

Substance Abuse and Dependence in a Public Hospital: Hawaii

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Abstract

A pilot study of the prevalence of substance abuse disorders was completed on the only open unit of the only state psychiatric hospital in Hawaii to address the following questions: 1) What were the substances of abuse and dependence in this population? 2) What was the pattern of abuse and/or dependence in this sample? 3) How did these patterns compare to the patterns observed in the published literature? 4) What was the predominant Stage of Change of these patients? 5) Was the staff perception that these patients were in denial an accurate perception? Methodology: All patients admitted to the unit between 1st June and 31st August 1999 comprised the sample, N=35. Each patient was assigned diagnoses based upon the DSM-IV criteria and level of change was assessed. Results: The demographic characteristics of the sample follow: 60% were ages 20-39, 89% were male; 92% were currently single, 71% had an education of high school or college, and 66% had a diagnosis of schizophrenia or schizoaffective disorder. The racial composition reflected the diversity of Hawaii. Although 20% of the sample had no substance abuse problem, 66% of the remaining patients were multiply dependent upon alcohol, cannabis, crystal methamphetamine, or cocaine with 48% of these patients in the Precontemplative Stage of Change (denial). The patterns of multiple substances of abuse and dependence were higher than in the reported literature. Further studies are needed.

Introduction

The recent "Mental Health: A Report of the Surgeon General" reported that "in one year 3% of the adult United States population had both a mental disorder and an addictive disorder and 6% had addictive disorders alone."¹ Studies of mentally ill persons in the United States have demonstrated that more than 70% of persons with schizophrenia have high rates of co-occurring nicotine dependence.^{2,3} Among alcohol and drug abusers in treatment 80% are smokers of nicotine.⁴ As many as 50% of schizophrenic patients in treatment have been identified as having alcohol or illicit drug dependence.^{5,6} Investigators have suggested that the substance use among schizophrenic patients may moderate the side effects of traditional antipsychotic medication, specifically akathisia and extrapyramidal side effects, and/or moderate auditory hallucinations

and paranoid delusions.⁷ Thus, patients with mental illness, particularly schizophrenia, are at an increased risk of dependence upon nicotine, alcohol, and/or other illicit substances, i.e., cannabis or cocaine.⁸

In comparison to many mainland cities, the state of Hawaii is more culturally diverse. No single racial group forms the majority of its population, which is comprised of Asian (34.2%), Caucasian (22.1%), Native Hawaiians and Pacific Islanders (21.4%), Mixed not including part Hawaiian (21.4%), and Others (African American and Puerto Rican) (1.5%).⁹ The island of Oahu has 75% of Hawaii's population and the only public psychiatric hospital for the state. In order to establish the pattern of substance abuse and dependence among patients in this setting, a pilot study was completed to address the following questions. First, what substances are used in this population? Second, what is the pattern of abuse and dependence? Third, how do these findings compare to the patterns observed in the published literature? Fourth, what is the predominant stage of change of our patients? And, fifth, would a treatment initiative focused on the culture of the patient be helpful?

Methodology

All 36 patients on the only open, in-patient unit of the Hawaii State Hospital comprised the study sample. As the only open, psychosocial (psychiatric) rehabilitation unit, it was anticipated that patients would be actively working toward their discharge through active participation in their treatment program. The psychiatric rehabilitation program included specific groups to address the skills needed by the patient to be successful in the patient's discharge environment based upon the patient's strengths and weakness identified through a detailed functional assessment.^{10,11} The groups included psychoeducational groups on mental illness and psychoactive medication, basic living skills training, social skills training, prevocational assessment, and community reintegration activities. Patients with substance abuse problems participated in Substance Abuse Education groups as well as Alcoholics Anonymous and Narcotics Anonymous groups.

These data were obtained as part of a Quality Assurance Survey based upon chart review. The Quality Assurance Survey was implemented to provide data about the perception that a number of substance abuse patients, though in treatment on a psychiatric rehabilitation unit, were not actively working in their substance abuse treatment programs. A chart abstraction form was utilized to record the demographic data, Axis I diagnoses, specific substances of abuse and substances of dependence based upon Axis I diagnoses, the Psychiatric Evaluation, the Addiction Psychiatry Evaluation, and the identified stage of recovery documented in the Addiction Psychiatry Evaluation.

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The "Changing for Good"¹² six-stage program (see Table 1 and Figure 1) provides a conceptual model for understanding the progressive stages of change from dependence to living a "clean and sober" life style. It serves both diagnostic and heuristic purposes.

Results

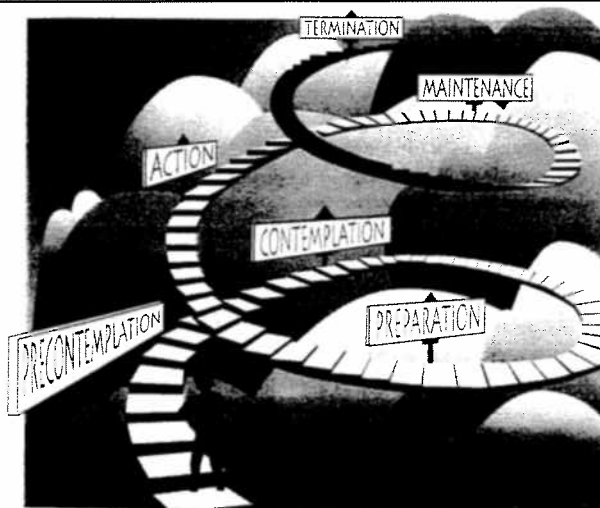
All patients on the open HSH unit between 1st of June to the 31st of August 1999 comprised the sample (N=35). Some 17% of the sample (N=6) were Asian (Filipino or Japanese), 26% (N=9) were Caucasian, 26% (N=9) were of Mixed Race (2 or more racial groups, i.e. Chinese, Caucasian), 23% (N=8) were Hawaiian or Pacific Islander (Samoan, Tongan), and 8% (N=3) were Other (e.g., African American, Portuguese, Puerto Rican). Ninety-four percent (N=33) of the sample were men. One of the 2 women was of Mixed heritage age 30-39 and the second woman was of Other heritage and age 40-49. Seventeen percent (N=6) of the sample were aged 20-29, 43% (N=15) were aged 30-39, 26% (N=9) were aged 40-49, and 14% (N=5) were aged 50-59. Sixty-nine percent (N=24) were single, 23% (N=8) were separated or divorced, and 8% (N=3) were married. Some 9% (N=3) of the sample had completed a Bachelor or Master degree, 42% (N=15) had attended community college, and 20% (N=7) had completed high school or earned a GED diploma. Some 20% (N=7) of the sample had completed between the 7th to the 11th grade and 9% (N=3) were functionally illiterate or had attended ungraded special education classes. Diagnosis by race is shown in Table 2. Twenty percent (N=7) of the sample had no substance abuse or dependence diagnoses. Fourteen percent (N=5) of the sample abused 2 or more substances (e.g., alcohol and marijuana); but did not meet dependence criteria. Sixty-six percent (N=23) of the sample was both dependent upon and abusing substances. Of these patients 43% (10 of 23) were dependent on 2 or more substances (e.g., crystal methamphetamine, marijuana, and alcohol) and 52% (12 of 23) were abusing 2 or more substances. Table 3 gives the number of patients who were dependent upon various substances in this sample. The majority of patients with an Axis I diagnosis of a non-substance disorder and an Axis I substance disorder, the dually diagnosed, were mainly Schizophrenic (Table 4). Table 5 presents the percentage of patients and their Stage of Change. The majority of substance abusing and/or dependent patients were in the Precontemplative Stage.

Discussion

The racial composition of our sample reflected the cultural diversity of Hawaii. In contrast to the cocaine epidemic of the center cities of the mainland, (smokable) crystal methamphetamine was the amphetamine-like substance of concern. The epidemic of crystal methamphetamine abuse had been identified as a major public health problem in Hawaii for several years.¹³

In contrast to the Baltimore sample of dually diagnosed, chronically mentally ill patients,¹⁴ these patients were better educated with 66% (23 of 35) patients having a high school education or beyond. The pattern of abuse and dependence in this sample was more complex than found in a sample of chronically mentally ill patients with dual diagnosis.¹⁴ Dually diagnosed patients with a diagnosis of a psychotic disorder were found to be dependent on alcohol, cannabis, crystal methamphetamine, and nicotine or to be dependent on alcohol and nicotine and to be abusing cannabis and crystal methamphetamine. In this study most dually diagnosed patients had one Axis I psychotic disorder and four Axis I substance use disorders.

Figure 1.— The Spiral of Change



Prochaska JO, Norcross JC, DiClemente CC. Changing for Good. New York: Avon Books, Inc. 1994, p 49

Table 1.—Stages of Change

- PRECONTEMPLATION
 - There is no intention of changing behavior in the foreseeable future
- CONTEMPLATION
 - The person acknowledges that he/she has a problem, but has not made a commitment to action. Plans to act, perhaps in 6 months.
- PREPARATION
 - The person is committed to action and may have made small behavioral changes. Plans to take action in the next month.
- ACTION
 - The person modifies behavior, experiences, or the environment to overcome the problem. (Altering addictive behavior for between one day to six months is evidence of being in the Action Stage).
- MAINTENANCE
 - The person consolidates the gains attained in the Action and other Stages and actively focuses on strategies to prevent lapses and relapses
- TERMINATION
 - The person no longer feels tempted or threatened by the former addiction or problem and has complete confidence that he/she can cope without fear of relapse

Prochaska JO, Norcross JC, DiClemente CC. Changing for Good. New York: Avon Books, Inc. 1994, p 49

Table 2.—Diagnosis by Race

Diagnosis	Asian	Caucasian	NH/PI	Mixed	Other	Total	
	N	N	N	N	N	N	%
Schizophrenia, Schizoaffective Disorder	5	6	6	4	2	23	66
Bipolar Disorder	-	3	-	-	-	3	9
Amphetamine Psychosis	-	-	2	4	-	6	17
Other	1	-	-	1	1	3	9
Totals	6	9	8	9	3	35	100
% of Total Sample	17%	26%	23%	26%	8%		100%

Table 3.—Pattern of Dependence by Substance Abusers

Dependence	Alcohol*	14 Patients
Dependence	Crystal Methamphetamine*	12 Patients
Dependence	Cocaine*	10 Patients
Dependence	Cannabis (Marijuana)*	9 Patients

*= Many patients had more than one dependence

Table 4.—Dual Diagnosis: Mental Illness of Substance Abuser or Substance Dependent Patients

Mental Illness	Male N	Male %	Female N	Female %	Total N	Total N
Schizophrenia,	5	46	-	-	5	42
Schizoaffective Disorder	2	18	-	-	2	17
Bulimia Nervosa	1	8	-	-	1	8
Psychosis Nos	3	27	-	-	3	25
Paraphilia	1	8	-	-	1	8
Totals	12	100	-	-	12	100

Table 5.— Stage of Change of the Patients Studied

Stage of Change*	N	%
No substance Abuse	7	20
Precontemplative	17	49
Contemplative Stage	2	6
Preparatory Stage	4	11
Action Stage	2	6
Not Evaluated/Refused	3	9
Totals	35	100

*Source: Prochaska JO, Norcross JC, DiClemente CC. Changing for Good. New York: Avon Books, Inc. 1994, pp 36-50

Comparing these findings with the published literature, the rate of co-occurring substance abuses and dependence (drug use disorders) (N=12, 34%) were slightly higher than published rates for patients with psychotic illness and one or two substances of dependence. The Epidemiologic Catchment Area (ECA) Survey of community residents reported that 47% of patients with schizophrenia had a substance abuse disorder in their lifetime, 34% had alcohol disorder diagnosis in their lifetime, and 28% has a diagnosis of drug use disorder in their lifetime.^{5,8} In contrast to prior studies a pattern of multiple dependence (2 to 4 substances) or multiple abuse of 2 to 3 substances was observed. Some 66% of the 80% of patients (N=28) who were substance abusers were multiply dependent and in the Precontemplative stage of change (denial). The rates of nicotine dependence in this sample were consistent with prior studies.^{2,3}

Although these investigators initially questioned the need for a culture specific treatment program, the data in the charts revealed that the level of readiness for change was Precontemplative and characterized by denial in almost all of the patients with substance abuse disorders. This resulted in a failure of these patients to engage in therapy so that the question of cultural appropriateness did not even arise. A partial explanation for this pattern of multiple dependences and/or multiple substances of abuse may be a tolerance for the use of cannabis in some of the islands that comprise the state of Hawaii. It was not unusual for some patients to report that their parents' "cash crop" was cannabis, which they gave to the patient in childhood. Several patients, also, reported the early use of alcohol with parental encouragement. The majority of the Caucasian patients were not born in Hawaii, but emigrated from the mainland. Patterns of substance abuse begun on the mainland were continued in Hawaii and for some patients escalated in amount and multiplied in type of substances used.

The clinical impression of the treatment team that the patients with substance abuse/dependence were in denial was confirmed. Only 23% (N=8) of the patients were in Contemplative, Preparatory, or Action phases of change readiness. Although the remainder were attending substance abuse education classes and AA/NA meetings, they denied that they had substance abuse problems and a few stated that they anticipated drinking alcohol or using cannabis upon discharge.

This pilot study facilitated the identification of the specific type of intervention needed in our setting. In addition to the Substance Abuse Education groups, the Addiction Psychiatry Service initiated a new series of groups based upon the "Changing for Good" six-stage model. Beginning with a group for all patients in the Precontemplative Stage, patients remained in this group until they reached the Contemplative Stage. Then, they were advanced to the Contemplation Stage group and so on until the sixth stage. The Addiction Psychiatry Service modified the definition of the sixth stage, the Termination Stage, to a Relapse Stage that fit better with the model of addiction as a chronic, progressive, relapsing disorders, similar to rheumatoid arthritis or diabetes mellitus.¹⁵ This proved compatible with motivational enhancement approaches increasingly favored in this population with psychotic Comorbidity.¹⁶

Although establishing a treatment program directed to the cultural concerns of our patients was considered, the psychosocial rehabilitation program contained two group experiences which described Native Hawaiian and Pacific Islander culture, relationships, dietary preferences, and religious beliefs as well as contrasting other Asian cultures with Native Hawaiian culture. The development of a Precontemplative Group was identified as the optimum utilization of resources to address the significant resistance to treatment found in patients with substance abuse problems in this study.

The prevalence of multiple substances of dependence and abuse in the same patient in this Hawaiian in-patient population was somewhat surprising for those clinicians whose primary practice was not substance abuse disorders. Although the co-occurrence of substance abuse and mental disorders has been well established from the 1980s, the extent of alcohol, marijuana and crystal methamphetamine dependencies with episodic cocaine abuse in a patient with schizophrenia or schizoaffective disorder was unanticipated. The need to provide in-service staff education to facilitate better

treatment interventions with these patients was established by the Addictive Psychiatry Service. The involvement of treatment team members as co-leaders of the "Changing for Good" groups provided direct clinical experience with the techniques of interventions targeted to the specific state of readiness of the patient to address the patient's pattern of substance dependence and abuse. We look forward to presenting the outcome of a longitudinal study involving this type of intervention with the total hospital population.

References

1. Substance Abuse and Mental Health Services Administration, National Institute of Mental Health: Fundamentals of mental health and mental illness, in *Mental Health: A Report of the Surgeon General*. Washington, DC, Department of Health and Human Services, 2000 pp 80-104
2. Dixon L, Haas G, Weiden PJ, et al: Drug abuse in schizophrenic patients: clinical correlates and reasons for use. *American Journal of Psychiatry* 148:224-230, 1991
3. Ziedonis DM, Kosten TR, Glazer WM, et al: Nicotine dependence and schizophrenia. *Hospital and Community Psychiatry* 45:204-206, 1994
4. Ockene JK, Kristeller JL, Donnelly G: Tobacco, in *The American Psychiatric Press Textbook of Substance Abuse Treatment - Second Edition* edited by M Galanter and HD Kleber. Washington DC, American Psychiatric Press, 1999 pp 215-237
5. Reiger DA, Farmer ME, Rae DS, et al: Comorbidity of mental disorders with alcohol, and other drug abuse: results from the Epidemiologic Catchment Area (ECA) Study. *Journal of the American Medical Association* 264:2511-2518, 1990
6. Shaner A, Khalsa ME, Roberts L, et al: Unrecognized cocaine use among schizophrenic patients. *American Journal of Psychiatry* 150:758-762, 1993
7. Brady KT, Halligan P, Malcolm RJ: Dual diagnosis, in *The American Psychiatric Press Textbook of Substance Abuse Treatment - Second Edition* edited by M Galanter and HD Kleber. Washington DC, American Psychiatric Press, 1999 pp 475-483
8. Ziedonis D, Wyatt S: Psychotic disorders, in *Principles of Addiction Medicine - Second Edition* edited by AW Graham and TK Schultz. B (eds). American Society of Addiction Medicine Inc., 1998, pp 1007-1027
9. Department of Business, Economic Development and Tourism, State of Hawaii: *The State of Hawaii Data Book, 1997: A Statistical Abstract*. Honolulu HI, Department of Business, Economic Development and Tourism, State of Hawaii, 1998
10. Anthony WA, Cohen M, Farkas M: A psychiatric rehabilitation treatment program: can I recognize one if I see one? *Community Mental Health Journal* 19:83-96, 1982
11. Lamb HR: A century and a half of psychiatric rehabilitation in the United States. *Hospital and Community Psychiatry* 45:1015-1020, 1994
12. Porchaska JO, Norcross JC, Diclemente CC: *Changing For Good*. New York, Avon Books, 1994
13. Nestor TA, Tamamoto WI, Kam TH, et al.: Crystal methamphetamine-induced acute pulmonary edema: a case report. *Hawaii Medical Journal* 48:457-458, 460, 1989
14. Baker FM, Stokes-Thompson J, Davis OA et al: Psychosocial rehabilitation of the black chronically mentally ill: two year outcome. *Psychiatric Services* 50:535-539, 1999
15. Khantzian EJ: Self-regulation and self-medication factor in alcoholism and the addictions: similarities and differences. *Recent Developments in Alcoholism*. 8:255-271, 1990
16. Westermeyer J: A case approach, in *Addiction Treatment: Avoiding Pitfalls* by The Committee on Alcoholism and Addictions of the Group for the Advancement of Psychiatry. Wa. American Psychiatric Press, 1998, pp 21-30



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