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Allokation alkoholabhängiger Patienten zur ambulanten, stationären Kurzzeit- oder Langzeittherapie: Lässt sich anhand von Patientencharakteristika die optimale Alkoholentwöhnung bestimmen?

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Einleitung

Zusammenfassung

Übergeordnetes Ziel der vorliegenden Untersuchung lag in der Analyse und Ermittlung von Patientencharakteristika für die Vorhersage von Therapieerfolg hinsichtlich verschiedener Therapiearten bei Alkoholabhängigkeit.

Die Untersuchung erfolgte in Form einer prospektiven quasiexperimentellen Beobachtungsstudie. In den Jahren 2003-2006 wurden insgesamt 290 alkoholabhängige Patienten eingeschlossen, die eine 12-monatige ambulante Entwöhnung, 8-wöchige stationäre Kurzzeitentwöhnung oder 12-16-wöchige stationäre Langzeitentwöhnung begannen. Die Analyse umfasste patienten- und störungsbezogene Merkmale, die mittels klinischer Basisdokumentation, European Addiction Severity Index (EuropASI), Timeline Followback-Interview, Beck-Depressions-Inventar (BDI) State-Trait-Angstinventar (STAI) und Obsessive Compulsive Drinking Scale (OCDS) erhoben und durch diverse statistische Analysen ausgewertet wurden.

Als Prädiktoren des Behandlungserfolgs ergaben sich für die Gesamtstichprobe höherer Schulabschuss, abgeschlossene Ausbildung, späterer Beginn der Alkoholabhängigkeit, längere Dauer der Alkoholabhängigkeit, weniger bisherige Behandlungen wegen körperlichen Problemen und weniger bzw. keine Suizidversuche in der Vorgeschichte. Hinsichtlich der Allokation konnte zusammengefasst werden, dass Zufriedenheit mit der Familiensituation und vorhandene Erwerbstätigkeit zu Therapieerfolg in der ambulanten und stationären Kurzzeitentwöhnung führten. Zudem ergaben sich Assoziationen zwischen Craving und Behandlungserfolg: Je geringer das Craving, desto erfolgreicher war die Behandlung auf kürzere Sicht.

Summary

The primary aim of the study was to investigate the predictive value of patients´ characteristics for treatment outcome in outpatient and inpatient settings.

Study took place between 2003 and 2006. It was a prospective observational study with participation of 290 alcohol-dependent patients. Patients entered an outpatient treatment (12 months duration), short term inpatient treatment with duration of 8 weeks, or long term inpatient treatment (duration between 12 and 16 weeks). Analyzes implied patients´ characteristics and characteristics of mental illness. Assessments were made using medical basic documentation, European Addiction Severity Index (EuropASI), Timeline Followback Interview, Beck Depression Inventory (BDI), State- Trait Anxiety Inventory (STAI), and Obsessive-Compulsive Drinking Scale (OCDS).

Higher secondary school qualifications, finished professional training, onset of alcohol dependence at a later time, longer duration of alcohol dependence, less previous treatments for somatic problems, and a history without or of less attempted suicide were found to be predictive for a preferable treatment outcome. Furthermore, family satisfaction and employment were variables which differed between treatments with respect to the treatment outcome. Association between craving and treatment outcome were found as follows: In the short term, patients who reported less craving had better treatment outcome than patients with a larger extent of craving.

Einführung in das Thema

In der Behandlung psychischer Erkrankungen, besonders von Abhängigkeitserkrankungen ist es nicht einfach, die für den Patienten optimale Therapie zu finden. Aufgrund der psychischen Komponente kommt es selbst in ein und derselben Erkrankungsklasse zu großen interindividuellen Unterschieden. Doch gerade Patientencharakteristika, die mit einem positiven Therapieergebnis korrelieren, sind von großer Relevanz für den klinischen Alltag - eben um die für den Patienten am besten geeignete Therapieart zu bestimmen und ihm anbieten zu können [1-7]. Damit verbunden ist zum einen der psychologische Effekt für den Patienten, sich gut aufgehoben zu fühlen, was wiederum zu einer besseren Therapiemotivation führen sollte. Im günstigen Fall lassen sich somit weitere Therapieversuche vermeiden, was wiederum eine Entlastung für das Gesundheitssystem bedeutet.

In den letzten 20 Jahren wurden in Deutschland und anderen europäischen Ländern hoch strukturierte, ambulante Therapieangebote für alkoholabhängige Patienten geschaffen, die als wirksame Behandlungsalternative zu den bereits etablierten stationären Therapien zur Verfügung stehen. Es gibt nur wenige Wirksamkeitsstudien zur ambulanten Therapie [8] und keine direkten Vergleiche zur stationären Therapie. Letztere sind insofern schwer durchführbar, als das davon auszugehen ist, dass sich die Patientenprofile in ambulanter und stationärer Therapie stark unterscheiden. Die vorliegende Studie wurde vor diesem Hintergrund konzipiert und beabsichtigte unter anderem die Erarbeitung von „Anforderungsprofilen“ an Patienten für die ambulante und stationäre Alkoholentwöhnung.

Als Ergebnis einer umfassenden Literaturrecherche wurden die folgenden Variablen als relevant bezüglich der Vorhersage von Therapieerfolg sowie der Therapieallokation zusammengefasst:

- Demographische und soziale Variablen:

  Geschlecht, vorhandene berufliche Integration (Beschäftigung ja / nein), soziale Integration, sozioökonomischer Status, Religionszugehörigkeit [9-17].

- Substanzbezogene Variablen:

  Dauer von Alkoholabhängigkeit bzw. problematischem Alkoholkonsum, Höhe des Alkoholkonsums vor der Therapie, Schwere der Alkoholabhängigkeit, Häufigkeit bisheriger Therapieversuche, erwartete Selbstwirksamkeit bezüglich der Therapieziele, Motivation, Behandlungsziel [10-12, 18].

- Weitere klinische Variablen:

  Psychopathologie, neuropsychologische Leistungsfähigkeit [10-23].

Zudem sollte das Konstrukt „Craving“ im Zusammenhang mit dem Therapieerfolg genauer betrachtet werden. Es ergab sich die Frage, hinsichtlich eines effektiven Maßes zur Einschätzung des Therapieerfolges auf kürzere Sicht. Zu besserer Objektivität, Reliabilität und Validität führt die Datenerhebung, wenn ein Maß standardisiert und über mehrere Dimensionen erfasst werden kann. Craving ist ein multidimensionales Konstrukt, welches mit positiven und negativen Emotionen, Kognitionen und häufig einem Rückfall in die Sucht einhergeht [24-32]. Craving ist also nicht nur bei Alkoholabhängigkeit sondern auch bei anderen Arten der Substanzabhängigkeit relevant. Es existieren Skalen zur standardisierten Erhebung, in denen das Konstrukt sehr gut operationalisiert ist. Für Alkoholabhängigkeit ist die Obsessive Compulsive Drinking Scale (OCDS) [33] eine konstruktiv erforschte und weit verbreitete Skala. Die OCDS besteht aus zwei Subskalen; so liefert das Instrument neben

einem Gesamtwert je einen zusätzlichen Summenwert - zum einen in Bezug auf Gedanken und zum anderen auf Handlungen bzw. Handlungsimpulse.

Es ergaben sich folgende Fragestellungen:

Fragestellungen und Hypothesen

Die übergeordnete Fragestellung der vorliegenden Arbeit lautete:

Für welche Patienten ist eine ambulante bzw. eine stationäre Alkoholentwöhnung am besten geeignet? Die stationäre Entwöhnung konnte zudem unterteilt werden in eine Kurzzeit und eine Langzeittherapie, so dass die Fragestellung wie folgt erweitert wurde:
Für welche Patienten ist eine ambulante, eine stationäre Kurzzeit bzw. stationäre Langzeitentwöhnung am besten geeignet?

Aufgrund der Komplexität dieser übergeordneten Fragestellung konzentrierte sich die Bearbeitung des Themas vorab auf die (Teil-) Fragestellungen:

1. Durch welche Patientenmerkmale lässt sich Therapieerfolg vorhersagen?
2. Welche Patientenmerkmale erlauben eine gute Zuordnung zu den drei Therapiearten?
3. Welche Rolle spielt Craving bzw. die Obsessive Compulsive Drinking Scale (OCDS) hinsichtlich der Vorhersage des Therapieerfolges?

Hypothese zu Fragestellung 1 und 2:

Die folgenden Variablen wurden aufgrund der Vorüberlegungen als wesentlich für die Einschätzung und Vorhersage des Therapieerfolges sowie die Allokation erachtet [9-24]: Geschlecht, berufliche und soziale Integration, sozioökonomischer Status, Religionszugehörigkeit, Höhe des Alkoholkonsums vor der Therapie, Schwere der Alkoholabhängigkeit, Häufigkeit bisheriger Therapieversuche, erwartete Selbstwirksamkeit bezüglich der Therapieziele, Motivation, Behandlungsziel, Dauer von Alkoholabhängigkeit bzw. problematischem Alkoholkonsum, Psychopathologie, neuropsychologische Leistungsfähigkeit. Aufgrund der Heterogenität der betrachteten Untersuchungen ist davon auszugehen, dass nicht alle der aufgeführten Variablen das gleiche Vorhersagepotential haben. Als besonders relevant, da besonders häufig in der Literatur genannt, als statistisch sowie praktisch bedeutsam analysiert, erschienen für die Beantwortung der Fragestellungen 1 und 2 die Variablen Geschlecht, berufliche Integration, soziale Integration, Häufigkeit bisheriger Therapieversuche, Schwere der Alkoholabhängigkeit, Dauer von Alkoholabhängigkeit bzw. problematischem Alkoholkonsum und Psychopathologie.

Hypothese zu Fragestellung 3:

Alkoholabhängige Patienten, während oder nach Entgiftungs- bzw. Entwöhnungstherapie, sind anfällig für suchtspezifische Schlüsselreize [34]. Dadurch ausgelöste Emotionen und Kognitionen können schnell die Qualität des Alkoholcravings erreichen [24-29]. Es war davon auszugehen, dass sich ein statistisch bedeutsamer Zusammenhang zwischen Craving und Therapieerfolg ergibt: Je geringer das Craving, desto erfolgreicher die Therapie auf kürzere Sicht.

Methodik

Die Studie wurde in den Jahren 2003-2006 in Form einer prospektiven quasiexperimentellen Beobachtungsstudie durchgeführt.

Eingeschlossen wurden 290 nach DSM IV und ICD-10 [35, 36] alkoholabhängige Patienten. Davon absolvierten 92 Patienten eine 12-monatige ambulante Entwöhnung, 91 Patienten eine 8-wöchige stationäre Kurzzeitentwöhnung und 107 Patienten eine 12-16-wöchige stationäre Langzeitentwöhnung. Die Aufnahmekriterien für die ambulante Therapie waren an die „Empfehlungsvereinbarung ambulante Rehabilitation Sucht" der Kranken- und Rentenversicherungsträger [37] angelehnt.

Untersuchungszeitpunkte waren vor Therapiebeginn (T0), unmittelbar nach Beendigung der Therapie (T1), 6 (T2), 12 (T3) sowie 24 Monate nach Therapieende (T4).

Als Erfolgskriterium wurde vollständige Alkoholabstinenz zum jeweiligen Untersuchungszeitpunkt definiert, vordergründig interessierte die Abstinenz bis 2 Jahre nach Therapieende.

Eingesetzte Untersuchungsinstrumente für die Beantwortung der Fragestellungen 1 und 2 waren neben der klinischen Basisdokumentation, der European Addiction Severity Index (EuropASI), das Timeline Followback-Interview, Beck-Depressions-Inventar (BDI) sowie das State-Trait-Angstinventar (STAI). Abstinenz wurde objektiv mittels Atemalkoholtester geprüft.
Zusätzlich für die Beantwortung der Fragestellung 3 wurde den Patienten die deutsche Version der Obsessive Compulsive Drinking Scale (OCDS) zu den Zeitpunkten T1 (nur ambulante Entwöhnung), T2 und T3 zur Selbstbeurteilung vorgelegt.

Die Befragungen führten entsprechend trainierte Psychologen, Ärzte und Medizinstudenten durch, die nicht in die Therapie eingebunden waren, aber mit den Therapeuten in Kontakt standen. Auch der Projektkoordinator war nicht in die Therapie der Patienten integriert.

Die Datenauswertung erfolgte mit der Software SPSS [38, 39]. Prädiktoren wurden mittels logistischer Regression ermittelt, Mittelwerte und Standardabweichung mit den entsprechend des Datenniveaus geeigneten statistischen Testverfahren (alternative, kategoreale, ordinale, metrische Daten; Vergleich von zwei, mehr als zwei, abhängigen oder unabhängigen Stichproben), deren genaue Nennung an den entsprechenden Stellen in Text und/ oder Tabellen erfolgte.

Wegen der in Relation zur Anzahl möglicher Prädiktoren kleinen Stichprobe, erfolgte die Bildung des endgültigen Regressionsmodells für die Beantwortung der Fragestellungen 1 und 2 in drei Schritten, wie von Hosmer & Lemeshow [40] vorgeschlagen. Nach einer ersten univariaten Analyse (Schritt 1), in die alle entsprechend Literaturrecherche ermittelten Variablen eingeschlossen wurden, erfolgte eine manuelle Auswahl nach Signifikanz (Schritt 2). Der 3. Schritt beinhaltete eine logistische Regressionsanalyse, mit den nach Schritt 2 verbliebenen Prädiktoren und damit die endgültige Modellbildung.

Ergebnisse

Insgesamt beendeten 256 von 290 Patienten die Therapie regulär (88%). Von diesen 256 Patienten absolvierten 77 (84%) eine ambulante Alkoholentwöhnung, 89 (98%) eine stationäre Kurzzeit- und 90 (84%) eine stationäre Langzeitentwöhnung. Zur 2-Jahres-Katamnese lag die Gesamtausschöpfungsquote bei 60%. Patienten, die zur Katamnese nicht befragt werden konnten, waren entweder verzogen und über das Einwohnermeldeamt nicht auffindbar, telefonisch nicht erreichbar, reagierten nicht auf Anschreiben oder verweigerten die weitere Teilnahme an der Studie. Die Nichtantworter der 2-Jahres-Katamnese waren im Vergleich zu den Antwortern eher männlichen Geschlechts (Chi^2-Test für alternative Daten: $Chi^2 = 67,6$; $p < 0,001$), eher ledig als verheiratet (Chi^2-Test für kategoriale Daten: $Chi^2 = 164,2$; $p < 0,001$), lebten eher allein als mit einem Partner zusammen (Chi^2-Test für kategoriale Daten: $Chi^2 = 286,8$; $p < 0,001$), waren eher arbeitslos als berufstätig (Chi^2-Test für kategoriale Daten: $Chi^2 = 292,9$; $p < 0,001$) und ihr regelmäßiger Alkoholkonsum war von längerer Dauer (Kolmogorov-Smirnov-Test für metrische Daten ohne Verteilungsannahme: $Z = 1,4$; $p < 0,05$).

Die Patienten der Gesamtstichprobe waren im Mittel 45,3 Jahre (SD = 8,6) alt und zu 26% (n = 75) Frauen. Die Dauer der durchschnittlichen Schulbildung betrug 9,9 Jahre (SD = 1,7), fünf Patienten hatten keinen Schulabschluss. Keine Berufsausbildung hatten 62 Patienten (21%). Die drei Patientengruppen unterschieden sich hinsichtlich des Alters, der Geschlechterverteilung, vorhandenem Schulabschluss, absolvierter Berufsausbildung, dem Anteil berufstätiger Personen, des Familienstands, des Alters zu Beginn der Alkoholabhängigkeit, der durchschnittlichen täglichen Trinkmenge im letzten halben Jahr vor Therapiebeginn, der Anzahl bisheriger Entgiftungen und Entwöhnungen sowie Suizidversuchen. Weitere Angaben enthält die folgende Tabelle mit den zu T0 erhobenen sozialdemographischen und störungsbezogenen Merkmalen.

Tabelle: Soziodemographische und störungsbezogene Merkmale der Stichprobe (T0)

	gesamt	Behandlungsgruppe			Unterschieds-testung
	(n=290)	ambulant (n=92)	stationär Kz[a] (n=91)	stationär Lz[b] (n=107)	Chi^2
Alter (M, SD)	45,3 (8,6)	46,2 (10,2)	46,5 (8,3)	43,4 (6,9)	**7,0*** [c]
Geschlecht (n, %)					**67,6***** [d]
Männer	215 (74,1)	60 (65,2)	67 (73,6)	88 (82,2)	
Frauen	75 (25,9)	32 (34,8)	24 (26,4)	19 (17,8)	
Schulbildung/ Jahre (M, SD)	9,9 (1,7)	10,2 (2,0)	9,9 (1,7)	9,6 (1,5)	3,6 [c]
Ohne Schulabschluss (n, %)	5 (1,7)	1 (1,1)	4 (4,4)	-	**604,4***** [d]
Ohne Berufsausbildung (n, %)	62 (21,4)	14 (15,2)	17 (18,7)	31 (29,0)	**462,6***** [d]
Berufstätigkeit (n, %)					**292,9***** [d]
berufstätig	159 (54,8)	48 (52,2)	66 (72,5)	45 (42,1)	
arbeits- / erwerbslos	91 (31,4)	15 (16,3)	17 (18,7)	59 (55,1)	
Nichterwerbsperson	40 ((13,8)	29 (31,5)	8 (8,8)	3 (2,8)	
Familienstand (n, %)					**164,2***** [d]
ledig	68 (23,4)	19 (20,7)	14 (15,4)	35 (32,7)	
verheiratet	124 (42,8)	43 (46,7)	53 (58,2)	28 (26,2)	
getrennt	19 (6,6)	9 (9,8)	5 (5,5)	5 (4,7)	
geschieden	69 (23,6)	17 (18,5)	16 (17,6)	36 (33,6)	
verwitwet	10 (3,4)	4 (4,3)	3 (3,3)	3 (2,8)	
Alter: Beginn Alkohol-abhängigkeit (M, SD)	32,8 (9,5)	32,3 (10,5)	35,4 (9,3)	30,9 (8,5)	**11,3**** [c]
Dauer der Alkoholabhängigkeit (Jahre: M, SD)	12,4 (8,6)	13,8 (9,2)	11,3 (8,4)	12,2 (7,9)	3,5 [c]
Trinkmenge (g/d) (M, SD)	191,7 (145,4)	184,0 (113,9)	150,3 (97,8)	233,4 (187,4)	**13,4***** [c]
Vorbehandlungen (M, SD) bezüglich					
Alkohol - Entgiftung	3,2 (6,4)	3,0 (5,5)	2,3 (4,7)	4,0 (8,1)	**7,9*** [c]
Alkohol - Entwöhnung	0,7 (4,3)	1,1 (5,5)	0,7 (5,1)	0,3 (1,1)	**7,5*** [c]
Psychischer Probleme	0,9 (4,4)	1,1 (4,2)	0,7 (3,8)	1,0 (5,1)	2,8 [c]
Körperlicher Probleme (stationär)	3,3 (3,5)	3,1 (2,7)	3,0 (2,7)	3,7 (4,5)	1,2 [c]
Suizidversuch (n, %)	46 (15,2)	16 (17,4)	6 (6,6)	24 (22,4)	**9,4**** [c]

Anmerkungen. [a] = Kurzzeittherapie, [b] = Langzeittherapie, [c] = Chi^2 des Kruskal-Wallis H-Tests (für ordinalskalierte Daten), [d] = Chi^2 des Chi^2 -Test.
* p<0,05; ** p<0,01, *** p<0,001.

Die Abstinenzquote zur 2-Jahres-Katamnese lag in der Gesamtstichprobe bei 59%. Unterteilt in die drei Therapieangebote ergab sich eine Abstinenzquote von 57% nach ambulanter, 77% nach stationärer Kurzzeittherapie und 43% nach stationärer Langzeittherapie.

1. Durch welche Patientenmerkmale lässt sich Therapieerfolg vorhersagen?

Als Prädiktoren wurden mittels logistischer Regressionsanalyse für die Gesamtstichprobe Schulabschuss, abgeschlossene Ausbildung, Beginn der Alkoholabhängigkeit, Dauer der Alkoholabhängigkeit, bisherige Behandlungen wegen körperlichen Problemen und Suizidversuche ermittelt.

Patienten mit durchgängiger Abstinenz bis zur 2-Jahres-Katamnese hatten einen durchschnittlich höheren Schulabschluss (OR = 0,7; 95% KI = 0,5 - 1,0; $p < 0,05$), seltener eine abgebrochene Ausbildung (OR = 1,4; 95% KI = 1,0 - 2,0; $p < 0,05$), waren älter, als bei ihnen eine Alkoholabhängigkeit diagnostiziert wurde (OR = 1,6; 95% KI = 1,0 - 2,4; $p < 0,05$), zu Therapiebeginn bereits länger abhängig (OR = 1,6; 95% KI = 1,0 - 2,4; $p < 0,05$), sind durchschnittlich seltener stationär wegen körperlicher Probleme behandelt worden (OR = 0,3; 95% KI = 0,1 - 1,0; $p < 0,01$) und hatten seltener einen Suizid versucht (OR = 0,8; 95% KI = 0,7 - 1,0; $p < 0,01$).

Unter alleiniger Betrachtung der ambulanten Entwöhnung ergaben sich als Prädiktoren für Therapieerfolg Geschlecht (OR = 0,2; 95% KI = 0,0 - 1,0; $p < 0,05$), Anzahl bisheriger Entgiftungen (OR = 0,7; 95% KI = 0,6 - 1,0; $p < 0,05$) und Anzahl von Behandlungen wegen körperlichen Problemen (OR = 0,2; 95% KI = 0,1 - 0,7; $p < 0,05$). Die Analysen zeigten, dass sich zum einen männliches Geschlecht positiv auf den Therapieerfolg der ambulanten Entwöhnung auswirkte; außerdem war es für die Patienten umso günstiger ja weniger Entgiftungen und/ oder Behandlungen wegen körperlichen Problemen sie bisher absolviert hatten.

2. Welche Patientenmerkmale erlauben eine gute Zuordnung zu den drei Therapiearten?

Es zeigten sich statistisch bedeutsame Assoziationen zwischen Therapieerfolg in Form von Abstinenz 2 Jahre nach Therapieende und Zufriedenheit mit der Familiensituation sowie Abstinenz 2 Jahre nach Therapieende und Erwerbstätigkeit. Im Detail ergaben sich die folgenden Assoziationen:

- positive Assoziationen zwischen der zu T0 mittels EuropASI erfassten Zufriedenheit mit der Familiensituation und Abstinenz, wenn die Personen an der ambulanten oder stationären Kurzzeitentwöhnung teilnahmen (OR = 0,3; 95% KI = 0,1 - 0,9; $p < 0,05$) und
- zu T0 Erwerbstätige hatten mehr Aussicht auf Therapieerfolg in Form von Abstinenz nach 2 Jahren, wenn sie die Entwöhnung als ambulante oder stationäre Kurzzeittherapie (OR = 3,1; 95% KI = 1,2 - 7,9; $p < 0,05$) und nicht als stationäre Langzeittherapie (OR = 0,4; 95% KI = 0,2 - 0,9; $p < 0,05$) absolvierten, wobei die stationäre Kurzzeittherapie im Vergleich zur ambulanten Therapie bessere Ergebnisse erzielte.

3. Welche Rolle spielt Craving bzw. die Obsessive Compulsive Drinking Scale (OCDS) hinsichtlich der Vorhersage des Therapieerfolges?

Die Analysen wurden für Patienten der ambulanten und stationären Entwöhnung getrennt durchgeführt.

Für die Patienten der ambulanten Entwöhnung ergaben sich Assoziationen zwischen der Unterskala „Gedanken“ und Abstinenz bis T2 (OR = 0,7; 95% KI = 0,5 - 0,9; $p < 0,05$), Abstinenz bis T3 (OR = 0,6; 95% KI = 0,5 - 0,8; $p < 0,01$) und Abstinenz bis T4 (OR = 0,8; 95% KI = 0,3 - 0,7; $p < 0,001$).

Je höher der Summenscore auf der Subskala „Gedanken“ ausfiel (T1, T2, T3), desto eher waren die Patienten zum unmittelbar folgenden Messzeitpunkt rückfällig (T2, T3, T4).

Die Analyse der entsprechenden Werte der stationären Entwöhnung resultierte in signifikant höheren OCDS-Summenwerten für die Patienten, die bis zur jeweils folgenden Katamnese einen Rückfall hatten. Bei den im Folgenden angegebenen OCDS-Werten handelt es sich um arithmetische Mittelwerte (MW). Der erstgenannte MW ist der Gruppenmittelwert der rückfälligen Patienten und der zweite MW jener der nicht rückfälligen Patienten.

6 Monate nach Therapieende (T2) signifikant höhere OCDS-Summenwerte der Patienten, die bis zur 1-Jahres-Katamnese (T3) einen Rückfall hatten:

OCDS-Gesamtwert 6,7 vs. 2,1 (OR = 0,8; 95% KI = 0,7 – 0,9; $p < 0,01$)

OCDS-Handlungsimpulse 2,6 vs. 0,8 (OR = 0,8; 95% KI = 0,6 – 0,9; $p < 0,01$)

OCDS-Gedanken 4,1 vs. 1,3 (OR = 0,8; 95% KI = 0,7 – 0,9; $p < 0,05$).

12 Monate nach Therapieende (T3) signifikant höhere OCDS-Summenwerte der Patienten, die bis zur 2-Jahres-Katamnese (T4) einen Rückfall hatten:

OCDS-Gesamtwert 6,7 vs. 2,1 (OR = 0,8; 95% KI = 0,7 – 0,9; $p < 0,05$)

OCDS-Handlungsimpulse 4,0 vs. 1,4 (OR= 0,8; 95% KI = 0,7 – 0,9; $p < 0,05$)

OCDS-Gedanken 2,5 vs. 0,9 (OR = 0,8; 95% KI = 0,6 – 0,9; $p < 0,05$).

Die Analyse der Daten der stationären Einrichtung ergab also höhere OCDS-Gesamtwerte sowie höhere OCDS-Werte beider Unterskalen, „Gedanken“ und „Handlungsimpulse“, für die bis zur folgenden Befragung rückfällige Patientengruppe.

Diskussion

Um vollständig auf die Beantwortung der übergeordneten Fragestellung, für welche Patienten eine ambulante, eine stationäre Kurzzeit bzw. stationäre Langzeitentwöhnung am besten geeignet ist, eingehen zu können, wurden zunächst die Fragen 1.-3. erörtert.

1. Durch welche Patientenmerkmale lässt sich Therapieerfolg vorhersagen?

Für die Prognose des Behandlungserfolgs bei alkoholabhängigen Patienten scheinen Patientenmerkmale eine größere Rolle zu spielen als Therapiemerkmale [3, 8-24]. Das Ergebnis einer Vorrecherche waren Variablen, die sich auf die beiden Bereiche Demographie/Soziales und Substanzbezogenheit sowie eine Restkategorie (weitere klinische Variablen) verteilen ließen [9-24]: Geschlecht, berufliche und soziale Integration, sozioökonomischer Status, Religionszugehörigkeit, Höhe des Alkoholkonsums vor der Therapie, Schwere der Alkoholabhängigkeit, Häufigkeit bisheriger Therapieversuche, erwartete Selbstwirksamkeit bezüglich der Therapieziele, Motivation, Behandlungsziel, Dauer von Alkoholabhängigkeit bzw. problematischem Alkoholkonsum, Psychopathologie, neuropsychologische Leistungsfähigkeit.

Aufgrund statistisch-praktischer Vorüberlegungen wurden Geschlecht, berufliche und soziale Integration, Häufigkeit bisheriger Therapieversuche, Schwere der Alkoholabhängigkeit, Dauer von Alkoholabhängigkeit bzw. problematischem Alkoholkonsum und Psychopathologie als besonders relevant angesehen und in die Modellbildung eingeschlossen. Das Resultat für die Gesamtstichprobe war ein Modell mit den Prädiktoren Schulabschuss, abgeschlossene Ausbildung, Beginn der Alkoholabhängigkeit, Dauer der Alkoholabhängigkeit, bisherige Behandlungen wegen körperlichen Problemen und Suizidversuche. Nach diesem Modell absolvieren Patienten mit höherem Schulabschluss, abgeschlossener Ausbildung, später begonnener Alkoholabhängigkeit, längerer Dauer der Alkoholabhän-

gigkeit, weniger bisherigen Behandlungen wegen körperlichen Problemen und weniger bzw. keinen Suizidversuchen in der Vorgeschichte mit hoher Wahrscheinlichkeit die Alkoholentwöhnung erfolgreich sowie nachhaltig und zwar unabhängig davon, ob die Patienten eine ambulante oder stationäre Entwöhnung durchführten. Wurden die stationär behandelten Patienten herausgefiltert, waren eher männliches Geschlecht, weniger bisherige Entgiftungen und/ oder Behandlungen wegen körperlicher Probleme Garanten für den Therapieerfolg. Das heißt unter alleiniger Betrachtung der ambulanten Therapie ergab sich eine andere Prädiktorenkombination für die Vorhersage des Therapieerfolges. Deshalb wurde unter Fragestellung 2 untersucht:

2. Welche Patientenmerkmale erlauben eine gute Zuordnung zu den drei Therapiearten?

In vorliegender Studie waren die Patienten der ambulanten Therapie und der stationären Kurzzeittherapie sozial besser eingebunden, eher verheiratet als ledig oder geschieden und eher berufstätig als arbeitslos. Dagegen gab es in der stationären Langzeittherapie mehr Patienten ohne Berufsabschluss als in den anderen beiden Therapieformen. Zudem wurde die Alkoholabhängigkeit bei den Patienten der stationären Langzeittherapie früher diagnostiziert, sie tranken vor Therapiebeginn durchschnittlich mehr Alkohol pro Tag und hatten mehr Suizide versucht. Speziell für die ambulante und die stationäre Kurzzeitentwöhnung ließen sich Zufriedenheit mit der Familiensituation und Erwerbstätigkeit als Prädiktoren des Therapieerfolges herausarbeiten. Wenn die Patienten also bereits zu Therapiebeginn zufrieden mit ihrer familiären Situation und erwerbstätig waren, waren eine ambulante oder eine stationäre Kurzzeitentwöhnung als erfolgreich zu betrachten. Anderenfalls, sollten die Patienten vordergründig in stationärer Langzeitentwöhnung behandelt werden.

Es kann zusammengefasst werden, dass sich die Patienten der ambulanten und der stationären Kurzzeitentwöhnung relativ ähnlich waren mit einem geringer ausgeprägten Störungsprofil, waren

sie besser beruflich und sozial eingebunden. Die Patienten der stationären Langzeitentwöhnung wiesen ein stärkeres Störungsprofil auf und waren sozial sowie beruflich weniger gut integriert.

Nicht alle in eingangs formulierter Hypothese aufgeführten Variablen wurden als Prädiktoren für den Therapieerfolg bzw. geeignet für die Therapieallokation bestätigt. Das ergab sich zum einen zwangsläufig aufgrund der im Verhältnis zu dem Variablenpool relativ geringen Stichprobengröße und der damit aus methodischen Gründen erforderlichen Voranalyse. Darüber hinaus stellten die Variablen eine Auswahl aus heterogenen Studien dar. Das Ergebnis ist konform mit den Resultaten früherer und vergleichbarer Studien [siehe u.a. 6, 8, 9, 10].
Die dritte Fragestellung selektiert nach dem, in den bisherigen Analysen absichtlich nicht ausreichend berücksichtigen Konstrukt: Craving.

3. Welche Rolle spielt Craving bzw. die Obsessive Compulsive Drinking Scale (OCDS) hinsichtlich der Vorhersage des Therapieerfolges?

Craving, ein multidimensionales Konstrukt [22-29], ist nicht nur bei Alkoholabhängigkeit sondern auch anderen Arten der Substanzabhängigkeit von Bedeutung. Wegen dieser Bedeutung existieren Skalen mit guter Konstruktvalidität zur standardisierten Erhebung - für Alkoholabhängigkeit unter anderem die Obsessive Compulsive Drinking Scale (OCDS) [30]. Die OCDS ist ein Selbstbeurteilungsinstrument und die Analysen der Patienteneinschätzungen ergaben:
Je geringer ausgeprägt der OCDS-Wert war, desto besser war der Therapieerfolg. In vorliegender Studie bezog sich diese Aussage für die Patienten der ambulanten Therapie speziell auf den Summenscore der Subskala „Gedanken“. Für die stationären Patienten traf sie auf den OCDS-Gesamtwert und die Werte der beiden Unterskalen, „Gedanken“ und „Handlungsimpulse“, zu.

Die Ergebnisse deuten darauf hin, dass die OCDS zum einen ein geeignetes Instrument zur Erfassung von Craving ist und zum anderen, dass mittels OCDS erfasstes Craving relevant für das Therapieergebnis und den kurzfristigen Therapieerfolg ist. Die OCDS stellte sich als nützliches Instrument zur Identifikation von Patienten mit erhöhter Rückfallgefahr dar und könnte auch aus wirtschaftlichen Überlegungen heraus im Rahmen der Therapienachsorge alkoholabhängiger Patienten eingesetzt werden.

Die übergeordnete Fragestellung der vorliegenden Arbeit betraf die Abgrenzung von patienten- und störungsbezogenen Merkmalen für eine empirisch geleitetet Patientenallokation - zur Bestimmung der für den Patienten am besten geeignete Therapieart [1-7]. In den vergangenen Jahren wurden einige Studien zu dieser Thematik durchgeführt (Übersicht in [41]). So wurden in der MEAT-Studie [42], ohne Differenzierung zwischen ambulanter oder stationärer Therapieform, u. a. eine stabile Wohnsituation, die Familiensituation (Partner) sowie das Fehlen von Suizidversuchen in der Vorgeschichte als Hinweise auf den erfolgreichen Therapieabschluss herausgearbeitet. Den Patientengruppen der ambulanten und stationären Kurzzeittherapie vorliegender Studie konnten ähnliche Charakteristika zugeordnet werden, was wiederum zu vergleichbaren Kriterien für eine erfolgreiche Therapieallokation führte. Unter erfolgreicher Allokation ist natürlich nicht nur die rein formale „Zuordnung“ von Patienten zu Therapieplätzen, d.h. ohne jegliches Mitspracherecht der Patienten, zu verstehen. Darum ging es in vorliegender Arbeit nicht. Die Mitsprache der Patienten bleibt unangefochten und floss zusätzlich über die Art der Datenerhebung in die durchgeführten Analysen ein. Schließlich handelte es sich bei der Datenerhebung in erster Linie um Befragungen und somit entsprechen die Daten Beurteilungen der Befragten. Ziel war es, möglichst objektive Kriterien aufzudecken, anhand derer alkoholabhängigen Patienten mit Therapiebedarf ein Optimum an therapeutischem Nutzen dargelegt werden kann. Zufriedenheit mit der Familiensituation, die mit stabiler Wohnsituation sowie sozialer Integration korreliert, und Erwerbstätigkeit - also berufliche Integration führten sowohl in

der ambulanten Entwöhnung als auch der stationären Kurzzeitentwöhnung zu Therapieerfolg. Offensichtlich leitete der, bereits vor Therapiebeginn vorhandene, soziale und berufliche Rückhalt zu einem langfristig positiven Therapieergebnis. Bei den Patienten der stationären Langzeittherapie waren soziale und berufliche Integration weniger ausgeprägt, so dass andere Faktoren für den erfolgreichen Therapieabschluss von Bedeutung waren. Eine Reihe von Befunden aus der Literatur wurde bestätigt, entweder direkt oder indirekt, wie z. B. soziale Integration und Zufriedenheit mit der Familiensituation oder Schwere der Abhängigkeit und Beginn sowie Dauer der Abhängigkeit.

Kritisch an der Studie anzumerken sind die nicht erfolgte Randomisierung der Patienten zu den drei Therapieformen, die relativ kleine Stichprobe, dass Laborwerte, wie GGT (Gamma-Glutamyl-Transferase) oder CTD (Carbohydrate deficient transferrin), nicht erfasst wurden und, dass Craving über keine weitere Skala neben der OCDS untersucht wurde.

Trotz dieser methodischen Einschränkungen eröffnet die vorliegende Arbeit ein Modell, nach dem eine Allokation durchgeführt und mit dem Patienten abgestimmt werden kann. Es hat sich gezeigt, dass vor allem soziale und berufliche Einbindung, d.h. ein intaktes privates Umfeld und bis zu einem gewissen Grad Profession für eine ambulante Therapie oder eine stationäre Kurzzeittherapie sprechen. Dieses Ergebnis ist sehr gut mit der Absicht vereinbar, bei vorhandener Erwerbstätigkeit nicht oder so selten wie möglich der Arbeitsstelle fern zu bleiben. Wenn die Patienten zudem mit ihrer sozialen Situation zufrieden sind und nicht die Notwendigkeit besteht, aus einem krankheitsfördernden Milieu ausbrechen zu müssen, so spricht das für eine ambulante Therapie oder stationäre Kurzzeittherapie und im umgekehrten Fall für eine stationäre Langzeittherapie: Die Patienten haben kein unterstützendes privates Umfeld und/ oder sind nicht beruflich eingebunden. Sie können sich im Rahmen der stationären Langezeitentwöhnung auf eine private und/ oder berufliche Rehabilitation

konzentrieren, ohne dass suchtspezifische Schlüsselreize den Therapieerfolg bereits auf kurze Sicht gefährden.

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Originalarbeit

Predictive value of obsessive-compulsive drinking scale (OCDS) for outcome in alcohol-dependent inpatients: results of a 24-month follow-up study

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SUBSTANCE ABUSE TREATMENT, PREVENTION, AND POLICY

RESEARCH Open Access

Predictive value of obsessive-compulsive drinking scale (OCDS) for outcome in alcohol-dependent inpatients: results of a 24-month follow-up study

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Abstract

Background: The present study examined whether craving as measured by the obsessive-compulsive drinking scale (OCDS) predict long-term outcome in alcohol-dependent inpatients.

Methods: This was a 24-month prospective, observational study in 198 alcohol-dependent inpatients treated under standardized conditions. The primary outcome criterion was abstinence, defined as no subjective report or objective indication of alcohol consumption since discharge from treatment. The patients self-rated their craving for alcohol at the 6- and 12-month follow-ups by using the German version of the OCDS, which measures obsessive and compulsive aspects of craving. Univariate and logistic regression analyses with covariates were performed.

Results: Of the 104 patients interviewed at the 24-month follow-up, 60% (n = 62) were abstinent. We found significant associations between total OCDS scores at 6 months and outcome at 12 months and between total OCDS scores at 12 months and outcome at 24 months: the higher the OCDS total score at one follow-up evaluation, the less likely patients were to be abstinent at the subsequent one. The same association was found for each of the two OCDS subscales, control and consequences and drinking obsessions.

Conclusions: These results support earlier findings that OCDS scores can predict outcome in alcohol-dependent patients. This information can be used for the timely development of protective resources. Hence, decisions over the use of resources can be made on the basis of objectified parameters to develop a personalized treatment concept. Consequently, economic considerations can induce a reduction of high medical costs.

Keywords: Treatment, alcohol, alcoholism, craving, OCDS, outcome

Background

Craving is a multidimensional construct that has both positive and negative reinforcement properties and plays a key role in relapse to alcohol consumption. It comprises thoughts about alcohol and urges to drink alcohol and is associated with negative affect, depressed mood, distress or withdrawal symptoms (for review see Abrams) [1-7]. There is plethora of research on different forms of craving in substance use disorders [8-12], with some studies indicating that subjective craving is predictive of treatment outcome [13-19]. Patients in remission are particularly prone to alcohol-related cues or stress that may induce craving [20-23].

The obsessive-compulsive drinking scale (OCDS) [24] is the most widely used multi-factorial self-rated craving scale in alcohol research and treatment. The OCDS measures various aspects of craving for alcohol, including the compulsive urge to drink alcohol, continuous thoughts about alcohol and the struggle to control the urgency. The scale is a modified version of the Yale-Brown Obsessive Compulsive Scale [25,26] and aims to measure both obsessive and compulsive aspects of craving. The 14 items of the scale are divided into two subscales, control and consequences (CC) and drinking obsessions (DO). The OCDS has been shown to be a valid self-rated instrument with good test-retest

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reliability and internal consistence [24,27]. There are several validated translations with good reliability and construct validity, including a German version [6,28-31]. The studies that examined the construct, concurrent and discriminate validity of the OCDS [24,27,32-35] were reviewed by Connor et al. [36], who also performed a further validation study and reported that neither the factor scores nor the total OCDS score was related to baseline alcohol problems or consumption.

The predictive value of OCDS scores for treatment outcome has been demonstrated in some but not all previous studies [37,38] and needs further confirmation [35]. Our goal was to examine the association between OCDS scores and outcome in a sample of alcohol-dependent inpatients treated under standardized conditions.

Methods

Subjects

The subjects were 198 alcohol-dependent inpatients. From January to December 2003, all patients admitted to the inpatient clinic AHG Clinic Wilhelmsheim, Germany for treatment of alcohol dependence were consecutively recruited into the study at the start of their treatment. The primary study inclusion criterion was an ICD-10 and DSM-IV diagnosis of alcohol dependence. Exclusion criteria were dependence on benzodiazepines or illicit drugs or both, severe physical illness and severe psychiatric disorders such as psychosis or acute suicidality. All patients who entered treatment participated in the study and all gave written informed consent to participate. The study protocol was approved by the local ethics committee, and the study was performed according to the principles laid down in the Declaration of Helsinki.

Patients received a standard alcohol treatment, which lasted for either 8 weeks (for less severe cases) or 12 to 16 weeks (for more severe cases). The treatment includes both psychoanalytical and behavioural approaches and methods. The treatment concept at the clinic follows an abstinence-oriented approach.

Assessments

This was a prospective, 24-month follow-up study that measured outcome, defined as abstinence.

Assessments of diagnostic criteria for disorders according to DSM-IV and ICD-10 were made by the Munich Composite International Diagnostic Interview [39,40]. Further variables relevant for the analyses were recorded in structured, face-to-face interviews at the start of the programme (Baseline, T0), at discharge from the treatment unit (T1), and at the 6-month (T2), 12-month (T3) and 24-month (T4) follow-ups. The baseline assessment included demographic variables, past and current psychiatric, medical and substance use-related problems, and drinking parameters. Patients were asked about prior detoxifications, prior alcohol rehabilitation and prior treatments for psychiatric problems, except for alcohol dependence. At discharge, the length of time spent in the programme, mode of discharge from the programme (e.g. successfully completed the programme, left prematurely by choice), and relapses during treatment were recorded. Alcohol consumption was reported using the Timeline Followback interview. Patients completed the German version of the OCDS [31] at T2 and T3.

The interviewers were trained psychologists, physicians and medical students and were not involved in the treatment of interviewed subjects; the project coordinator was not a member of the clinical staff. But, the interviewers as well as the project coordinator were in contact with the therapists. For further details see Soyka and Schmidt [41].

Table 1 summarizes the variables, assessment instruments and assessment times.

Definition of outcome criterion

The primary outcome criterion was abstinence 6, 12 and 24 months after discharge from treatment. Abstinence was defined according to the definition from Feuerlein and Kuefner [42] as no subjective report or objective indication of alcohol consumption since discharge. This criterion was used as the dependent variable in the data analyses.

For data analysis, patients were divided into two groups: those who were personally interviewed at the 24-month follow-up and those who did not attend the 24-month follow-up interview.

Data analysis

Statistical analyses were performed using SPSS for Windows [43].

Absolute and relative frequencies, means and standard deviations (SD) were calculated for data description. Univariate comparisons of responders and non-responders were performed by using the likelihood ratio statistic (for alternative and categorial data), the Mann-Whitney U test (for ordinal data), and the Kolmogorov-Smirnov test (for metric data). The predictive value of the OCDS scores was analyzed with logistic regression analyses. The variables which differed between responders and non-responders were inserted as covariates.

All statistical tests were two tailed. A p value of less than 0.05 was considered to be statistically significant. We performed one analysis that only included the data of patients who were personally interviewed at the 24-month follow-up and another that also included the data from those who did not attend the 24-month

Table 1 Variables, assessment instruments and assessment times

T0	T1	T2	T3	T4
Treatment start	At discharge	6 months after discharge	12 months after discharge	24 months after discharge
EuropASI/ patient files: Demographics Psychiatric, medical and substance use problems Drinking parameters	EuropASI/ patient files: Time in treatment Mode of discharge Relapses	Total abstinence during the 6 months Relapse OCDS	Total abstinence during the 12 months Relapse OCDS	Total abstinence during the 24 months Relapse

interview; we repeated these two analyses after applying the OCDS modification for longitudinal studies to the data (see Nakovics et al. for further details [44]), making a total of four sets of analyses. There were no significant differences between the results of these four sets of analyses.

Results

Subject characteristics and outcome

The subject characteristics are summarized in table 2. One hundred and ninety-eight patients were enrolled in the study and 104 patients attended the 24-month follow-up. At admission, the mean age of the patients was 45.6 (*SD* = 7.4) years. The average duration of alcohol dependence was 11.4 (*SD* = 8.1) years, and the mean age of onset of alcohol dependence 34.0 years (*SD* = 9.1).

Of the patients interviewed at the 24-month follow-up (T4; *n* = 104), 72% (*n* = 75) had been continuously abstinent until 6 months after treatment discharge (T2), 67% (*n* = 70) until the 12-month follow-up (T3), and 60% (*n* = 62) until T4. There are no significant differences in the baseline and T1 characteristics between the 94 patients who did not attend the 24-month follow up and the 104 patients who attended this follow up.

Significant differences were found at T4 between abstinent (*n* = 62) and non-abstinent patients (*n* = 42) for employment status: 42 (97.7%) of the patients abstinent at T4 were employed at T0 but only 23 (55%) of the non-abstinent patients. Furthermore, the non-abstainers had participated in more previous alcohol detoxifications and more previous alcohol rehabilitations than the abstainers. The non-abstainers had repeated alcohol relapses during the treatment period, and more patients of this group dropped out.

Association between the OCDS scores and outcome

As to be seen in figures 1 and 2, associations were found between the OCDS scores at T2 and outcome at T3 as well as between the scores at T3 and outcome at T4 for both OCDS subscales and the total OCDS score. The mean 6-month OCDS scores of patients abstinent or non-abstinent at T3 were as follows: 1.3 in abstainers vs. 4.1 in non-abstainers (*OR* = 0.8, $p < .05$, 95% CI = 0.7, 0.9) in the CC subscore; 0.8 in abstainers vs. 2.6 in non-abstainers (*OR* = 0.8, $p < .01$, 95% CI = 0.6, 0.9) in the DO subscore; and 2.1 in abstainers and 6.7 in non-abstainers (*OR* = 0.8, $p < .01$, 95% CI = 0.7, 0.9) in the total score. The mean 12-month OCDS scores of patients abstinent or non-abstinent at T4 were as follows: 1.4 in abstainers vs. 4 in non-abstainers (*OR* = 0.8, $p < .05$, 95% CI = 0.7, 0.9) in the CC subscore; 0.9 (abstainers) vs. 2.5 (non-abstainers) in the DO subscore (*OR* = 0.8, $p < .05$, 95% CI = 0.6, 0.9); and 2.1 (abstainers) vs. 6.7 (non-abstainers) in the total score (*OR* = 0.8, $p < .05$, 95% CI = 0.7, 0.9).

Discussion

Our findings indicate that in alcohol-dependent inpatients being treated under standardized conditions in a specialized alcohol inpatient facility, OCDS scores 6 months after discharge are predictive for the 12-month outcome and OCDS scores 12 months after discharge are predictive for the 24-month outcome. Concerning significant results in both subscales, it seems that obsessions as well as control/consequences about alcohol are connected closely with alcohol relapse.

Our findings are in line with other studies reporting that the magnitude of craving is predictive for drinking outcome in alcohol-dependent patients [17,27,35,37,45,46].

Richardson et al [17] randomized 169 patients (70 male, mean age 45) who were treated across three outpatient clinics in Sydney, Australia to receive acamprosate, naltrexone or placebo. They found craving to be a significant predictor of daily drinking during treatment in independence of baseline depression and dependence severity.

Anton et al [27] assessed 41 alcohol-dependent individuals weekly with the OCDS during a 12-week pharmacologic and cognitive-behavioural treatment. The OCDS total and the subscale scores were significantly higher in subjects who had relapsed during the time after the assessment.

Roberts et al [35] studied 132 alcohol dependent patients seeking outpatient treatment. Patients received

Table 2 Baseline and T1 characteristics of subjects - shown for the total sample and according to drinking status (abstinent or non-abstinent) at the 24-month follow-up (T4)

	Total sample	Patients who responded at T4		Difference abstinent vs. non-abstinent
	(*n* = 104)	abstinent at T4 (*n* = 62)	non-abstinent at T4 (*n* = 42)	
Baseline				
Age (*M, SD*)	45.6 (7.4)	46.2 (7.4)	44.7 (7.4)	Z = 0.6; p = 0.93[a]
Sex (*n, %*)				LR(1, n = 104) = 0.8; p = 0.38[b]
Male	77 (74)	44 (71)	33 (79)	
Female	27 (26)	18 (29)	9 (21)	
Without secondary school qualifications (*n, %*)	3 (3)	2 (3)	1 (2)	LR(1, n = 104) = 2.3; p = 0.80[b]
Without professional training (*n, %*)	29 (28)	17 (27)	12 (29)	LR(1, n = 104) = 4.3; p = 0.37[b]
Employment status (*n, %*)				LR(4, n = 104) = 9.7; p = 0.05*[b]
Employed	65 (63)	42 (68)	23 (55)	
Unemployed	35 (34)	16 (26)	19 (45)	
Retired	4 (4)	4 (7)	0	
Residential situation (*n, %*): Living ...				LR(5, n = 104) = 10.5; p = 0.61[b]
alone	35 (34)	15 (24)	20 (48)	
with parents	4 (4)	1 (2)	3 (7)	
with children	5 (5)	4 (7)	1 (2)	
with cohabitant and with/without children	59 (57)	41 (66)	18 (43)	
with friends	1 (1)	1 (2)	0	
Marital status (*n, %*)				LR(5, n = 104) = 8.4; p = 0.14[b]
Single	21 (20)	10 (16)	11 (26)	
Married	47 (45)	32 (52)	15 (36)	
Separated	5 (5)	2 (3)	3 (7)	
Divorced	27 (26)	14 (23)	13 (31)	
Widowed	4 (4)	4 (7)	0	
Age of onset of alcohol use (years: *M, SD*)	15.1 (3.9)	15.3 (4.3)	14.8 (3.3)	Z = 0.5; p = 0.97[a]
Age of onset of regular alcohol use (years: *M, SD*)	22.4 (7.3)	22.8 (7.4)	21.9 (7.2)	Z = 0.7; p = 0.78[a]
Age of onset of alcohol dependence (years: *M, SD*)	34.0 (9.1)	34.7 (9.3)	32.9 (8.8)	Z = 0.8; p = 0.54[a]
Duration of alcohol dependence (years: *M, SD*)	11.4 (8.1)	11.5 (8.8)	11.2 (7.0)	Z = 1.1; p = 0.63[a]
Daily alcohol intake (g/day: *M, SD*)	176.8 (140.7)	156.0 (101.9)	207.5 (180.8)	Z = 0.8; p = 0.19[a]
Number of previous treatments (*M, SD*) for				
alcohol				
detoxification	3.7 (8.6)	2.9 (8.4)	4.7 (9.0)	U = 996.5; p = 0.03*[c]
rehabilitation	0.2 (0.5)	0.1 (0.2)	0.4 (0.7)	U = 1006.0; p = 0.002**[c]
psychiatric problems	1.3 (6.1)	0.9 (4.6)	1.9 (8.0)	U = 1266.5; p = 0.75[c]
medical problems	3.3 (3.0)	2.8 (1.9)	4.0 (4.1)	U = 1160.0; p = 0.34[c]
T1				
Repeated alcohol relapse during treatment (*n, %*)	4 (4)	0	4 (10)	LR(1, n = 104) = 7.5; p = 0.01**[b]
Treatment drop out (*n, %*)	9 (9)	2 (3)	7 (17)	LR(1, n = 104) = 5.7; p = 0.03*[b]

[a] Kolmogorov-Smirnov test, [b] Likelihood ratio statistic, [c] Mann-Whitney U test.

*$p < 0.05$; **$p < 0.01$.

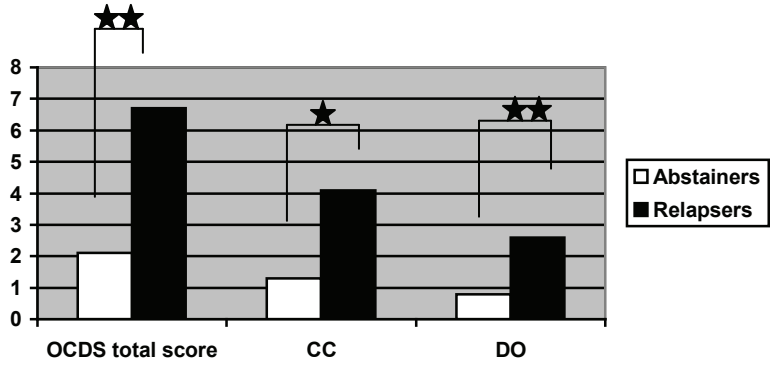

Figure 1 12-month follow-up. Differences in total OCDS score, control and consequences subscore (CC) and drinking obsession subscore (DO) at the 6-month follow-up between patients who were abstainers (n = 62) and those who were non-abstainers (n = 42) at the 12-month follow-up. Logistic regression analyses: 1. column Wald = 7.0; df = 1; p = 0.01 2. column Wald = 6.6; df = 1; p = 0.05 3. column Wald = 6.5; df = 1; p = 0.01. *p < 0.05; **p < 0.01.

either 50 mg naltrexone or placebo daily for 12 weeks and attended 12 sessions of cognitive behavioural therapy. The authors suggested the OCDS may better predict shorter term drinking outcomes than prolonged outcomes as each of the OCDS subscale scores predicted the hazard for heavy drinking during the following treatment week.

Bottlender and Soyka [37] reported on 103 patients attended an intensive outpatient treatment program for around 12 month. Patients who relapsed during the treatment phase had significantly higher total OCDS scores as well as higher scores on the subscales 'obsessions' and 'drinking control and consequences' compared to abstinent patients. Furthermore, major relapse was predicted by the total OCDS score and the subscale 'obsessions'.

Gordon et al [45] reported on 218 alcohol-dependent patients admitted to two separate residential addiction treatment programs. They found that days craving reported in the week prior to discharge predicted alcohol use at the three-month follow-up.

Kranzler et al [46] initiated a study with 127 alcohol depended subjects who attended a 12-week outpatient pharmacotherapy trial with a 3-month follow-up period. The predictive validity of the OCDS was not found to be significant but was a tendency.

There is some debate as to whether the OCDS includes questions that may not represent the core concept of craving and therefore requires changes [29,44,47]. Still, taken together, our findings suggest that craving as defined and measured by the OCDS items is indeed relevant for predicting long-term outcome in patients. Data from this study further emphasize the role of craving for treatment and outcome in alcohol dependence.

Allocating patients to different treatment settings according to their symptom profile and prediction of

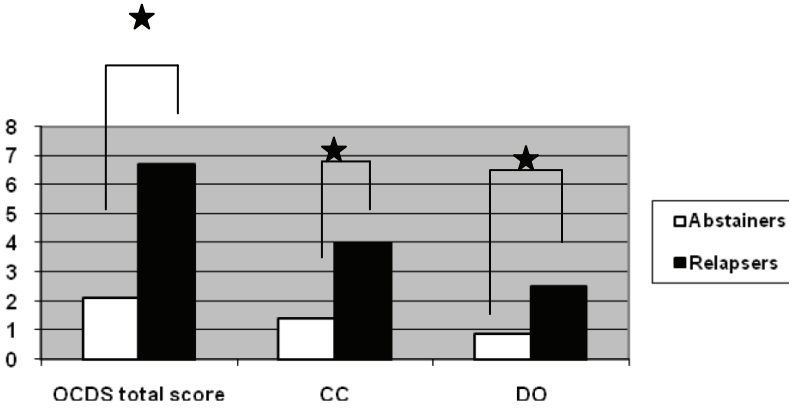

Figure 2 24-month follow-up. Differences in total OCDS score, control and consequences subscore (CC) and drinking obsession subscore (DO) at the 12-month follow-up between patients who were abstainers (n = 62) and those who were non-abstainers (n = 42) at the 24-month follow-up. Logistic regression analyses: 1. column Wald = 6.3; df = 1; p = 0.05 2. column Wald = 5.4; df = 1; p = 0.05 3. column Wald = 5.1; df = 1; p = 0.05. *p < 0.05.

response is a major but difficult clinical task and results of studies are conflicting [48]. Craving has been identified as one of the key symptoms in alcohol dependence and as a major cause of relapse to alcohol [4,14,34,49], craving is similarly relevant in other forms of substance use, especially cocaine [13,18]. Craving can be but does not have to be cue related [12,16,50] and can be linked to different positive and negative affective stimuli, cognitive processes and especially stress [3,7,9,11,51]. The interrelationship between craving and relapse is unclear and many relapses occur without any clear subjective experience of craving. Still, there is robust evidence for a predictive role of craving for relapse to heavy drinking and many treatment studies use craving scales at least as secondary outcome parameters [14,16,17,19].

The OCDS aims to measure key features of craving [24] and is by far the most frequently used scale in this respect. It was developed on the basis of two theoretical obsessive and compulsive dimensions of alcohol craving [25,26] and is divided into two subscales, obsessions (drinking obsessions; DO) and compulsions (control and consequences; CC). Its predictive value is still a matter of debate [35,36,38]. Previously, we demonstrated that the OCDS total score and each of the two subscores are predictive for 12-month follow-up after outpatient treatment for alcohol dependence [37]. Kranzler et al. [46] also demonstrated that a higher OCDS score is predictive for a worse outcome.

There are several limitations to this study. First, no biological markers (such as CDT or GGT) were used to verify outcome and no collateral informants were available. Still, patients were repeatedly seen over a two-year period and personally interviewed, so that the results can be assumed to be reliable. Second, no other craving scales were used to cross-verify results. However, many studies indicate that the OCDS has well to excellent values for validity, as discussed above. As it is another situation if the patients are in treatment compared to the follow up time, we just used the OCDS at time point T2 and T3. Finally, only 104 out of 198 patients who entered inpatient treatment could be followed up by personal interview after 2 years. Nevertheless, this rate is acceptable for follow-up studies in alcoholic patients.

Conclusions

The results of this study further support that OCDS scores may have predictive value in alcohol-dependent patients and that the OCDS may also be a useful tool in clinical practice to identify patients at risk for relapse. To avoid high follow up costs for further treatments, patients with higher relapse potential are detectable in an earlier stage. The information is useful for the timely development of protective resources. Decisions over the use of resources can be made on the basis of objectified parameters to develop a personalized treatment concept. In this manner, economic considerations can induce a reduction of high medical costs.

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Authors' contributions

PS performed the statistical analysis and drafted the manuscript. CH helped to draft the manuscript. MS conceived the study, participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

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Originalarbeit
OCDS craving scores predict 24-month outcome in alcoholic outpatients

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OCDS Craving Scores Predict 24-Month Outcome in Alcoholic Outpatients

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This study was conducted to replicate previous findings on the predictive value of a German version of the Obsessive Compulsive Drinking Scale (OCDS) by investigating 24-month treatment outcome in an outpatient setting. This was a prospective, observational study with 92 alcohol-dependent patients. The OCDS was used to assess craving at the end of treatment, and at the 6-, 12-, and 24-month follow-ups. Univariate and logistic regression analyses were performed. Of the 67 patients interviewed at the 24-month follow-up, 58% were abstinent and 79% improved. OCDS scores were higher in patients with a less favorable outcome. In line with previous findings, our results showed that the intensity of craving as measured by the OCDS may predict outcome in outpatient alcoholics. (Am J Addict 2010;19:264–269)

BACKGROUND

Craving is a multidimensional construct comprising both positive and negative reinforcement properties; it is considered to be a key symptom and mechanism in the development of and relapse to alcoholism.[1–5] Numerous variables such as alcohol cues or stress may induce craving.[6–9] Although there are different definitions and concepts of craving, there is broad consensus that many alcoholics experience craving during and after alcohol consumption and that intensive craving may lead to relapse. There are many craving scales,[2,10–12] but the Obsessive Compulsive Drinking Scale (OCDS)[13] is the most frequently studied and widely used craving scale in alcohol research and treatment.

The OCDS measures various aspects of craving for alcohol, including the compulsive urge to drink alcohol, continuous thoughts about alcohol, and the struggle to control the urgency.[13] It is a modification of the Yale-Brown Obsessive Compulsive Scale,[14,15] and consists of 14 items covering both obsessive and compulsive aspects of alcohol consumption. The OCDS has demonstrated good test–retest reliability and internal consistence.[13,16] There are numerous, validated translations with good reliability and construct validity,[17–19] including a German one.[20] The studies examining the construct and concurrent and discriminant validity of the OCDS[13,16,21–24] were discussed in depth by Connor et al.[25] In addition, Connor et al.[25] recently performed a further validation study in 370 patients and found that neither the factor scores nor the total OCDS score was related to baseline alcohol problems or consumption. In addition, they found some support for the construct validity of the OCDS, but did not find concurrent validity of the scale.

Some items of the OCDS (Nos. 7 and 8) were considered to be problematic. Anton et al.,[26] Federoff et al.,[27] and de Wildt et al.[28] showed that alcohol craving can be assessed by five items from the OCDS. Likewise, Narkovics et al[29] found a short version to be equivalent to the full OCDS.

In a previous study in alcoholic outpatients, we found the OCDS to be predictive for treatment outcome,[30] whereas other researchers reported mixed results.[31] The predictive value of the OCDS needs further confirmation.[24] This study aimed to replicate the previously reported results by studying another sample of alcoholic outpatients from the same treatment facility as in our previous study.[30]

METHODS

Study Design

This was a prospective, 24-month follow-up study that measured outcome and abstinence rates in a sample of alcoholic outpatients who attended treatment for an average of 8 months at a specialized center (the outpatient facility "Client-oriented Problem Advice Centre Dachau," near Munich, Germany), offering a highly structured, intensive, two-phase treatment model. The therapy concept is

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TABLE 1. Variables, assessment instruments, and assessment times

T0 Treatment start	T1 At discharge	T2 6 months after discharge	T3 12 months after discharge	T4 24 months after discharge
EuropASI/patient files:	EuropASI/patient files:	Total abstinence during the 6 months	Total abstinence during the 12 months	Total abstinence during the 24 months
Demographics	Time in treatment	"Improved"	"Improved"	"Improved"
Psychiatric, medical and substance use problems	Mode of discharge Relapses	Relapse	Relapse	Relapse
Drinking parameters	OCDS	OCDS	OCDS	

group-oriented, integrative, and eclectic, and includes psychoanalytical as well as behavioral approaches and methods (three weekly sessions). The treatment follows an abstinence-oriented approach and has been described and evaluated repeatedly.[30–33] The abstinence rates and outcome of this sample have been reported before[34]; the methodology and research instruments also have been described in detail previously.[30]

In brief, from January to December 2003, all alcohol-dependent patients admitted to this outpatient clinic were consecutively recruited at the start of their outpatient rehabilitation. The primary inclusion criterion as defined by health care providers was an ICD-10 and DSM-IV diagnosis of alcohol dependence. Exclusion criteria were dependence on benzodiazepines or illicit drugs or both, severe physical illness, severe mental disorders, and mental disorders requiring inpatient treatment (acute suicidality, psychosis). All patients who entered treatment participated in the study, and all gave written informed consent to participate.

Assessment of Patients

Both diagnoses and variables relevant for the analyses were recorded in structured, face-to-face interviews. Interviews used the European Addiction Severity Index (EuropASI: German version)[35] and were conducted with each patient at the start of the program (Baseline, T0), at discharge from the treatment unit (T1), and at the 6-month (T2), 12-month (T3), and 24-month (T4) follow-ups. The baseline assessment included demographics; past and current psychiatric, medical, and substance use-related problems; and drinking parameters. Patients were asked about prior detoxification, prior alcohol rehabilitation, and prior treatments for psychiatric problems except for alcoholism. At discharge, the length of time spent in the program, mode of discharge from the program (eg, successfully completed the program, left prematurely by choice, etc.), and relapses during treatment were recorded. The interviewers were trained psychologists, physicians, and medical students and were not involved in the treatment of interviewed subjects; the project coordinator was not a member of the clinical staff. For further details, see Soyka and Schmidt.[32]

At T1, T2, and T3, patients completed the German version of the OCDS.[36]

Table 1 summarizes variables, assessment instruments, and assessment times.

Definition of Outcome Criteria

Abstinence 2 years after discharge from treatment was the primary outcome criterion. Abstinence was defined as no subjective report or objective indication of alcohol consumption since discharge from treatment. This criterion was used as the dependent variable in the data analyses.

Moreover, in the outcome description the number of patients who completed treatment and the number of improved patients were recorded. "Improvement" was defined according to the classification by Feuerlein and Küfner[37] as the presence of at least one of the following: consumption of less than 30 g (females) or 60 g (males) of alcohol per day; no signs of physical or mental consequences of alcohol abuse or of any pathological drinking pattern; no more than three drinking periods lasting less than a week (lapses) since discharge from treatment. "Relapse" was defined as the presence of at least one of the following: more than three lapses or regular consumption of more than 30 g (females) or 60 g (males) of alcohol per day; newly appeared alcohol-related disorders; inpatient treatments for alcoholism.

Furthermore, patients who were personally interviewed at the 24-month follow-up were classified as "responders," and those who did not attend the 24-month follow-up interview as "nonresponders."

Data Analysis

Statistical analyses were performed using SPSS for Windows.[38]

Absolute and relative frequencies, means, and standard deviations (SD) were calculated for data description.

TABLE 2. Baseline characteristics of subjects—shown for the total sample and according to drinking status (abstinent or nonabstinent) at the 24-month follow-up (T4)

	Total sample ($n = 89$)	Patients who responded at T4 ($n = 67$)		Difference abstinent vs. nonabstinent
		Abstinent at T4 ($n = 39$)	Nonabstinent at T4 ($n = 28$)	
Age (M, SD)	46.0 (9.9)	47.0 (9.2)	46.1 (1.6)	n.s.
Gender (n, %)				
Male	58 (65.2)	26 (66.6)	15 (53.6)	
Female	31 (34.8)	13 (33.3)	13 (46.3)	n.s.
Without secondary school qualifications (n, %)	1 (1.1)	1 (2.6)	0	n.s.
Without professional training (n, %)	14 (15.7)	5 (12.8)	4 (14.3)	n.s.
Livelihood (n, %)				n.s.
Gainful employment	67 (75.3)	34 (87.2)	18 (64.3)	
Unemployment benefit	7 (7.8)	1 (2.6)	3 (10.7)	
Pension	7 (7.8)	2 (5.2)	4 (14.3)	
Supported by relatives	5 (5.6)	1 (2.6)	2 (7.1)	
Other	3 (3.3)	1 (2.6)	1 (3.6)	
Residential situation (n, %): living				n.s.
Alone	33 (37.0)	14 (35.9)	6 (21.4)	
With parents	1 (1.1)	0	0	
With children	5 (5.6)	1 (2.6)	3 (10.7)	
With cohabitant and with/without children	49 (55.0)	24 (61.5)	18 (64.3)	
With friends	1 (1.1)	0	1 (3.6)	
Marital status (n, %)				n.s.
Single	18 (20.2)	7 (17.9)	4 (14.3)	
Married	42 (47.2)	20 (51.3)	15 (53.6)	
Separated	9 (10.1)	2 (5.1)	2 (7.1)	
Divorced	17 (19.1)	9 (23.1)	5 (17.9)	
Widowed	3 (3.4)	1 (2.6)	2 (7.1)	
Age of onset of alcohol use (years: M, SD)	14.1 (3.9)	14.4 (3.2)	14.4 (3.0)	n.s.
Age of onset of regular alcohol use (years: M, SD)	21.2 (7.2)	21.1 (6.2)	21.8 (7.3)	n.s.
Age of onset of alcohol dependence (years: M, SD)	32.3 (10.5)	32.0 (9.9)	32.2 (11.6)	n.s.
Duration of alcohol dependence (years: M, SD)	13.7 (9.4)	15.0 (10.6)	13.2 (9.4)	n.s.
Daily alcohol intake (g/day: M, SD)	184.0 (113.9)	193.2 (113.5)	157.8 (90.3)	n.s.
Number of previous treatments (M, SD) for alcohol				
Detoxification	3.0 (5.5)	2.5 (4.9)	4.7 (7.5)	Mann-Whitney $U = 346.5^*$
Rehabilitation	1.0 (5.5)	1.6 (8.0)	0.4 (0.8)	n.s.
Mental health problems	1.1 (4.2)	0.4 (0.6)	1.3 (2.3)	n.s.
Somatic problems	3.1 (2.7)	2.7 (2.4)	3.5 (2.7)	n.s.

$^*p < .05$.

Univariate comparisons of responders and nonresponders was performed by using Pearson's Chi^2 test (for alternative and categorial data), the Mann-Whitney U-test (for ordinal data), and the Kolmogorov-Smirnov test (for metric data). The predictive value of the OCDS scores was analyzed with backward stepwise logistic regression analyses.

All statistical tests were 2-tailed. A p-value of less than .05 was considered to be statistically significant. We performed two sets of analyses: one with the data of responders only, and one that included the data from nonresponders as "relapsers." There were no significant differences between the results of these two sets of analyses.

RESULTS

Patient Characteristics and Outcome

Ninety-two patients were enrolled in the study. Three patients became seriously ill and were excluded from further analyses; the study sample therefore consisted of 89 patients (58 males [65.2%] and 31 females [34.8%]). At admission, the mean age of the patients was 46.0 (SD = 9.9) years. Patients were socially well integrated: many were married (47.2%), lived together with a partner or with a partner and children (55.0%), and were employed (75.3%). The average duration of alcohol dependence was 13.6 (SD = 9.3) years, and the mean age of onset of alcohol dependence 32.1 years (SD = 10.4). Abstainers and nonabstainers at the 24-month follow-up differed in the number of previous detoxifications: on average, the nonabstainers had participated in more alcohol detoxifications (4.7; SD = 7.5) than the abstainers (2.5; SD = 4.9). Table 2 summarizes the baseline characteristics of subjects.

Of the 92 patients enrolled in the study, 77 (83.7%) completed the full outpatient treatment.[34] Data from 67 patients (75.3% of 89) were available for analysis 24 months after discharge; the other 22 patients (24.7%) did not take part in the 24-month follow-up because they declined further participation ($n = 13$; 14.6%), their new address was unknown ($n = 6$; 6.7%), or they could not be contacted despite several attempts ($n = 3$; 3.4%). Of the interviewed patients ($n = 67$), 58.2% ($n = 39$) were abstinent and 79.1% ($n = 53$) were abstinent or improved at the 24-month follow-up. If all patients without follow-up data were assumed to be relapsers, 43.8% patients (39 of 89) were abstinent and 59.6% (53 of 89) were abstinent or improved.

Association between Craving and Outcome 12 and 24 Months after Completion of Treatment

Associations were found for the subscale "drinking obsession" at T2 (OR = 0.7; 95% CI = 0.5–0.9; $p < .05$), T3 (OR = 0.6; 95% CI = 0.5–0.8; $p < .01$), and T4 (OR = 0.8; 95% CI = 0.3–0.7; $p < .001$): the higher the craving at discharge from treatment (T1), the higher the probability of a relapse before the 6-month follow-up (T2); the higher the craving at T2, the higher the probability of relapse before T3; and the higher the craving at T3, the higher the probability of relapse before T4 (see Figs. 1–3).

Abstainers and nonabstainers differed in the number of attempted suicides before T0: 25% of the nonabstinent patients had attempted at least one suicide, but only 7.7% of the abstainers.

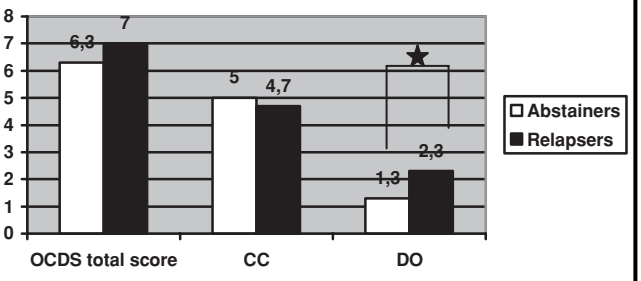

FIGURE 1. Differences in total OCDS score, control and consequences subscore (CC), and drinking obsession subscore (DO) at discharge from treatment unit between patients who were abstainers ($n = 39$) and those who were relapsers ($n = 28$) at the 6-month follow-up. $^{*}p < .05$.

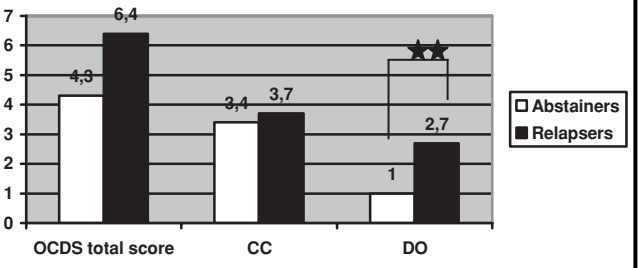

FIGURE 2. Differences in total OCDS score, control and consequences subscore (CC), and drinking obsession subscore (DO) at the 6-month follow-up between patients who were abstainers ($n = 39$) and those who were relapsers ($n = 28$) at the 1-year follow-up. $^{**}p < .01$.

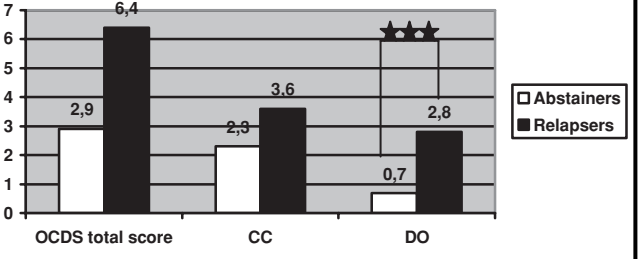

FIGURE 3. Differences in total OCDS score, control and consequences subscore (CC), and drinking obsession subscore (DO) at the 1-year follow-up between patients who were abstainers ($n = 39$) and those who were relapsers ($n = 28$) at the 2-year follow-up. $^{***}p < .001$.

DISCUSSION

There is an extensive database on both the optimal allocation of alcoholic patients to different treatment settings and the prediction of response, but results are mixed.[26,33,39–42] No optimal gold standard has been identified yet. Craving for alcohol has been identified as one of the key psychological symptoms for relapse to alcoholism, and a number of craving scales have been developed to measure various aspects of craving.[2,3,11,12] The OCDS[13] is by far the most frequently utilized scale in this respect, but the predictive value of the OCDS over time is somewhat unclear,[24,31] and future research in this area has been

suggested.[25] Previously, we demonstrated that the OCDS total score is predictive for 12-month follow-up after outpatient treatment for alcoholism,[30] especially in the "obsessions" and "control and consequences" subscales. Kranzler et al.[23] also demonstrated that a higher OCDS score is predictive for outcome.

Data from this replication study were obtained in the same treatment setting as our earlier study.[30] In line with previous findings, patients who relapsed during and after treatment had significantly higher OCDS craving scores at the end of treatment. These data indicate that the OCDS scores are predictive not only for the 12-month outcome[28] but also for the 6- and 24-month outcomes. These findings are in line with those of some other studies, which reported that craving as measured by the OCDS may be predictive for drinking outcome in alcoholics.[2,16,23] Taken together, our findings suggest that craving as defined and measured by the OCDS items is indeed relevant for long-term outcome in patients and that the OCDS itself may have predictive value.

There are several limitations to this study. First, the sample size is rather small and patients had a predominantly stable residential situation and a rather good level of social adjustment, as indicated by the fairly low unemployment rate, among other things. On the other hand, the patients included in the study represent a complete and rather homogenous sample of all patients treated in this facility over a year. Second, no biological markers (CDT or GGT) were used to verify outcome and no collateral informants were available. Still, patients were repeatedly seen over a 2-year period and personally interviewed, so that the results can be assumed to be reliable. When administering the OCDS, we found that patients had some problems with the operationalization of the obsession subscale. Finally, no other craving scales were used to cross-verify results. Still, the OCDS is by far the most frequently utilized scale to assess craving, with good to excellent values for validity.

CONCLUSIONS

The results of this study further indicate that OCDS scores may have predictive value in alcoholic patients and may also be a useful tool in clinical practice to identify patients at risk for relapse. To our knowledge, the OCDS (and other craving scores) is used rather in alcohol research than in clinical practice. In view of the increasing amount of data available on this topic, the use of the OCDS or similar instruments in clinical practice to identify patients at risk for relapse and to develop possible treatment approaches in "high craving" patients seems a logical next step. Future research should focus on this area.

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Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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Outpatient alcoholism treatment – 24-month outcome and predictors of outcome

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Abstract

Objectives: To study the value of demographic and alcohol-related variables for predicting 24-month treatment outcome in an outpatient setting.

Methods: Prospective observational study with 92 alcohol-dependent patients. Assessments were made by personal interviews at the beginning and end of therapy, and at the 24-month follow-up. Univariate and logistic regression analyses were performed.

Results: The mean age was 46.0 (SD = 9.9) years. There were 58 males (65.2%) and 31 females (34.8%). Of the 67 patients interviewed at 2-year follow-up, 58% were abstinent and 79% improved. Differences between abstainers and non-abstainers were found for number of previous detoxifications, and number of patients attempted suicides. In addition, female gender and a higher number of prior treatments predicted negative treatment outcome.

Conclusion: Matching patients to different types of treatment by means of empirically based characteristics may help to improve outcome but research has failed to establish reliable predictors in that area. Data from this follow-up study confirm the role of certain clinical outcome predictors. Additionally, results give further evidence for outpatient treatment as an effective setting for alcohol-dependent patients as indicated by a favourable retention rate (84%) and outcome (minimum abstinence rate 44%).

Background

Setting and gender effects play a substantial role in treatment of alcoholism. Variables that may predict treatment outcome are of great relevance for optimal allocation of patients to different treatment settings [1-5]. In Germany and other European countries in recent years highly structured outpatient treatment programs have been developed and partially replaced longer inpatient treatment as indicated by a larger number of patients in outpatient clinics but few follow-up studies have been published on the efficacy of these treatments [6]. Variables that were found to be predictive in inpatient treatment [7] do not necessarily have to be so in other treatment settings.

Favourable 3-year outcome results for an intensive alcohol outpatient treatment programme were found in an earlier study [8]. Furthermore, this study identified female gender, number of previous treatments, relapse during treatment, duration of relapse during treatment, treatment drop out and attempted suicides as risk factors for a negative treatment outcome. Identification of predictors should allow improvement of treatment outcome and

allocation of patients to the most suitable treatment setting as well as a reduction in the number of treatment failures. A number of different variables are being discussed as potential predictors of treatment outcome. Besides biological parameters such as the GABRA2 genotype [9], the following variables were generated in a literature review.

- Demographics and social functioning measures: employment, gender, socioeconomic status/income, religion [8,10-26],

- Substance-related measures: baseline alcohol consumption, dependence severity, treatment history, alcohol-related self-efficacy, motivation, treatment goal, duration of problem drinking/alcohol dependence, baseline alcohol consumption, craving, [10-13,17,27],

- Other clinical measures: psychopathology rating, neuropsychological functioning [10-14,28-35].

Identification of reliable outcome predictors should help to improve patient allocation and consequently the utilization of resources. Hence the main objective of this study is to evaluate the value of demographic, alcohol-related variables, and psychopathology-related variables for predicting 24-month treatment outcome. In this study we tried to confirm previous research concerning predictors of outcome in an elaborated outpatient treatment setting [8].

According to the previous results we will examine the hypothesis that female gender and treatment drop out are the strongest predictors for relapsing after treatment.

Methods

Study design

This was a prospective observational study. The methodology and research instruments were basically the same as those used in a previous study performed in the same treatment setting [8]. The study was conducted at the outpatient facility "Client-oriented Problem Advice Centre Dachau", near Munich. This centre offers a highly structured, intensive, two-phase treatment model. Treatment starts with a three-month motivational phase immediately after detoxification. This phase includes a detailed medical/neurological and psycho-diagnostic examination. Patients are seen on several days per week. They attend a weekly group therapy session and four individual psychotherapy/medical sessions. The motivational phase is followed by an 8-month rehabilitation phase which is the object of research. The therapy concept is integrative and eclectic, and includes psychoanalytical as well as behavioural approaches and methods (three weekly sessions). It is an intensive abstinence-oriented program which was described in detail by Bottlender and Soyka [36].

From January to December 2003, 92 alcohol-dependent patients were consecutively recruited at the start of the outpatient rehabilitation. This was all of the patients (100%) which fulfilled the inclusion criteria defined by health care providers; no formal screening took place. Most patients referred by (family) physician or employer. Patients fulfilled the DSM-IV [37] criteria for alcohol dependence. A further inclusion criterion was a stable residential situation. Exclusion criteria were dependence of benodiazepines and/or illicit drugs, severe physical illness, severe mental disorders and mental disorders requiring inpatient treatment (acute suicidality, psychosis). All patients who entered treatment participated in the study. All patients gave written informed consent to participate in the study.

Assessment

Both diagnoses and variables relevant for the analyses were recorded in structured face-to-face interviews. Interviews used the European Addiction Severity Index (EuropASI: German version) [38] and were conducted with each patient at the start of the programme (Baseline, T0), at discharge from the treatment unit (T1) and at the 24-month follow-up (T4). The baseline assessment included demographics, past and current psychiatric, medical and substance use-related problems, and drinking parameters. According treatment history the patients were asked about prior detoxification, prior alcohol rehabilitation, and prior treatments for psychiatric problems except for alcoholism. The variable 'suicide attempts' means the lifetime suicide attempts before T0. At discharge the length of time spent in the programme, mode of discharge from the programme (e.g. successfully completed the programme, left prematurely by choice, etc.) and relapses during treatment were recorded. The interviewers were trained psychologists, physicians and medical students and were not involved in the treatment of interviewed subjects; the project coordinator was not a member of the clinical staff.

At T1, patients completed the self-rating Obsessive Compulsive Drinking Scale (OCDS) [[39], German version: [40]] and at T0 the self-rating Beck Depression Inventory (BDI) [41] and the state scale of the State-Trait-Anxiety Inventory (STAI) [42].

Furthermore, abstinence was checked by breathalyser during the entire treatment period as well as at every visit after treatment. In table 1 variables, assessment instruments and assessment times are summarized.

Definition of outcome criteria

Abstinence two years after discharge from treatment was the primary outcome criterion. Abstinence was defined as no subjective report or objective indication of alcohol consumption since discharge from treatment. This criterion was used in the data analyses as dependent variable.

Table 1: Variables, assessment instruments and assessment times

T0	T1	T2	T3	T4
Treatment start	At discharge	6 months after discharge	12 months after discharge	24 months after discharge
EuropASI/patient files: Demographics Psychiatric, medical and substance use problems Drinking parameters BDI STAI	EuropASI/patient files: Time in treatment Mode of discharge Relapses OCDS	Not relevant for this study		Total abstinence during the 24 months "Improved" Relapse

Moreover, in the outcome description the number of patients who completed treatment and the number of improved patients were recorded. 'Improved' was defined according to the classification by Feuerlein and Küfner [7] as less than 30 g (female) or 60 g (male) of alcohol per day, no signs of physical or mental consequences of alcohol abuse or of any pathological drinking pattern, or no more than three drinking periods lasting less than a week (lapses) since discharge from treatment; '*relapse*' was defined as more than three lapses or regular consumption of more than 30/60 g alcohol per day, newly appeared alcohol-related disorders and/or alcohol inpatient treatments.

Furthermore, patients who personally interviewed at the 24-month follow-up were named 'responder'. Non-responders are patients who missed the 24-month follow-up interview. Regarding the sample size, we performed both, the analyse limited to responders vs. analyse including non-responders as relapsers. No significant difference resulted.

Data analyses

Statistical analyses were performed using SPSS for Windows [43]. Absolute and relative frequencies, means and standard deviations (SD) were calculated for data description. Abstinent and non-abstinent patients as well as responders and non-responders were compared univariat with Chi^2 by Pearson (alternative and categorial data), Mann-Whitney-U-test (ordinal data), Kolmogorov-Smirnov-test (metric data) and with backward stepwise logistic regression analyses. In account of the small sample size and the lot of variables we would like to integrate in the analyses, we followed the three steps for model building described by Hosmer and Lemeshow [44] to identify meaningful predictors of outcome. The model is useful for modelling of complex data sets. The process began with univariate analysis for checking potential predictors (Step 1). Step 2 was the manual selection of variables for the multivariate analysis. According to Mickey and Greenland [45] variables whose univariate p-value < 0.25 were candidates for the multivariate analyse. In a third step the importance of each variable integrated in the model was verified and we obtained a preliminary main effects model. This third step included a manual selection of the most important predictor of each category (demographics, substance-related variables and other clinical measures).

Independent variables included in the analyses were:

- *Demographics:* age, gender, education (school and professional qualifications), employment status, living circumstances, marital status and socioeconomic status/income (kind of income),

- *Substance-related variables* onset of alcohol use, onset for problem drinking, onset of alcohol dependence, baseline alcohol consumption, craving (OCDS-score), dependence severity (EuropASI) and treatment history,

- *psychopathology-related variables (other clinical measures):* attempted suicide, psychopathology rating (EuropASI), prior psychiatric treatment and symptoms of depression or anxiety (scores of BDI and STAI).

All statistical tests were two-tailed. A p-value of less than 0.05 was considered to be statistically significant. Regarding the sample size, we performed both, the analyse limited to responders vs. analyse including non-responders as relapsers. No significant difference resulted.

Results

Of the 92 patients enrolled in the study, 77 (83.7%) completed the full outpatient treatment. Two male and one female patient became seriously ill (apoplexy, cerebral haemorrhage, laryngeal carcinoma) and were excluded from further analyses (3 of 92). Data from 67 patients (75.3% of 89) were available for analysis 24 months after discharge: The other 22 patients (24.7%) did not take part in the 24-month follow-up because they declined further participation (n = 13; 14.6%), their new address was unknown (despite a search by the registration office: n = 6; 6.7%) or they could not be contacted despite several attempts (n = 3; 3.4%). Of the interviewed sample (n = 67), 58.2% patients (n = 39) were abstinent and 79.1%

patients (n = 53) were abstinent or improved at the 24-month follow-up. If all patients without follow-up data were assumed to be relapsers, 43.8% patients (39 of 89) were abstinent and 59.6% (53 of 89) were abstinent or improved.

Patients' characteristics and results of the univariate comparison of abstainers and non-abstainers (T4)

The study sample consisted of 58 males (65.2%) and 31 females (34.8%). At admission, the mean age of the patients was 46.0 (SD = 9.9) years. Patients were socially well integrated: Many were married (47.2%), lived together with a partner and children (55.0%) and were employed (75.3%). Further demographic variables are shown in table 2.

Alcohol-related as well as psychopathology-related variables are shown in table 3. The average duration of alcohol dependence was 13.6 (SD = 9.3) years and the mean age of onset of alcohol dependence 32.1 years (SD = 10.4). Abstainers and non-abstainers differed in the number of previous detoxifications. On average, the non-abstainers had participated in more alcohol detoxifications (4.7; SD = 7.5) than the abstainers (2.5; SD = 4.9).

Furthermore, abstainers and non-abstainers differed in attempted suicides until T0: 25% of the non-abstinent patients had attempted at least one suicide, while this relation for the abstainers was 7.7%. No significant differences were found in the results of STAI, BDI or OCDS.

With reference to the three steps for model building, we selected the following variables with an univariate p-value less than 0.25 as candidates for the multivariate analyse: gender, number of previous detoxifications, number of prev. mental health problems, number of prev. somatic problems, treatment drop out, repeated relapse during treatment, attempted suicide, the BDI score, and the OCDS total score.

Table 2: Differences in demographic variables (T0) between abstinent and non-abstinent patients at 24-month follow-up (T4)

	Total sample	Patients responded T4 (n = 67)		Differences abstinent vs. non-abstinent
	(n = 89)	abstinent T4 (n = 39)	non-abstinent T4 (n = 28)	
Age (M, SD)	46.0 (9.9)	47.0 (9.2)	46.1 (1.6)	n.s.
Gender (n, %)				
Male	58 (65.2)	26 (66.6)	15 (53.6)	Pearson $Chi^2 = 0.84$[a]; df = 1
Female	31 (34.8)	13 (33.3)	13 (46.3)	
Without secondary school qualifications (n, %)	1 (1.1)	1 (2.6)	0	n.s.
Without professional training (n, %)	14 (15.7)	5 (12.8)	4 (14.3)	n.s.
Livelihood (n, %)				n.s.
Gainful employment	67 (75.3)	34 (87.2)	18 (64.3)	
Unemployment benefit	7 (7.8)	1 (2.6)	3 (10.7)	
Pension	7 (7.8)	2 (5.2)	4 (14.3)	
Support by relatives	5 (5.6)	1 (2.6)	2 (7.1)	
Other	3 (3.3)	1 (2.6)	1 (3.6)	
Residential situation – living (n, %):				n.s.
alone	33 (37.0)	14 (35.9)	6 (21.4)	
with parents	1 (1.1)	0	0	
with children	5 (5.6)	1 (2.6)	3 (10.7)	
with cohabitant and with/without children	49 (55.0)	24 (61.5)	18 (64.3)	
with friends	1 (1.1)	0	1 (3.6)	
Marital status (n, %)				n.s.
Single	18 (20.2)	7 (17.9)	4 (14.3)	
Married	42 (47.2)	20 (51.3)	15 (53.6)	
Separated	9 (10.1)	2 (5.1)	2 (7.1)	
Divorced	17 (19.1)	9 (23.1)	5 (17.9)	
Widowed	3 (3.4)	1 (2.6)	2 (7.1)	

[a]$p < 0.25$, variable was included in the main effects model.

Table 3: Differences in alcohol-related, treatment-related and psychopathology-related variables (T0/T1) between abstinent and non-abstinent patients 24 months after end of treatment (T4)

	abstinent T4 (n = 39)	non-abstinent T4 (n = 28)	Differences abstinent vs. non-abstinent
Age of onset of alcohol use (years: M, SD)	14.4 (3.2)	14.4 (3.0)	n.s.
Age of onset of regular alcohol use (years: M, SD)	21.1 (6.2)	21.8 (7.3)	n.s.
Age of onset of alcohol dependence (years: M, SD)	32.0 (9.9)	32.2 (11.6)	n.s.
Duration of alcohol dependence (years: M, SD)	15.0 (10.6)	13.2 (9.4)	n.s.
Daily alcohol intake (g/day: M, SD)	193.2 (113.5)	157.8 (90.3)	n.s.
Number of previous treatments (M, SD) for alcohol			
detoxification	2.5 (4.9)	4.7 (7.5)	Mann-Whitney-U = 346.5*,b
rehabilitation	1.6 (8.0)	0.4 (0.8)	n.s.
mental health problems	0.4 (0.6)	1.3 (2.3)	Mann-Whitney-U = 411.5a,b
somatic problems	2.7 (2.4)	3.5 (2.7)	Mann-Whitney-U = 432.0a,b
EuropASI Composite Score Medical status	0.18 (0.27)	0.21 (0.33)	n.s.
EuropASI Composite Score Economic situation	0.21 (0.34)	0.33 (0.44)	n.s.
EuropASI Composite Score Employment	0.18 (0.26)	0.16 (0.24)	n.s.
EuropASI Composite Score Alcohol use	0.24 (0.07)	0.26 (0.12)	n.s.
EuropASI Composite Score Drug use	0.00 (0.00)	0.01 (0.03)	n.s.
EuropASI Composite Score Law	0.03 (0.09)	0.00 (0.00)	n.s.
EuropASI Composite Score Family relationship	0.12 (0.19)	0.17 (0.24)	n.s.
EuropASI Composite Score Social relationship	0.08 (0.16)	0.05 (0.12)	n.s.
EuropASI Composite Score Psychiatric status	0.06 (0.09)	0.10 (0.14)	n.s.
OCDS total (M, SD)c	5.5 (5.5)	7.8 (7.0)	Mann-Whitney-U = 277.5a
Treatment drop out (n, %)c	2 (5.2)	4 (14.3)	Pearson Chi2 = 1.5a; df = 1
Single relapse during treatment (n, %)c	1 (2.6)	1 (3.6)	n.s.
Repeated relapse during treatment (n, %)c	0	2 (7.2)	Pearson Chi2 = 2.7a; df = 1
Attempted suicide (n, %)	3 (7.7)	7 (25.0)	Pearson Chi2 = 3.5*,b; df = 1
STAI (M, SD)	36.9 (7.3)	38.3 (7.9)	n.s.
BDI (M, SD)	7.0 (7.1)	8.9 (6.0)	Mann-Whitney-U = 301.5a.

*p < 0.05;ap < 0.25; b variable was included in the main effects model; c evaluated at T1.

Predictors of outcome after 24 months (T4)

In the next step the importance of each variable included in the model was verified and we obtained a preliminary main effects model. The variables 'gender', 'number of previous treatments' and 'attempted suicide' were included in the main effect model. Table 4 presents the final logistic regression model with three significant predictors: gender (OR = 0.2; 95%CI = 0.0–1.0; p < 0.05), number of prior detoxifications (OR = 0.7; 95%CI = 0.6–1.0; p < 0.05) and prior treatments for mental problems (OR = 0.2; 95%CI = 0.1–0.7; p < 0.05).

Differences between patients with response or non-response at T4

The groups differed in the retention rate (Pearson Chi² = 8.1; df = 1; p < 0.01) and number of single (Pearson Chi² = 4.3; df = 1; p < 0.05) and repeated relapses during treatment (Pearson Chi² = 11.3; df = 1; p < 0.01). More patients with no response had dropped out (33.3% vs. 9.0%), had a single relapse (14.8% vs. 3.0%) or had repeated relapses (25.9% vs. 3.0%) during the outpatient treatment.

Discussion

Associations between demographic and clinical variables and outcome in outpatient alcohol treatment were examined in a 2-year follow-up study. The overall treatment results of the 24-month follow-up were in replication of former results comparatively good, with a retention rate over the 8-month treatment phase of 84% and a minimum abstinence rate of 44% (all patients lost to follow-up regarded as relapsers), and in line with previous findings [8]. Of patients personally interviewed at follow-up 57% were abstinent and 21% improved. These results give further evidence for the effectiveness of this outpatient treatment for alcohol-dependent patients [cp. [6,8,36]].

The analyses identified female gender, number of prior detoxifications and prior treatments for mental problems as predictors of negative outcome. In addition, univariate

Table 4: Differences between abstinent and non-abstinent patients 24 months after end of treatment (T4) – results of logistic regression analyses

	abstinent T4 (n = 39)	non-abstinent T4 (n = 28)	OR	Wald/df	95%CI
Gender (n, %)			0.2*	3.9/1	0.0–1.0
Male	26 (66.6)	15 (53.6)			
Female	13 (33.3)	13 (46.3)			
Number of previous treatments (M, SD)					
Detoxification	2.5 (4.9)	4.7 (7.5)	0.7*	3.7/1	0.6–1.0
For mental health problems	0.4 (0.6)	1.3 (2.3)	0.2*	3.9/1	0.1–0.7

*$p < 0.05$.

analyses showed effects of suicide attempts. More of the non-abstinent patients had a history of attempted suicides.

These findings will be discussed in the light of previous studies on this subject.

Demographics

In a quantitative and qualitative review of alcohol treatment research, Jarvis [16]) found gender differences varied as a function of time after treatment. During the first year after treatment, women had a slightly superior treatment outcome; however, this result had reversed one year after treatment. In a review of 38 alcohol outcome studies, Toneatto et al. [17] reported a better treatment outcome of women in 58% of all studies reviewed and no gender differences in the remaining 42%. The Project MATCH Research Group [19] and McKay et al. [18] found better treatment outcome in females, but other studies found no gender differences [e.g. [20,21]]. Reasons for variation in gender effects found in various studies include the different definitions of relapse or a variation in the outcome criteria, statistical methodology, prospective versus retrospective design and sample characteristics [11]. The same result like in the actual study, a less favourable outcome of woman, was reported by Bottlender and Soyka [8] and Anton et al. [22]. It seems that women have other treatment needs than men. This is one result of a study by Grella et al. [26]. They found differences in the treatment needs of women and men [26]. It is possible that different coping strategies are a reason for different demands in alcohol treatment. Sigmond et al. [25] detected the use of different coping strategies by women and men. Additionally, women were found to show different patterns of alcohol exposure and a different course of the disease [e.g. [18,21], and [23]]. Special treatment settings such as outpatient treatment may in some sequences not meet the needs of some female patients. One feasible reason is that female patients more often have an alcoholic spouse compared to male participants [8]. In summary, an understanding of the differences in the treatment needs of women and men seems to be helpful for the development and provision of the most effective alcoholism treatment.

Alcohol-related variables

Unlike Diehl et al. [20] and others, we did not find any predictive value of the duration of alcohol dependence. The same is true for years of problem drinking, drinks per drinking day [11,29] and age of onset for problem drinking [13]. However, we found that the number of previous detoxifications predicted outcome and further studies showed that there is an association between this number and the alcohol severity. These findings are in line with the previous research indication prior treatment(s) to be a negative predictor [7,10].

Psychopathology-related variables

In general, psychopathology and psychiatric comorbidity is one of the most robust predictors of outcome in alcohol treatment [14,28]. In our sample, patients who relapsed during the 24-month period had more prior treatments for mental problems and more attempted suicides than the abstinent group. Furthermore previous treatments for mental health problems were an significant outcome predictor. In a previous sample, Bottlender and Soyka [8] also identified the number of previous (alcoholism) treatments and the attempted suicides as risk factors for a negative treatment outcome.

Data on depression and outcome in alcoholism are mixed. Greenfield et al. [30] used the BDI to analyse the relation between time to first drink and current depressive symptoms for 40 women and 61 men participating in an inpatient alcoholism treatment programme. They found no predictive value of depressive symptoms. In addition, Bradizza et al. [34] investigated associations between relapse to alcohol and depressive symptoms and found no relationship between depressive symptomatology measured by BDI and resumption of alcohol use or relapse in patients one year after discharge from inpatient treatment. Like Greenfield et al. [30] and Bradizza et al. [34], we also found no evidence that depressive symptoms (measured

with the BDI) have impact on treatment outcome after 24 months. The same applied to anxiety symptoms assessed by STAI. A potential reason for the lack of a relationship between depressive and anxiety symptoms and relapse is the severity of the symptoms, as reflected by the scores: at admission, the scores of STAI and of BDI ranged in the lower to middle range; the patients' scores were not scattered over such a wide range that a clear differentiation would be possible.

In summary, depressive symptoms measured with the BDI and anxiety symptoms measured with the STAI did not predict treatment outcome in a less severely affected sample of patients. Nevertheless, the psychiatric status is not irrelevant as the relapsed patients were treated more frequently for mental disorders.

According the a priori hypothesis:

Female gender was one of the predictors of a negative treatment outcome: treatment outcome was triggered by gender, number of previous detoxifications and of previous treatments for mental problems. A recent systematic review also showed gender to be predictive as was severity of dependence and baseline alcohol consumption [10].

Surprisingly, treatment drop out was not a predictor of relapsing after treatment. The role of previous treatments is very interesting according the allocation to the most suitable current kind of treatment. In a further study we aim to investigate the allocation to three kinds of treatments.

Our study has some limitations. The selection procedure of patients was done before study start. Patients were participants of an outpatient treatment programme and had a stabile residential situation, a rather good level of social adjustment, as indicated by the fairly low unemployment rate, among others. The sample size was rather small; differences may have been larger if all patients had participated in the 24-month follow-up. Still the rate of patients personally interviewed after 2 years was fairly good. Finally we did not integrate a control group.

Matching patients to different types of treatment on the basis may help to improve outcome but research has failed to establish reliable predictors in that area [19]. In general, social variables have a high predictive value [46]. Our data are in line with these findings.

Conclusion

Despite the limitations which reduce generalizability, the study indicates that alcohol outpatient treatment is an effective treatment option at least in socially more stable patients. Data from this follow-up study confirm the role of certain clinical outcome predictors. Female patients and patients treated more frequently for mental problems were more likely to have a poor 24-month outcome. These findings are basically in line with results of a previous follow-up study [8]. Future research may especially focus on setting and gender effects to improve allocation of patients to different treatment settings.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

MS conceived of the study, participated in its design and coordination and helped to draft the manuscript. PS performed the statistical analysis and drafted the manuscript. All authors read and approved the final manuscript.

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