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Addiction treatment ultimatums and U.S. health reform: A case study

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Abstract

AIMS—Increased access to health care, including addiction treatment, has long been a goal of health reform in the U.S. An unanswered question is whether reform will change the way people get to addiction treatment; when treatment is easily accessible, do individuals self-refer, or do they still enter treatment via ultimatums, and if so, from which sources? To begin examining this, we used a single case study of a U.S. health plan that provides access similar to that called for in health reform.

METHOD—Using a case study method of data from studies conducted in a large, private non-profit, integrated managed care health plan which includes addiction services, we examined the prevalence and source of ultimatums to enter treatment, and the characteristics of those receiving them. The plan is highly representative of changes to U.S. health care and other countries due to health reform.

RESULTS—Many individuals entering addiction treatment had received an ultimatum stemming from employment, legal, medical, and family sources. Having more employment problems, an occupation with public safety concerns, being older, male, and ethnicity predicted an employment ultimatum. Higher legal problem severity predicted a legal ultimatum. More men (and younger people) had family ultimatums, and more women (and older people) had medical ultimatums. Being younger, male, married, having higher employment and family problem severity, and being drug or combined drug/alcohol dependent rather than dependent on alcohol-only predicted an ultimatum from one's family. On the whole, an ultimatum from one source was not related to having one from another source. Those most likely to receive ultimatums from multiple sources were women, those separated/divorced, and those having higher psychiatric and legal problem severity.

CONCLUSIONS—Even in an insured population with good access to addiction treatment, individuals often receive ultimatums to enter treatment rather than being self-referred. Understanding the treatment entry process, and how it is affected by health care systems, could benefit from international and other comparative research.

Keywords

alcohol and drug treatment systems; treatment entry; coercion

Introduction

Research has studied extensively how individuals enter addiction treatment, finding that in the U.S. they frequently enter via legal, welfare, employment, or family ultimatums. An extensive literature discusses the social control function of treatment; addiction is often related to problems in many areas of life, including employment, legal, and medical (Institute of Medicine 2006; Wild 2006; Wild & Wolfe 2009). The institutions most bearing the burden of such problems have addressed them by referring to or requiring addiction treatment. Treatment agencies have traditionally been freestanding, and often receive funding from some of these institutions (e.g., criminal justice).

One key characteristic of help-seeking for alcohol and drug problems versus for other medical problems, is that individuals receive intense gratification from using substances. Giving them up is far more difficult than going to treatment to be rid of unpleasurable symptoms, such as depression or physical pain (Institute of Medicine 2006), even when treatment is available. At the same time, because access to addiction treatment has been inadequate to the need, it is also true that individuals often wait until their problems are severe enough to trigger ultimatums from these sources (Institute of Medicine 2006). Clearly, both aspects of help-seeking could co-exist. However, research has rarely examined coercion to treatment in systems where availability is not an issue; in this study we examine coercion in a system with good access and availability.

This study is relevant to current national health policy issues, as major developments in health care have affected access to addiction treatment. In 2008, Congress passed the Wellstone and Domenici Mental Health Parity and Addiction Equity Act (Centers for Medicare & Medicaid Services 2008a; 2008b), which required health plans that covered addiction and mental health services to provide benefits, including access levels and service utilization, equal to those for other health conditions. Thus, length of stay and number of treatment episodes are based on need and cannot be limited. Although it did not extend insurance to everyone, it did greatly increase the population of those with better access to addiction treatment. The legislation both reflected and encouraged new attitudes to addiction treatment by patients and providers, bringing them a step closer to conceiving of it as a part of general health care (Curley 2008; Frank et al. 1997).

In 2010 Congress also passed health reform legislation (2010 Patient Protection and Affordable Care Act, or ACA) that moves the country closer to universal coverage. It will greatly affect how health systems are organized and facilitate in several ways the integration of addiction and medical treatment. It removes pre-existing conditions (including alcohol and drug problems) as a bar to eligibility for health insurance, required most businesses to provide health insurance, and imposed penalties for not buying coverage. It also adds substantial funding to the public health system for addiction treatment (Mental Health America 2010; Sisko et al. 2010). New funding will be available to Federally Qualified Health Centers (FQHCs) (in 2009 the U.S. had over 1200 FQHCs serving 12 million Americans, 75% uninsured or on Medicaid, at 7500 delivery sites, with the number planned to double) (National Association of Community Health Centers 2009). The ACA provides another $11 billion from 2011 to 2015 to FQHCs and community health centers for addiction services, training, and electronic medical record (EMR) (Blumenthal & Tavenner 2010; Mental Health America 2010). The FQHCs are incentivized by the ACA to develop

organizations that deliver integrated addiction and health care (Mental Health America 2010). Medicaid will cover 16 million more individuals by 2019 (Broaddus & Angeles 2010), with those having substance use problems (and legal referrals) over-represented in the population. Finally, the 2010 *"National Drug Control Strategy"* has as a fundamental core, the integration of addiction treatment into health care (Office of National Drug Control Policy 2010). The legislation is expected to expand access for addiction treatment across private and public systems.

This paper examines as a case study a private non-profit health system that provides unlimited access to addiction treatment. Nationally, this health plan is viewed as one of the most similar to a single-payer system, and the Obama administration has referred to it as a proxy for what health reform might look like. It is capitated, financed by monthly premiums that are fixed regardless of how many services are used; use of services is "managed," primarily by primary care physicians; and it has inclusive alcohol and drug treatment benefits. The plan's membership is heterogeneous in socio-economic-status, race, work occupation, gender, and age.

With this case study we have the opportunity to examine how people get to treatment in a health system similar to that now called for in the public system overall and in many private systems. We ask the following questions: In the context of full access to addiction treatment, what is the prevalence of ultimatums (employment, legal, medical, and family) in treatment entry? What are the characteristics of health plan members who receive each type of ultimatum? What predicts multiple sources of ultimatums? Our goal is to provide one window on what entry to addiction treatment might look like when access is not a major issue. Do ultimatums to enter treatment continue to be prevalent, and if so, for whom, and from what sources?

Methods

Participants

Participants were drawn from two large studies conducted at the Kaiser Permanente Chemical Dependency Recovery Program (CDRP) in Sacramento, California. Kaiser Permanente is a large, private non-profit, integrated managed care health plan covering over 40% of the regional catchment area population. It provides alcohol and drug treatment, and psychiatric services internally within the health plan, rather than contracting them out. Most members are insured through their own or a family member's employer.

The first study (DHS) compared day hospital to traditional outpatient treatment, and recruited patients between 1994 and 1996 (N = 1204) (Weisner et al. 2000b). The second (ICS) examined integrated delivery of medical and addiction services, and recruited patients between 1997 and 1998 (N = 749) (Weisner et al. 2001). Program components were consistent across studies. Although both studies were randomized, they represent a strong population base of those in treatment. We also recruited those unwilling or unable to be randomized. The first study included 93% of those entering treatment, and the second 94%.

Treatment program

Patients were referred to treatment through several sources, including medical providers, employers, employee assistance programs (EAPs), criminal justice agencies, families, or were self-referred. The treatment program provides group-based outpatient and day treatment modalities. Both include supportive group therapy, education, relapse prevention, family therapy and individual counseling. This model is similar to other abstinence-based, group-format private and public programs. Both last 8 weeks with weekly aftercare available for 10 months and both conduct random drug testing. A psychiatrist is available for

consultation; the psychiatry department provides individual and group psychotherapy, and medication management.

Procedures

All patients completed in-person baseline interviews at a scheduled evaluation at or within seven days of intake. Research staff obtained informed consent and conducted in-person interviews.

Measures

Demographic questions included age, gender, ethnicity, educational level, employment status, occupation, whether the respondent lived alone, marital status, and household income.

Alcohol, drug, and related problem severity was measured using the composite scores of the Addiction Severity Index (ASI). It is a valid and reliable instrument that assesses the severity of alcohol, drug, employment, medical, psychiatric, family/social relations, and legal problems, and is one of the most commonly used in addiction treatment research (McLellan et al. 1992; McLellan et al. 1985; Weisner et al. 2000a). In each domain, questions measure the number, frequency, and duration of problem symptoms in the past 30 days, providing a continuous measure from 0 (no problems) to 1.0 (high severity).

Ultimatums to enter treatment: Questions were: “Did anyone tell you that if you did not get treatment you might suffer serious consequences? Serious consequences would be things like going to jail, losing your job, welfare benefits, or custody of your children, or your spouse leaving you.” If respondents answered yes, they were asked who gave them the ultimatum. Thus each type of ultimatum was asked about in the context of serious consequences. For employment ultimatums, from the population base of all those who were at risk for an employment ultimatum (i.e., who were employed full- or part-time) we selected those who were told by an employer, union, or Employee Assistance Program that they would lose their job, and we refer to this group as having received an employment ultimatum. For legal ultimatum, from the subgroup of all those who were at risk (reported a legal problem, i.e., above 0 on the ASI legal composite score), we selected those who reported an ultimatum from a legal source. For medical ultimatum, from the subgroup of all those who reported above 0 on the ASI medical composite score, we selected those who said an ultimatum came from a health provider. For the family ultimatum, from the subgroup of all those who reported family problems (i.e., above 0 on the family/social ASI composite score), we selected those who said an ultimatum came from a family member.

Pressure to enter treatment: Respondents selected the intensity of the pressure they felt to enter treatment, with five choices ranging from “No Pressure” to “Very Strong Pressure.”

Alcohol and drug dependence: Questions adapted from the Diagnostic Interview Schedule for Psychoactive Substance Dependence, Checklist (Weisner et al. 2001) were used to provide a diagnosis for alcohol and drug dependence and abuse (9 substances). For each substance, we established whether three of seven dependence symptoms (or one of three abuse symptoms) were present in the prior 30 days. We categorized dependence diagnoses as alcohol only, drug only, combined alcohol and drug, and alcohol or drug abuse.

Treatment history: Individuals were asked whether they had been to addiction treatment in their lifetime prior to this treatment entry, and if so, how many treatment episodes they had. We formed a dichotomous variable of 0 versus 1+.

Data analysis

This is a secondary analysis of predictors of receiving an ultimatum. In both the DHS and ICS studies, we found no differences in the distribution of the variables of interest (ultimatums) between the study arms, nor between the two levels of treatment (day hospital versus outpatient treatment) and the randomization measures were not significant predictors in post hoc regression models or change the significance of any other measures; thus they are not included in the models presented here.

Respondents meeting criteria for evaluation of receiving each type of ultimatum were included in table 1 to examine baseline differences by source of ultimatum. Chi-square tests assessed differences in proportions, and *t*-tests compared means, by each type of ultimatum among those at risk for receiving each ultimatum. Using these same subgroups, we performed logistic regression analysis to examine predictors of receiving each type of ultimatum. For the regression predicting a legal ultimatum, we multiplied the legal ASI score by 10 because this predictor variable is highly skewed and with small values. We also replicated the analysis using a dichotomous measure of having legal ASI = 0 versus >0. The occupation measures were not included in the regressions predicting ultimatums other than for the employment ultimatum, because all individuals not employed would have missing data for these measures (see Measures section). We replicated the logistic regressions using all patients, rather than those defined as “at risk” for each ultimatum. We also examined Spearman correlations between types of ultimatums. Among those receiving at least 1 type of ultimatum, we used logistic regression analysis to examine predictors of receiving an ultimatum from more than one, versus one, source.

Results

Bivariate comparisons of characteristics by source of ultimatum

Table 1 compares characteristics of those receiving each type of ultimatum with those not receiving it, among the subgroup of participants who were at risk for receiving the ultimatum. Thirteen percent (N=140) of those employed had received an employment ultimatum, 15% of those with a legal problem (N=81) a legal ultimatum, 30% of those with a family problem (N=480) a family ultimatum, and 7% of those with a medical problem (N=71) an ultimatum from a medical provider. Those reporting family ultimatums were younger and those reporting medical ultimatums were older, than those without said ultimatums. There were no age differences for those with and without employment or legal ultimatums. More of those with employment and family ultimatums than without were men, and more of those with medical ultimatums were women. Those with employment ultimatums were less likely to have higher education levels than those without. There were no differences in education levels between those receiving or not receiving the other ultimatums. There were differences in occupation between those receiving and not receiving employment ultimatums; more craftsmen, repairmen, machinists, and farmers or laborers reported ultimatums, and fewer managers or professionals, clerical workers, sales or service workers reported them ($p<0.0001$ for all). The only ethnicity differences across ultimatums were for employment ultimatums, with fewer whites, and more African Americans reporting them ($p=0.0017$).

Problem severity differed by type of ultimatum. Those with employment ultimatums had higher ASI employment problem severity than those without. However, they had lower alcohol, drug, family, psychiatric and medical ASI scores (all $p<0.05$). Those with legal ultimatums had higher legal and employment problem severity. Those with family ultimatums had higher family problem severity, as well as drug and employment problem

severity, but lower alcohol severity scores. Finally, those with medical ultimatums had higher medical, psychiatric and employment problem severity.

We examined the overlap of ultimatums: 41% of the sample received at least one source of ultimatum; 34% received only one, 5% received two, and 2% received three or more. Spearman correlations between types of ultimatums were low; significant correlations were . 0855 (p=0.0002) between medical and family ultimatums; .0657 (p=0.0037) between medical and legal ultimatums, and .0632 (p=0.0052) between legal and family ultimatums (not shown).

Multivariate analysis of sources of ultimatums

Table 2 presents logistic regression models predicting receiving an ultimatum. For employment ultimatums, women had lower odds than men and older age was related to higher odds African Americans had higher odds than whites as did the “other” ethnic group category (primarily Native Americans and Asians). Craftsmen and machine operators had higher odds of receiving an ultimatum than professionals. No other occupational categories were significant. Those meeting alcohol or drug abuse criteria (rather than dependence) had higher odds than those who were alcohol-only dependent. Those with higher employment problem severity had higher odds of receiving an employment ultimatum.

Higher legal problem severity was the only measure which predicted receiving a legal ultimatum; there was a trend of lower odds for those with higher family problem severity. We replicated the analysis using a dichotomous measure of having legal ASI =0 versus >0 for legal problem severity; results did not change in significance or direction (not shown).

Medical ultimatums were predicted by being female, older age, and “other” ethnicities, primarily Native Americans and Asians and marginally so for African Americans. Higher medical problem severity was marginally predictive, as was being alcohol dependent rather than meeting abuse criteria.

Women had lower odds of receiving a family ultimatum as did those who were older. Those separated or divorced or never married had lower odds than those married. Those reporting higher levels of family and employment problems had higher odds of receiving an ultimatum from their family. Those dependent on drugs alone had higher odds than those who were alcohol-only dependent.

We conducted post hoc analysis of the sample as a whole to assess whether results would differ if respondents did not fit our “at risk” for an ultimatum definition (e.g., had already lost their job or had their family or medical problem resolved prior to entering treatment). Findings using the full sample were similar to those using the sub-samples of those at risk for an ultimatum, with differences in significance only for the following: for the full sample, those widowed had higher rates of receiving an employment ultimatum than those married. Higher medical severity was related to receiving a medical ultimatum. These relationships were in the same direction in the “at risk” sub-samples, but became significant in the analysis of the full sample (not shown).

Multiple sources of ultimatums

We conducted logistic regression analysis using a similar model to examine the characteristics of those receiving more than one source of ultimatum versus only one (Table 3). Among demographic characteristics, women had higher odds of receiving more than one ultimatum than men and those separated or divorced had higher odds than those married. “Other” ethnic groups (predominantly Native Americans and Asians) also had higher odds. There were no differences by other demographic characteristics, by type of dependence, or

by treatment history. The only problem severity differences in odds of receiving more than one source of ultimatum were for those with higher levels of psychiatric and legal problems.

Discussion

We examined as a case study a health plan with addiction treatment access similar to those available under health reform and addiction parity legislation. There were no limits on access (lifetime or annual visit limits), and we found that in our sample many individuals entering addiction treatment had received an ultimatum from several sources, such as employment, legal, medical, and family. Individual characteristics varied by type of ultimatum: having an occupation which had high visibility and potential safety problems related to substance use, being male or a member of any minority group other than Hispanics were predictors of an employment ultimatum. Women were less likely to have an ultimatum from their family, but more likely to have one from a medical provider (as were older individuals and minorities other than Hispanics). More men reported family ultimatums and more women (and older people) reported medical ultimatums.

Receiving an ultimatum in one area of life was not related to having problems in other areas. For each type of ultimatum, problem severity was higher for those with an ultimatum resulting from a particular problem than for those without that problem. However, a striking finding was that, on the whole, problem severity in other life areas was not higher than those without an ultimatum. As an example, those receiving an employment ultimatum had significantly lower problem severity across other ASI problem areas than those without (except equal average scores of legal problems). The findings suggest that since the behaviors that interfere with families or institutions are not often related to the severity of alcohol and drug problems, ultimatums from those sources may represent a social control function, rather than a mechanism for identifying those most severely in need of services. In addition, fewer individuals than expected had received multiple ultimatums, again an indication that these problematic alcohol and drug-related behaviors are specific to particular formal and informal institutions. These results have clinical implications for understanding the mindset of clients, and their motivation for treatment (Wild & Wolfe 2009).

Implications for addiction treatment in the context of health reform/ increasing access

This case study presents a first look at how treatment entry might look in a reformed health care system with increased access. Will people enter treatment on their own volition? Will a health *policy* that treats addiction problems as similar to other chronic medical conditions be undermined by this special aspect of addiction treatment—that many individuals enter treatment because of mandates or ultimatums? The policy agenda of health care reform is that addiction treatment should be integrated into general health care as a chronic condition. The U.S. addiction field has argued that with parity and widespread coverage, treatment will become more integrated with other health care, problems will be treated earlier, and thus the stigma issues that have distinguished our field will diminish. After all, the issues have largely stemmed from what has been the marginal and optional nature of treatment, causing, among other problems, a lack of reliable program funding. These concerns have reasonably been the focus of treatment advocates. But it may be premature to assume that the challenges particular to the addiction field will soon diminish. When a large proportion of patients suffering from a specific disease population seeks help because of ultimatums (in this program almost half), that may continue to set this population apart in the medical community and the larger community as well.

The powerful stigma and legal sanctions attached to addiction problems may continue to make addiction treatment unique among health problems. There are no empirical studies of how addiction treatment differs from that for other health conditions in regard to ultimatums (e.g., whether individuals who have high blood pressure or are obese are pushed to the doctor.) However, high profile studies and reports, such as by the U.S. Institute of Medicine, have contrasted addiction problems with other health problems from this perspective. People who are obese are likely pushed to treatment by their family, but probably not by their employer with the risk of job loss, or by the legal system. And they would be seen by a doctor, not a specialty treatment agency.

With the U.S. health care system becoming more similar to the systems of other industrialized countries in providing access to health care, including addiction treatment, the field will benefit from international studies. They can control for structural/financial differences and improve our understanding of addiction treatment and its patients. In particular, our understanding of how alcohol and drug problems and their treatment will be affected by parity and health reform in the U.S. will benefit from studying how this has evolved in other countries, where services have been integrated for some time, and are provided within a universal health care system (Klingemann et al. 1992; Stenius et al. in press; Storbjörk 2006). For instance, we can examine how treatment entry is related to being part of an “employer-based” health insurance system rather than a single-payer system, a critical question, given that in the U.S. the institution providing the most ultimatums in private health plans is the workplace.

The study has several limitations. Data are self-report and do not include specific information on severity of the ultimatum or its sanctions. Data on ultimatums for obtaining treatment for other health conditions were not available. A further limitation is that the study is of one health plan which may not be representative of others. However, the health system we studied resembles in important aspects the one now called for under U.S. health reform, and with similarities to that of many other countries. At the same time, other artifacts of history may exist which might produce results different from when this population entered treatment. As a beginning study, since ultimatums may impact motivation and the treatment process (Wild & Wolfe 2009), the findings warrant additional research, particularly studies that specify the level of sanctions, and comparative studies of different health systems and different medical conditions.

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Table 1

Characteristics of individuals with and without ultimatums

	Employment Ultimatum			Legal Ultimatum			Medical Ultimatum			Family Ultimatum		
	Yes (N =140)	**No (N=912)**	**P-value**	**Yes (N =81)**	**No (N=476)**	**P-value**	**Yes (N=71)**	**No (N=907)**	**P-value**	**Yes (N=480)**	**No (N=1130)**	**P-value**
Age, mean (SD)	38.85 (8.35)	37.47 (9.11)	0.09	32.65 (11)	34.89 (10.34)	0.07	42.63 (13.15)	37.74 (10.67)	0.0031	35.13 (10.47)	37.41 (10.47)	<.0001
Gender (%)			<.0001			0.18			0.0022			<.0001
Women	19	36		32	25		56	38		28	41	
Men	81	64		68	75		44	62		72	59	
Ethnicity (%)			0.0017			0.56			0.21			0.32
White	61	73		75	69		65	75		72	75	
African-Amer	21	11		9	12		15	11		12	11	
Hispanic	10	11		9	12		10	9		9	10	
Other	8	5		7	7		10	6		7	4	
Education (%)			0.0051			0.20			0.95			0.51
< High School	13	11		24	18		15	15		16	14	
High School Graduate	58	45		52	48		51	53		50	49	
Some college	30	44		24	34		34	33		34	37	
Occupation (%)			<.0001			0.74			0.05			0.62
Manager/Professional	19	34		23	24		25	31		30	30	
Craftsman/Machinist	42	18		28	24		3	19		22	21	
Clerk/Sales/Services	21	35		23	31		47	35		30	34	
Farming/Laborer/Other	18	13		26	21		25	15		18	15	
Live Alone (%)	25	17	0.0241	12	16	0.46	17	16	0.92	11	18	0.0004
Treatment Episodes prior to treatment entry, mean (SD)	0.94 (1.50)	1.32 (2.92)	0.0202	1.68 (2.46)	1.83 (3.67)	0.65	1.65 (1.68)	1.51 (2.36)	0.55	1.57 (2.87)	1.50 (3.10)	0.71
ASI b Scores, mean (SD)												
Alcohol	.33(.30)	.45(.31)	.0001	.37(.31)	.40(.30)	0.32	.50(.33)	.43(.31)	.0551	.39(.32)	.44(.31)	0.0136
Drug	.09(.11)	.12(.12)	0.01	.13(.12)	.15(.13)	0.16	.14(.14)	.13(.12)	.4486	.15(.13)	.13(.12)	<.0001

	Employment Ultimatum			Legal Ultimatum			Medical Ultimatum			Family Ultimatum		
	Yes (N =140)	**No (N=912)**	**P-value**	**Yes (N =81)**	**No (N=476)**	**P-value**	**Yes (N=71)**	**No (N=907)**	**P-value**	**Yes (N=480)**	**No (N=1130)**	**P-value**
Legal	.09(.18)	.09(.18)	0.91	.47(.18)	.34(.20)	<.0001	.08(.17)	.12(.21)	0.065	.11(.20)	.10(.19)	0.41
Employment	.34(.23)	.29(.19)	0.0097	.60(.27)	.50(.28)	0.0044	.49(.25)	.42(.26)	.0274	.43(.27)	.40(.25)	0.0114
Family/Social	.27(.27)	.38(.28)	<.0001	.38(.28)	.40(.27)	0.47	.42(.29)	.40(.29)	.7144	.53(.22)	.43(.25)	<.0001
Psychiatric	.28(.24)	.38(.26)	<.0001	.45(.25)	.41(.27)	0.19	.52(.26)	.45(.26)	.0220	.44(.25)	.44(.26)	0.69
Medical	.21(.32)	.29(.37)	0.0077	.35(.39)	.31(.37)	0.45	.74(.31)	.61(.31)	.0010	.33(.39)	.32(.38)	0.56
Pressure to Enter Treatment (%)			<.0001			<.0001			.0001			<.0001
No	5	34		4	31		3	29		3	38	
Mild	4	15		6	13		10	10		5	14	
Moderate	14	13		11	13		8	14		12	13	
Strong	16	15		17	13		20	16		20	14	
Very Strong	61	23		62	27		59	32		60	21	

Notes:

[a] For each type of ultimatum, comparisons are conducted among those who are at risk for the type of ultimatum.

[b] ASI = Addiction Severity Index.

Table 2

Logistic regressions predicting receiving ultimatums to enter treatment

	Employment Ultimatum (N=861)		Legal Ultimatum (N=430)		Medical Ultimatum (N=781)		Family Ultimatum (N=1288)	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Age (per 1 year increase)	1.04	1.01–1.07	0.98	0.95–1.02	1.05	1.02–1.08	0.97	0.96–0.99
Female vs. Male	0.54	0.30–0.97	1.38	0.75–2.56	2.16	1.22–3.81	0.48	0.37–0.64
Ethnicity								
African American vs. White	1.95	1.09–3.50	0.55	0.20–1.51	2.19	0.99–4.86	0.81	0.54–1.22
Hispanic vs. White	0.75	0.36–1.56	0.64	0.24–1.65	1.64	0.66–4.04	0.77	0.50–1.17
Other vs. White	3.25	1.41–7.50	1.21	0.45–3.29	2.77	1.09–7.04	1.31	0.79–2.20
Education								
High School Graduate vs. < High School	1.10	0.56–2.16	1.06	0.52–2.13	0.91	0.42–1.97	1.02	0.71–1.47
Some College vs. < High School	0.54	0.26–1.12	0.69	0.30–1.59	0.79	0.34–1.83	1.11	0.75–1.64
Occupation								
Craftsman vs. Manager/Professional	2.26	1.20–4.24						
Clerical vs. Manager/Professional	0.77	0.40–1.52	NAa	NAa	NAa	NAa	NAa	NAa
Farming vs. Manager/Professional	1.81	0.86–3.81						
Income > $40K vs. < $40K I	0.66	0.41–1.07	0.66	0.34–1.30	0.64	0.33–1.24	1.07	0.82–1.40
Marital Status								
Never vs. Married	1.78	0.94–3.38	1.68	0.77–3.68	1.01	0.44–2.31	0.52	0.36–0.75
Separate/Divorced vs. Married	1.61	0.90–2.86	1.63	0.77–3.44	0.68	0.33–1.39	0.73	0.54–1.00
Widowed vs. Married	2.55	0.53–12.36	4.23	0.56–31.96	0.64	0.12–3.51	2.01	0.76–5.33
Live Alone, Yes vs. No	1.01	0.55–1.85	0.69	0.29–1.66	0.97	0.43–2.22	0.77	0.52–1.14
Treatment History, Any vs. None	0.93	0.82–1.07	0.97	0.90–1.06	0.99	0.89–1.10	1.00	0.96–1.04
ASI b Scores								
Psychiatric	0.51	0.19–1.37	1.07	0.95–1.20	1.38	0.39–4.90	0.76	0.45–1.30
Medical	0.55	0.28–1.08	0.99	0.91–1.07	2.46	0.94–6.42	1.00	0.72–1.40

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	Employment Ultimatum (N=861)		Legal Ultimatum (N=430)		Medical Ultimatum (N=781)		Family Ultimatum (N=1288)	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Employment	7.17	2.42–21.28	1.03	0.92–1.15	2.08	0.60–7.26	2.00	1.12–3.59
Family/Social	0.62	0.24–1.60	0.90	0.80–1.01	1.06	0.36–3.13	5.43	3.11–9.51
Legal	0.18	0.05–0.66	1.47	1.26–1.72	0.29	0.06–1.38	0.71	0.37–1.37
Dependence Type								
Drug Only vs. Alcohol Only	1.14	0.62–2.10	0.91	0.43–1.93	0.72	0.35–1.46	1.39	1.02–1.90
Alcohol & Drug vs. Alcohol Only	1.17	0.59–2.31	0.77	0.34–1.72	0.95	0.45–2.00	1.28	0.90–1.81
Abuse vs. Alcohol Only	7.69	4.27–13.83	1.29	0.52–3.18	0.36	0.12–1.13	1.02	0.65–1.61

Notes:

[a] Occupation measures were not included in regressions because all individuals not employed would have missing data.

[b] ASI = Addiction Severity Index.

Table 3

Logistic regression predicting more than one sources of ultimatum versus only one

	(N =713)	
	OR	**95% CI**
Age (per 1 year increase)	1.01	0.99–1.04
Female vs. Male	1.72	1.10–2.67
Ethnicity		
African American vs. White	1.07	0.57–2.00
Hispanic vs. White	1.68	0.84–3.36
Other vs. White	2.38	1.17–4.83
Education		
High School Graduate vs. < High School	0.78	0.45–1.37
Some College vs. < High School	0.82	0.45–1.51
Income > $40K vs. < $40K	1.31	0.83–2.05
Marital Status		
Never vs. Married	1.48	0.80–2.74
Separate/Divorced vs. Married	1.88	1.12–3.13
Widowed vs. Married	1.03	0.20–5.25
Live Alone, Yes vs. No	1.08	0.59–1.95
Treatment History, Any vs. None	0.95	0.86–1.04
ASI Scores		
Psychiatric	4.48	1.73–11.61
Medical	0.67	0.38–1.18
Employment	1.40	0.62–3.20
Family/Social	0.67	0.28–1.59
Legal	3.37	1.30–8.73
Dependence Type		
Drug only vs. Alcohol Only	0.92	0.53–1.59
Alcohol & Drug vs. Alcohol Only	0.95	0.52–1.73
Abuse vs. Alcohol Only	0.78	0.39–1.54

Notes: ASI = Addiction Severity Index.