

**Suicidal ideations and self-dehumanization in recently
detoxified patients with severe alcohol use disorder: an
experimental exploration through joint explicit-implicit
measures.**

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Abstract

Background: Metadehumanization (the feeling of being considered as less than human by others) is a pervasive phenomenon in psychiatric states, notably promoting self-dehumanization and suicide antecedents. However, its role in suicidal ideations among patients with addictive disorders remains unexplored. We thus investigated the involvement of metadehumanization/ self-dehumanization in suicidal ideations and suicidal thoughts interference in severe alcohol use disorder.

Methods: We measured metadehumanization, suicidal ideations and desire for social contact through questionnaires among 35 recently detoxified patients with severe alcohol use disorder (26 males). We measured animalistic/mechanistic self-dehumanization using an Implicit Association Task, and suicidal thoughts interference using a Stroop Task with suicide-related words. We performed regression analyses, while controlling for depression/anxiety.

Results: Animalistic self-dehumanization was positively associated with suicidal thoughts interference and with decreased desire for social interactions, such link being absent for metadehumanization or mechanistic self-dehumanization.

Conclusions: This link between self-dehumanization and suicide-related factors suggests that a reduced sense of belonging to humanity is associated with self-harm antecedents. Results also emphasize the importance of using indirect measures to investigate sensitive variables as self-dehumanization and suicidal thoughts.

Keywords: suicidal ideations; dehumanization; alcohol use disorder

Introduction

Alcohol use and Suicide

With more than 700000 cases yearly, suicides represent 1.5% of all deaths worldwide (WHO, 2019). The lifetime prevalence of suicidal ideations is higher than 9%, and 2.7% of the population will attempt suicide (O'Connor and Nock, 2014). While suicide is important in the general population, its related issues are even worse in psychiatric disorders, where suicidal ideations and suicide attempts rates are high: mental disorders is present in 90% of people who die by suicide (Cavanagh et al., 2003). Beyond depression, the mental disorder most strongly associated with suicide is alcohol use disorder WHO, 2019). Alcohol use is involved in up to 61% of all completed suicides (Schneider, 2009), and 22% of all deaths from suicide can be directly attributed to alcohol (WHO, 2019). Alcohol and suicide are thus closely intertwined: a threefold risk of suicide is observed among heavy drinkers compared to the general population, this risk being even higher in people with severe alcohol use disorder (SAUD), who are nine times more likely to die by suicide (Wilcox et al., 2004; Rizk et al., 2021). Anxiety and depression, which are frequently associated with SAUD further increase this suicide risk (Berglund and Ojehagen, 1998).

The influential theory of suicide as an escape from the self (Baumeister, 1990; Tello et al., 2020) identified six successive steps leading to suicide: (1) the person experiences a negative event, namely a situation that falls short of expectations; (2) if the person feels responsible for this experience, an internal attribution occurs; (3) this internal attribution creates a state of aversive self-awareness; (4) this state provokes negative emotions; (5) the person might try to escape such affects by entering a state of cognitive deconstruction characterized by apathy, focus on the present, emotional distance, and avoidance of meaningful thoughts and self-awareness; (6) This state changes one's perception of what is acceptable or not and can bring disinhibition, finally facilitating suicide attempt. Empirical results support this model (Chatard and Selimbegović, 2011; Selimbegović and Chatard, 2013). For example, falling short of an

important standard provokes increased accessibility of suicide-related thoughts, particularly among participants with larger discrepancies between self and standards (Chatard and Selimbegović, 2011). Moreover, merely promoting participants' self-awareness increases suicide-related words recognition (Selimbegović and Chatard, 2013). Alcohol use constitutes a coping mechanism to avoid aversive self-awareness by directly altering people's awareness (Hull, 1981). Alcohol consumption and suicide attempts might thus be driven by the same need to escape aversive self-awareness. Interestingly, important suicide-related variables are linked to another phenomenon recently revealed in patients with SAUD: metadehumanization, namely patients' perception of being dehumanized by others (Fontesse et al., 2020).

Alcohol use and (meta-)dehumanization

Dehumanization, the fact of denying someone else's humanity, has received much attention in social psychology. The dominant model (Haslam, 2006) distinguishes mechanistic (where the target is assimilated to an object, tool, or robot) and animalistic (where the target is assimilated to an animal) dehumanization. These dehumanization forms might have different consequences (Zhang et al., 2017), but dehumanization is often used as a unitary concept (Demoulin et al., 2021). Beyond these debates, dehumanization plays a primordial role in intergroup relations and notably enables aversive behaviors such as negligence, violence, and aggression (Haslam, 2006; Kteily et al., 2015).

While most research on dehumanization focused on the perpetrator's perspective, recent studies have investigated victim's perspective, unveiling aversive consequences such as negative emotions, aversive self-awareness, and cognitive deconstruction (Zhang et al., 2017). Cumulative evidence identified metadehumanization, namely the feeling of being considered as less than human by others, as a central perception related to people's emotions, cognitions, behaviors and interpersonal attitudes (Haslam, 2006). When feeling dehumanized by others, people tend to report negative emotions and psychosomatic strains (Kteily et al., 2016; Zhang

et al., 2017). Such consequences have also been reported in SAUD (Fontesse et al., 2020), metadehumanization thus constituting a key variable in this disorder. Previous research on metadehumanization also revealed its links with antecedents of suicide, including negative emotions, aversive self-awareness, and cognitive deconstruction (Baumeister, 1990; Zhang et al., 2017).

Rationale and Aims of the Study

Previous research identified multiple variables potentially linking metadehumanization and suicide by acting both as metadehumanization consequences and suicide antecedents. However, while these links appear of high experimental and clinical relevance, they have not been systematically explored in psychiatry. The main aim of the present study was thus to investigate the links between metadehumanization and suicidal ideations (i.e., suicide thoughts) in patients with SAUD. Moreover, the role of self-perception in suicidal behaviors has been emphasized by the theory of suicide as an escape from the self. Self-dehumanization, namely the integration of metadehumanization leading to the self-perception of being less than human (Bastian and Crimston, 2014; Kouchaki et al., 2018), constitutes an important self-perception phenomenon. As its relationship with suicidality remains unknown, we also explored whether self-dehumanization could be related to suicide.

Another key originality of our approach was to combine explicit and implicit measures of suicidal thoughts. Indeed, suicide is a sensitive topic and people are often unconscious of their suicidal thoughts or unwilling to share them (Nock et al., 2010), notably because suicide attempters are stigmatized, which prevents them from disclosing their inner feelings (Carpiniello and Pinna, 2017). We thus used, beyond explicit evaluations, indirect measures which are better suited to investigate variables heavily subjected to social desirability biases or not accessible to people's consciousness (Gawronski and Hahn, 2015). We thus assessed attentional bias towards suicide-related words, constituting an indirect marker of suicidal

behavior (Cha et al., 1999). We also measured self-dehumanization using indirect measures as dehumanization often happens outside people's awareness (Demoulin et al., 2004). Finally, our will to offer an integrative and in-depth exploration of this research question led us to include two more measures in our model (presented in Figure 1), namely (1) mood disorders (i.e., anxiety and depression), which are frequent in SAUD and closely linked to suicide risk (Kanwar et al., 2013; Richa et al., 2008); (2) sociability (i.e., willingness to participate in social versus non-social activities), as social contacts could constitute a way to be rehumanized by others.

Materials and Methods

Participants

Thirty-five inpatients (74.2% males) with SAUD diagnosed using DSM-5 criteria took part in the experiment during their detoxification treatment (minimum abstinence duration: 14 days). Their mean age was 45.3 years old (S.D.=10.5). The mean duration of SAUD was 15.6 years (S.D.=12.43) and the mean number of previous alcohol detoxification treatments was 4.86 (S.D.=7.13). All participants were free from other major medical problems or neurological disorder. The study was presented as a study on emotions and self-perceptions; we did not talk about dehumanization or any of our hypotheses before the study to avoid participants conforming to our expectations. They received a full written and oral description of the study before providing informed consent. The experiment lasted around one hour and was approved by the bioethical committee of the University (Cliniques Universitaires Saint-Luc, UCLouvain, Belgium; approval number B403201732246).

Measures

Participants started with the computerized tasks assessing animalistic/mechanistic self-dehumanization and suicidal thoughts interference (counterbalanced). Then, they answered a survey evaluating metadehumanization, desire to participate in social/non-social activities (order of these two scales randomized), suicidal ideations and depression/anxiety. We measured these variables as follows:

- *Metadehumanization*: we used a 13-item scale (Cronbach's $\alpha=.94$, Fontesse et al., 2020) measuring the key characteristics underlying metadehumanization such as immaturity, coldness and dehumanizing metaphors. This scale was adapted from the scale of organizational dehumanization (Caesens et al., 2017). We measured participants' feeling of being dehumanized by the society using a 7-point Likert-type scale (from 1, "Completely disagree" to 7, "Completely agree"). We computed a mean score (1-7). While the scale initially differentiated animalistic and mechanistic metadehumanization, the high correlation ($r=.86$) observed between the items originally classified in each dimension led us to compute a general metadehumanization index on all items.

- *Animalistic self-dehumanization (single category implicit association task)*: As two central metaphors exist in the dehumanization literature (Haslam, 2006), we measured self-dehumanization in its association with animal-related words and object-related words. We assessed animalistic self-dehumanization using a single category implicit association task, which is an alternative to the classical implicit association task that allows testing a single category (Karpinski and Steinman, 2006). In this task, two fixed categories are determined ("*animal*" and "*human*" for animalistic self-dehumanization) and one other category (here, "*myself*") is associated once to one category ("*animal*" for the incongruent block) and once to the other ("*human*" for the congruent block). Participants categorize target words using the keyboard ("e" for categories on the left side and "r" for categories on the right). Target words clearly represent one of the categories and have similar valence. The words selected for the animal category were "*instinct*," "*species*," "*primate*," "*herd*," and "*livestock*". For the human category, the words were "*human*," "*individual*," "*society*," "*subject*," and "*nose*". We computed

an animalistic self-dehumanization index using Greenwald's procedure (2003), higher score expressing higher animalistic self-dehumanization (i.e., higher implicit association between "myself" and animal-related words).

- *Mechanistic self-dehumanization (single category implicit association task)*: The procedure and analysis of mechanistic self-dehumanization were similar to animalistic self-dehumanization, except that the animal category was replaced by words related to the object category. The words related to animals were thus replaced by object-related words: "*tool*," "*instrument*," "*mechanical*," "*device*," and "*robot*". We computed a mechanistic self-dehumanization index using Greenwald's procedure (2003), higher score expressing increased mechanistic self-dehumanization.

- *Suicide ideations*: we used the Beck Suicidal Ideations scale (Beck et al., 1979), directly evaluating patients' willingness to keep on living, to die, and if they have concrete ideas on how to die by suicide. The scale comprised 19 items, scored from 0 to 2 (Total score: 0-38). The scale showed excellent reliability ($\alpha=.85$).

- *Suicidal thoughts interference*: we used a Stroop task featuring three categories: suicide-related words ("*suicide*," "*dying*," "*mortal*"), negative words ("*conflict*," "*disease*," "*threat*") and neutral words ("*attitude*," "*museum*," "*station*"). We used a pretest for word selection. These were selected because they belonged to their category more than to other categories. The pretest also ensured that negative and suicide-related words did not differ regarding emotional intensity, valence, concreteness level, frequency of use in French, and number of letters. To control for participants' general speed, we subtracted the reaction times for words in the neutral category to the suicide and negative categories mean reaction times. A higher score indexed higher suicidal thoughts interference.

- *Desire to participate in social and non-social activities*: we used the Whelan and Zelenski's (2012) social and non-social activities' scale, where participants provide ratings of their willingness to participate in various social and non-social activities. We selected the situations to provide the same number of high, medium, and low pleasant activities in both social and

non-social situations. The scale ranges from 1 (“very slightly or not at all”) to 7 (“extremely or a lot”). We computed a mean score for social ($\alpha=.89$) and for non-social activities ($\alpha=.76$).

- *Depression*: we used the 13-items Beck Depression Inventory-short version (BDI; Luty and O’Gara, 2006), which showed excellent reliability ($\alpha=.89$). Each item was scored from 0 to 3 (total score: 0-39).

- *State anxiety*: we used the state subscale of the State-Trait Anxiety Inventory (STAI; Gauthier and Bouchard, 1993; Spielberger, 1983), comprising 20 items assessing participants’ current anxiety. Agreement with the propositions was measured using a 4-point Likert-type scale (“No” to “Yes” scored 1 to 4), with a total score ranging from 20 to 80. The reliability of the scale was excellent ($\alpha=.95$).

Statistical analyses

We computed all analyses on SPSS 25. We first computed bivariate correlations. We analyzed all independent variables one by one in a series of linear regressions controlling for depression and anxiety. Data is openly available online on the Open Science Framework (OSF): https://osf.io/ehg4k/?view_only=3abda19cd20949b789ddec0bff9ac240

Results (Table 1)

Metadehumanization was only significantly correlated with depression ($r=.38^*, p<.05$). Animalistic self-dehumanization was significantly and positively correlated with suicidal thoughts interference ($r=.35^*, p<.05$) and negatively correlated with the desire to participate in social activities ($r=-.40^*, p<.05$). Mechanistic self-dehumanization was significantly and negatively correlated with suicidal ideations ($r=-.35^*, p<.05$). Suicidal ideations were negatively correlated with the desire for social activities ($r=-.35^*, p<.05$) and positively correlated with

depression ($r=.54^{**}, p<.01$) and anxiety ($r=.46^{**}, p<.01$). Negative thoughts interference was negatively correlated with depression ($r=-.38^*, p<.05$). Desire to participate to social activities was correlated with the desire to participate to non-social activities ($r=.42^*, p<.05$). Finally, depression and anxiety were correlated ($r=.67^{**}, p<.01$).

Regression analyses (Figure 1) controlling for anxiety and depression and testing the effects of metadehumanization, animalistic self-dehumanization, and mechanistic self-dehumanization one by one, did not reveal any effect of metadehumanization (all $p>.05$). Nevertheless, our results revealed that animalistic self-dehumanization was positively associated with suicidal thoughts interference ($t=2.11, \beta=.35, p<.05$) and negatively associated with the desire to participate in social activities ($t=2.411, \beta=-.39, p<.05$). Interestingly, animalistic self-dehumanization was not associated with negative thoughts interference ($p>.05$); the effect on suicidal thoughts interference thus does not seem driven by negativity. Mechanistic self-dehumanization was significantly associated with suicide ideations in the correlations but, when controlling for anxiety, only a marginal effect remained ($p=.09$).

Discussion

We investigated the links between dehumanization processes (metadehumanization and self-dehumanization) and suicide-related variables in SAUD. Our results centrally revealed that animalistic self-dehumanization is associated with higher levels of suicidal thoughts interferences and with a lower desire to participate in social activities. This underlines the need to investigate self-dehumanization, especially in psychiatry. As suicidal thoughts measured implicitly is predictive of suicide completion (Nock et al., 2010), animalistic self-dehumanization is thus associated to one of the most critical clinical variable in a population that is particularly at risk of suicide (Cavanagh et al., 2003; WHO, 2019).

Animalistic self-dehumanization was associated with suicidal thoughts interference but not with negative thoughts interference. Even though suicidal thoughts share valence with negative thoughts, the effect observed is thus not caused by the negative nature of suicidal thoughts but by the suicide semantic *per se*. Conversely, we found no link between metadehumanization and suicidal thoughts interference, indicating that the internalization of dehumanization (i.e., self-dehumanization) is a primordial variable to investigate in relation to patients' mental health and suicidality. The way patients perceive themselves (i.e., self-dehumanization) appears more crucial than the way they feel perceived by others. In contrast with the animalistic one, the mechanistic component of self-dehumanization was not related with suicidal thoughts interference. Animalistic self-dehumanization might intrinsically be associated with suicide because humans' awareness of being animals is related to mortality (Burke et al., 2010; Goldenberg et al., 2001). Future studies should thus investigate if mortality salience can mediate the relation between animalistic self-dehumanization and suicidal thoughts interference. Moreover, all significant effects involved indirect measures, which confirms their usefulness when investigating self-dehumanization and suicidal ideations.

Animalistic self-dehumanization, beyond its links with interference of suicidal thoughts, was also associated with social contacts avoidance (i.e., reduced desire to participate in social activities, but not non-social ones). This is congruent as avoidance of social activities can lead to loneliness, itself associated with suicide ideations (Stravynski and Boyer, 2001). Conversely, having social connections might protect those in pain and hopelessness against suicidal ideations (Klonsky and May, 2015).

At the clinical level, the present results claim for a deeper consideration of self-dehumanization in patients with SAUD, particularly in view of the high prevalence of suicide attempts in this population. Measuring such processes in clinical settings, in SAUD but also among patients presenting other addictive or psychiatric disorders, might help caregivers to develop targeted interventions. Furthermore, our work illustrates the benefits of using indirect measures to complement direct ones when investigating sensitive topics. The measures of animalistic self-

dehumanization and interference of suicidal thoughts are fast and cheap, and bring complementary information from those captured by questionnaires. As both alcohol consumption (Hull, 1981) and suicide (Baumeister, 1990) constitute ways to escape from self-awareness, the links between these three variables should be further explored. Using alcohol to escape from self-awareness might lead to disinhibition and facilitate suicide attempt, but suicide might alternatively be the last resort to escape from self-awareness when alcohol is insufficient.

In conclusion, our design combining explicit and implicit measures showed that animalistic self-dehumanization is associated with suicidal thoughts and with decreased desire to participate in social activities in SAUD. These findings advocate for using implicit measures to investigate sensitive topics, as they allowed to identify that self-dehumanization might constitute a key determinant of suicidal attempts. Improving patients' self-perception and reducing self-dehumanization thus constitute interesting avenues for clinicians working with this suicide-prone population.

Author disclosures

The authors declare no conflict of interest.

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Table 1. Means (S.D.), Cronbach's alphas, and pairwise correlations between variables. Cronbach's alphas are between brackets on the diagonal. * $p < .05$; ** $p < .01$

	Mean	S.D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Meta-dehumanization	3.33	1.5	(.94)									
2. Animalistic self-dehumanization	-.54	.43	-.05	N.A.								
3. Mechanistic self-dehumanization	-.44	.44	-.19	.02	N.A.							
4. Suicidal ideations	7.8	6.45	.27	.26	-.35*	(.85)						
5. Suicidal thoughts interference	46.88	95.33	-.10	.35*	-.16	.32	N.A.					
6. Negative thoughts interference	22.02	102.89	-.17	.04	.04	-.01	.31	N.A.				
7. Desire for social activities	3.64	1.23	.08	-.40*	-.20	-.35*	-.14	-.06	(.89)			
8. Desire for non-social activities	3.92	.91	.12	-.12	-.12	-.03	-.21	-.15	.42*	(.76)		
9. Depression	11.61	8.09	.38*	.01	-.12	.54**	-.01	-.38*	-.19	.09	(.89)	
10. Anxiety	46.03	18.52	.29	.08	-.04	.46**	.00	-.11	-.19	.16	.67**	(.95)

Figure Caption

Figure 1. Graphical summary of the results. Independent variables (left part) were tested on the outcomes in a series of linear regressions. Plain lines depict significant effects; dashed lines, marginal effects and no line are depicted when no significant effect was found. Depression and state anxiety were controlled for in all linear regressions but were not depicted for clarity purposes. * $p < .05$