INTRODUCTION

There have been several attempts to describe individuals with excessive alcohol consumption according to personality and other characteristics and then classify them into cluster groups or multidimensional typologies. Besides the typologies of alcoholism by Babor (1996) and Lesch and Walter (1996), one of the most commonly used typology is the type 1 and type 2 alcoholism developed by Cloninger, Bohman and Sigvardsson (1981). According to this classification individuals with type 1 alcoholism are characterized by social stability with late onset of alcoholism, few psychopathological symptoms and social complications (Cloninger, Sigvardsson & Bohman, 1996). In contrast, the type 2 alcoholics have an earlier onset of alcoholism, more severe dependence with serious social and medical consequences due to their drinking behavior and also a more severe psychopathy (Cloninger et al., 1981, 1996; Sigvardsson, Bohman & Cloninger, 1996). Studies have also found that type 2 alcoholics have a different personality profile in comparison to type 1 alcoholics, characterized by sensation seeking, impulsiveness, monotony avoidance and aggressiveness (Cloninger et al., 1996; von Knorring, von Knorring, Smigan, Lindberg & Edholm, 1987). Furthermore, they have a lower degree of harm avoidance and less feelings of guilt (Cloninger et al., 1996, von Knorring et al., 1987). This personality pattern has some resemblance with various personality disorders. In fact, some researchers have, for example, proposed that type 2 alcoholism rather represents a separate diagnostic entity, the antisocial personality disorder, than alcoholism itself (Schuckit & Irwin, 1989). The personality profile of type 2 individuals is thus fairly well investigated and discussed in the literature (Cloninger et al., 1981, 1996, Sher, Trull, Bartholow & Vieth, 1999). Less is known whether Cloninger’s type 1 alcoholics also are characterized by such a distinctive personality pattern as their type 2 counterpart.

The majority of individuals with excessive alcohol consumption have characteristics resembling those of type 1 alcoholics (Cloninger et al., 1996), that is, few social complications and psychopathological symptoms, and late onset of alcohol-related problems (see Berglund, 2009; Schuckit, 2009). To our knowledge, there are no studies which have investigated whether individuals with excessive alcohol consumption per se are characterized by specific personality patterns.

Aim

The main objective of the present study was to investigate personality traits in a group of male individuals with excessive alcohol consumption and in controls by comparison with normative data and also by a multivariate projection-based approach. For the latter purpose, principal component analysis (PCA) was used for pattern recognition and image compression, thus identifying the most important gradients, that is, revealing the hidden structure of traits (Eriksson, Johansson, Kettaneh-Wold, Trygg, Wikström & Wold, 2006). Personality traits were investigated by using the Karolinska

Personality and Social Sciences

Do men with excessive alcohol consumption and social stability have an addictive personality?

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The existence of an “addictive” personality has been extensively debated. The current study investigated personality in male individuals with excessive alcohol consumption \((n = 100)\) in comparison to a population-based control group \((n = 131)\). The individuals with excessive alcohol consumption were recruited by advertisements in a regional daily newspaper and controls from a population based Swedish Twin Registry. Personality was assessed by the Karolinska Scales of Personality (KSP). Comparisons were made with normative data. Furthermore, by using a multivariate projection-based approach (Principal Component Analysis; PCA), hidden structures of traits and possible relationships among the individuals with excessive consumption and the controls was investigated. The individuals with excessive alcohol consumption as well as the controls had mean values within the normative range in all scales of the KSP. Moreover, the PCA analysis revealed no systematic between-group separation. Taken together, this result demonstrates that male individuals with excessive alcohol consumption do not have a personality different from that of a general population, which supports the notion of no “addictive personality”.

Key words: Personality, men, excessive alcohol consumption.

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Scales of Personality (KSP), which quantifies individual differences in habitual, overt behavior preferences, cognitive style and reaction to a given situation (Schalling, Asberg, Edman & Orelund, 1987).

METHOD

Participants

Male individuals (n = 100) with excessive alcohol consumption were recruited by advertisements in a regional daily newspaper. The advertisements were entitled with the questions: “Do you drink more alcohol than you actually want?” followed by “Are you male and between 18–65 years, healthy and with a permanent residence?” Excessive alcohol consumption was defined as consuming more than three standard drinks of alcohol (about 40 g of pure alcohol) per day (Miller, Anton, Egan, Basile & Nguyen, 2005). To be included in the study they also had to be employed or living on a pension. They had to be without physical or psychiatric disorders not associated with excessive alcohol intake or have abuse or dependence on substances other than alcohol and nicotine. The subjects in the present study have been included in earlier studies of ours, when investigating possible pharmacotherapeutical interventions for alcohol-dependence (Baldin, Berggren, Engel, Eriksson, Härdf & Söderpalm, 1994; Eriksson, Berggren, Blennow, Fahkle & Baldin, 2001a; Eriksson, Fahkle, Hansen, Berggren, Mårin & Baldin, 2001b). However, data for the personality profiles have only been published for a sub-group (n = 33) of these individuals (Berglund, Fahkle, Berggren, Eriksson & Baldin, 2006).

For the PCA analysis a control group was recruited from the ongoing population-based Swedish Adoption/Twin Study of Ageing (SATSA), which consists of twins separated at an early age and reared apart and a matched sample of twins who were reared together (Pedersen, McClearn, Plomin, Nesselroade, Berg & DeFaire, 1991). In 1995 twin pairs from the SATSA cohort born in 1935 or later were considered eligible for participation in a study on the relationship between personality and health (Gustavsson, Weinryb, Göransson, Pedersen & Asberg, 1997). Out of 194 males in the SATSA cohort 136 gave their informed consent and participated in a substudy on the relationship between personality and alcohol consumption (Ramklint & Ekselius, 2003; Schalling et al., 1987). The Karolinska Scales of Personality (KSP) comprises 135 items with a four-point response format grouped in 15 scales (Ramklint & Ekselius, 2003; Schalling et al., 1987). Four scales are related to anxiety proneness (i.e. somatic anxiety, psychic anxiety, muscular tension and psychasthenia), three scales to vulnerability for disinhibitory psychopathology (i.e. impulsiveness, monotony avoidance and socialization) and six scales to aggressiveness and hostility (i.e. verbal aggression, indirect aggression, irritability, suspicion, guilt and inhibition of aggression). The remaining two scales are detachment and social desirability.

Procedure

After a telephone interview/screening, eligible individuals with excessive alcohol consumption were invited for an examination at the research center. They were examined psychiatrically using a semi-structured interview by an experienced psychiatrist from the alcoholism treatment unit at a University Hospital. This interview also included questions whether the subjects fulfilled the DSM-IV criteria for alcohol abstinence or dependence (American Psychiatric Association, 1994). In addition, they were requested to estimate for how long a time-period (in years) they had consumed this excessive level of alcohol. The age of the subjects at onset of excessive alcohol consumption could thus be calculated and recorded. Determination of illicit drugs and benzodiazepines in urine samples was also performed using suitable laboratory screening procedures in order to follow the exclusion criteria. During two weeks thereafter individuals had to record their daily alcohol consumption on a self-monitoring form called an alco-card (for details, see Baldin et al., 1994).

After these two weeks an experienced research nurse at the research center assessed possible depressive and anxiety symptoms using the Hamilton Depression Scale (HDS; Hamilton, 1967; total sum of scores ranging from 0–52) and Hamilton Anxiety Scale (HAS; Hamilton, 1959; total sum of scores ranging from 0–56), respectively. The nurse also administered the self-rating scale KSP for assessment of the personality profile, see below.

Assessment of personality

The Karolinska Scales of Personality (KSP) comprises 135 items with a four-point response format grouped in 15 scales (Ramklint & Ekselius, 2003; Schalling et al., 1987). Four scales are related to anxiety proneness (i.e. somatic anxiety, psychic anxiety, muscular tension and psychasthenia), three scales to vulnerability for disinhibitory psychopathology (i.e. impulsiveness, monotony avoidance and socialization) and six scales to aggressiveness and hostility (i.e. verbal aggression, indirect aggression, irritability, suspicion, guilt and inhibition of aggression). The remaining two scales are detachment and social desirability.

Statistics

In the present study all individual raw data from the personality test KSP was transformed into normative T-scores (mean ± SD: 50 ± 10) (Gustavsson et al., 1997; Schalling et al., 1987).

The Soft Independent Modelling of Class Analogy (SIMCA) Principal Component Analysis (PCA) was used for pattern recognition and image compression. One advantage of this PCA is that it handles many variables and few observations as well as few variables and many observations. The SIMCA PCA is a projection method which can deal with non-linear relationships, based on how the various measures for each individual form a multidimensional space. Thus, the individuals and not the groups (i.e. individuals with excessive alcohol consumption and controls) are tested in this model. This PCA method includes “scaling” and “mean-centering” to facilitate that the variables are given the same weight in the model. The method is designed to extract and display the systemic variation in a data set. The PCA creates a score plot showing a summary of the relationship among the individuals and a loading plot identifying variables important for creating these relationships, that is, the different personality dimensions of KSP. How much a variable contributes can be read from the loading plot. The closer to the origin of the coordinates the more the variable contributes to the pattern recognition (Eriksson et al., 2006; Wold, Eibensen & Geladi, 1987). The SPSS 15.0 and SIMCA-P + 11.5 software (Umetrics AB, Umeå, Sweden) were used for the analyses. Differences were considered statistically significant at p < 0.05.

RESULTS

Background data

At the time of investigation, the individuals with excessive alcohol consumption had an age (mean ± sd; range) of 49 ± 7 (28–64) years. Out of the individuals, 66 fulfilled the DSM-IV criteria for alcohol dependence and the remaining 34 the criteria for alcohol abuse. Age at onset of excessive alcohol consumption was 40 ± 10 years (n = 96) and the reported duration of such consumption was 9 ± 8 years (n = 95). The scores for HDS and for HAM were within the normal range (3.2 ± 3.9 and 7.4 ± 6.8 [n = 84], respectively).

The age of the control group was 53 ± 7 (38–61) years. In this group 85% reported that they were married (or living together with a partner) and 84% were employed (8% non-employed and 8% retired).

Patterns of personality profiles among male individuals with excessive alcohol consumption and controls

The individuals with excessive alcohol consumption as well as the controls had mean values within the normative range (T-scores mean ± 2 SD; 30–70), in all 15 scales of the KSP, see Fig. 1a and 1b.

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The systematic variance of individuals with excessive alcohol consumption and controls in the scales of the KSP was investigated using the PCA. The score plot indicated no between-group separation (see Fig. 2a). There was, however, significantly more outliers in the group of individuals with excessive alcohol consumption ($n = 11$; 11%) in comparison to controls ($n = 4$; 3%); $\chi^2 = 4.94, 1 \text{ df}, p < 0.05$. The majority of the outliers in the group of individuals with excessive alcohol consumption had higher psychic anxiety and lower impulsiveness and monotony avoidance. Figure 2b shows how the dimensions of the KSP loaded in the model, regardless of the two groups. Dimensions appearing close to the origin are less significant, whereas dimensions appearing at some distance are more important. Psychic anxiety and impulsiveness loaded opposite with the largest span to each other, which indicates an inverse relationship between these two dimensions.

DISCUSSION

Our hypothesis that male individuals with excessive alcohol consumption do not have a specific “addictive” personality, was confirmed in this study. Thus, this group as well as the population-based control group had mean values within the normative range in all scales of the KSP. Furthermore the score plot in the PCA did not indicate a between-group separation. Our findings, obtained by either norm group comparisons or through the use of the statistical method of PCA, are thus in agreement with our own previous findings (Berglund et al., 2006; Eriksson et al., 2001a) that individuals with excessive alcohol consumption do not differ in personality patterns from a general reference population as assessed by the Temperament and Character Inventory (Cloninger, Svrakic & Przybeck, 1993). These results are also in agreement with the notion that there exists little empirical evidence for a certain “addictive personality” (e.g. Mulder, 2002; Sher & Trull, 1994; Sutker & Allain, 1988; Weijers et al., 1999) at least regarding individuals with excessive alcohol consumption resembling either type 1 alcoholics (Cloninger et al., 1981) or those with social stability (Berglund, 2009; Schuckit, 2009).

Despite no between-group separation in the PCA analysis, there was, however, more outliers in the group of individuals with excessive alcohol consumption (11%) as compared to controls (3%). The majority of these outliers had higher psychic anxiety and lower impulsiveness scores. According to the definition of KSP (Schalling et al., 1987), higher scores of the dimension

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psycho anxiety reflect anxiousness, lack of self-confidence and social anxiety (i.e., neuroticism or negative emotionality). Lower scores of the dimension impulsiveness reflect well-planned behav-
ior and less acting on the spur of the moment. Since this study is
cross-sectional, we cannot conclude whether this deviating per-
sonality pattern in the outliers had a causal role in the develop-
ment of alcoholism, or if this personality pattern rather is a 

consequence of excessive alcohol consumption. It should, how-
ever, be emphasized that 89% of male individuals with excessive 
alcohol consumption have personality traits within the normal 
range.

There are some limitations in the present study. First, only mid-
dle-aged men were included in this study. Secondly, they were 
recruited by advertisements, mainly aimed to investigate pharma-
c要去, recruited by advertisement and at the time of the study not 

conclusive; 2001a, 2001b). These limitations may impede the generalization of the findings to other 
groups of individuals with excessive alcohol consumption. More-
over, the control group was recruited from a population-based 
Swedish Twin Registry (Pedersen et al., 1991). It cannot be 

excluded that some individuals within that group also had exces-

sive alcohol consumption. Finally, it may be argued that the 
samples were relatively small for such statistical analysis as PCA. 

It should, however, be noted that the total sample was 231 

individuals.

CONCLUSION

The majority of male individuals with excessive alcohol consump-
tion, recruited by advertisement and at the time of the study not 
participating in any treatment, do not have a personality different 
from that of a general population. This finding thus supports the 

notion that there exists no “addictive” personality. As socially 
stable men with excessive alcohol consumption may represent the 

majority of the population with alcohol problems, this finding 

may be of importance when formulating national guidelines for 
care-giving and treatment of this group.

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