

October 2017
Program « Public Health in Europe »
Northwestern University – Sciences Po Paris

Visit at University of Bordeaux and Charles Perrens Hospital
Wednesday October 4, 2017, from 2:30 pm to 5:15 pm

Addiction Treatment and Research Center

Pôle Addictologie
ISUA, ELSA, HDJA, CSAPA, EMAP, CERJPA, LaboPsy
addictologie@ch-perrens.fr

14H30	Arrival
14H30	Introduction and Welcome
14H45	Pr. M. Auriacombe, chief of Pôle Addictologie L. Caturla, chief staff supervisor, Pôle Addictologie
14H45 16h00	How is the Pôle Addictologie organized to integrate treatment, prevention, research and teaching? A focus on diagnosis and treatment: What is Addiction? (M. Auriacombe) A focus on research: What is Craving? (F. Serre) New Addictions: Gaming Addiction? (J-M. Alexandre) A focus on public health: Can policy and regulations influence behaviors and health? (M. Auriacombe)
16h15 17h15	Onsite visit
17h15	Departure

More information available from
<http://www.sanpsy.univ-bordeauxsegalen.fr/fr/static56/addictologie-enseignement-formations>

Full documents mentioned in this brochure are accessible for you
to download at the above link



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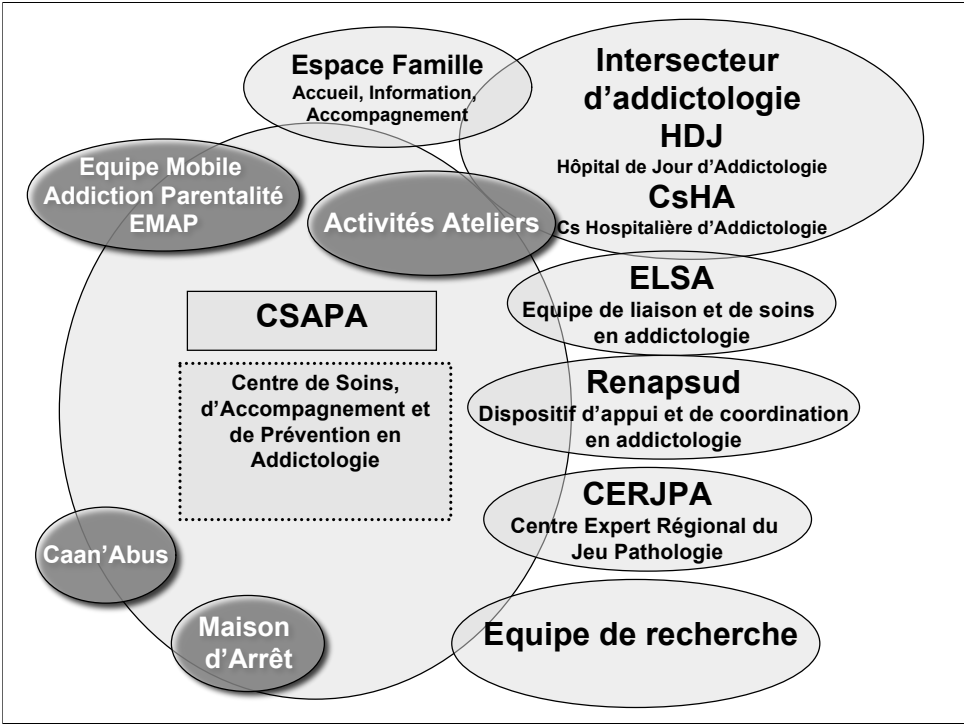
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Pôle Addictologie



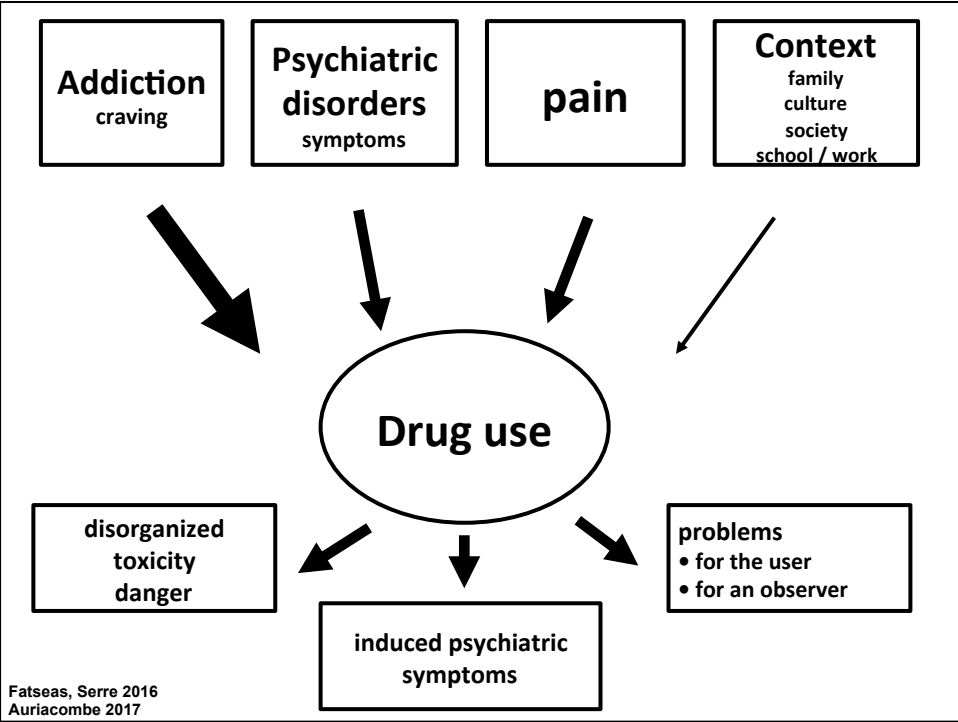
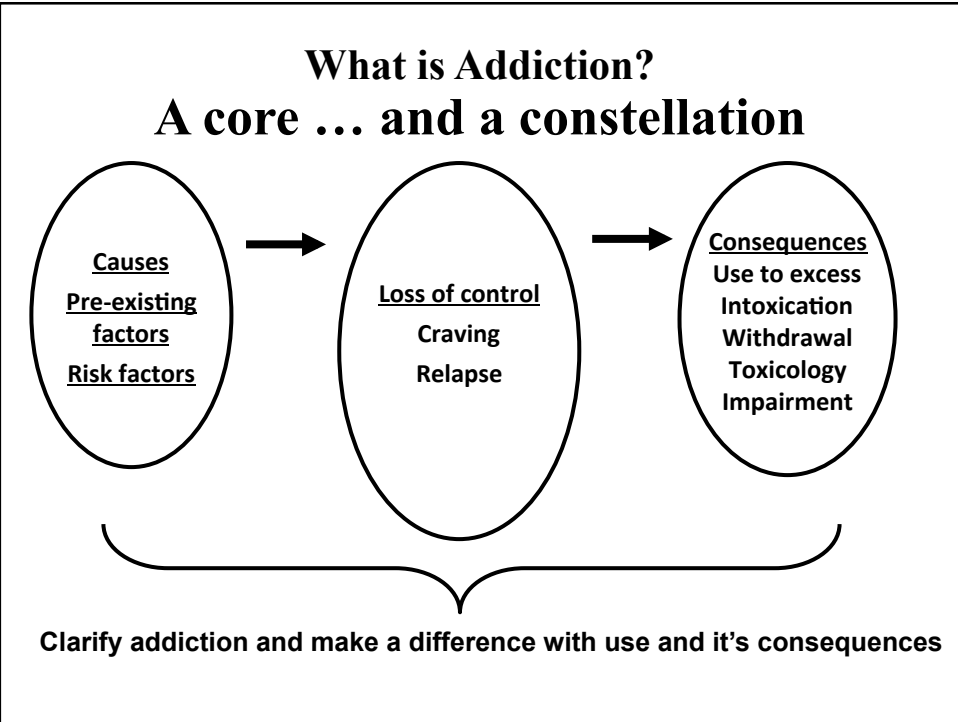


Illustration by Jan Diehm / The Huffington Post

Dying To Be Free

There's A Treatment For Heroin Addiction That Actually Works.

Why Aren't We Using It?

By Jason Cherkis(<http://www.huffingtonpost.com/jason-cherkis/>)

JANUARY 28, 2015

The last image we have of Patrick Cagey is of his first moments as a free man. He has just walked out of a 30-day drug treatment center in Georgetown, Kentucky, dressed in gym clothes and carrying a Nike duffel bag. The moment reminds his father of Patrick's graduation from college, and he takes a picture of his son with his cell phone. Patrick is 25. His face bright, he sticks his tongue out in embarrassment. Four days later, he will be dead from a heroin overdose.

That day, in August 2013, Patrick got in the car and put the duffel bag on a seat. Inside was a talisman he'd been given by the treatment facility: a hardcover fourth edition of the Alcoholics Anonymous bible known as "The Big Book." Patrick had tagged some variation of his name or initials on the book's surfaces with a ballpoint pen, and its pages were full of highlighting and bristling with

Commentary on Scharkow et al. (2014): Welcomed and yet to come. Are we looking at what we are looking for?

Scharkow, Festl & Quandt [1] have completed a welcome longitudinal study of computer gamers. The baseline results, that provided some insight into the epidemiological importance of the phenomenon, were published previously [2] and commented upon [3]. Although showing that a condition exists at one moment in time for some individuals, and that it is associated with some impairment/severity, is of interest. Showing that this condition has stability over time is of utmost importance in the treatment perspective [4–6] underlying addiction as a medical/psychiatric disorder. This is where longitudinal studies are required. As noted in the Introduction to this paper, only a handful of studies were available to date, and their outcomes were inconsistent [7–10], due perhaps to their self-selected or specific target-group samples. To avoid this bias, Scharkow and colleagues focused on a representative sample of gamers in Germany and analysed their problematic game use in a three-wave computer-assisted telephone survey design. In order to allow comparisons with previous research, they used the Gaming Addiction Scale (GAS) [11] to categorize problematic gaming and gaming addiction. To their amazement, they found only three individuals categorized as gaming addiction, and none were consistent throughout. As a consequence, they grouped them with problematic gamers. The majority of the baseline problematic gamers ceased to exhibit criteria over the 2-year time span of the study, and finally only a very small group of consistently problematic gamers were identified. The authors report that their results indicate a far less stable condition than some previous studies have shown [7,10]. The findings suggest that the prevalence of problematic gaming is low and that consistently problematic users are extremely rare, even among adolescents. In addition, they saw little evidence that problematic gaming was related systematically to negative changes in the gamers' lives. The authors acknowledged that the number of respondents classified as stable problematic gamers was so small that analyses to understand associated psychosocial factors more clearly were limited by statistical power.

What can be said; what are we looking at; what were we looking for?

The results show that a large majority of computer game users from the general population are consistently unproblematic, and gaming addiction is a rare phenomenon considering the small proportion of computer game users who endorse the condition over time. The rule seems to be that only a minority of gamers will transit to gaming use disorder. This is documented for most, if not all, sub-

stances for which addiction or use disorder is accepted as a disorder. A consequence for the future is that, as is the case for substance addiction, population-based surveys of gaming addiction will need very large samples.

Further, classification as 'problematic gamer' was not associated with poor psychosocial functioning, which questions what was actually characterized by the criteria used. Requiring endorsement of at least four of the seven criteria of the GAS [11] defined problematic gaming. All seven criteria were required for 'gaming addiction'. These thresholds might have been too high, which might have caught the authors by surprise. A possible consequence is that the characterized 'problematic gamers' comprised a heterogeneous group of individuals, ranging from stable severe gaming addiction to unimpaired intermittent-problem gaming. The relative proportions of these two boundaries led to the inconsistency in results between studies and over time within studies.

Hence, the question of how to measure gaming addiction [3,12] remains central to the field. We need to come to some agreement upon universal diagnostic criteria to further characterize this condition and determine its nature more clearly. This is what is intended by the internet gaming disorder diagnostic criteria suggested in Section 3 of the DSM-5 [13,14]. The optimal threshold for diagnosis is a challenge. The proposed cut-point of five criteria was conservatively chosen in the DSM-5, because low thresholds will inflate diagnoses and result in classifying individuals who have not suffered significant clinical impairment. Conversely, high thresholds make the condition artificially rare and over-severe. Both too-high and too-low thresholds hold potentials to undermine the importance and significance of a true disorder.

We need further longitudinal research to document how stable this condition is over time, both in endorsement of criteria and severity. This will provide a sound basis for treatment interventions and prevention measures. Because this phenomenon is rare, population-based longitudinal studies are probably not the easiest path to follow. Seeking individuals who meet the criteria at one point in time and following them from there might be a better option (open longitudinal cohort). These may be searched for in different settings (help-settings versus non-help) for comparison purposes using a quasi-experimental paradigm, as Scharkow and colleagues [1] rightly discuss. Controlling for co-occurring severity and also for co-occurring established addictions (substance and gambling) and non-addiction psychiatric disorders will be important.

The disparate manner in which game use and potential disorder have been assessed to date may reflect the controversy surrounding internet gaming disorder, outlining a need for continued clarification between what we are striving to look for and what we are really looking at.

Declaration of interests

None.

Keywords gaming addiction, internet gaming disorder, problematic gaming DSM 5.

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Change in HIV-HCV Risk-Taking Behavior and Seroprevalence Among Opiate Users Seeking Treatment Over an 11-year Period and Harm Reduction Policy

Melina Fatseas · Cécile Denis · Fuschia Serre · Jacques Dubernet · Jean-Pierre Daulouède · Marc Auriacombe

Published online: 9 October 2011
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Abstract Our purpose was to assess change in HIV and HCV prevalence and risk-taking behaviors among IDUs over a period of time that included changes in French Public Health policy. Risk behavior and biological testing for serostatus were collected from cross-sectional samples of yearly new requests for opiate dependence treatment in Aquitaine, France between 1994 and 2004 ($n = 648$). Coincident declines in injection equipment sharing and HIV prevalence among injectors were observed, while sexual behavior remained stable. There was a decline in HCV prevalence that was not significant among injectors. After controlling for potential confounding variables,

participants enrolled after 1995 were less likely to share injection material and those enrolled after 1999 were less likely to share spoons. Our findings give evidence for behavioral and seroprevalence changes among IDUs over a period of time that included changes in needle access policy.

Keywords Risk-taking behaviors · HIV prevalence · HCV prevalence · French harm reduction policy

Abbreviations

RAB Risk assessment battery
ASI Addiction severity index
IDUs Intravenous drug users
HIV Human immunodeficiency virus
HCV Hepatitis C virus
SD Standard deviation

Preliminary results were presented at the 2005 (June 18–23) Annual Scientific Meeting of the College on Problems of Drug Dependence (CPDD), Orlando, Florida.

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Introduction

Intravenous drug users (IDUs) are at increased risk of human immunodeficiency virus (HIV), Hepatitis C (HCV) and Hepatitis B transmission [1–4]. HIV transmission has been linked to injection frequency [5], frequency of needle and paraphernalia sharing [6], and number of sharing partners [7]. Paraphernalia including cotton wool, spoons and rinsing water might be more particularly implicated in the transmission of HCV [8]. Early studies also suggested the role of sexual transmission of HIV among IDUs even after accounting for injection risks [9, 10]. Educational campaigns about reducing risk-taking behavior and needle-exchange programs have been organized in some areas of the world with the goal of reducing transmission of HIV

and HCV among IDUs regardless of access to treatment for drug addiction. Since the development of such programs, some studies have reported reduced needle- and syringe-sharing [11–13], but continuing high levels of paraphernalia-sharing [6, 14] and unsafe sexual behavior [15]. In France, until the mid-1990s, access of IDUs to sterile syringes remained very restricted. Following the establishment of the harm reduction policy in 1995, access to sterile injection material and condoms was facilitated. Ready-to-use injection kits (Steribox[®]) were marketed through state funding in order to facilitate access to both injection material and condoms in all community pharmacies [16, 17], in addition to the opening of state-funded needle exchange programs. From 1996 to 2003, the amount of sterile syringes sold in pharmacies increased dramatically thanks to the availability of the Steribox[®]: from about 3.8 millions units in 1996 to 5.3 in 2003 [17]. This public health initiative was associated in 1996 with availability of highly active antiretroviral therapy (HAART) and improved access to opiate agonist assisted treatment through methadone and buprenorphine [17]. During the same period in France, data from cross-sectional studies suggested decrease in syringe sharing and HIV prevalence (from 40 to 20%), while HCV prevalence remained high (60–70%) [17]. However, evidence for reliable change over time of both risky behaviors and HIV and HCV serostatus was insufficient, in part due to methodological limitations. Particularly, in most French available studies, serostatus were based on self-reports with no biological outcomes (HIV and HCV prevalence) [17–19]. Another methodological issue is that population recruitment, methods for assessing risk-taking behaviors were inconsistent between studies, thereby limiting comparability and enhancing risk for confounding and selection biases. Consequently, the extent to which this period was associated with true decrease in specific risk behaviors and HIV/HCV infection remains unknown. In addition, investigations from Europe and North America have shown varying results with regard to the temporal association between periods of increased needles/syringes access through community pharmacies, reduced risk-behaviors and HIV/HCV transmission among IDUs [20]. On the other hand, studies assessing the effect of provision of sterile drug preparation equipment other than needles are far more rare, limiting the evidence of a potential association with declines in equipment sharing [20]. Controversial data to support the effects of harm reduction policy may contribute to the fact that the distribution of sterile needle-syringes and paraphernalia remains very limited in many areas of the world [21]. In this context, there remains a need for studies assessing both behavioral (including needles and paraphernalia sharing) and biological outcomes, over a period of time that includes significant changes in Public Health policy. To

assess potential temporal changes, data should be collected for a sufficient time after policy changes. Thus, long time-periods after implementation of harm reduction policy need to be considered to examine whether a decrease in risk practices and then in HIV/HCV prevalence might occur.

The aim of this study was to examine change on both HIV and HCV prevalence and risk-taking behaviors including injection practices and sexual behaviors among IDUs over a period of time that included significant changes in French government policy. Because opiate users are by far the most important group of IDUs in France [22], we recruited out-of-treatment opiate-dependent subjects seeking treatment in Aquitaine, France, between January 1st 1994 and December 31st 2004.

Methods

Design and Recruitment

This study was conducted according to the principles expressed in the Declaration of Helsinki. The study was approved by the Institutional Review Board of the University of Bordeaux and all participants gave written informed consent. Self-reported risk behaviors and HIV and HCV serology were collected from cross-sectional samples of yearly new requests for access to buprenorphine or methadone maintenance treatment programs in outpatient addiction treatment centers in South West France (Bordeaux and Bayonne), between January 1st, 1994 and December 31st, 2004.

This study period was chosen because we wanted to capture data for the years before and after 1995 when harm reduction policy was introduced in France. From 1996 to 2003, the number of ready-to-use injection kits sold in pharmacies increased greatly, suggesting an effective and widespread access to sterile injection material and condoms by IDUs [16, 17].

The study was conducted in outpatient treatment programs of a community hospital and a university hospital. Both of these centers were publicly funded programs where patients can be enrolled without restrictions. The study sites were connected with other medical (HIV treatment) and psychiatric services and stayed constant over the study period.

To be eligible, participants had to be newly admitted, not in treatment and not included in the study a previous year, to be at least 18 years of age and to meet DSM-IV opiate dependence criteria (defined as to meet at least 3 of the following 7 criteria over a 12-month period: tolerance; withdrawal symptoms; opiate taken in larger amount and for a longer period than intended; persistent desire or repeated unsuccessful attempt to quit; much time/activity

to obtain, use, recover; important social, occupational, or recreational activities given up or reduced; use continues despite knowledge of adverse consequences) [23].

Seven hundred and fifty-seven opiate users sought treatment during the study period, were eligible and were solicited to participate. Over 85% ($n = 648$) of these eligible subjects agreed to participate. The response rate was stable over to the study period (Table 1).

Subjects who agreed to participate were evaluated using the Risk Assessment Battery (RAB) [24, 25], the Addiction Severity Index (ASI) [26, 27] and HIV and HCV biological testing. Recruited subjects were identified with a single number to avoid ties from year to year.

Measures

Demographic and substance use information was gathered with the Addiction Severity Index (ASI), conducted as face-to-face interviews with trained research assistants. The ASI is a validated, reliable and widely used assessment instrument designed to be administered by a trained interviewer as a semi-structured interview in 1 h or less to patients who present for substance abuse treatment [27]. It aims to assess the problem severity of substance abuse clients, but also, for periodic repeated administrations, to monitor and quantify change in problems commonly associated to substance abuse. The instrument gathers information about seven areas of a patient's life: medical, employment/support, drug and alcohol use, legal, family history, family/social relationships, and psychiatric problems. Using a ten-point scale from 0 to 9, Interviewer's Severity Ratings indicate the degree of patient's needs for treatment in each of the seven problem areas, based on lifetime and current information. The higher the score, the greater is the need for treatment in each area. The ASI has been translated in many languages and has been used in France since 1990 [26]. The reliability and validity of the French-language version of the ASI are highly similar to the original version [28].

Risk behaviors were determined by the Risk Assessment Battery (RAB), a 41-item self-report instrument that takes 10–15 min to complete and measures behaviors that are associated with HIV risk within the previous 6 months [24]. The RAB has been translated and validated in many languages including French [25]. A research technician provided an explanation of the form and the confidential nature of the assessment before administration and was available during administration to screen for potential difficulties. Items related to Drug risk include: "In the past 6-month have you injected drugs?" "With how many different people did you share needles in the past 6-month?" "How often have you shared rinse water in the past 6-month?", "How often have you shared cotton wool in the

past 6-month?" "How often have you shared spoons or bottles in the past 6-month?". Participants report frequency of sharing behavior and the number of sharing partners checking 1 of several items that range from "never" or "0" to "more than once a day" or "11 or more partners". Items related to Sex risk include: "With how many people have you had sex in the past 6-month?" "How often did you use condoms when you had sex?". Participants report frequency of behaviors that range from "never" or "0 partners" to "systematically" or "11 or more partners." The RAB has demonstrated adequate reliability and validity for assessing HIV risk in drug-using populations [29].

HIV and HCV serostatus were obtained using biological standardized immunoassays based on antibody testing at time of assessment. Serum specimens were tested for antibodies to HIV with two enzyme-linked immunosorbent assays (ELISA). All repeated reactive specimens with ELISA were confirmed by Western blot testing. Presence of antibodies to HCV was detected by second- or third-generation ELISA and recombinant immunoblot assay (RIBA), which are reliable tools for diagnosing infection. Two ELISAs were routinely used for detecting HCV antibodies (Ortho Diagnostic and Diagnostics Pasteur). If the two results did not agree, a RIBA test (Chiron RIBA HCV) was used.

Variables

The independent variables included demographic information from the ASI: age, gender, number of years of education, living conditions (living alone, with family, cohabiting, controlled environment or no stable arrangements). Drug information from the ASI included: Interviewer's Severity Ratings (ISR) in each of the 7 areas (Medical status, Employment/support, Drug and Alcohol use, Legal situation, Family/social relationships, and Psychiatric status), years of heroin use, number of prior treatment, lifetime main route of administration (intravenous or nasal). Age was normally distributed but for the logistic regression analyses, it was dichotomized to less than 31 years of age, or 31 and above. Interviewer's Severity Ratings were dichotomized to 4 or less and 5 and above as a score higher than 4 reflects an important need for additional treatment in that area. Number of prior treatment was dichotomized to 2 or less and 3 and above.

The outcome measures were reported risk behaviors measured by the Drug and Sex risk items of the RAB, all transformed to dichotomous variables. The specific items chosen were sharing needles, sharing rinse water, sharing spoons or bottles, sharing cotton wool, having multiple sexual partners, defined as more than one partner in the 6-month time frame of the RAB, and systematic use of condoms among participants who declared multiple sex partners.

Table 1 Sociodemographic and substance characteristics at baseline for total sample according to study period

Study period	1994–1995	1996–1999	2000–2004	ANOVA or Cochran–Armitage test	<i>P</i> value
Number of eligible patients (<i>n</i>)	180	316	261		
Number of included patients (<i>n</i>)	148	280	220		
Response rate (%)	82.2	88.6	84.3	$Z = -0.36$	0.72
Sociodemographic data Cochran–Armitage					
Age					
Mean (SD)	31.2 (0.5)	30.9 (0.3)	31.5 (0.4)	$F(2, 629) = 0.50$	0.60
≤30 years old% (<i>n</i>)	53.4 (71)	52.5 (147)	46.6 (102)	$Z = -1.40$	0.16
Gender (males), % (<i>n</i>)	70.7 (99)	72.5 (203)	83.6 (184)	$Z = 3.1$	0.002
Number of years of education mean (SD)	10.0 (0.2)	9.9 (0.2)	9.8 (0.2)	$F(2, 629) = 0.40$	0.67
Substance-related data					
ASI interviewer severity rating >4, % (<i>n</i>)					
Drug	87.9 (123)	91.4 (256)	84.9 (185)	$Z = -1.3$	0.20
Alcohol	7.9 (11)	6.4 (18)	13.8 (30)	$Z = 2.3$	0.02
Psychiatric	59.7 (83)	57.0 (159)	53.5 (116)	$Z = -1.2$	0.23
Medical	25.0 (35)	30.4 (85)	26.2 (57)	$Z = -0.05$	0.95
Legal	11.4 (16)	13.6 (38)	16.5 (36)	$Z = 1.3$	0.16
Employment	31.4 (44)	26.1 (73)	17.4 (38)	$Z = -3.1$	0.001
Familial	25.0 (35)	29.0 (81)	27.1 (59)	$Z = 0.2$	0.80
Number of prior treatments, % (<i>n</i>)					
≤2	41.7 (58)	54.7 (152)	64.6 (135)	$Z = 4.1$	<0.0001
>2	58.3 (81)	45.3 (126)	35.4 (74)		
Main route of administration, % (<i>n</i>)					
Intravenous	92.4 (121)	82.8 (216)	84.0 (163)	$Z = -1.7$	0.08
Nasal	7.6 (10)	17.2 (45)	16.0 (31)		
Years of heroin use*					
Mean (SD)	9.5 (0.4) ^a	7.7 (0.3) ^b	6.8 (0.3) ^b	$F(2,625) = 11.64$	<0.0001
Serology					
Whole sample					
HIV% (<i>n</i>)	37.9 (47)	16.6 (46)	13.0 (28)	$Z = -4.9$	<0.0001
HCV% (<i>n</i>)	76.9 (70)	64.1 (159)	59.6 (108)	$Z = -2.6$	0.01
Among injectors					
HIV% (<i>n</i>)	43.2 (45)	17.8 (35)	12.4 (17)	$Z = -5.3$	<0.0001
HCV% (<i>n</i>)	81.3 (61)	73.7 (132)	71.1 (84)	$Z = -1.4$	0.1
Injection practice**					
Syringe and needle sharing % (<i>n</i>)	46.8 (52)	24.1 (48)	16.3 (23)	$Z = -5.1$	<0.0001
Rinse water sharing % (<i>n</i>)	40.5 (45)	24.2 (48)	17.9 (24)	$Z = -3.8$	0.0001
Cotton Wool sharing % (<i>n</i>)	53.1 (59)	33.3 (66)	22.2 (30)	$Z = -4.9$	<0.0001
Spoons, bottles sharing % (<i>n</i>)	55.8 (62)	42.9 (85)	21.6 (29)	$Z = -5.5$	<0.0001
Sexual behaviors**					
No systematic condom use % (<i>n</i>)	64.2 (27)	60.2 (50)	52.5 (31)	$Z = -1.2$	0.21
Multiple sex partners % (<i>n</i>)	39.6 (42)	35.7 (84)	34.5 (58)	$Z = -0.8$	0.42

Bold values indicate statistically significant

Values not connected by the same letter are significantly different

* Number of years of heroin use at least 3 times per week, ** over the past 6-month period

Data Analyses

Three time periods were considered for the analysis: Period 1 before the introduction of harm reduction policy in 1995, Period 2 from 1996 to 1999 when sterile injection kits (Steribox[®] including syringes, water, swabs and condoms) were made available, Period 3 from 2000 to 2004 when sterile spoons and a sterile single use cotton filter were added to injection kits (Steribox 2[®]). We used the ANOVA test (quantitative variables) and the Cochran–Armitage test (qualitative variables) to assess the overall differences in all collected data across the three defined periods. To further examine the association between risk-taking behaviors and time period, we performed a multivariate analysis using stepwise generalized logistic regression. Logistic models were calculated with risk-taking behaviors as dependent variable and the time period as the explanatory variable to obtain adjusted odds ratios (95% confidence intervals) controlling for potentially important covariates (age, gender, years of education, conditions of life, HIV status, HCV status, 7 ASI's ISR scores, years of heroin use, main route of administration, number of previous treatments). Data analyses related to injection risk-taking behaviors were limited to participants who reported having injected drugs in the 6-month period prior to the baseline interview. Data analyses related to sexual risk-taking behaviors were limited to participants who reported having sexual relationships in the 6-month period prior to the interview. Separate logistic regression models were calculated for each of the dependent variable (syringe-needle sharing, rinse water sharing, cotton wool sharing, spoons or bottles sharing, multiple sex partners, systematic use of condoms). Clinically relevant variables (age and gender) and variables significant ($P(\text{enter}) = 0.25$) at univariate analysis were entered into the backward stepwise multiple logistic regression analyses to ascertain the model associated with risk behaviors.

All analyses were conducted with JMP[®] 9.0 (SAS[®] Institute Inc., Cary, North Carolina).

Results

Sample Characteristics

Our sample comprised 648 participants. They were mainly males (75.0%, $n = 486$) and 31.2 years of age ($SD = 5.7$) at inclusion. The average number of years of education was 9.9 years ($SD = 2.6$). Available socio-demographic and substance-related data according to the period of inclusion are presented in Table 1.

The prevalence of injection as primary and main route of use remained stable over the three defined study periods

(Cochran–Armitage trend test $Z = -1.72$, $P = 0.08$). This prevalence was higher than the prevalence of the nasal route use (Table 1).

Changes in HIV and HCV Status During Study Periods

HIV and HCV status were available for 95% ($n = 614$) and 80% ($n = 520$) of the whole sample, respectively. Prevalence of HIV-positive status decreased significantly starting from 1996 and thereafter over the study periods considering the whole sample (Cochran–Armitage trend test $Z = -4.9$, $P < 0.0001$) and injectors only ($Z = -5.3$, $P < 0.0001$). Prevalence of HCV-positive status decreased significantly starting from 1996 and thereafter over the study periods in the whole sample (Cochran–Armitage trend test $Z = -2.6$, $P = 0.01$). Considering injectors only, a slight decrease of HCV prevalence was observed but this decrease was not significant ($Z = -1.4$, $P = 0.1$) (Table 1).

Changes in Injection Practice During Study Periods

Among the injectors, the prevalence of needle- and syringe-sharing decreased significantly, from a peak in 1994–1995 (46.8%) to 24.1% in 1996–1999 and 16.3% in 2000–2004 (Cochran–Armitage trend test $Z = -5.1$, $P < 0.0001$). The decrease of paraphernalia-sharing was statistically significant for sharing of rinsing water (Cochran–Armitage trend test $Z = -3.8$, $P = 0.0001$), spoons or bottles (Cochran–Armitage trend test $Z = -5.5$, $P < 0.0001$) and cotton wool (Cochran–Armitage trend test $Z = -4.9$, $P < 0.0001$) (Table 1).

After adjusting for covariates, participants enrolled after 1995 (time period #2 1996–1999 and time period #3 2000–2004) were less likely to share needles/syringes and paraphernalia than those enrolled before 1995 (Table 2). However, among paraphernalia, the sharing of spoon significantly decreased less than the sharing of water or cotton wool after 1995 and continued to decrease after 1999 (Table 2).

Changes in Sexual Behaviors During Study Periods

No significant change over time in the frequency of condom use was observed among those reporting having multiple sex partners (Cochran–Armitage trend test $Z = -1.2$, $P = 0.21$). Among those reporting having sexual relationships in the previous 6 months, the number of multiple sex partners did not change significantly over time (Cochran–Armitage trend test $Z = -0.8$, $P = 0.42$).

After adjusting for the covariates, having multiple sex partners (variables entered into the final model ($n = 505$): age, gender, living conditions, Employment and Alcohol

Table 2 Multivariate adjusted odds ratios of the association of injection risk behaviors and time period

Risk-taking behavior	OR	CI 95%	P
Sharing of needles/syringes ^a			
1994–1995	4.2	2.3–8.0	<0.0001
1996–1999	1.5	0.8–2.7	NS
2000–2004	1	–	–
Sharing of water ^b			
1994–1995	3.0	1.6–5.6	<0.001
1996–1999	1.4	0.8–2.5	NS
2000–2004	1	–	–
Sharing of cotton wool ^c			
1994–1995	4.0	2.0–8.0	<0.0001
1996–1999	1.7	0.9–3.0	NS
2000–2004	1	–	–
Sharing of spoon ^d			
1994–1995	4.5	2.5–8.2	<0.0001
1996–1999	2.4	1.4–4.2	<0.001
2000–2004	1	–	–

Odds ratio were adjusted for age, gender, number of years of education, living conditions, HIV status, HCV status, years of heroin use, number of previous treatments, main route of administration, ASI interviewer severity ratings (Medical, Alcohol, Drug, Legal, Employment, Family/relationships, Psychiatric status)

OR adjusted odds ratio, CI confidence interval, NS not significant

^a Final model $X^2 = 47.70$ ($df = 7$, $P < 0.0001$) ($n = 444$); variables entered into the final model were: age, gender, Employment, Drug and Alcohol Interviewer's Severity Ratings

^b Final model $X^2 = 45.62$ ($df = 6$, $P < 0.0001$) ($n = 436$); variables entered into the final model were: age, gender, Drug and Alcohol Interviewer's Severity Ratings

^c Final model $X^2 = 47.95$ ($df = 6$, $P < 0.0001$) ($n = 360$); variables entered into the final model were: age, gender, HIV and HCV serostatus

^d Final model $X^2 = 64.96$ ($df = 8$, $P < 0.0001$) ($n = 436$); variables entered into the final model were: age, gender, living conditions, Drug Interviewer's Severity Ratings

Interviewer's Severity Ratings) and the systematic use of condom (variables entered into the final model ($n = 183$); age, gender) were not associated with the time periods.

Discussion

This study assessed changes in HIV and HCV prevalence and in risk-taking behaviors among 648 opiate-dependent users seeking treatment over an 11-year period (1994–2004) that included significant changes in French government Public Health policy. The results showed a significant decrease in syringe- and paraphernalia-sharing over the period, while sexual behavior appeared to remain stable. Among injectors, the prevalence of HIV- but not

HCV-positive status decreased significantly whereas for the whole sample, HIV and HCV positive status decreased significantly. After controlling for potential confounding variables, we found that participants enrolled after 1995 were less likely to share injection material than those enrolled before 1995, and that those enrolled after 1999 were less likely to share spoons than those enrolled before.

Our sample included more than 80% of opiate users who sought a treatment for opiate dependence in the participating clinics and could be considered as representative of the population accessing those clinics during that time. The extent to which our sample was representative of opiate-dependent subjects who sought treatment in other specialized addiction clinics in France is unknown. However, socio-demographic and substance-related characteristics of our sample were similar to those of IDUs seeking treatment in specialized addiction centers in South West France [30].

The decrease in HIV prevalence during the period 1994–2004 and the low rate observed among recently recruited IDUs are consistent with HIV incidence data in this area. Indeed, since 1996, through an increased access to highly active antiretroviral therapy (HAART), the proportion of untreated patients decreased greatly in France and in Aquitaine [31, 32]. In 2003, it was estimated that around 90% of HIV positive subjects were receiving HAART therapy in Bordeaux [32]. The decrease in the prevalence of HIV among IDUs may reflect the large decrease in HIV incidence, as HAART treatments have substantially reduced the death rate among HIV-infected cases, including both IDUs and non-IDUs [33]. Thus, in South West France, the incidence of new diagnoses of HIV infection and AIDS cases has been decreasing since 1996, particularly among IDUs [34]. These aspects are consistent with the lower HIV prevalence among recently recruited IDUs.

Our results showed an early and significant decrease in both syringe- and paraphernalia-sharing since 1995. These declines remained significant after controlling for potentially confounding variables. Although changes in syringe-sharing were observed by others [12, 25, 35], changes over time in paraphernalia-sharing were not reported in former studies performed on in- and out-of-treatment patients in France [18, 19, 25] or in other countries [6, 14]. Importantly, we found that injectors who were enrolled in the study after 1995 were less likely to share needles and less likely to share other injection paraphernalia. Among paraphernalia, the sharing of spoons has been decreased since 1995 but less than other paraphernalia, and clients enrolled after 1999 shared less than those enrolled before. Interestingly, during these two study periods 1996–1999 and 2000–2004, important changes in harm reduction policy occurred in France. Easy access to needles, syringes and sterile paraphernalia including water and cotton was introduced in 1995, whereas access to sterile spoon was

only introduced at the end of 1999 [36]. During the period 1996–1999, the amount of sterile syringes sold in pharmacies increased greatly, resulting in a substantial increase in Steribox[®] units distributed (+50.2%). After 1999, following the addition of a sterile filter and a sterile spoon (Stericup[®]), the number of Steribox[®] units distributed remained approximately stable [17]. Thus, decrease in syringe and paraphernalia (cotton and water) sharing as well as decrease in sharing of spoons clearly coincided with the introduction of their increased availability. In view of these findings, the specificity of changes in injection practices in regard to public health advances strengthens the possibility that the public health policy changes played a major role in reducing risk behaviors.

In contrast with drug risk-taking behavior, sexual risk-taking behavior in our sample of IDUs did not change significantly over time and no effect of time period was observed. This is consistent with previous studies [15, 37], suggesting that sexual risk-taking behavior among IDUs remain a problem. Despite awareness campaigns and an increased access to condoms, no changes on sexual practice was evidenced in our sample during a period of time that included increased access to condoms. This suggests that HIV prevention interventions should better address sexual risk behaviors in addition to drug use behaviors in this population.

The significant decrease in HIV prevalence observed is consistent with previous studies in France and in other countries [16, 19, 35]. Interestingly, in the present study, coincident declines in both injection equipment sharing practices and HIV prevalence among injectors were observed from 1996 to 2004, a period associated with easier access to needles and syringes and their effective use by IDUs. Concerning HCV prevalence, results showed a significant decline in prevalence in our sample that has not been previously reported in France [17]. However, the decrease in HCV prevalence was not significant among injectors, even though injectors reported less paraphernalia sharing. While paraphernalia-sharing is a well-known cause of HCV transmission between IDUs [38], some data have suggested an indirect protective effect of needle exchange program use on HCV infection by reducing injection risk behaviors [39, 40]. The absence of coincident declines in HCV prevalence among injectors over the study periods could be explained by the greater infectivity of HCV than HIV through unsafe injection practices [41] and by the high HCV prevalence baseline levels. It has been estimated that parenteral transmission of HCV is tenfold more efficient than that of HIV [42]. The strong tendency of HCV to chronicity also generates a large reservoir of infected subjects with a potential for spreading the virus through parenteral or intra-nasal contact [43]. Use of the intra-nasal route of administration might also be involved

in continued transmission of HCV [44, 45]. Moreover, the more delayed changes in sharing of spoon raises the possibility that continuing sharing up to 2000 could have contributed to delay in the reduction in HCV transmission.

This study has several limitations. One limitation is that risk-behaviors were self-reported and therefore subject to under-reporting and social desirability that can bias the results. However, the reporting of risky-behaviors by a self-report method was made to limit social desirability and reduce the possibility of shame in reporting these behaviors as might occur during a direct interview. Furthermore, before administration of the RAB, issues of confidentiality were addressed and reinforced to enhance validity of the collected data. Secondly, because the study is descriptive, we cannot attest to a causal association between improvement in some risk-taking behaviors, HIV and HCV prevalence and the French harm reduction policy. Although we found a significant decrease of both positive serostatus and injection risk-taking behaviors over time, the extent to which the decline may be related to an improved access to sterile injection material that occurred during the periods 1996–1999 and 2000–2004 remains unknown. Undoubtedly multiple factors are related to the changes observed during those time periods. Particularly, a potential contributing factor to the reduction of HIV prevalence may be the increased access and use of HAART that occurred in France and in Aquitaine since 1996 [32] which reduces viral load and spread of infection. Of concern, the introduction of methadone in treatment centers and the spread of buprenorphine in office-based practice since 1996 [46] may also have contributed to the reduction of risky behaviors and blood-borne infections by reducing use. Nevertheless, no association was found between the number of previous treatments and risk behaviors, suggesting that this variable had limited influence on the current findings. In addition, in the present study, the characteristics of substance use of the recruited IDUs as assessed by the ASI interview remained severe and stable whatever the time period considered. This excludes that the decrease of injection sharing in our sample was explained by a decrease in drug use. Hence, changes observed over time in risk-taking behavior occurred albeit of a stable and high level of drug use. Finally, participants were enrolled in the study before the start of the treatment program, thereby limiting the possible contribution of methadone or buprenorphine treatment for those individuals.

Conclusions

Despite these caveats, our findings give evidence for significant behavioral changes among IDUs over a period of time that included significant changes in Public Health

Policy. Continued evaluation is needed in order to assess the effectiveness of harm reduction and educational programs on the spread of HCV and on drug risk-taking behaviors. Evaluation of risk-taking behaviors in further studies should include situational and psychopathological factors associated with risk-taking behaviors, in order to conduct more appropriate educational and prevention programs.

Acknowledgments This study was supported in part by MESR-94V 0269 to M. Auriacombe, a Research Grant PHRC (1994 and 2000) from the French Ministry of Health to J. Tignol and M. Auriacombe, a Research Grant MILDT INSERM (2004) from the French Ministry of Research to M. Auriacombe and French National Research Agency PRA-CNRS-CHU-Bordeaux award (2008–2010) to M. Fatseas. The funding sponsors had no role in the design and conduct of the study, in the collection, analysis, and interpretation of the data, or in the preparation, review, or approval of the manuscript. The researchers confirm their independence from funders and sponsors. All researchers had access to all the data. Valérie Bertorelle, Pascale Franques-Rénéric, Estelle Lavie and Rebecca Poutet are thanked for their participation in this study. Gaelle Encrenaz is thanked for her advice in the data analysis. We thank all physicians and participants for their contribution. Pr. Jean Tignol, former director of the Laboratoire de psychiatrie is acknowledged and deeply thanked for his seminal contribution to this work.

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Individual factors are major contributors to relapse in addiction

Involuntary relapse is a feature of all addictions and a challenge for patients and their families. 20 to 25% of the general population is affected worldwide. Marc Auriacombe's team (Addiction Team, Sanpsy Laboratory, University of Bordeaux, CNRS USR 3413 and CH Ch. Perrens, Bordeaux, France) identifies, for the first time in natural conditions, the primary role of individually tailored stimuli in relapse in addiction to alcohol, tobacco, cannabis and heroin. They also identified craving as the main mediator of relapse. It is thus possible to determine for each individual the person-specific factors that contribute to and aggravate relapse. This study opens immediate prospects for treatment of addictions, and is published in the journal *Addiction*.

Previous work carried out by Melina Fatseas and colleagues in Marc Auriacombe's team on the involvement of psychophysiological reactivity to stimuli in relapse in humans had shown a strong correlation between the magnitude of conditioned responses (such as craving) induced by these stimuli and the risk of relapse in heroin use disorder. This study was conducted in human laboratory conditions and the question arose as to the relevance of this model in the context of daily life. Stimuli in the natural environment are usually more complex and varied than those studied in the laboratory.

Through collaboration with Joel Swendsen (INCIA, CNRS UMR 5231, Bordeaux, France), Melina Fatseas and Fuschia Serre adapted and validated a novel procedure using smartphones in subjects with an addiction to different substances. This method allows real-time assessment of substance use of individuals in their natural environment and investigation of causal links with environmental or emotional factors. Using this method validated in patients with addiction to substances, the researchers show for the first time in real life conditions that exposure to factors previously associated with use, and specific to each individual, are potent inducers of craving and then relapse within hours of exposure to these person-specific stimuli. These factors, such as places, contexts, emotions are very specific and personal to each individual, linked to personal history. Interestingly, the researchers also confirm the central role, regardless of the substance, of intensity of craving in relapse and chronicity of addiction. This highlights the value of focusing on treatment approaches that reduce craving and control its determinants. This work also opens the prospect of integrating individual markers predictive of relapse in treatment programs for long-term prevention of relapse.

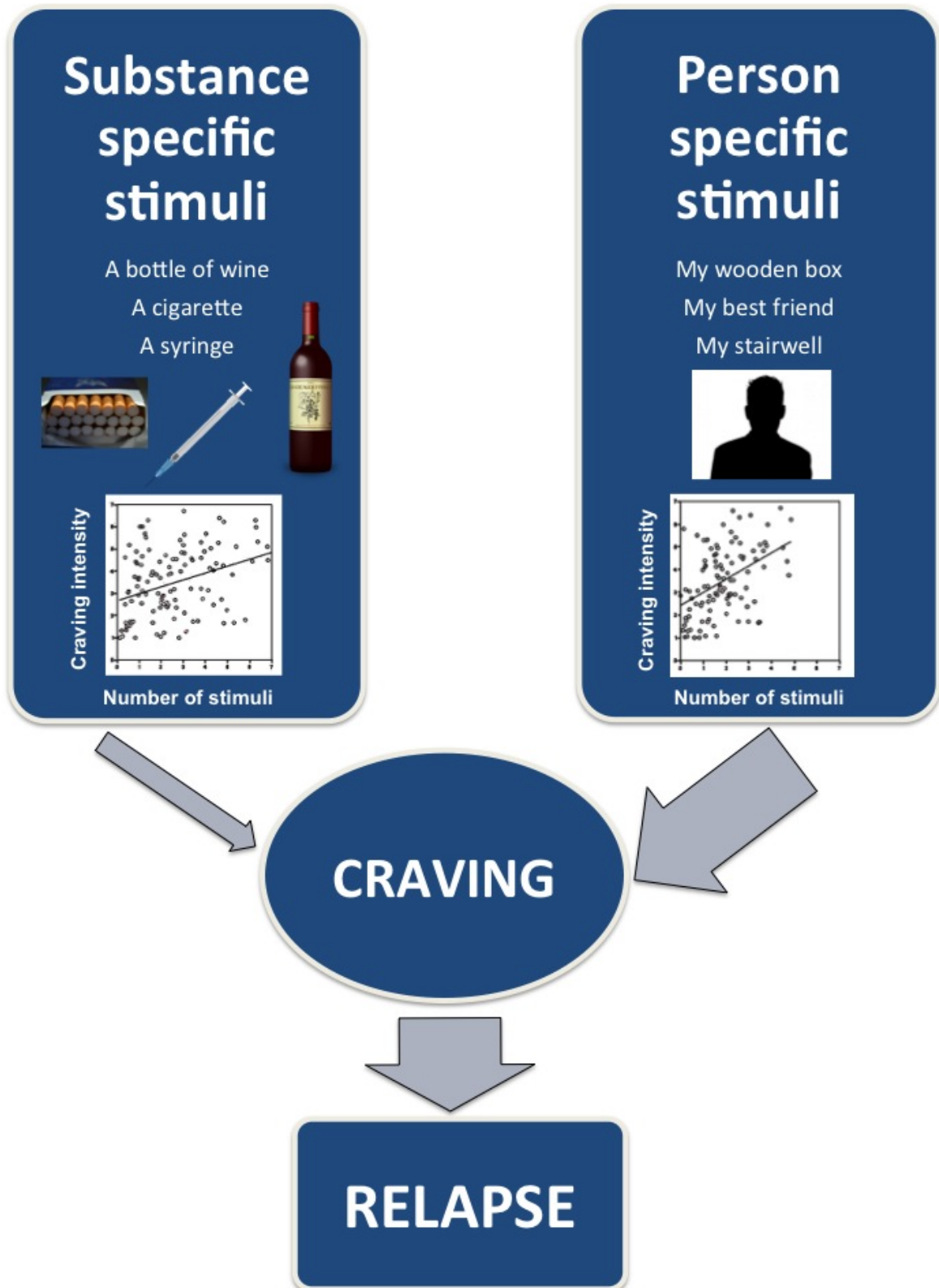


Figure: Implication of person-specific stimuli and craving in relapse

En savoir plus

[Craving and substance use among patients with alcohol, tobacco, cannabis or heroin addiction: a comparison of substance-specific and person-specific cues.](#)

Fatseas M, Serre F, Alexandre JM, Debrabant R, Auriacombe M, Swendsen J.
Addiction. 2015 Feb 16. doi: 10.1111/add.12882.

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Commentary on Fatseas *et al.* (2015): Ecological momentary assessment – new insights and opportunities

With ecological momentary assessment (EMA) methods, research participants complete self-report and cognitive assessments on mobile devices as they go about their daily lives. EMA represents a valuable opportunity to investigate behaviour in the contexts in which it normally occurs, and it has become increasingly popular in recent years. In the addiction field, EMA studies have made important contributions to issues such as the prospective relationship between subjective craving and substance use [1], drug interactions [2] and the relationship between negative affect and alcohol consumption [3].

Fatseas and colleagues' paper [4] makes an important contribution to the literature on cue-reactivity, craving and drug use. Previous investigations of drug cue-reactivity tended to use standardized cues, and therefore neglected cues that were specific to the individual, such as being in a certain place or in the company of a specific person. Person-specific cues such as these cannot be studied in clinical and laboratory settings, and arguably EMA is the only viable method to investigate their influence. Study findings indicated that the number of general substance-related and person-specific cues that had been encountered in the previous hours was associated with concurrently assessed craving intensity. Regarding relationships over time, person-specific cues were predictive of subsequent craving but general substance-related cues were not. Other analyses revealed that craving intensity predicted substance use 4 hours later, confirming findings reported in a recent meta-analysis from the same group [1]. Finally, a mediation analysis demonstrated that the relationship between exposure to drug cues and drug use 4 hours later was fully mediated by craving intensity.

EMA research is not without its limitations, many of which were noted by the authors. Perhaps the most important limitation of this particular study is that participants were asked to recall their exposure to drug cues over the previous few hours immediately after they had rated their craving intensity during the corresponding period. It is possible that recall of an experience of strong craving may have prompted a (perhaps involuntary) search for the cause of that craving, and therefore more drug-related cues may have been remembered. Given that assessments occurred at predictable intervals, the converse could also be true ('I encountered a lot of drug cues so I am probably craving now'). These explanations could be tested in future research by decoupling the assessment of craving and exposure to drug cues so that each assessment probes only one, and including assessments at random rather than fixed intervals.

The study suggests opportunities to exploit this methodology to address other research questions. For example, the authors speculated that attentional bias to drug cues might have contributed to increased craving in response to those cues. Indeed, other EMA studies demonstrated that attentional bias can be measured on mobile devices, that increases in bias preceded increases in craving [5] and that attentional bias may predict relapse independently of craving [6]. This may lead eventually to novel clinical interventions: trials of attentional bias modification (ABM) administered in clinical settings have generally yielded negative or ambiguous findings, perhaps because effects do not generalize outside the clinic [7]. A recent trial demonstrated that ABM administered on mobile devices could prompt reductions in cigarette craving in tobacco smokers [8], and a priority for future research should be to investigate if this intervention can reduce the risk of relapse in drug users who are attempting to remain abstinent.

Declaration of interests

None.

Keywords Attentional bias, craving, ecological momentary assessment, experience sampling, relapse.

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Alexandre J-M, Fatseas M, Auriacombe M. Addiction(s)? *Biofutur* 2012;338:27-29

Journée sur la Recherche clinique et l'Évaluation en addictologie en Aquitaine

3 juillet 2012 - Cap Sciences

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L'ARS a confié au Département d'Addictologie, une structure hospitalo-universitaire d'addictologie de la région Aquitaine, l'organisation de cette journée.

L'objectif principal était de rassembler des professionnels cliniciens travaillant dans les dispositifs spécialisés en addictologie des secteurs médico-social (CSAPA et CAARUD) et sanitaire (services hospitaliers d'addictologie, ELSA), des acteurs institutionnels de l'ARS et des professionnels de la recherche clinique et de l'évaluation en addictologie.

Les intervenants de cette journée sont des professionnels d'instituts de recherche ou d'organismes d'évaluation, ainsi que des professionnels du dispositif de soins impliqués ou ayant été impliqués dans un travail de recherche clinique ou d'évaluation. Participants et intervenants sont basés en Aquitaine afin de favoriser des échanges durables.

Synthèse de la journée

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- ▶ **Accueil et présentation de la journée** *Nicole Klein, Martine Valadié-Jeannel, Stéphanie Deblois, Marc Auriacombe*
- ▶ **Perspective clinique pour la recherche. Quelles questions et comment ?** *Mélina Fatseas*
- ▶ **Comment étudier les phénomènes subjectifs et émotionnels ?** *Joel Swendsen*
- ▶ **Que peut apporter la recherche sur les animaux à la recherche clinique ?** *Serge Ahmed*
- ▶ **Echanges avec les participants / Débat**
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- ▶ **Echanges avec les participants / Débat**
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- ▶ **Prise en charge de l'addiction au tabac en psychiatrie** *David Esfandi*
- ▶ **Repérage et prévention Tabac à l'hôpital général** *Luc Perrin*
- ▶ **Conclusions et Synthèse** *Martine Valadié-Jeannel, Anne-Cécile Rahis, Marc Auriacombe*

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Biosketch

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Marc Auriacombe is a Professor of Psychiatry and Addiction medicine at the Medical School of the University of Bordeaux, Bordeaux, France and an Adjunct Associate Professor of Psychiatry at the University of Pennsylvania, Philadelphia, PA., USA. He is the director of an addiction research team at CNRS USR 3413 Sanpsy (Laboratoire de psychiatrie) and medical director of the Addiction Treatment Services of the Charles Perrens Hospital and CHU in Bordeaux, France. He is the principal senior investigator of an integrated addiction research program funded by French national and European funds. The focus of this research is on addictive behaviors whether related to drugs (tobacco, alcohol, cannabis, heroin, cocaine and other drugs) or other addictions (gambling, internet, food, etc.). The objective is to better characterize the phenomenology of addictive behavior and its determinants. With Jean-Pierre Daulouède and Jean Tignol he has contributed to introduce the Addiction Severity Index in France in 1989. Marc Auriacombe was awarded the EUROPAD Award 2002 "Chimera d'Argento" "Dedicated to all those who dream of a better world for drug addicts". Over the past 25 years, Marc Auriacombe has been a member or collaborator of several French (ANDEM, ANAES, HAS, AFSSAPS), European (EMCDDA, Pompidou Group, Cochrane), North-American (NIDA) and International Agencies (WHO) related to health and addictions and member of advisor groups for the French Government (MILDT, CNA). Marc Auriacombe was appointed by the American Psychiatric Association member of the Substance-Related Disorders DSM-5 Workgroup (2007-2013).

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