticism than the comparison groups. Three of the drug-using groups were significantly high on neuroticism, the fourth approaching significance in that direction. Two of the drug-using groups were significantly low on extraversion; the other two did not differ from a control population. They found significant differences on the Psychoticism, Extraversion & Neuroticism scores between the four drug-using groups. Gossop [24] tried to compare the personality of two hundred and twenty one addicts at three London treatment centres and three hundred ten normal subjects. Both groups were administered the Eysenck Personality Questionnaire. They found that a large number of items discriminated between the two groups. An 'Addiction Scale' was constructed from the 32 items on which the groups significantly differed most. Most of the A-Scale items were drawn from the Neuroticism Scale and identified feelings of anxiety and depression. Gossop [23] extended their previous study and compared personality of prisoners and drug addicts using Eysenck Personality Inventory. They found that Prisoners scored significantly higher than addicts on the Extraversion and Lie scales, and addicts scored higher on the Psychoticism and Neuroticism factors.

Spielberger [38] investigated the relationship between selected personality measures and the initiation and maintenance of smoking behavior. They selected nine hundred and fifty five students and subjects were administered The Eysenck Personality Questionnaire (EPQ), the State-Trait Personality Inventory (STPI) and a Smoking Behavior Questionnaire. They found that smokers had significantly higher scores than Nonsmokers on the EPQ Extraversion, Neuroticism and Psychoticism scales, and lower scores on the Lie Scale. They further concluded that the initiation and maintenance of smoking behavior are influenced by different personality factors. Feldman [18] tried to find out the personality of bulimic patients. Forty-five female patients attending for treatment for bulimia nervosa were selected for study and were administered the Eysenck Personality Questionnaire and an Impulsiveness Inventory. Addiction score, derived from items on the EPQ, was higher than the group of bulimic patients almost as high as drug addicts and certainly well above the normal range. Further, the bulimic scored higher than normals on N, P, Imp and Emp, but lower on E, Vent and Social Desirability. De Silva [10] investigated the personality difference between anorexia nervosa patients and bulimics. They selected fifty-nine female patients with anorexia nervosa and 122 bulimics. They were administered the Eysenck Personality Questionnaire (EPQ) an addiction score derived from the EPQ. The score of the bulimics was significantly higher than

the anorexics on Psychoticism and Neuroticism, and lower on Social Desirability. Bulimics also scored considerably higher on addiction, and tended to be more like drug addicts.

Blaszczynski [5] hypothesize that the pathological gambling is an addictive disorder and that pathological gamblers would show a profile similar to substance addicts. To test this, they replicated the Gossop [23] finding that the scale differentiated drug addicts from controls. They selected 60 pathological gamblers, 25 male and 26 female heroin addicts and 27 male and 25 female controls and a 32 item Addiction Scale derived from the Eysenck Personality Questionnaire was administered to them. Their results supported the hypothesis. Male addicts and gamblers had significantly higher Addiction, Neuroticism and Psychoticism scale scores than controls. Female addicts scored significantly higher on the Addiction and Psychoticism scales than their female counterparts.

Abu-Arab [1] investigated the personality of drug addicts by selecting three separate group of sample. Three groups of male, drug addicts consisted of 50 patients each. The three groups were: volunteer in-patients (VIP), volunteer out-patients (VOP) and involuntary in-patients (IIP) and all were administered The Eysenck Personality Questionnaire (EPQ). As per the finding of study, the IIP group scored significantly higher than the VIP and VOP groups on the Psychoticism scale, the Neuroticism scale and on the Lie scale. On the Extraversion scale the IIP scored significantly higher than the VOP. The only significant difference between the VIP and the VOP was on the Neuroticism scale in favour of the former. Addicts were also compared with the normative Saudi population and scored significantly higher than university students on the Psychoticism, Neuroticism and Lie scales and higher than secondary students on the Neuroticism and Lie scales. Further, Extraversion and the Lie scales correlated positively and other scales showed independence. Sigurdsson & Gudjonsson found that drug dependent prisoners scored higher on the Eysenck Personality Questionnaire psychoticism (P), neuroticism (N), and addiction scale, whereas no differences were found for extraversion [37].

Hurlburt [27] tried to find the personality of alcoholics. Their correlational study included two hundred thirty seven 237 alcoholics who had just completed a detoxification treatment. They were administered Eysenck Personality Questionnaire. They found that on the Eysenck Personality Questionnaire, the alcoholics were generally higher than normal samples on the dimensions of psychoticism (toughmindedness), neuroticism (emotionality), and the Lie scale (tendency to fake), but lower on extraversion. Only the P (toughmindedness) and (emotionality) scales were significantly related. The other scales showed independence. Mann [32] conducted a study on eighty adults (40 normal volunteers, 40 substance abusers matched for age and sex) about alexithymia and five factors of personality, measured on the Toronto Alexithymia Scale and the NEO Five Factor Inventory, respectively, and their relationship to recognition of affect. They found that the substance abusers scored the same as the normal volunteers on recognizing posed facial expressions, but higher on the alexithymia scale, while on

Neuroticism and Extraversion they had lower scores on Agreeableness. Francis [20] conducted a study using a scale of attitude towards substance use and the short form of the Junior Eysenck Personality Questionnaire on a sample of 20968, 13–15-year-old secondary school pupils. He found that rejection of substance use among this age group is associated with tender mindedness, introversion, stability and social conformity.

Semple [36] tried to study whether the Binocular Depth Inversion Illusion (BDII) could detect subtle cognitive impairment due to regular cannabis use. For this, they compared 10 regular cannabis users and 10 healthy controls – matched for community sources, age, sex, premorbid IQ, measures of executive functioning, memory, and personality. They found significantly higher BDII score for cannabis users for inverted images. There was no relationship between BDII scores for inverted images and time since last dose, suggesting that the measured impairment of BDII more closely reflected chronic than acute effects of regular cannabis use. Further, a positive relationship was found between EPQ-R-psychoticism and cannabis, tobacco, and alcohol use. However, no relationship was found between BDII scores and drug use other than cannabis or psychoticism. Sáiz [35] tried to determine the personality features and levels of sensation seeking in cocaine users. The World Health Organization questionnaire for drug consumption, the Eysenck Personality Questionnaire (EPQ) for adults and the Zuckerman Sensation Seeking Scale were used on the sample of 2,862 secondary school students. They found that the students who had used cocaine at some point during their lifetime scored significantly higher on the EPQ psychoticism subscale and reported higher levels of sensation seeking. Further they found that once individuals had used cocaine for the first time, they were likely to use it again. Compared to students who had never used cocaine (but who may have used other substances), cocaine users had a more extensive drug abuse history. They concluded that those who consume cocaine have a different psychological profile, characterized by high sensation seeking and high levels of psychoticism.

Varma [40] measured intelligence, memory and other cognitive functions using psychological tests between heavy cannabis users and control group. They took twenty six heavy cannabis users. They found that the cannabis users reacted slowly as compared with a control group, in perceptuo-motor tasks, but not to differ in intelligence or memory tests. The users suffered disability in personal, social and vocational areas and indicated higher psychoticism and neuroticism scores. Gossop [22] investigated the relationship between drug dependence and self-esteem on seventy one sample size using semantic differential forms for their self and ideal-self concepts. He found no differences between inpatients and outpatients, or between intravenous and oral groups. However, females who were dependent upon drugs were found to have lower self-esteem than males in terms of the evaluation factor. No such sex differences were found between all drug groups and the control group on the evaluation and potency factors. Results of the study showed considerable deficiencies of self-esteem among drug-dependent patients, and that female addicts are especially deficient. In terms of etiology, this association between drug dependence and low self-esteem may indicate that those individuals with a deficient self-image who are exposed to drugs may be at risk; this may carry implications also for alcohol and nicotine dependence.

4. Objective & Research Methodology

The fundamental aim of this study is to compare, examine and measure the personality of alcoholics & drug addicts with non-alcoholics & non-drug addicts. The statement of research problem is "Comparison of Personality of Alcoholics & Drug Addicts versus Non-Alcoholics & Non-Drug Addicts". Further, it is extremely important to clearly specify the objective of the study as it generally describe the researcher's goal which he/she want to attain in the study and inform the reader accordingly. The objectives of the present paper are: "To assess the personality among alcohol & drug addicts and non-alcoholics and non-drug addicts".

The following are the main hypotheses formulated in the present study.
- The alcoholics & drug addicts would score high on Neuroticism as compared to the non alcoholics & non drug addicts.
- The alcoholics & drug addicts would score low on Extraversion as compared to the non alcoholics & non drug addicts.
- The alcoholics & drug addicts would score high on Psychoticism as compared to the non alcoholics & non drug addicts.

In present paper, researcher has used the 2x2 Factorial Research Design. Factorial research designs are used in experiments where the effects of varying more than one factor are to be determined [30]. For the current paper, 50 (fifty) samples for each category i.e. drug addicts & alcoholics and non-alcoholics & non drug addicts has been considered (see table number 1). Sample selection criteria of the current paper are: only male, graduate & higher degree/education, working and from upper middle class. Sample has been collected from the various rehabilitation centers and hospitals with psychiatric setup along with de-addiction centre in Mumbai and Pune.

Table 1: Sample Categories

Sample		Substance (S)		
		Alcoholic (S1)	Drug (S2)	Total
Category (C)	Addicts (C1)	50	50	100
	Non-Addicts (C2)	50	50	100
	Total	100	100	200

While the prime focus of the current study is to estimate the significance level of variation in Personality between addicts

(alcoholics & drug) and non-addicts (alcoholics & drug), the analysis has also covered to find out whether there is any significant variation between types of substance use or not.

Below is the Operational Definition of Sample

1. Addicts:

Alcohol: Who was consuming excessive quantity of alcohol since last five years on a regular basis is considered as **"Alcohol Addict" (Alcoholics)**.

Drugs: Who was consuming excessive quantity of drugs (ploy-substance) since last five years on a regular basis is considered as **"Drug Addict"**.

2. Non-addicts:

Alcohol: Who have taken alcohol for some time in their life and left is considered as **"Non Alcoholics" (Non Alcohol Addicts).**

Drugs: Who have taken drugs (ploy-substance) for some time in their life and left is considered as **"Non Drug Addicts"**.

Following variables under the study in research

A) Independent Variable:-
1. Alcoholics and drugs addicts
2. Non alcoholics and non-drugs addicts

B) Dependent Variable:-
1. Personality Score

In the current study, Eysenck Personality Questionnaire - Revised (EPQ-R) has been used to measure personality of alcoholics & drug addicts and non-alcoholics & drug-addicts. Further, in appropriate descriptive statistics and 2x2 Factorial ANOVA technique and for the comparison, 't' test has been used for data analysis.

5. Analysis and Findings

As discussed earlier, the main objective of this study is to compare, examine and measure the personality of alcoholics & drug addicts with non-alcoholics & non-drug addicts. Personality has been measured by Eysenck Personality Questionnaires (EPQ) for both category i.e. addict and non-addict. The hypothesis is designed to test the variation between the personality of addict and non addict. Further, for illustrative purpose and to enhance the understanding, this paper has also tried to test whether there are any variations at substance level.

Hypothesis 1: The alcoholics & drug addicts would score high on Neuroticism as compared to the non alcoholics & non drug addicts.

Looking at table number 3, it can be concluded that there is significant main effect for category. But there is no significant main effect in substance and interaction of category and substance. Only category is significant while

substance and interaction is not significant. Further, looking at table number 2, the average score for addicts is higher than that of non-addicts. The average score of addicts is 8 while that of non-addicts is just 4. This means that there is significant variation between the Neuroticism score of addicts and non-addicts and Neuroticism score is higher in addicts than non-addicts as stated in our first hypothesis. Before confirming the results t-test has been also carried out

Table 2: Descriptive Statistics of Neuroticism Score of Alcoholics & Drug Addicts and Non Alcoholics & Non Drug Addicts

Dependent Variable: Neuroticism Score

CATEGORY	SUBSTANCE	Mean	Std. Deviation	Number
Addicts	Alcoholic	8	0.60	50
	Drug	8	0.91	50
	Total	8	0.77	100
Non-Addicts	Alcoholic	4	1.56	50
	Drug	4	1.13	50
	Total	4	1.37	100
Total	Alcoholic	6	2.38	100
	Drug	6	2.55	100
	Total	6	2.46	200

Table 3: Tests of Between-Subjects Effects: 2x2 Factorial ANOVA - Neuroticism

Dependent Variable: Neuroticism Score

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-statistics	Significance
Corrected Model	963.3a	3	321.1	262.28	0.00
Intercept	7344.7	1	7344.7	5999.19	0.00
Category	959.2	1	959.2	783.49	0.00
Substance	0.7	1	0.7	0.59	0.44
Category * Substance	3.4	1	3.4	2.76	0.10
Error	240.0	196	1.2		
Total	8548.0	200			
Corrected Total	1203.3	199			

a R Squared = 0.801 (Adjusted R Squared = 0.798)

The t-statistics value in table number 4 is 27.90, which explains that there is significant difference between mean value of addicts and non-addicts. The positive value of t-statistics signifies the direction of mean difference. It can be confirmed that Neuroticism score are higher in addicts than that of non-addicts.

Table 4: T-test Results for Neuroticism Score of Addicts and Non-Addicts

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Neuroticism Score	Equal variances assumed	22.491	0.000	27.90	198	0.000	4	0.16	4.07	4.69
	Equal variances not assumed			27.90	156	0.000	4	0.16	4.07	4.69

Hypothesis 2: The alcoholics & drug addicts would score low on Extraversion as compared to the non alcoholics & non drug addicts.

The Category row of the table number 6 is highly significant as F-statistics is very high (228.95). There is significant main effect for Category, while there is no significant main effect for Substance and Interaction. The significance level of category explains the significance level of variation in the Extraversion score of addicts and non-addicts.

Table 5: Descriptive Statistics of Extraversion Score of Alcoholics & Drug Addicts and Non Alcoholics & Non Drug Addicts

Dependent Variable: Extraversion Score

CATEGORY	SUBSTANCE	Mean	Std. Deviation	Number
Addicts	Alcoholic	4	1.03	50
	Drug	4	1.22	50
	Total	4	1.13	100
Non-Addicts	Alcoholic	6	0.99	50
	Drug	6	0.90	50
	Total	6	0.94	100
Total	Alcoholic	5	1.53	100
	Drug	5	1.52	100
	Total	5	1.53	200

However, like previous results, variation at substance level is not significant. When analysed descriptive statistics table (see table 5), the average Extraversion score for addicts is lower than that of non-addicts. The average extraversion score of addicts is 4 and for non-addicts, it is 6.

Table 6: Tests of Between-Subjects Effects: 2x2 Factorial ANOVA - Extraversion

Dependent Variable: Extraversion Score

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Statistics	Significance
Corrected Model	250.0	3	83.3	76.74	0.00
Intercept	5050.1	1	5050.1	4650.12	0.00
Category	248.6	1	248.6	228.95	0.00
Substance	1.1	1	1.1	1.04	0.31
Category * Substance	0.2	1	0.2	0.23	0.64
Error	212.9	196	1.1		
Total	5513.0	200			
Corrected Total	462.9	199			

a R Squared = 0.540 (Adjusted R Squared = 0.533)

Table 7: T-test Results for Extraversion Score of Addicts and Non-Addicts

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Extraversion Score	Equal variances assumed	0.250	0.618	-15.2	198	0.000	-2	0.15	-2.52	-1.94
	Equal variances not assumed			-15.2	192	0.000	-2	0.15	-2.52	-1.94

In order to substantiate the results and confirm the direction and significance level of variation, t-test has been used. The t-statistics value in the table number 7 is (-) 15.2 which is significant at 99% significance level. And the sign of t-statistics explains the direction of variation. This means that

Extraversion score in addicts are significantly lower than that of non-addicts. This proves our hypothesis that alcoholic & drug addicts score low on Extraversion as compared to non alcoholics and non drug-addicts.

Hypothesis 3: The alcoholics & drug addicts would score high on Psychoticism as compared to the non alcoholics & non drug addicts.

The average score on Psychoticism of addicts and non-addicts are presented in table 8, which shows the variation between the score. However, the significance level of variation has been presented in the subsequent table number 9.

The main effect of category is significant with F-Statistics value of 984.4 which is significant at 99% significance level. While main effect of substance is significant, the main effect of interaction is not significant. The average Psychoticism score of addicts is 9 and that of non-addicts is 5. The average psychoticism score of addicts is significantly higher than that of non-addicts. To confirm the results, t-test has been also used.

Table 8: Descriptive Statistics of Psychoticism Score of Alcoholics & Drug Addicts and Non Alcoholics & Non Drug Addicts

Dependent Variable: Psychoticism Score

CATEGORY	SUBSTANCE	Mean	Std. Deviation	Number
Addicts	Alcoholic	9	0.84	50
	Drug	9	1.24	50
	Total	9	1.06	100
Non-Addicts	Alcoholic	5	0.87	50
	Drug	5	0.85	50
	Total	5	0.87	100
Total	Alcoholic	7	2.30	100
	Drug	7	2.41	100
	Total	7	2.35	200

The t-statistics score in the table number 10 is 31.20 which are significant at 99% significance level. The sign of t-statistics signify the direction of variation. The t-test confirms that there is significant variation between Psychoticism score of addicts and non-addicts. From the above analysis, we can say that alcoholics and drug addicts score high on Psychoticism than non-alcoholics and non-drug addicts.

Table 9: Tests of Between-Subjects Effects: 2x2 Factorial ANOVA - Psychoticism

Dependent Variable: Psychoticism Score

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Statistics	Significance
Corrected Model	919.9a	3	306.6	329.55	0.00
Intercept	10281.8	1	10281.8	11050.83	0.00
Category	915.9	1	915.9	984.43	0.00
Substance	3.9	1	3.9	4.21	0.04
Category * Substance	0.0	1	0.0	0.02	0.88
Error	182.4	196	0.9		
Total	11384.0	200			
Corrected Total	1102.2	199			

a R Squared = 0.835 (Adjusted R Squared = 0.832)

Table 10: T-test Results for Psychoticism Score of Addicts and Non-Addicts

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower / Upper
Psychoticism Score	Equal variances assumed	1.76	0.187	31.20	198	0.000	4	0.14	4.01 / 4.55
	Equal variances not assumed			31.20	191	0.000	4	0.14	4.01 / 4.55

6. Discussion

The present section summarizes the results derived in the multiple data analysis conducted above. Analysis is done in order to prove the three hypothesis of the study. It tried to find the personality of both categories i.e. alcoholics and drug addicts and non-alcoholics & non-drug addicts. For the current paper, 50 (fifty) samples for each category i.e. drug addicts & alcoholics and non-alcoholics & drug addicts have

been considered. So the total of 200 samples is considered for the paper. The samples have been collected from various rehabilitation centers and hospitals with psychiatric setup along with de-addiction centre in Mumbai and Pune.

To measure the personality, Eysenck Personality Questionnaire has been used. The test results of the analysis supports for all alternative hypotheses. Extraversion score in non alcoholics and non drug addicts is higher as compared to alcoholics and drug addicts. Further, the average Psychoticism and Neuroticism Score found to be low in non alcoholics and non drug addicts as compared to alcoholics and drug addicts.

The findings of this research are in line with the findings of multiple studies conducted in the literature. We have already discussed on the third chapter about some studies similar to current study and findings are in sync with current findings. As Psychoticism & Neuroticism is found to be higher in addict, it can be concluded that they are solitary, troublesome, cruel, lacking in feeling and empathy, hostile to others sensation seeking and liking odd and unusual things, his emotional over-responsiveness and his liability to neurotic breakdown under stress. Further, extraversion score is found to be higher in non addict as compared to addict, which means non addicts are outspoken out going, uninhibited, sociable proclivities of a person. It can be summaries that personality development is better in non addict than that of addict.

7. Conclusion

Like various studies in the literature, the results of current study found that Psychoticism and Neuroticism are higher in addicts as compared to non-addicts. Further, Extraversion found to be high in non-addicts as compared to addict. No significant variation seen at the substance level when compared with alcohol and drugs. It appears that alcohol and drug more or less damages the personality at same pace. This can be helpful to mental health professional (psychiatrist and psychotherapist) and organization (rehabilitation centers & psychiatric setups). It is expected to help mental health professional to design a treatment procedure for alcohol and drug addicts. It will include medication and psychotherapy (Group Therapy and Individual Counseling, Family Therapy, Group Family Therapy and Psycho-Education).

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