



# Metadehumanization, fundamental needs and coping strategies: A comparison of drinkers at low versus high risk of alcohol use disorder

Sullivan Fontesse, Coralie Creupelandt, Zoé Bollen, Arthur Pabst, Pierre Maurage\*

Louvain Experimental Psychopathology Research Group (LEP), Psychological Sciences Research Institute, UCLouvain, Place C. Mercier 10, B-1348 Louvain-la-Neuve, Belgium

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## ABSTRACT

The interpersonal difficulties documented in chronic excessive drinking might foster the progression toward severe alcohol use disorder (SAUD). Characterizing these interpersonal difficulties and their commonalities with patients already presenting a diagnosed SAUD is needed to develop targeted prophylactic interventions. Patients with SAUD present metadehumanization (i.e., the perception of being considered as less than human by others), which is associated with deleterious consequences (e.g., reduced fundamental needs satisfaction, increased negative emotions, reduced self-esteem, disrupted coping strategies) involved in the persistence of this disorder. No study has investigated metadehumanization among individuals not diagnosed with SAUD but at high risk of alcohol use disorder. We measured metadehumanization, emotions, self-esteem, coping strategies, and fundamental needs threat among such high-risk drinkers (N = 86; AUDIT score higher than 15), and matched low-risk drinkers (N = 100, AUDIT score <8). Compared to low-risk drinkers, high-risk drinkers felt more dehumanized and reported increased fundamental needs threat, negative emotions, anxiety, depression, and more frequent use of both adaptive and maladaptive coping strategies, including alcohol use. Mediation analyses controlling for anxiety/depression revealed that the differences in emotions and coping strategies were explained by metadehumanization and fundamental needs threat. Despite not being diagnosed with SAUD and being untreated, high-risk drinkers are more similar to patients with SAUD than to low-risk drinkers. In view of its links with factors favoring SAUD, metadehumanization should be considered in experimental studies among high-risk drinkers and treated by specific interventions.

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## Introduction

Excessive alcohol consumption is related to a wide range of health effects (WHO, 2018). Cumulative evidence has emphasized the detrimental role of alcohol-related disorders on physical (e.g., impaired brain structure and function, cardiovascular or hepatic diseases, reduced life expectancy; Bagnardi, Blangiardo, La Vecchia, & Corrao, 2001; Bagnardi et al., 2015; Bühler & Mann, 2011; Oscar-Berman & Marinković, 2007) and psychological (e.g., mood disorders, interpersonal problems, suicide risk; Driessen et al., 1998; GBD, 2018; Hufford, 2001; Maurage et al., 2011; Stavro et al., 2013) factors.

This research field has long been focused on severe alcohol use disorder. However, the release of the Diagnostic and Statistical

Manual of Mental Disorders (DSM-5) and the switch from categorical to dimensional approaches led researchers to intensify the exploration of populations presenting an excessive but not clinically diagnosed alcohol consumption, such as high-risk drinkers (Field, Mogg, Zettler, & Bradley, 2004; Wiers, van de Luitgaarden, van den Wildenberg, & Smulders, 2005). These individuals constitute a population of particular interest as, while not being involved in any treatment and thus not being identified as fulfilling DSM-5 criteria for severe alcohol use disorder, their excessive consumption puts them at risk for developing alcohol use disorder. Further characterizing this subsample of people presenting a high-risk alcohol consumption could thus improve prophylactic interventions to avoid the transition between excessive drinking and severe alcohol use disorder (King, Hasin, Connor, McNamara, & Cao, 2016; Rodgers et al., 2000).

Previous research revealed large-scale differences between high-risk (characterized by scores higher than 15 on the Alcohol Use Disorder Identification Test, AUDIT) and low-risk drinkers

\* Corresponding author. UCLouvain, Faculté de Psychologie, Place du Cardinal Mercier, 10, B-1348, Louvain-la-Neuve, Belgium. Tel.: +32 10 479245; fax: +32 10 473774.

E-mail address: [pierre.maurage@uclouvain.be](mailto:pierre.maurage@uclouvain.be) (P. Maurage).

(Saunders, Aasland, Babor, De La Fuente, & Grant, 1993). High-risk drinkers already present physical and psychological consequences related to their alcohol consumption (Saunders et al., 1993). For example, they have stronger approach behaviors toward alcohol-related stimuli than low-risk drinkers, which is associated with increased alcohol craving (Field, Kiernan, Eastwood, & Child, 2008). They also show decreased behavioral performance in tasks where participants have to inhibit the processing of alcohol-related stimuli. Such differences are also reflected in brain activity measures, which reveal increased working memory demand and control efforts to inhibit alcohol approach behaviors, due to the enhanced salience of alcohol-related content (Ames et al., 2014). High-risk drinkers are also more likely to consume excessively when facing social pressure to drink, when sharing pleasant times with others, or when experiencing pleasant emotions or, conversely, physical discomfort (Carey, 1993). Furthermore, during acute alcohol consumption, high-risk drinkers are as impaired as low-risk drinkers at the cognitive level, but they are less aware of this impairment, as attested by lower levels of reported impairment (Brumback, Cao, & King, 2007). All these cognitive, cerebral, and motivational differences are proposed to increase alcohol consumption and risk for developing severe alcohol use disorder, which is further reinforced by the fact that these individuals are more sensitive to the stimulating effects of alcohol and less sensitive to its sedative effects compared to low-risk drinkers (King et al., 2016). Because of their excessive alcohol use, high-risk drinkers also expose themselves to increased risks of cardiomyopathy, systematic hypertension, heart rhythm disturbances, and hemorrhagic stroke (Klatsky, 2004).

The presence of deficits at cognitive, physical, and cerebral levels is thus now clearly documented in this population, allowing identification of their commonalities and differences with patients diagnosed with severe alcohol use disorder and involved in a detoxification treatment. However, several impairments observed in severe alcohol use disorder have not yet been explored in high-risk populations, hampering a comprehensive comparison of these two conditions. This is particularly true for social cognition, and interpersonal deficits, which have been widely explored in severe alcohol use disorder (e.g., Bora & Zorlu, 2017; Le Berre, 2019 for reviews) but are far less documented in untreated high-risk drinkers from the general population. Among the recently identified correlates of these interpersonal deficits, dehumanization appears as a key factor. Dehumanization, namely the perception that one is less than human, has been widely studied in social psychology, as it plays a crucial role in shaping interpersonal behaviors. Notably, dehumanizing others enables maltreatments, unlocking many aversive behaviors toward the victims such as verbal or physical aggression, and even mass violence (Alleyne, Fernandes, & Pritchard, 2014; Delbosc, Naznin, Haslam, & Haworth, 2019; Harris & Fiske, 2011; Kelman, 1973; Kteily & Bruneau, 2017; Osofsky, Bandura, & Zimbardo, 2005). It has been recently documented that patients diagnosed with severe alcohol use disorder feel dehumanized by others (Fontesse, Demoulin, Stinglhamber, & Maurage, 2019; Fontesse et al., 2020). They thus report metadehumanization, which can be defined as the subjective perception by the dehumanized individual of being considered as less than human by others (Kteily, Hodson, & Bruneau, 2016). Metadehumanization can emerge when individuals are treated as unequal, despised, disrespected, or when their identity is considered as not valuable by others (Bastian & Haslam, 2011). The metadehumanization reported by individuals presenting addictive disorders might thus result from actual dehumanization by others. Neuroimaging studies offered preliminary support to this proposal by showing that the general population tends to dehumanize individuals presenting an addictive disorder, who are perceived as lacking key human characteristics such as competence and

warmth. This dehumanizing perception is also related to disgust toward these individuals (Harris & Fiske, 2006), which could foster the emergence of metadehumanization among people with alcohol use disorder (Harris & Fiske, 2009).

Studies conducted in a wide range of dehumanized populations have shown that metadehumanization elicits negative emotions (e.g., anger, sadness, guilt, shame), aversive self-awareness, a state of cognitive deconstruction, and psychosomatic strains (Bastian & Haslam, 2011; Caesens, Nguyen, & Stinglhamber, 2019; Caesens & Stinglhamber, 2019; Zhang, Chan, Xia, Tian, & Zhu, 2017). In patients with severe alcohol use disorder specifically, metadehumanization has been linked to a variety of negative outcomes such as negative emotions, reduced self-esteem, dysfunctional coping strategies, and increased consumption of alcohol to face their problems (Fontesse et al., 2020). Metadehumanization was also associated with the hampering of fundamental needs. Fundamental needs are the psychological counterpart of physical needs like hunger or thirst. They encompass the need for autonomy, competence, meaning, and belonging, and they are experienced by all human beings. When unsatisfied, they generate a broad range of negative consequences for physical and mental health (Baumeister & Leary, 1995; Ryan & Deci, 2000). The reduction of fundamental needs satisfaction might constitute the central impact of metadehumanization on patients, as fundamental needs threat is a mediator of the relationship between metadehumanization and patients' emotions, self-esteem, and coping strategies (Fontesse et al., 2020).

Despite its newly identified key role in severe alcohol use disorder, metadehumanization has never been investigated in untreated populations with excessive alcohol consumption. Two opposite hypotheses can be proposed. First, high-risk drinkers might, in line with patients presenting severe alcohol use disorder, feel dehumanized by others as they share many common risk factors involved in the emergence of metadehumanization. Indeed, the alcohol continuum theory proposes that high-risk drinkers present multiple characteristics similar to patients with diagnosed severe alcohol use disorder, but to a lesser extent (Brion, Pitel, Beaunieux, & Maurage, 2014). Second and conversely, metadehumanization might arise from specific characteristics of patients diagnosed with severe alcohol use disorder who are currently receiving proper treatment, these characteristics being absent in untreated high-risk drinkers. Such characteristics could include being labeled as presenting a mental illness (Martinez, Piff, Mendoza-Denton, & Hinshaw, 2011) or having lost control over alcohol consumption (Fontesse et al., 2019). To disentangle these alternatives, this study will thus explore whether high-risk drinkers (who are particularly at-risk of developing severe alcohol use disorder and present excessive consumption but without being diagnosed with severe alcohol use disorder and medically treated) already present metadehumanization. This experiment will also assess whether the link between increased fundamental needs threat and metadehumanization observed in severe alcohol use disorder (Fontesse et al., 2020) applies to the high-risk population.

To offer a more global view of the factors potentially related to metadehumanization in people at risk for severe alcohol use disorder, this study investigates participants' self-esteem, emotions, and coping strategies. Considering that these variables are also involved in the emergence of alcohol use disorder, they will thus provide meaningful information on our sample's commonalities with patients presenting severe alcohol use disorder (Buchmann et al., 2010; Cooper, Frone, Russell, & Mudar, 1995; Trucco, Connery, Griffin, & Greenfield, 2007).

To sum up, in accordance with the continuum theory of alcohol use disorders, high-risk drinkers are expected to present a psychological profile different from low-risk drinkers. We expect them

to report more metadepersonalization and fundamental needs threat than low-risk drinkers. We hypothesize that they will also exhibit increased use of disengaging coping strategies as well as less positive emotions and more negative emotions. Finally, to understand group differences, metadepersonalization and fundamental needs threat will be investigated as potential mediators of the group effects.

**Material and methods**

*Participants*

Participants received a full description of the study before providing their informed consent and then completed the survey (approximate duration: 1 h). Participants provided informed consent prior to their inclusion in the study. The experimental protocol has been approved by the bioethical committee of the University (Cliniques Universitaires Saint-Luc, UCLouvain, Belgium; approval number B403201732246). All procedures contributing to this work comply with the ethical standards of the Helsinki Declaration of 1975, as revised in 2008.

Two hundred and twenty-three participants (136 low-risk drinkers, 87 high-risk drinkers) were recruited through Qualtrics Panels (Qualtrics, LLC; Provo, Utah, United States). To enter the survey, participants had to be at least 18 years old. Participants' mean age was 44.2 years old (S.D. = 14.5). All participants were French speakers (64.6 % French, 25.6 % Swiss, 6.3 % Belgian) and most were males (60.1 % males, 39.5 % females, 0.4 % non-binary).

Four participants were excluded because they provided an aberrant weekly alcohol consumption (more than 210 units of alcohol per week). We checked for between-group differences in age, gender, and level of education. A significant difference in age was found between low-risk and high-risk drinkers, which led us to exclude the older participants from the low-risk drinkers' group, as it was the larger group, until the difference between low-risk and high-risk drinkers was not significant anymore (32 participants excluded, 50 % male, 50 % female to maintain the gender repartition; see Table 1 for the age, gender, and level of education in each group). The pairing of groups based on demographics led to a final sample of 186 participants (100 low-risk drinkers, 86 high-risk drinkers) with equivalent age, gender repartition, and education level.

*Procedure*

Participants were categorized as low-risk drinkers or high-risk drinkers based on their score on the Alcohol Use Disorder Identification Test (AUDIT). The AUDIT is a widely used 10-item

**Table 1**  
Raw demographic and experimental results [Mean (S.D.)] of the high-risk drinkers (n = 86) and low-risk drinkers (n = 100) groups.

	High-risk drinkers	Low-risk drinkers
Age	38.71 (12.74)	41.97 (11.67)
Percentage of males	59.30 %	64.00 %
Percentage of higher education diplomas	55.80 %	66.00 %
Metadepersonalization	3.28 (1.78)	1.20 (.61)
Fundamental needs threat	3.12 (1.69)	1.12 (.37)
Self-esteem	4.08 (.94)	5.25 (1.04)
Positive emotions	4.20 (1.64)	4.78 (1.31)
Negative emotions	3.93 (1.63)	2.30 (1.04)
Engaging coping strategies	2.53 (.66)	2.48 (.59)
Disengaging coping strategies	2.57 (.69)	1.89 (.59)
Alcohol as coping strategy	2.62 (.86)	1.21 (.44)
Anxiety	52.49 (12.00)	38.90 (11.40)
Depression	14.67 (8.95)	3.49 (5.32)

questionnaire screening for alcohol-related disorders ( $\alpha = 0.92$ ; Saunders et al., 1993). It measures alcohol use, as well as the frequency of various problematic alcohol-related behaviors. Each item is scored from 0 to 4, providing a total score (range: 0–40). A score of 7 or less indicates low-risk alcohol use, whereas a score of 16 or more indicates high-risk consumption with a likelihood of alcohol use disorder (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Saunders et al., 1993). Participants scoring 7 or less were categorized as low-risk drinkers, while participants scoring 16 or more were categorized as high-risk drinkers. It should be noted that, while we recruited our sample in the general population and while none of the included participants presented current treatment for alcohol use disorder or current/past diagnosis of severe alcohol use disorder, we did not directly evaluate the presence of such a diagnosis in our sample. We thus cannot exclude that some patients in our high-risk group might fulfill the DSM-5 diagnosis criteria for moderate/severe alcohol use disorder. All participants successfully answered the two attention checks included in the study. The full questionnaire is available at: [https://osf.io/sjdm5/?view\\_only=168d18f3b7e04175aff559c724c64e90](https://osf.io/sjdm5/?view_only=168d18f3b7e04175aff559c724c64e90).

**Measures**

*Metadepersonalization*

We measured participants' perception of being dehumanized by people close to them and other individuals, namely metadepersonalization, using a 22-item scale (Fontesse et al., 2020) with an excellent internal validity ( $\alpha = 0.99$ ). The scale encompasses the main dehumanization criteria such as immaturity, lack of emotions, coldness, as well as animal or automaton metaphors (e.g., general header "Your close ones or other people ..." "treat you as an object", "treat you as a child", "think that you are irrational"). We asked high-risk drinkers to provide how they felt dehumanized because of their alcohol consumption (header: "Because of your alcohol consumption, your close ones or other people ..." before the items). Participants rated each item using a 7-point Likert scale (from "Completely disagree" to "Completely agree"). We computed a mean score by averaging all items.

*Fundamental needs threat*

We assessed the threat to participants' fundamental needs (belonging, control, and self-esteem) through a 12-item scale, evaluating the frequency of needs-threatening behaviors from others (Demoulin et al., 2021). Participants rated each item using a 7-point Likert scale (from "Never" to "Almost always"). We computed a mean score by averaging all items ( $\alpha = 0.98$ ).

*Positive and negative emotions*

We measured positive and negative emotions experienced by participants during the previous month using a 31-item French adaptation of the Positive And Negative Affective State (PANAS; Watson & Clark, 1999; Watson, Clark, & Tellegen, 1988) called "Emotionalité Positive et Négative" (EPN-31; Pélissolo, Rolland, Perez-Diaz, Jouvent, & Allilaire, 2007). Participants answered using a 7-point Likert scale (from "Never" to "Multiple times a day"). We computed two mean scores, one for positive ( $\alpha = 0.93$ ) and one for negative emotions ( $\alpha = 0.97$ ).

*Self-esteem*

We assessed participants' self-esteem with the 20-item State Self-Esteem scale (SSE; Heatherton & Polivy, 1991). The scale

assesses participants' performance self-esteem, social self-esteem, and appearance self-esteem. However, as we did not have specific hypotheses on these sub-dimensions, we computed a global self-esteem score by averaging all items ( $\alpha = 0.91$ ). Participants answered using a 7-point Likert scale (from "Completely disagree" to "Completely agree").

### Coping strategies

We evaluated the coping strategies used by participants when facing a negative event using the 30-item Response to Stress Questionnaire (RSQ; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). The RSQ measures various coping strategies such as problem-solving, emotional regulation, denial, and magical thoughts. These strategies can be grouped into two dimensions: engagement/active ( $\alpha = 0.92$ ) and disengagement/avoidance ( $\alpha = 0.87$ ) coping strategies. We included three additional items to investigate alcohol-related coping strategies ( $\alpha = 0.92$ ; e.g., "I drink alcohol to feel better"). Participants answered using a 4-point Likert scale ranging from "Not at all" to "A lot". We computed a mean score for each dimension.

### Anxiety

We measured state anxiety using the 20-item State-Trait Anxiety Inventory form Y (Spielberger, 1983). Participants answered using a 4-point Likert scale (from "No" to "Yes"). We computed a total score ( $\alpha = 0.93$ ; range: 20–80).

### Depression

We assessed depression with the 13-item Beck Depression Inventory (BDI; Luty & O'Gara, 2006). Participants answered using 4-choice statements (scoring range: 0–3). We computed a total score ( $\alpha = 0.94$ ; range: 0–39).

### Statistical analyses

We conducted all statistical analyses on SPSS 25. We conducted *t* tests for independent samples to compare groups on anxiety and depression (estimating effect sizes with Cohen's *D*), and one-way ANCOVAs (including anxiety/depression as covariates) on all variables of interest using the group variable ( $-1 =$  Low-risk Drinkers;  $1 =$  High-risk Drinkers) as a comparison criterion, eta squared being provided as effect sizes. We conducted mediation analyses using the model number 6 of PROCESS version 3.0. with a bootstrap of 10 000 samples (Hayes, 2013). PROCESS is an add-on for SPSS used to conduct analyses involving mediation, moderation, and conditional process modeling. It offers well-validated pre-registered models to run complex models of mediations and/or moderation.

## Results

High-risk drinkers reported more anxiety [Cohen's *D* = 1.16,  $t(184) = 7.91$ ,  $p < 0.001$ ] and depression [Cohen's *D* = 1.55,  $t(184) = 10.52$ ,  $p < 0.001$ ] than low-risk drinkers. When including anxiety/depression as covariates, compared to low-risk drinkers (Table 1), high-risk drinkers felt more dehumanized by others [ $F_{(1,182)} = 37.50$ ;  $\eta^2 = 0.11$ ,  $p < 0.001$ ] and showed higher level of fundamental needs threat [ $F_{(1,182)} = 45.78$ ;  $\eta^2 = 0.13$ ,  $p < 0.001$ ]. No group differences were found for self-esteem [ $F_{(1,182)} = 1.99$ ;  $\eta^2 = 0.00$ ,  $p = 0.16$ ] or positive emotions [ $F_{(1,182)} = 0.64$ ;  $\eta^2 = 0.00$ ,  $p = 0.42$ ], but high-risk drinkers reported more negative emotions [ $F_{(1,182)} = 4.39$ ;  $\eta^2 = 0.01$ ,  $p < 0.05$ ]. Regarding coping strategies,

high-risk drinkers used more engaging coping strategies [ $F_{(1,182)} = 9.29$ ;  $\eta^2 = 0.04$ ,  $p < 0.01$ ] as well as disengaging coping strategies [ $F_{(1,182)} = 20.49$ ;  $\eta^2 = 0.08$ ,  $p < 0.001$ ], and used alcohol as a coping mechanism more frequently than low-risk drinkers [ $F_{(1,182)} = 101.08$ ;  $\eta^2 = 0.24$ ,  $p < 0.001$ ].

Sixteen high-risk drinkers reported having received professional help for their alcohol consumption (i.e., hospitalized or followed by a physician/psychologist). We conducted exploratory analyses after excluding them to investigate whether differences between groups persisted even when excluding participants with potential severe alcohol use disorder. Results were consistent: all group differences remained significant (all  $p < 0.05$ ) except for negative emotions, which became non-significant.

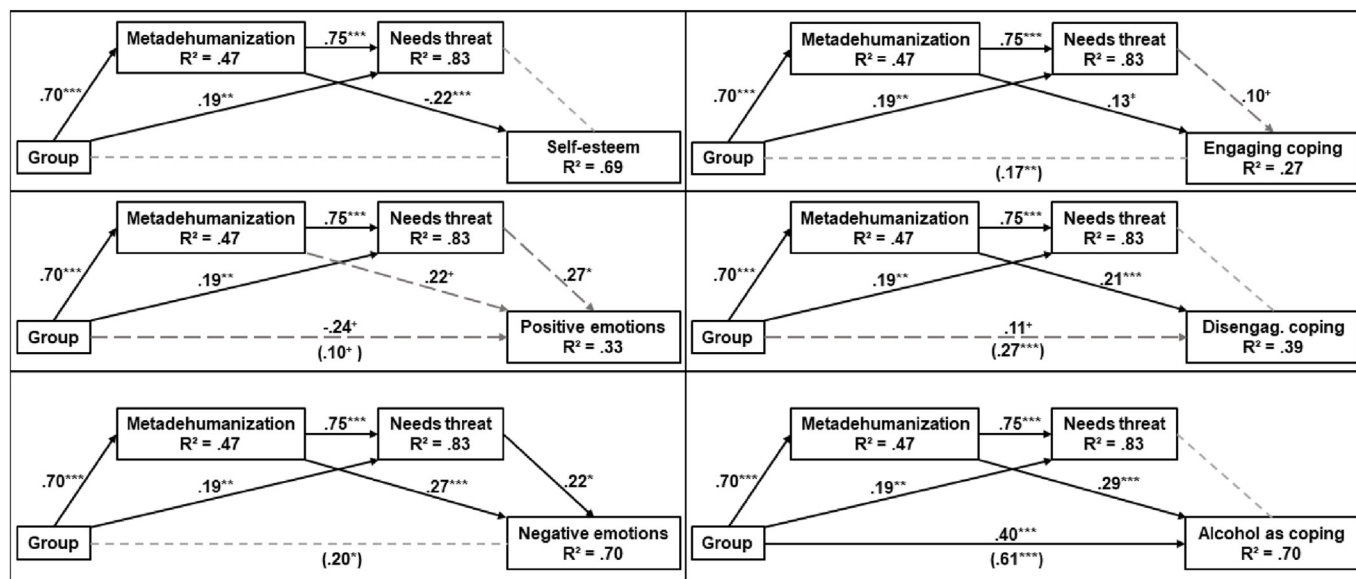
We conducted mediation analyses to further investigate group differences. We controlled for depression and anxiety, as they differed between groups. We created a first preliminary model to test whether metadepersonalization mediated the group effect on fundamental needs threat. This model revealed that the group effect on fundamental needs threat was indeed mediated by metadepersonalization (Partially Standardized Indirect Effect [PSIE] = 0.34, SE = 0.07, 95 % CI [0.21, 0.48]). For the following analyses, group (contrast coded) was used as a predictor, metadepersonalization and fundamental needs threat were used as mediators in a double mediation, depression and anxiety were used as covariates, and the other variables were placed as outcomes, one by one in a series of analyses.

Results (Fig. 1) revealed that all group effects were mediated by metadepersonalization, fundamental needs, or by metadepersonalization and fundamental needs threat together. The group effect on self-esteem (non-significant in our initial analyses) was mediated by metadepersonalization (PSIE =  $-0.13$ , SE = 0.05, 95 % CI [ $-0.23$ ,  $-0.05$ ]). The group effect on positive emotions (non-significant in our initial analyses) was not mediated. The group effect on negative emotions was mediated by fundamental needs threat (PSIE = 0.03, SE = 0.02, 95 % CI [0.00; 0.08]) and metadepersonalization and fundamental needs threat together (PSIE = 0.07, SE = 0.05, 95 % CI [0.00, 0.19]). The group effect on engaging coping strategies was mediated by fundamental needs threat (PSIE = 0.03, SE = 0.03, 95 % CI [0.00, 0.10]) and metadepersonalization and needs threat together (PSIE = 0.09, SE = 0.06, 95 % CI [0.00, 0.23]). The group effect on disengaging coping strategies was mediated by metadepersonalization (PSIE = 0.20, SE = 0.08, 95 % CI [0.05, 0.36]). The group effect on alcohol consumption as coping was mediated by metadepersonalization (PSIE = 0.21, SE = 0.07, 95 % CI [0.09, 0.35]).

## Discussion

This first exploration of metadepersonalization and its related factors in high-risk drinkers revealed multiple differences with low-risk drinkers regarding emotions, self-perceptions, behaviors, psychological well-being, and psychopathological states. Most importantly, it showed that high-risk drinkers felt more dehumanized and that metadepersonalization and fundamental needs threat contributed to explain the differences in psychological profiles between groups.

The higher metadepersonalization reported among high-risk drinkers is consistent with our expectations. Indeed, previous research attested that patients with severe alcohol use disorder experience such metadepersonalization (Fontesse et al., 2020). The fact that this population already reports feeling dehumanized by others widens the range of populations potentially affected by metadepersonalization, by showing that it can occur independently of the presence of a psychiatric diagnosis or the inclusion in a psychiatric clinical setting.



**Fig. 1.** Summary of the mediation analyses. Full arrows represent significant effects, dashed arrows indicate marginal effects, and dashed lines indicate non-significant effects. The values in brackets are the regression coefficients of the group's effect on outcomes controlling for anxiety and depression without metadehumanization and needs threat. For the sake of clarity, non-significant coefficients are not represented. †*p* < .10; \**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

Past research emphasized the fact that receiving a mental illness label can be dehumanizing *per se* (Martinez et al., 2011). However, in our sample, only 16 participants reported having been treated for their excessive alcohol consumption in the past and thus having been potentially diagnosed as patients with severe alcohol use disorder. Moreover, when excluding these participants from the analyses, all differences between groups, except negative emotions, persisted. This suggests that the metadehumanization reported by high-risk drinkers does not appear to be centrally driven by the stigma associated with seeking treatment or being labeled a psychiatric patient, but rather directly by excessive alcohol consumption. Nevertheless, alternative explanations can be proposed to explain the link between metadehumanization and excessive alcohol consumption. First, high-risk drinkers might already have conflictual relationships because of their excessive alcohol consumption, which might make others dehumanize them. Excessive alcohol consumption would then lead to metadehumanization indirectly through the modifications of interpersonal behaviors and interactions. Second, metadehumanization may be the cause rather than the consequence of excessive alcohol use, with dehumanization feelings and their related interpersonal difficulties contributing to the appearance or maintenance of excessive drinking, notably through the use of alcohol consumption to cope with such difficulties. At this stage, these propositions are speculative. Nevertheless, our results showing strong metadehumanization in high-risk drinkers (actually close to the levels observed in severe alcohol use disorder, see Fontesse et al., 2020) advocate for the need to study this phenomenon in this population. Future studies should notably disentangle the potentially distinct interactions that excessive alcohol consumption presents with dehumanization (i.e., the objective fact of being dehumanized) versus metadehumanization (i.e., the subjective perception of being dehumanized).

Our results also revealed that, even after controlling for group differences on depression/anxiety, high-risk drinkers reported threatened fundamental needs, increased negative emotions, and increased use of engaging/disengaging coping strategies as well as alcohol use as coping compared to low-risk drinkers. These results reinforce and extend previous findings in this population as the associations between negative emotions, coping modifications, and

high-risk drinking are congruent with earlier studies (Britton, 2004; Cooper et al., 1995; Dvorak et al., 2014; Jakubczyk et al., 2018; Zeigler-Hill, Stubbs, & Madson, 2013). However, the findings that this group report feeling dehumanized by others and present higher fundamental needs threat than low-risk drinkers had not been reported before.

This finding is particularly important because metadehumanization and fundamental needs threat mediate group differences in psychological profiles, even when including depression and anxiety as covariates. Two effects were mediated by metadehumanization and fundamental needs together, namely the effect on negative emotions and engaging coping strategies. Three other group effects (on self-esteem, disengaging coping strategies, and alcohol use as coping) were mediated by metadehumanization alone. The perception of being treated as less than a human by others thus seems to be a strong correlate of the emotional, cognitive, and behavioral differences of both groups. Considering these variables' implication in alcohol-related problems and severe alcohol use disorder emergence (Britton, 2004; Buchmann et al., 2010; Fontesse et al., 2020; Zeigler-Hill et al., 2013), metadehumanization might contribute to the increased risk of developing severe alcohol use disorder in high-risk drinkers.

As a whole, our study thus suggests that metadehumanization plays a key role in the difficulties encountered by high-risk drinkers, which might be of importance for the progression toward severe alcohol use disorder. In light of the continuum theory of alcohol use disorders, they are already advanced in the path leading to severe alcohol use disorder, as they tend to differ from low-risk drinkers and exhibit several similarities with patients presenting severe alcohol use disorder. In addition to displaying levels of metadehumanization close to these patients, high-risk drinkers reported more negative emotions than low-risk drinkers, with such emotions being a strong relapse factor in severe alcohol use disorder (Zywiak, Westerberg, Connors, & Maisto, 2003). They also showed high levels of anxiety and depression, which have previously been linked to alcohol-related problems (Acuff et al., 2019) and constitute psychopathological comorbidities in half of the patients with severe alcohol use disorder (Anker, Kummerfeld, Rix, Burwell, & Kushner, 2019). Finally, our sample of high-risk

drinkers presented an increase in maladaptive coping strategies, and centrally in the use of alcohol to cope with negative events, with such coping strategies being frequently reported in alcohol use disorders (Windle & Windle, 2015).

### Limitations

As the design used does not allow for causal interpretations, future studies should investigate whether the variables measured contribute to the emergence of excessive consumption, or conversely. The causal relations between metadepersonalization and fundamental needs threat should also be clarified in future studies: in line with previous research in severe alcohol use disorder (Fontesse et al., 2020), we considered metadepersonalization as an antecedent of fundamental needs threat, but the reverse relation has also been postulated (e.g., Demoulin et al., 2021). Furthermore, metadepersonalization is still an emerging concept, especially in clinical psychology. While we have investigated key variables about people's psychological health, other variables are still to be investigated in relation to metadepersonalization. Future studies will thus have to extend the connections between metadepersonalization and other clinically relevant variables.

### Conclusion

High-risk drinkers present a broad range of psychological and interpersonal differences with low-risk drinkers. Our results centrally showed that they feel dehumanized by others, have threatened fundamental needs as well as increased negative emotions and maladaptive coping strategies. Metadepersonalization, namely the feeling of being dehumanized by others, emerges as a major variable mediating the previously described differences between high-risk and low-risk drinkers on psychological and interpersonal variables.

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### Credit author statement

**Sullivan Fontesse:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing – Original Draft, Visualization. **Coralie Creupelandt:** Writing – Review & Editing, Conceptualization. **Zoé Bollen:** Writing – Review & Editing, Methodology. **Arthur Pabst:** Writing – Review & Editing, Formal analysis. **Pierre Maurage:** Conceptualization, Methodology, Validation, Writing – Review & Editing, Supervision, Project administration, Funding acquisition.

### Data accessibility statement

Processed data are openly accessible on OSF: [https://osf.io/sjdm5/?view\\_only=168d18f3b7e04175aff559c724c64e90](https://osf.io/sjdm5/?view_only=168d18f3b7e04175aff559c724c64e90).

### Declaration of competing interest

None.

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