Emotional Control in Patients With Opioid Dependence Syndrome and Reported History of Negative Life Events

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Abstract

Aim
The aim of this study was to evaluate the extent to which individuals who suffer from opioid dependency report controlling emotions of anger, anxiety, and depressed mood.

Method
Recruitment was achieved through an outpatient drug treatment clinic in Birmingham, UK, and data were collected through a semi-structured interview. One hundred and twenty participants with opioid-dependence syndrome were interviewed and 100 controls of non-drug-using family members and friends were included in the study.

Result
The mean age of the opioid group was 33.3 years, SD = 8.8. The majority of the participants were white British (80.8%), unemployed (69.2%), and male (75%). There is a significant difference between the 2 groups in total control of emotional expression scores and all the 3 subscales. The control group had high ability in controlling their emotion and the patient group had very low ability in controlling their emotion (expression of affect) (P = 0.000). Suppression of anger mean was clearly very low in the opioid-dependent group indicating a high level of expression of hostility.

Conclusions
The data presented indicate that a significant group of opioid-dependent patients experience and express their emotions in general, and hostile feelings in particular, owing to difficulties in controlling these emotions. Possibly, they tend to use drugs as a self-medication to help themselves in controlling their emotions. By attending to and addressing these issues, healthcare workers can alleviate ongoing distress and promote confidence.

Key Words: opioid dependence, emotional control, hostility, life events

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INTRODUCTION

Emotion regulation refers to the processes by which we influence the emotions we feel and how we experience and express these emotions.1 As emotions are a multicomponent process that unfolds over time, emotion regulation involves changes in “emotion dynamics”2 or the latency, rise time, magnitude, duration, and offset of responses in behavioral, experiential, or physiological domains. Emotion regulation also involves changes in how response components are interrelated as the emotion unfolds, such as when increases in physiological responding occur in the absence of overt behavior.3

There are 2 commonly used strategies for downregulating emotion. The first, reappraisal, comes early in the emotion-generative process. It consists of changing the way a situation is construed to decrease its emotional impact. The second, suppression, comes later in the emotion-generative process. It consists of inhibiting the outward signs of inner feelings. Experimental and individual-difference studies find reappraisal to be often more effective than suppression. Reappraisal decreases emotion experience and behavior expression, and has no impact on memory. In contrast, suppression decreases behavior expression but fails to decrease emotion experience, and actually impairs memory. Suppression also increases physiological responding for suppressors and even their social partners.5

Suppression of emotional thoughts, particularly those thoughts that arouse negative emotions, is often invoked as a way of regulating mood and reducing distress. Emotional suppression has played an important role in psychosomatic models of disease, in which the

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active suppression of strong emotions has been proposed to increase susceptibility to illness.\(^4\) Reports from clinicians working with patients with cancer and research studies suggest that a personal coping style that suppresses negative emotion may increase the risk of cancer.\(^5,6\) The mechanisms by which suppression of emotions is associated with disease are far from clear, but a likely mechanism is through the immune system.\(^7\)

The aim of this study was to evaluate the extent to which individuals who suffer opioid from dependency report controlling emotions of anger, anxiety, and depressed mood. This study is part of a large data collection in a previous study, which aimed at examining the impact of self-reported life events on the profile of opioid-dependence syndrome.\(^8\)

**METHODS**

Participants were recruited from outpatient attendees at a drug treatment service in Birmingham, UK. A sample size of at least 100 in each of the 2 groups (opioid dependency and control group of nondonor users) was aimed for, and all consecutive attendees at the clinic were interviewed. The opioid-dependent group consisting of patients aged between 18 and 65 years, with an ICD-10 diagnosis of opioid-dependence syndrome, who were dependent on heroin or were being prescribed methadone were included in the study. Participants were excluded from the study if they had any of the following conditions: comorbid alcohol dependence, head injury, or psychotic disorder. These exclusion criteria were used to reduce bias in recall of negative events in childhood. All eligible participants (based on self-reports of drug use) were then subjected to a urinalysis for psychoactive substances to confirm their use of heroin or methadone and to exclude concurrent use of other psychoactive substances. Twenty-three subjects had history of psychotic disorders, 39 had history of comorbid alcohol dependence, and 38 had urine test results suggestive of cocaine use; no one had a head injury and 42 refused to participate in the study. All of these participants were excluded and a final number of 120 opioid dependents participated in the study. Moreover, a 100 controls, which included family members or friends to guarantee a degree of the similar social background, participated in the study. The interviews were conducted in quiet, comfortable settings and each interview lasted approximately an hour.

**Definition of Onset**

Onset is defined as the time in which a participant started to regularly use opiates and developed symptoms that met the ICD-10 criteria of opiate-dependence syndrome (F11.2: WHO, 1992).\(^9\)

**Measures**

Data were collected using a semi-structured interview. A set of scales were incorporated in each interview: the Maudsley Addiction Profile\(^10\); the Severity of Dependence Scale\(^11\); and the Leeds Dependence Questionnaire.\(^12\)

Impact of Events Scale (IES)\(^13\); Courtauld Emotional Control Scale (CECS)\(^14\); and the Psychosis Screening Questionnaire (PSQ).\(^15\) Life events have been measured using a modification of "early life-events list for young people".\(^16\) The questionnaire used as our study instrument for reporting negative life events has not been validated in any earlier study. However, a pilot analysis was undertaken on 30 patients and then it was revised. We found the final form useful and easy to apply without leaving too many ambiguities. A total of twenty-eight mainly adverse events and important changes were included in the final questionnaire. Finally, there was an open-ended question for events not mentioned in the list. CECS\(^14\) was developed to evaluate the extent to which individuals report controlling anger, anxiety, and depressed mood. Scale items were derived from responses to semi-structured clinical interviews with patients who were awaiting breast biopsy. Women with breast cancer were more likely to report having suppressed anger during their adult lives than the control group of patients with benign breast disease. Internal consistency and test–retest reliability data were very high.\(^17\) Although intended for use with
patients with breast cancer this scale is envisaged to have wider application to other clinical populations. Using this scale will help to assess the possibility of lack of emotional control as a vulnerability factor to substance misuse. Ethical approval was obtained from Birmingham Local Ethics Committee.

Statistical Analysis
Analyses were performed using the Statistical Package for Social Sciences (SPSS, version 15). For normally distributed data, means were compared using Student t test; 2 × 2 tables were analyzed using confidence intervals. Categorical data and the interview data were analyzed by χ² tests. To assess whether severity of dependence is related to other variables, the Pearson correlation coefficient was used.

RESULTS
The mean age of the opioid group was 33.3 years, SD = 8.8. The majority of the participants were white British (80.8%), unemployed (69.2%), and male (75%). The mean severity of dependence as measured by 2 scales indicated severe level of dependence according to the investigators of each scale. The mean number of traumatic events for the opioid-dependence group was 4.8, SD = 3.57 versus 3.55, SD = 3.65 in the control group with significant difference (t = 2.56, df = 218, P = 0.01). Full demographic data are published elsewhere. ³

Results of CECS
Table 1 shows the results of CECS. There is a significant difference between the 2 groups in total control of emotional expression scores and all the 3 subscales. The control group has high ability in controlling their emotion and the patient group has very low ability in controlling their emotion (expression of affect), (P = 0.000). Suppression of anger mean is clearly very low in the opioid-dependent group indicating a high level of expression of hostility.

Table 2 shows the correlation between CECS scores and both measures of severity of dependence on opiates and total negative life events in the patient group. There is no significant correlation between CECS scores and both the measures of severity of dependence scales or the total negative life events.

Table 3 shows the correlation between CECS scores and expression of both physical and psychological symptoms in the patient group. There is a significant negative association between the total scores of suppression of emotions and both physical and psychological symptoms (r = −0.530, P = 0.000; r = 0.290, P = 0.001). This indicates that the higher the level of suppression of emotions, the lower

| TABLE 1. Results of Courtauld Emotional Control Scale (CECS) Watson and Greer ³³ | 95% Confidence Interval of the Difference |
|---|---|---|---|---|
| No. | Mean | SD  | t  | P  | Lower | Upper |
| Suppression of anger | | | | | | |
| Control group | 100 | 22.7 | 4.65 | 15.28 | 0.000 | 8.4 | 10.9 |
| Patients group | 120 | 13.0 | 4.66 | | | |
| Suppression of fear | | | | | | |
| Control group | 100 | 22.26 | 4.32 | 6.04 | 0.000 | 2.7 | 5.4 |
| Patients group | 120 | 18.18 | 5.46 | | | |
| Suppression of misery | | | | | | |
| Control group | 100 | 23.15 | 4.49 | 3.58 | 0.000 | 1.2 | 4.1 |
| Patients group | 120 | 20.51 | 6.08 | | | |
| Suppression of total affect | | | | | | |
| Control group | 100 | 68.12 | 10.96 | 12.08 | 0.000 | 14.2 | 19.7 |
| Patients group | 120 | 51.14 | 9.86 | | | |
the level of physical and psychological symptoms. This was true for emotions of both fear and misery but not anger. Suppression of anger was significantly correlated with psychological symptoms but not physical ones.

Finally, the correlation of negative life events and suppression of emotions shows that there is a significant negative correlation between suppression of anger and parent moving away from home \( r = 0.223; P = 0.014 \). In addition, suppression of anger was significantly correlated with both break up with girlfriend/boyfriend and sexual abuse \( r = 0.214; P = 0.019 \) and \( r = 0.278; P = 0.002 \). Meanwhile, suppression of misery was significantly negatively correlated with changing school and reached a high level \( r = -0.282; P = 0.002 \). Furthermore, the total scores of suppression of affect was significantly negatively correlated with having a new stepmother or stepfather \( r = -0.209; P = 0.022 \). Interestingly, there was a significant correlation between suppression of anger and the male sex \( r = 0.275, P = 0.002 \).

Results of Revised IES

Table 4 shows the mean, standard deviation, \( t \), and \( P \) value of the impact of event score in patients and controls.

Post-traumatic symptoms were determined by IES. These symptoms were reported in relation to the most distressing incident experienced by the respondent. Mean scores were compared and the participant’s total scores were classified according to the scheme recommended by the investigators into "low" (0 to 8), "medium" (9 to 19), and "high" (20+). The IES assesses post-traumatic stress, with 15 items rated on a 4-point scale for frequency of occurrence during the previous week. There are 2 subscales: intrusion and avoidance. Horowitz et al\(^{18}\) defined scores greater than 12 on intrusion subscale and greater than 10 on avoidance subscale as clinically significant on IES. On this basis, clinical intrusion was experienced 1 week before the interview by 40% of the patients and by 32% of the control group. Clinical avoidance was experienced by 63.3% of the patients and by 41% of the control group. Adding the

| Suppression of anger | -0.245 | 0.007 |
| Suppression of misery | -0.148 | 0.107 |
| Suppression of affect (total) | -0.330 | 0.000 |
TABLE 4. The Mean, Standard Deviation, t, and P Value of the Impact of Events Score in Subjects and Controls

<table>
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<th>N</th>
<th>Mean</th>
<th>SD</th>
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<th>P</th>
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subscales together, 57.5% patients were found to have a clinically significant total score compared with 39% of the control group, yielding them clinically stressed according to the investigators. However, when we look at the mean score for the both the groups, it was clinically stressful for the patient group in both total scores and avoidance but not in intrusion. In the same time, it did not reach stressful level in any of the 3 areas in control group. There was a significant difference in all the 3 scales between the 2 groups, although the mean scores are not significant clinically in intrusion subscale. Table 4 shows that the mean for patient group reached a clinically stressful level in avoidance subscale and in total scores but not in intrusion subscale. Clinical intrusion is not significant either in the patient group (mean 9.4) or in the control group (mean = 6.4). However, there is a significant difference between the 2 groups (P = 0.002). Clinical avoidance mean is significant in the patient group (10.9) and not clinically significant in the control group (7.7); there is a significant difference between the 2 groups (P = 0.01).

DISCUSSION

Our results show that opioid-dependent patients express their emotions in general, and feelings of anger particular, higher than normal populations. Furthermore, the results show that the higher the level of suppression of emotions of fear and misery, the lower the level of expressing both physical and psychological symptoms. Published studies show that suppression of emotions has been proposed to increase susceptibility to illness, particularly in patients with cancer. These findings are inconsistent with our results, except for angry feelings. There are 2 possibilities. First, drug users tend to use drugs as a form of self-medication to dull both physical and psychological symptoms and suppress emotions. Second, none of the published studies differentiated between the effects of different subtypes of emotions. The quantity and quality of emotions one expresses can either increase or decrease the intensity of the subjective feelings and physiological reactions. Hence, the expression of emotion may modulate any health effects brought about by the other component of emotion. Despite general agreement on this issue, researchers disagree about which excessive behaviors lead to which effects.

The association between emotional regulation (suppression of emotion or expressing it) and negative life events, or severity of dependence failed to reach any significant level. This could be explained in view of the fact that regulation of emotional system among the patient group, who suffer opioid dependence, is not disturbed by negative life events and is not mediated or related to the severity of dependence on opioid. Moreover, the study of life events alone is insufficient to infer a causal relationship between life events.
and severity of dependence. This could support the clinical impression that opioid dependence is a multidimensional and multifactorial illness rather than a 1-way disease.

There is a significant difference between the 2 groups in the ability to suppress emotions, with the patient group expressing more emotion. The most obvious is suppression of anger, indicating inability to control this emotion. This finding is consistent with results that the most frequent personalities among opioid dependence are emotionally unstable and of the psychopathic type. This is supported in the ICD10 where emotionally unstable personality disorder is characterized by a definite tendency to act impulsively and there is a tendency toward outbursts of emotion and inability to control the behavior explosions. In the case of antisocial or dissocial personality disorder, there is very low tolerance to frustration and a low threshold for discharge of aggression, including violence.

Interestingly, there is a significant correlation between high level of suppression of anger and the male sex ($r = 0.275$, $P = 0.002$), which means that men are able to suppress their angry feelings and express less hostility than women. These findings are consistent with those of Robinson et al's where high hostility levels were observed among the female sex seeking treatment for substance-use disorders compared with the male sex.

There is a significant association between a parent leaving the house and the expression of anger. In addition, there is an association between total expression of feelings and having a new parent. These associations could be due to the threatening effect of the disturbed family unit and the tendency to blame the leaving parent to be responsible for it. The other finding in this area is the significant association between expression of depression and the change of school, which could be a form of grief owing to the loss of friends and teachers. Finally, the breakup with boyfriend/girlfriend is significantly associated with suppression of anger. Possibly, the use of drugs is a pathological coping strategy for both the suppression of anger and the stress of separation.

Opioids Use as an Attempt to Cope

What appears to be unique about patients dependent on opioids is the special role that the drug comes to play in the personality organization of these patients. They have not successfully established familiar defensive, neurotic characters or other common adaptive mechanisms as a way of dealing with their distress. Instead, they have resorted to the use of opioids as a way of coping with a range of problems involving ordinary human pain, disappointment, anxiety, loss, anguish, sexual frustration, and other sufferings. Our results show a significant difference in the impact of life events on the 2 groups. Furthermore, there is a significant difference in the reaction of the 2 groups where the patient group shows more emotional expression in the 3 dimensions of emotions (fear, misery, and anger). It seems that opioid use provided a form of chemical buffer for dealing with various human feelings. This is consistent with Lifson's observation that survival emotion, guilt, violence, and rage associated with Vietnam veterans encouraged the use of readily available heroin as "a symptom's choice." Moreover, it is consistent with the view that narcotics are particularly effective in mitigating and attenuating feelings of violence and rage. This is also consistent with our finding of obvious lack of control of angry feelings in our group with the tendency to be significantly hostile compared with the control group of nonopioid users. Possibly, the central problem for people who have become dependent on drugs is that they have failed to develop effective symptomatic adaptive solutions in response to the stress of negative life events, which formed a developmental crisis and other forms of emotional pains.

Finally, about self-medication, it will be essential to differentiate 2 versions: self-medication as a reason of the substance abuse where life stresses cause a person to develop the syndrome; and self-medication as a coping method once the disorder exists, where substance abuse may be caused by some other factors, such as genetic predisposition, but then may be used with depression or...
anxiety symptoms owing to life stresses as an attempt to cope with them.

**Impact of Events**

The data from this study add weight to the view that people who have been exposed to negative life events tended to isolate their thinking (high avoidance score) about the negative events to the extent of having amnesia to it. Moreover, the use of drugs is a form of chemical avoidance or “stress buffers,” which is clinically significant in our sample.

The avoidance may be of clinical significance because such symptoms may have an influence on drug use behavior. Perhaps, they may avoid thinking about the negative events by taking drugs to shield their thinking and consequently reducing stress. This is consistent with both assumptions that drug use is a response to stress and that drug use is functional in reducing stress. These findings are also consistent with several study findings that emotional avoidance and avoidant coping mechanism were positively related to substance misuse.

**Clinical Implications**

Results of this study indicate that the level of hostility among the opioid-dependent group is higher than among the control group; however, it is not correlated with severity of dependence in 2 dependence scales or to the number of life events. Suppression of anger is significantly correlated with the male sex. Furthermore, expressing physical or psychological symptoms is lower in higher suppressed emotions of fear and misery in opioids dependents. However, expressing physical or psychological symptoms is higher in the higher suppressed emotion of anger. The most plausible interpretation of our findings is the fact that lack of emotional control has an impact on the profile of some individuals, increasing their vulnerability in experiencing both physical and psychological symptoms, hence precipitating drug-use disorder to control both the emotions and psychological well-being.

**Limitations**

The study had certain limitations. First, it was retrospective in design, and therefore vulnerable to bias related to the participant’s recall, both because of differences in participants’ ability to remember events, and because drug dependence could affect their ability to recall events accurately. Three measures were taken to try to minimize recall bias: (a) matching of the controls ensured that the period of recall required was the same, (b) accuracy in dating adverse events was achieved by providing aids to recall such as calendars, (c) an interview assessment was used rather than a self-report measure, to enhance clarity about events and their timing.

A second limitation is that the interviewer was not blind to the case status of the participants. To minimize this problem, the risk of the interviewer bias was discussed during the ongoing supervision. The interviewer was trying to adopt a standard but flexible approach in the use of investigator-based interview. The third limitation of this study is the subjectivity of the decisions made by the participant on how much an event has impact to his or her life and the lack of information collected in the context of the event. Finally, given the essentially retrospective nature of this type of research, the years that have passed may be obscuring our understanding of what has happened to the people over the course of their lives, and with this sample the true extent of the experience may never be known.

**CONCLUSIONS**

The study of control of emotions and life events is insufficient to infer a causal relationship between emotional control, life events, onset of illness, and severity of dependence in the opioid dependence syndrome group.

Evidence from this study suggests that there is no simple relationship between emotional control and the subsequent emergence of substance use. The interplay of adverse events over life span with personality profile; the interrelationship of vulnerability and
cognitive perception in response to lack of emotional control; and dopamine reward system of the brain are all indicated as important avenues of future research.

REFERENCES


