

## THE RELATIONSHIP OF ALCOHOL WITHDRAWAL SYMPTOMS TO SUGGESTIBILITY AND COMPLIANCE

GISLI H. GUDJONSSON<sup>a\*</sup>, KRISTIN HANNESDOTTIR<sup>b</sup>,  
TOMAS ÞOR AGUSTSSON<sup>b</sup>, JON F. SIGURDSSON<sup>b</sup>,  
ASA GUDMUNDSDOTTIR<sup>b</sup>, ÞURIDUR ÞORDARDOTTIR<sup>b</sup>,  
ÞORARINN TYRFINGSSON<sup>c</sup> and HANNES PETURSSON<sup>b</sup>

<sup>a</sup>*Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, UK;* <sup>b</sup>*Division of Psychiatry, Landspítali, University Hospital, IS-101 Reykjavik, Iceland;* <sup>c</sup>*Vogur Hospital, IS-110 Reykjavik, Iceland*

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People who are experiencing alcohol withdrawal are disadvantaged in terms of their ability to cope with leading questions and interrogative pressure (i.e. interrogative suggestibility). What had not been studied previously was the relationship of the severity of alcohol withdrawal symptoms with suggestibility and compliance. Suggestibility and compliance scores, obtained during the first week of hospital admission, were correlated with the severity of alcohol symptoms measured on a daily basis over a 7-day period in a group of 393 patients attending treatment for alcohol abuse problems. Separate analyses were performed for the male and female patients. Significant gender differences emerged. Among males, alcohol withdrawal symptoms correlated positively with suggestibility and compliance across days. In contrast, among the females alcohol withdrawal symptoms were not significantly correlated with suggestibility and compliance, but were related to confabulations in memory recall. The findings suggest that in relation to psychological vulnerabilities during questioning, alcohol withdrawal symptoms are associated with different psychological factors in males and females. The findings have implications for the potential unreliability of information obtained from people interviewed during alcohol withdrawal.

*Keywords:* Suggestibility; Compliance; Alcohol Withdrawal; Gender Differences; Confabulation

### INTRODUCTION

It is not known how often the police interview witnesses, victims and suspects who are under the influence of drugs or alcohol, or are withdrawing from such substances. However, we do know that the police do sometimes interview suspects under such circumstances (Gudjonsson, 2003). Payne-James *et al.* (1994) found that about 11% of individuals seen by two Forensic Medical Examiners (FMEs) at 11 police stations in London were drug addicts. About 30% of the sample used both heroin and cocaine regularly. In a study conducted for the Royal Commission on Criminal Justice (Pearse *et al.*, 1998), it was found that police

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\*Corresponding author. E-mail: g.gudjonsson@iop.kcl.ac.uk

detainees' claims of having consumed illicit substances during the 24 hours preceding their arrest was the single best psychological variable that predicted the likelihood of a confession being made in interview. These findings highlight the importance of drug withdrawal as a factor that may motivate some drug addicts to make a confession, which may on occasions prove to be false (Gudjonsson, 2003). One explanation for such findings is that drug withdrawal leads to mental states which limit the drug addict's ability for rational thinking and autonomy (Davison and Forshaw, 1993; Sigurdsson and Gudjonsson, 1994; Davison and Gossop, 1996, 1999; Gudjonsson and Sigurdsson, 1999; Gossop and Davison, 2000).

In contrast to drug withdrawal, little has been written about the effects of alcohol withdrawal symptoms on the validity of suspects' accounts during interviewing. What we do know is that many suspects arrested by the police and detained in custody in England are under the influence of alcohol and this is one of the most common reasons for FMEs to be called to assess detainees (Robertson, 1992; Robertson *et al.*, 1995). The advice most commonly given by the FME was that the suspect should be left to sober up for between 4 and 6 hours before an interview was commenced (Robertson, 1992). Undoubtedly, some of the detainees who are under the influence of alcohol when arriving at the police station will be experiencing withdrawal symptoms if detained in custody over many hours. Robertson and his colleagues did not study alcohol withdrawal; nor did they offer recommendations when interviewing suspects who are experiencing alcohol withdrawal symptoms. It is this neglected area of research that is the focus of the present study.

In our previous research we attempted to investigate the relationship of interrogative suggestibility and compliance with alcohol withdrawal during a detoxification programme (Gudjonsson *et al.*, 2000, 2002). In the first study (Gudjonsson *et al.*, 2000), alcoholic patients became significantly less able to cope with interrogative pressure on the third day of a detoxification programme as measured by the Shift part of the Gudjonsson Suggestibility Scale (GSS 1; Gudjonsson, 1997). In the second study, Gudjonsson *et al.* (2002) concluded that some patients experiencing alcohol withdrawal are significantly disadvantaged during questioning in terms of impaired ability to cope with leading questions and interrogative pressure, as measured by the GSS 1. In contrast to suggestibility, the absence of a significant relationship in these two studies between alcohol withdrawal symptoms and compliance, as measured by the Gudjonsson Compliance Scale (GCS, Gudjonsson, 1997), was interpreted as an indication that the GCS is perhaps not a measure that is sensitive to situational influences or temporary changes in mental state. Unlike the GSS 1, the GCS, is a self-report measure, where the items reflect how the person would generally respond when placed under pressure by people in authority.

The other main difference between suggestibility and compliance is that suggestibility implies a general acceptance of a proposition by the respondent, whereas no such private acceptance is required with regard to compliance (Gudjonsson, 2003, p. 370).

In the present study the relationship between suggestibility and alcohol withdrawal is investigated in both male and female alcoholics. The advantage of this study is that alcohol withdrawal symptoms were systematically recorded on a daily basis and these could be directly assessed in relation to suggestibility and compliance scores, as measured by the Gudjonsson Suggestibility and Compliance Scales (GSS 1, GSS 2; GCS; Gudjonsson, 1997). It was hypothesised that the severity of alcohol withdrawal symptoms would be associated with increased suggestibility, particularly in relation to impaired ability to cope with

interrogative pressure. Gudjonsson *et al.* (2000) provided a detailed theoretical reasoning for this hypothesis, which related to heightened anxiety and distress experienced during alcohol withdrawal, lowered self-esteem, and feelings of incompetence in handling interrogative pressure.

In view of previous findings (Gudjonsson *et al.*, 2002), we did not expect a significant relationship between alcohol withdrawal symptoms and compliance as measured by the GCS (Gudjonsson, 1997). However, we included the GCS in the present study, because recently gender differences were found in relation to GCS scores (Gudjonsson and Sigurdsson, 2003) and we wanted to investigate the possible implications in relation to alcohol withdrawal symptoms where similar gender differences might emerge.

## METHODOLOGY

### Participants

The participants were 393 patients attending treatment for substance (primarily alcohol) abuse problems in two hospitals in Reykjavik. There were 279 (71%) males and 114 (29%) females with a mean age of 36.5 (SD = 13.6; range = 16–76 years). There was no significant age difference between the male and female patients.

### Instruments

#### *1. Gudjonsson Suggestibility Scale (GSS 1, GSS 2; Gudjonsson, 1997)*

The GSS 1, and its parallel form, the GSS 2, is based on a mini interrogation procedure, where the participant is asked to listen to a short story. After the story has been read out (Immediate Recall) there is normally a 50-minute interval until Delayed Recall is obtained. There then follow 20 questions, 15 of which are leading. The extent to which the participant gives in to the leading questions is labelled as Yield 1. The 20 questions are then repeated after the participant has been told that he or she has made a number of errors (i.e. negative feedback is given). The extent to which the person gives in to leading questions the second time round is labelled as Yield 2, whereas Shift measures the number of times the person has altered the previous answers (i.e. it measures the extent to which the person gives in to pressure due to the negative feedback administered after Yield 1). Yield 1 and Shift are added together and are referred to as “Total Suggestibility”. Yield 2 and Shift have been more linked to anxiety processes than Yield 1, whereas Yield 1 is more associated with cognitive processes (Gudjonsson, 2003). Immediate and Delayed Recall can also be measured as well as confabulation with regard to the memory scores. Confabulation in memory recall can be separated into “distortions” and “fabrications” (Gudjonsson, 1997). Whereas the former refers to minor distortions in memory (e.g. minor distortions in the name or persons or places, stating that the person being robbed was upset by the incident when this was not specially stated), the latter represents major new information being added to the story’s content (i.e. giving a completely different name of a person or a place to that mentioned in the story, stating that the person robbed was taken to hospital when this was not in the story). The GSS 1 was used in the present study.

### 2. *Gudjonsson Compliance Scale (GCS; Gudjonsson, 1997)*

The GCS measures the tendency of people to conform to requests made by others, particularly people in authority, in order to please them or to avoid conflict and confrontation. The GCS is a self-report inventory and consists of 20 statements which are answered “True” or “False”. Each reply gives either a compliant or a non-compliant score, with scores ranging between 0 and 20. Examples of the items are as follows: “I give in easily when I am pressured”, “I tend to go along with what people tell me even when I know that they are wrong”, “I generally believe in doing as I am told”, and “I try to please others”.

### 3. *Alcohol Withdrawal Scale (AWS; Gossop et al., 2002)*

This is a 30-item Alcohol Withdrawal Scale that has been extensively administered to patients attending alcohol treatment services at the Maudsley Hospital in London. The Scale provides a measurement of a wide range of physical and psychological symptoms typically associated in the literature with alcohol withdrawal symptoms. Examples of symptoms are: anxiety, sleep disturbance, memory problems, nausea, tremor (the shakes), restlessness, feeling confused, sweating, and feeling the heart pounding. We used the full version of the Scale rather than the recently developed 10-item version (Gossop *et al.*, 2002). Patients are asked to indicate the severity of symptoms on a four-point scale: none (scored 0), mild (scored 1), moderate (scored 2), and severe (scored 3).

## **Procedure**

The patients were approached on the first day of their admission and asked to participate in the research, provided that they were sufficiently physically or mentally well (i.e. the patient was not reporting or exhibiting severe discomfort or distress, which made it unethical to engage him or her in the research). Withdrawal symptoms were measured daily over a 7-day period. The GSS 1 was administered on the third day, when they are most likely to be vulnerable to interrogative pressure (Gudjonsson *et al.*, 2000) and the GCS on the fourth day of admission (i.e. in view of the patients withdrawal symptoms and discomfort it was considered better not to administer both tests on the same day. The GSS 1 was of greater importance to the study and it was therefore administered first). All the patients were tested individually and in private.

## **RESULTS**

### **Mean Test Scores for Males and Females**

Table 1 gives the mean and standard deviation scores on the psychological tests for males and females. The main differences were on the AWS where the females obtained significantly higher scores over the 7-day period. The females were also significantly more compliant than the males on the GCS, but had better memory on the GSS 1.

TABLE 1 Mean scores and *t*-values for males and females on the GSS 1, the GCS and AWS.

<i>Psychological test</i>	<i>Males Mean (SD) (n)</i>	<i>Females Mean (SD) (n)</i>	<i>t-value</i>
<b>GSS</b>			
Immediate Recall	16.2 (6.0) (279)	17.6 (6.4) (114)	-2.02*
Distortion	1.5 (1.7) (279)	1.4 (1.3) (114)	0.19
Fabrication	0.8 (1.3) (279)	0.7 (1.0) (114)	0.89
Yield 1	4.4 (3.0) (279)	4.3 (2.8) (113)	0.51
Yield 2	6.4 (3.6) (279)	5.8 (3.5) (113)	1.33
Shift	4.5 (3.0) (279)	4.4 (2.8) (113)	0.42
Total Suggestibility	9.0 (4.7) (279)	8.7 (4.6) (113)	0.57
<b>GCS</b>			
GCS	10.4 (3.6) (206)	12.7 (4.0) (91)	-4.98***
<b>AWS</b>			
Day 1	25.9 (17.1) (258)	32.9 (19.6) (92)	-3.25**
Day 2	19.2 (15.4) (261)	24.7 (17.9) (101)	-2.92**
Day 3	16.0 (14.9) (253)	21.4 (18.9) (101)	-2.82**
Day 4	14.3 (14.2) (246)	20.1 (18.1) (102)	-3.20**
Day 5	12.3 (13.1) (229)	18.9 (18.0) (92)	-3.65**
Day 6	10.6 (12.5) (199)	18.6 (19.3) (79)	-4.05***
Day 7	9.9 (12.3) (172)	18.1 (18.9) (74)	-4.07***

\**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001.

### Correlations of GSS 1 and GCS with Withdrawal Symptoms

Tables 2 and 3 give the correlations between the scores on the GSS 1 and GCS and the AWS over the 7-day period. It is evident that there are marked gender differences. Among the males severity of alcohol withdrawal was negatively related to the memory score and positively with Yield 2, Shift, Total Suggestibility, and GCS compliance. The correlations were not significant only on the days the participants completed the GSS 1 (third day) and GCS (fourth day), they were generally significant across the 7 days.

The correlations found among the males were not found among the females. Instead, severity of alcohol withdrawal symptoms were negatively correlated with distortions and positively correlated with fabrications.

### The Effects of Chlordiazepoxide on Test Scores

Since many patients attending a detoxification programme in Iceland are given chlordiazepoxide to cope with the distress of the withdrawal symptoms (Gudjonsson *et al.*, 2002) this may have affected the correlations in Tables 2 and 3. Forty-eight per cent of the males and 32% of the females in the study had been prescribed chlordiazepoxide during their treatment. The mean number of days on chlordiazepoxide for those patients prescribed medication was 4.5 (range 2–8) and 5.9 (range 1–8) for the male and female patients, respectively. The correlations between the variables in Tables 2 and 3 were reanalysed using number of days on chlordiazepoxide (0–8) as a covariate (partial correlation). The correlations were only marginally affected and all those that were significant in the two tables remained significant after the adjustment. As far as the relationship between days on chlordiazepoxide and GSS 1 and GCS scores are concerned, there was a small correlation

TABLE 2 Correlations between the Withdrawal Symptoms Questionnaire and GSS 1 and GCS scores among males.

	<i>Withdrawal Symptoms</i>						
	<i>Day 1</i>	<i>Day 2</i>	<i>Day 3</i>	<i>Day 4</i>	<i>Day 5</i>	<i>Day 6</i>	<i>Day 7</i>
GSS							
Immediate Recall	-0.18**	-0.17**	-0.21***	-0.19**	-0.24***	-0.20***	-0.20***
Distortion	0.03	0.02	0.00	-0.07	0.01	0.02	0.07
Fabrication	-0.07	-0.08	-0.09	-0.09	-0.10	-0.08	-0.09
Yield 1	-0.05	0.06	0.09	0.06	0.09	0.06	0.05
Yield 2	0.09	0.16**	0.22***	0.17**	0.19**	0.19**	0.22***
Shift	0.17**	0.18**	0.22***	0.19**	0.18**	0.18**	0.23***
Total Suggestibility	0.08	0.15*	0.20***	0.16*	0.17**	0.16*	0.18*
GCS	0.19**	0.23***	0.20**	0.17*	0.22**	0.12	0.11

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

between number of days on chlordiazepoxide and Shift for males ( $r = 0.13$ ,  $P < 0.05$ ) with GSS 1 memory for females ( $r = -0.20$ ,  $P < 0.05$ ). None of the other correlations with the GSS 1 or GCS score were significant.

There were no significant effects of age on the correlations on Tables 2 and 3.

## DISCUSSION

The results indicate that the severity of alcohol withdrawal symptoms is significantly related to the memory, confabulation, suggestibility and compliance scores. This has important theoretical as well as practice implications for the criminal justice system.

The findings complement and extend our previous research into the psychological vulnerabilities of alcoholics when in a state of alcohol withdrawal (Gudjonsson *et al.*, 2000, 2002). It is the extent and severity of the alcohol withdrawal symptoms that are the focus of the study. Those patients who reported the greatest problems with withdrawal symptoms were those had impaired memory, and increased confabulation, suggestibility and compliance. These findings are consistent with our previous findings (Gudjonsson *et al.*, 2000, 2002) and suggest that the severity of alcohol withdrawal impairs the capacity of the person to cognitively process information and cope effectively with pressure during questioning. The implication for police interviewing is that special caution should be exercised when interviewing suspects during a phase of alcohol withdrawal.

However, there clearly are important gender differences, which had not been investigated in our previous research into alcohol withdrawal symptoms and suggestibility due to the relatively small number of female participants. The sample in the present study is much larger and allows the findings to be presented separately for males and females.

Memory processes, as measured by accurate free recall, distortions and fabrications on the GSS 1, were significantly related to alcohol withdrawal symptoms.

Interestingly, females had significantly higher memory scores on the GSS 1 than the males, but the relationship with alcohol withdrawal symptoms was very different. In the male sample, there was a negative correlation between total accurate recall on the GSS 1 and alcohol withdrawal symptoms over the 7-day period. In other words, the greater the

TABLE 3 Correlations between the Withdrawal Symptoms Questionnaire and GSS 1 and GCS scores among females.

	<i>Withdrawal Symptoms</i>						
	<i>Day 1</i>	<i>Day 2</i>	<i>Day 3</i>	<i>Day 4</i>	<i>Day 5</i>	<i>Day 6</i>	<i>Day 7</i>
GSS							
Immediate Recall	-0.02	-0.06	0.01	-0.05	0.01	-0.04	-0.13
Distortion	-0.11	-0.25*	-0.25*	-0.23*	-0.30**	-0.29***	-0.31**
Fabrication	0.23*	0.14	0.23*	0.25**	0.21*	0.30**	0.33**
Yield 1	-0.06	-0.09	-0.12	0.03	-0.06	0.10	0.05
Yield 2	-0.01	0.01	-0.04	-0.01	-0.08	0.04	-0.07
Shift	0.01	0.03	-0.04	0.00	-0.05	-0.01	-0.03
Total Suggestibility	-0.03	-0.04	-0.10	0.01	-0.07	0.06	0.02
GCS	0.19	0.08	0.06	0.04	0.06	0.04	0.03

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

reported withdrawal symptoms, the more impaired the memory recall. No such relationship was found for the females. In contrast, in females withdrawal symptoms were significantly correlated with both distortions and fabrications, but in the opposite direction. The correlation with withdrawal symptoms was negative with regard to distortions but positive with regard to fabrications. No such relationship was found for males. The implication of this is that during severe alcohol withdrawal females produce fewer distortions in the story's content, but they introduce more material that does not relate to the narrative presented in the memory test. In other words, they make up more new material rather than distorting existing material. However, these findings must be interpreted cautiously. Table 1 shows that there is no significant gender difference in the mean number of distortions and fabrications produced. It is not that females are producing a disproportionate number of distortions and fabrications; it is only that the number of distortions and fabrications that they produce are correlated with the severity of the withdrawal symptoms. It is this relationship between severity of alcohol withdrawal and distortions and fabrications that needs further investigation. It is also worth noting that the correlations are all small but consistent across days.

The finding that the females had much higher scores than males on the Alcohol Withdrawal Scale must not be overlooked. Is it that female alcoholics are more alcohol dependent than male alcoholics? Alternatively, are they more able and willing to identify and report symptoms? Or are they exaggerating their symptoms? In order to answer these questions further research is needed.

The present findings suggest that there may be a psychological difference between distortions and fabrications, at least in females during alcohol withdrawal. The implication is that these two components of confabulatory responding, which was first conceptualised by Clare *et al.* (1994), should be investigated separately, as recommended by Gudjonsson and Clare (1995). In previous research, fabrications on the GSS, but not distortions, have been found to be significantly associated with a diagnosis of personality disorder (Smith and Gudjonsson, 1995) and during severe depression confabulatory responding (a combination of distortions and fabrications) is significantly reduced (Sigurdsson *et al.*, 1994). No previous study has investigated gender differences in relation to distortions and fabrications.

The finding that compliance correlated significantly with the severity of alcohol withdrawal symptoms among males is interesting. Our previous research did not directly measure the severity of alcohol symptoms and it may be that there is a threshold effect; that is, alcohol withdrawal symptoms are only related to compliance when the symptoms are severe, or that there are individual differences in compliance in response to alcohol withdrawal along the lines found among opiate addicts (Davison and Gossop, 1996).

The strengths of the study are the reasonably large sample size, the fact that the patients' withdrawal symptoms were assessed every day over a 1-week period, and both males and females were tested. However, we do not know the generalisability of the findings to alcoholics who are in police custody. In the present study the patients were receiving treatment, including many of whom were being prescribed chlordiazepoxide. In police detention, suspects withdrawing from alcohol are not routinely given medication for withdrawal symptoms. There is a complicated interaction between tranquillisers, anxiety, and cognitive functions (Lader, 1999), which needs investigation under more experimental conditions.

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