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A study for identifying the knowledge, attitude and perception among final year bachelor degree students of polytechnic college-Raichur, regarding pattern of use of psychoactive substances, health consequences and available interventions for management of various psychoactive substance use

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Abstract

Objectives

1. To assess the knowledge and attitude regarding use of psychoactive substance
2. To know the awareness regarding the health consequences of psychoactive substance
3. To know the extent of awareness regarding the pharmacological interventions available for management of psychoactive substance

Material and methods: A cross sectional observational study by presenting pretested semi structured questionnaire to final year HKE-Polytechnic students in Raichur. The opinion of the students were compiled and analyzed in an XL sheet, and results were analyzed.

Results: Majority of students could identify only tobacco and alcohol as psychoactive substance, and they did not have knowledge about other psychoactive substance. Most of the students were against using psychoactive substance, and they felt that psychoactive substance have little beneficial effect. Few students had friends who were using tobacco and alcohol. Majority of students were unaware of short term and long term complications of psychoactive substance use. Large number of students expressed that smoking would cause cancer, and that alcohol would damage liver and might cause heart attack. Student knew that nicotine gums were available for smoking cessation. For alcohol addiction, few felt that psychiatry opinion has to be obtained. Some expressed that alcohol addiction can be controlled by will power.

Conclusion: Most students could identify the commonest psychoactive substances mainly the alcohol and tobacco. However their awareness regarding health consequences was not complete. The knowledge regarding the de-addiction measures were optimal.

Keywords: Psychoactive substance, health consequences, de-addiction measures, polytechnic final year students

Introduction

Any substance which changes the brain function and brings about alterations in mood, perception, behavior and consciousness is called a psychoactive substance. Most of the times these substances are used for recreational purpose, however few of them have therapeutic utility and they are anesthetics, analgesics, sedatives and hypnotic drugs. These substances might produce rewarding and positive reinforcing behavior. The long term use of these substances may lead to development of physical and psychological dependence. The rehabilitation of people using substance includes psychotherapy, pharmacological and non pharmacological interventions.

There has been constant rise in deaths related to use of psychoactive substances from 51000 in 1990 to 127000 in 2013, the deaths due to use of opioids accounts for most of the cases ^[1]. The psychoactive substance produces several short term and long term changes in the body systems. In most cases the people are not aware of these consequences. Hence there is a need to identify the level of awareness among people regarding the health consequences of using these psychoactive substances.

Most of the people who use psychoactive substance do not take help of professional experts

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due to varied factors. Hence we wish to take up the present study to identify the impacting factors, knowledge and attitude among various professional students regarding the use of psychoactive substance, by educating about psychoactive substances. Moreover the appropriate interventions vary among various professional students based on the knowledge about psychoactive substance. Hence we intend to take this study among various professional students to provide appropriate educational intervention.

Substance use disorder is also known as drug use disorder (drug abuse), is a condition in which the use of one or more substances leads to a clinically significant impairment or distress. Substance abuse may lead to addiction or substance dependence. Medically, physiologic dependence requires the development of tolerance leading to withdrawal symptoms. Both abuse and dependence are distinct from addiction which involves a compulsion to continue using the substance despite the negative consequences, and may or may not involve chemical dependency. Dependence almost always implies abuse, but abuse frequently occurs without dependence, particularly when an individual first begins to abuse a substance. Dependence involves physiological processes while substance abuse reflects a complex interaction between the individual, the abused substance and society. Physical dependence on a substance is defined by the appearance of characteristic withdrawal symptoms when the substance is suddenly discontinued. Opiates, benzodiazepines, barbiturates, alcohol and nicotine induce physical dependence. So, while physical dependency can be a major factor in the psychopharmacology of addiction and most often becomes a primary motivator in the continuation of an addiction, the initial primary attribution of an addictive substance is usually its ability to induce pleasure and euphoric kick, although with continued use the goal is not so much to induce pleasure as it is to relieve the anxiety caused by the absence of a given addictive substance, causing it to become reinforcing to use. Present outdated conceptualization of the problem, psychological dependency leads to psychological withdrawal symptoms (such as cravings, irritability, insomnia, depression, anorexia, behavioral abnormalities etc.). Addiction and rewarding behavior theoretically related to biamines, and is believed to be strongly associated with the dopaminergic neurons of the brain's reward system (as in the case of cocaine and amphetamines). Commonly addiction in lay man language is attributed to emotional, social, or psychological dysfunctions.

Interventions for smoking cessation

Nicotine replacement therapy, drugs (bupropion and nortriptyline), nicotinic receptor agonists (varenicline and cytisine), cannabinoid antagonists (rimonabant), clonidine and opioid antagonists. Nicotine replacement therapy, bupropion, and varenicline have helped in quitting smoking. Combination of Nicotine replacement therapy and varenicline are also effective in quitting smoking ^[2].

Interventions for alcohol addiction

Naltrexone

Naltrexone is antagonist for opioid receptors and blocks the rewarding effects of alcohol and reduces the craving for alcohol. It also has reduced relapse. Vivitrol injection is FDA-approved for treating alcoholism.

Acamprosate

Acamprosate a GABA and glutamate modulator reduces symptoms alcohol withdrawal, like insomnia, anxiety, restlessness, and dysphoria. Acamprosate has helped drinkers to maintain abstinence upto months.

Disulfiram

Disulfiram interferes with metabolism of alcohol, and increases levels of acetaldehyde, leading to development of flushing, nausea, and palpitations if a person drinks alcohol. However its compliance is poor.

Topiramate

Topiramate increases GABA neurotransmission and reduces glutamate neurotransmission. But it has not received FDA approval for treating alcohol addiction; it is used off-label for this purpose.

Combined With Behavioral Treatment

A number of behavioral treatments are effective in alcohol addiction;

Interventions for opioid addiction

Methadone

Methadone is long acting synthetic opioid receptor agonist, and prevents development of withdrawal symptoms and hence reduces craving in opioid-addicted individuals. It also blocks the effects of illicit opioids ^[3,4].

Combined with behavioral treatment: Studies have shown that methadone maintenance is more effective along with individual and/or group counseling.

Buprenorphine

Buprenorphine is synthetic opioid drug which acts as a partial agonist at opioid receptors and does not produce euphoria and sedation caused by heroin or other opioids and is able to reduce or eliminate withdrawal symptoms.

Buprenorphine treatment for detoxification and/or maintenance can be provided in office-based settings by qualified physicians who have received a waiver from the Drug Enforcement Administration (DEA), allowing them to prescribe it. The availability of office-based treatment for opioid addiction is a cost-effective approach that increases the reach of treatment and the options available to patients ^[5-8].

Naltrexone

Naltrexone is synthetic opioid antagonist prevents their euphoric and pleasurable effects. It is used for several years to reverse opioid overdose and is approved for treating opioid addiction. Naltrexone as a treatment for opioid addiction is usually prescribed in outpatient medical settings, although the treatment should begin after medical detoxification in a residential setting in order to prevent withdrawal symptoms.

Many experienced clinicians feel that naltrexone is best suited for highly motivated, recently detoxified patients who desire total abstinence because of external circumstances. Vivitrol is a long-acting injectable formulation of naltrexone which needs to be delivered once in a month. It has high compliance and good alternative for patients who do not wish to be treated with agonist/partial agonist medications ^[9,10].

Material and Methods

The study was approved by Institutional ethics committee.

The study was initiated in the HKE-Polytechnic College, Raichur after obtaining permission of the principal of this college. For our study 53 students volunteered to participate by answering the questionnaire. Our study is a cross sectional observational study and data is obtained by presenting pretested semi structured questionnaire. The opinion of the students was compiled in an XL sheet, and results were analyzed. All the quantitative data are expressed as percentage, and qualitative data is expressed by providing the range of the parameter.

Results
Social demographics

Age range: 16 - 22
Sex: Male (39), Female (2), No answer (12)
Pattern of lifestyle incorporated: Yoga-(3 students), Gym-(4 students), Dancing-(1 students), Swimming-(5 students).

2. Family details

	Education range	Occupation range	Income range
Father	Illiterate to MBA	Farmer to Business	1300 to 30000
Mother	Illiterate To BEd	House wife to business	Zero to 24500

Table 1: Identification of psychoactive substance among students

Substance	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage (%)
Codeine	1	1.88	21	39.62	31	58.49
Ganja/Bhang/Marijuana/Cannabis	5	9.43	19	35.84	29	54.71
Alcohol	25	47.16	16	30.18	12	22.64
Heroin	6	11.32	16	30.18	31	58.49
Tobacco(smoking/chewable/snuff)	25	47.16	16	30.18	12	22.64
Diazepam	1	1.88	18	33.96	34	64.15
Morphine	2	3.77	19	35.84	32	60.37
Others (please specify):	0	0	0	0	53	100

Table 2: Students opinion towards using psychoactive substance

Questions	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage (%)
Do you accept the use of psychoactive substances?	6	11.32	34	64.15	13	24.52
Do you think the use of psychoactive substances can slow down progress activity at school?	28	52.83	10	18.86	15	28.30
Will you advice your friend to abuse psychoactive substances?	9	16.98	26	49.05	18	33.96
Is there any possibility of drug addiction from continued use?	24	45.28	13	24.52	16	30.18
Is it possible for a person to protect himself or herself from psychoactive substances abuse by will power?	25	47.16	9	16.98	19	35.84
Are there any potential benefits associated with psychoactive substances abuse?	6	11.32	30	56.60	17	32.07
Is it easily available of drugs for abuse?	4	7.54	30	56.60	19	35.84

Table 3: Details pertaining to friends of students

Questions	Variable category	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage (%)
Do you have a friend who is abusing the psychoactive substances?		5	9.43	34	64.15	14	26.41
Would you prefer a friend who is abusing psychoactive substances?		5	9.43	31	58.49	17	32.07
Type of a psychoactive substance abused by their friends	Alcohol	4	7.54	14	26.41	35	66.03
	Solvents/glue or petrol	0	0	15	28.30	38	71.69
	Bhangi/Marijuana/Cannabis	0	0	15	28.30	38	71.69
	Codeine	1	1.88	15	28.30	37	69.81
	Tobacco/Cigarette	4	7.54	14	26.41	35	66.03
	Diazepam	0	0	15	28.30	38	71.69
	Heroin	1	1.88	15	28.30	37	69.81
Others (please specify)	0	0	5	9.43	48	90.56	

Table 4: Students opinion towards complications of addictive drugs (e.g., opium, heroin, morphine...)

Complications of addictive drugs	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage (%)
Miosis (constricted pupil of eye)	1	1.88	21	39.62	31	58.49
Dry mouth	3	5.66	19	35.84	31	58.49
Constipation	2	3.77	20	37.73	31	58.49
Mydriasis (dilatation of pupil)	1	1.88	20	37.73	32	60.37
Kidney damage and failure	4	7.54	19	35.84	30	56.60
Diarrhea	2	3.77	20	37.73	31	58.49
Brain damage	2	3.77	20	37.73	31	58.49
False perception, Seeing unreal images that others can't see	1	1.88	20	37.73	32	60.37
False perception, Hearing unreal sounds that others can't hear	2	3.77	19	35.84	32	60.37
Any others: (Please write it down)	Nil					

Table 5: Students opinion towards complications of stimulant drugs (e.g., ecstasy, hashish, ganja)

Complications of stimulant drugs	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage(%)
Miosis (constricted pupil of eye)	1	1.88	16	30.18	36	67.92
Dry mouth	3	5.66	15	28.30	35	66.03
Constipation	3	5.66	15	28.30	35	66.03
Mydriasis (dilatation of pupil)	1	1.88	15	28.30	37	69.81
Kidney damage and failure	3	5.66	15	28.30	35	66.03
Diarrhea	4	7.54	14	26.41	35	66.03
Brain damage	4	7.54	14	26.41	35	66.03
False perception, Seeing unreal images that others can't see	3	5.66	14	26.41	36	67.92
False perception, Hearing unreal sounds that others can't hear	2	3.77	14	26.41	37	69.81
Any others: (Please write it down)	Nil					

Table 6: Students opinion towards short-term complications of drug abuse

Short-term complications	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage (%)
Anxiety (Mental tension) and depression	6	11.32	13	24.52	34	64.15
Euphoria (short term wellness) and happiness	3	5.66	14	26.41	36	67.92
Improved memory and learning ability	3	5.66	14	26.41	36	67.92
Aggressiveness	3	5.660	13	24.52	37	69.81
Raised self-confidence	2	3.77	14	26.41	37	69.81
Pessimism (self-defending)	2	3.77	14	26.41	37	69.81
Personality disorder	4	7.54	14	26.41	35	66.03
Sleep disorder	1	1.88	13	24.52	39	73.58
Forgetfulness	2	3.77	13	24.52	38	71.69
Dependence to drugs	2	3.77	12	22.64	39	73.58
Eating disorders	3	5.66	11	20.75	39	73.58
Voiding problems (Urine and faeces)	2	3.77	12	22.64	39	73.58
Any Others (please write down)	Nil					

Table 7: Students opinion towards long-term complications of drug use

Long-term complications	Number of students saying YES	Percentage (%)	Number of students saying NO	Percentage (%)	Number of students who did not answer	Percentage (%)
Mental disorientation	2	3.77	13	24.52	38	71.69
Schizophrenia/Mania	2	3.77	12	22.64	39	73.58
Cardiac (heart failure) problems	2	3.77	12	22.64	39	73.58
Jaundice	1	1.88	13	24.52	39	73.58
Gangrene	3	5.66	11	20.75	39	73.58
COPD (Chronic pulmonary disease-lung disease)	3	5.66	11	20.75	39	73.58
Cancer	4	7.54	11	20.75	38	71.69
Gastritis	1	1.88	12	22.64	39	73.58
Any Others (please write down)	Nil					

Table 8: The answers to descriptive question on complications of smoking were as follows:

Complications	No of students giving this response	percentage
Cancer (all types)	45	84.90
Heart attack and related illness	26	49.05
Respiratory disorders	25	47.16

Table 9: The answers to descriptive question on complications of alcohol were as follows

Complications	No of students giving this response	percentage
Liver disorders (including jaundice)	27	50.94
Heart attack and related illness	15	28.30
Gastritis	3	5.66

Table 10: The answers to descriptive question on smoking cessation methods

Smoking cessation method	No of students giving this response	percentage
Nicotine gums	28	52.83

Table 11: The answers to descriptive question on alcohol cessation methods

Smoking cessation method	No of students giving this response	percentage
Psychiatry opinion	5	9.43
Will power	1	1.88

Table 12: Details about Students using psychoactive substance

Nature of Psychoactive substance	No of students	percentage
Smoking	2	3.77
Alcohol	1	1.88

Discussion

The results of the study are not comparable with other studies, because the variable factors are not matching pertaining to demographic distribution and educational level of students.

Psychoactive substance identification: Nearly half of the students could identify tobacco and alcohol as psychoactive substance. But only up to 10% of students could identify other psychoactive substances.

Opinion towards using psychoactive substance:

Very few students felt that psychoactive substance use as acceptable. Most of them felt that psychoactive substance use would retard their performance in school, and that majority of them said that they would not advise others to use psychoactive substance. Nearly half of students felt that continued use of psychoactive substance would lead to addiction, and they said that with strong will power one can control use of psychoactive substance.

Details pertaining to friends of students

Only 10% of students had friends, who were using psychoactive substance. The most common substances used by students were alcohol and tobacco. However there were single incidence, where their friends were using codeine and heroine.

Which of the following are the complications of addictive drugs (e.g., opium, heroin, morphine...) and stimulants (e.g., ecstasy, hashish, ganja)?

Majority of the students could not identify the complications of addictive drugs.

Which of the following are the short-term complications of drug abuse?

Very few felt that anxiety as short term complications. There were hardly one or two students who could recognise other short term complications of drug use.

Which of the following are the long-term complications of drug use?

Very few felt that cancer as short term complications. There were hardly one or two students who could recognise other long term complications of drug use.

The answers to descriptive question on complications of smoking were as follows:

Nearly ninety percent of students felt that smoking would cause cancer. Half of the students were of opinion that smoking would cause heart attack and related illness, and respiratory disorders.

The answers to descriptive question on complications of alcohol were as follows:

Nearly 50% of students felt that alcohol would cause Liver disorders. Up to 30% of the students were of opinion that alcohol would cause heart attack and related illness. Very few felt that alcoholism would cause gastritis.

The answers to descriptive question on smoking cessation methods

Half of the students opined that nicotine gums can be used to abstain from smoking.

The answers to descriptive question on alcohol cessation methods

Only five students opined that alcoholism need psychiatry consultation and only one student felt that with will power we can control alcoholism.

Details about people using psychoactive substance: Three students volunteered that they were using psychoactive substance. Two among these were using nicotine in various forms. They have not provided other details regarding nicotine use details. Only one student was using alcohol, and he expressed that he was initially offered by friends as social norms. Alcohol use has decreased his performance at school, he had few conflicts with others. He experiences headache and occasional chest pain.

Conclusion

Most students could identify the commonest psychoactive substances mainly the alcohol and tobacco. However their awareness regarding health consequences was not complete. The knowledge regarding the de-addiction measures were optimal. We feel educating the students regarding the areas where they lack adequate knowledge would be beneficial to them.

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