The Protective Role of Adaptive Humor Styles in Depression: A Culturally Diverse Study

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Abstract

This paper aimed at exploring the role of adaptive humor styles and personal-level collectivism in depression in a cross-cultural context. It was hypothesized that both adaptive humor styles would be negatively associated with depression and positively with personal-level collectivism, which would also be negatively associated with depression. Using online versions of the short Humor Style Questionnaire (HSQ), the Individualism-Collectivism Scale (ICS), and the Beck's Depression Inventory (BDI), a total of 650 self-report responses were examined. Subjects' age ranged between 18 - 65 years ($M = 33.4$, $SD = 12.5$), with 58% females, 41% males, and less than 1% of other gender and a relatively heterogeneous distribution of educational levels. As hypothesized, the self-enhancing humor style and personal-level collectivism were negatively associated with depression. Unexpectedly, the affiliative humor style was not. Both adaptive humor styles were positively correlated with personal-level collectivism, as expected. Further, personal-level collectivism partially explained the negative relationship between the self-enhancing humor style and depression. The affiliative humor style in interaction with the self-enhancing humor style, however, diminished the protective role the self-enhancing humor style had on depression. Overall, despite some methodological limitations, findings suggest a protective role of the self-enhancing humor style and personal-level collectivism in depression. An important implication is the encouragement of clients' self-enhancing humor style and collectivistic values in clinical interventions for depression.

The Protective Role of Adaptive Humor Styles in Depression: A Culturally Diverse Study

The global Covid-19 pandemic has given rise to a large number of individuals suffering from depression. A meta-analysis by Bueno-Notivol et al. (2021) found an estimated global prevalence of depression of 25% in 2021, approximately seven times higher than the prevalence of 3.44% in 2017 (Dattani et al., 2018). For treating depression, an important factor is humor, and specifically, the consideration of personal humor styles, as proposed in the field of positive psychology interventions (Ruch & McGhee, 2014; Martin et al., 2003). To increase cultural diversity in the study of depression and humor styles, this paper will study the influence of personal-level cultural orientation on the relationship between humor styles and depression.

To enrich the scientific understanding of the development and prevention of depression regarding individuals' humor styles and cultural orientation, this paper builds on the diathesis-stress model (Rubinstein, 1986). The diathesis-stress model for depression includes predisposing factors such as genetics or personality traits that make an individual more vulnerable to developing depression when exposed to stress (Monroe & Simons, 1991). Further, Breton et al. (2015) suggested a vulnerability-resilience stress model for mood disorders, which also incorporates protective factors that enhance resilience toward stress and thus prevent depression. Whereas psychological research often displays a negativity bias by mainly focusing on pathology or risk factors (Seligman & Csikszentmihalyi, 2014), this study will focus on whether adaptive humor styles and personal-level cultural orientation, as well as their relationship, serve as protective factors for depression. This will offer important insights into clients' coping styles and world views as well as help to implement culturally sensitive, humor-based clinical interventions to transmit positive emotion, enhance therapeutic alliance, and prevent or relieve depression (Amici, 2019, 2020).

To create a common understanding of the concepts used in this paper, firstly, definitions of the given terms will be given. Depression is characterized by clinically significant negative cognitions and feelings of sadness or hopelessness as well as loss of pleasure or engagement in everyday activities (American Psychiatric Association, 2013). Humor styles comprise four different kinds which refer to their applied function in everyday life: the self-enhancing, affiliative, self-defeating, and aggressive humor style, measured by the Humor Style Questionnaire (HSQ; Martin et al., 2003). To explore the protective factors in the vulnerability-resilience model, this study will focus on the adaptive humor styles: the self-enhancing and affiliative humor style. The self-enhancing humor style is focused on the individual, though non-detrimental to others, and describes a humorous attitude to cope with difficult emotions and reduce stress. The affiliative humor style has a social nature and aims at strengthening social bonds and reducing interpersonal tension while respecting oneself (Martin et al., 2003). Further, cultural orientation can be measured either based on the country or the individual. By using the Individualism-Collectivism index developed by Hofstede et al. (2005), countries' orientation can be categorized. Personal-level cultural orientation, on the other hand, is defined as an individual's inclination to think, feel or behave in a rather individualistic- or collectivistic-oriented way (Triandis, 2001). Individualism focuses on the individual's independence and importance of their own needs over group needs, whereas collectivism emphasizes the interdependence of individuals and the primacy of group needs (Triandis, 2001). Next, building on previous research, the relationship between these concepts will be discussed.

Regarding the relationship between humor styles and depression, a substantial amount of research suggests that the adaptive humor styles are negatively correlated with depression (Martin et al., 2003). A meta-analysis by Schneider et al. (2018) studied the association between the four humor styles of the HSQ and mental health factors of optimism, self-

esteem, and life satisfaction as well as depression. The studies in this meta-analysis were conducted mainly in North America, Asia, and Europe, as well as in Australia and Africa. They found that the self-enhancing humor style was negatively correlated with depression, displaying a medium effect size. This relationship was stronger in North American studies than in Asian ones. The relationship between the affiliative humor style and depression was also negative, though weaker. These results, however, are based on students aged between 18 and 22 years, and thus cannot be generalized to other groups and ages.

Later studies, nevertheless, found similar results in Australians aged between 30 and 45 years (Kfrerer et al., 2019) as well as in Spanish subjects aged between 18 and 76 years (Menéndez-Aller et al., 2020): Depressed affect was negatively associated with the self-enhancing and affiliative humor styles, with the former showing a stronger relationship. However, these studies did not consider the humor styles' interaction with third variables such as rumination. Indeed, Chuang et al. (2021) found that, among Taiwanese adults, the self-enhancing and affiliative humor styles negatively moderated the relationship between high rumination and depression, further suggesting a protective effect. Nevertheless, as all these studies are correlational, they do not offer evidence for causality. In contrast, Lin et al. 's (2022) study used a longitudinal design to infer possible causality between personality vulnerability factors, namely self-criticism and dependency, and depressive symptoms over a two-month period. They found the self-enhancing humor style to mediate this association for both vulnerability factors, whereas the affiliative humor style did so only for the relationship between self-criticism and depressive symptoms. Overall, these studies provide valuable conclusions about the negative relationship between adaptive humor styles and depression. It is worth noting, however, that the mentioned studies all relied on self-report and thus rely on the subject's introspective ability which might be a less accurate evaluation of one's depression state than that of a professional. Moreover, they did not consider the individuals'

personal-level cultural orientation in their analysis. This leaves results relatively generalized and unable to conclude about the role of personal-level cultural differences.

To investigate cultural differences in depression, cultural orientation has mostly been studied on a country-level. The prevalence seems to be four to 10 times higher in Western compared to Eastern countries (De Vaus et al., 2018). According to Hofstede et al. (2005), country-level collectivism allows people to be "integrated into strong and cohesive in-groups, which throughout people's lifetimes continue to protect them in exchange for unquestioning loyalty" (p.76, Hofstede et al., 2005). In contrast, Caldwell-Harris and Ayçiçegi (2006) investigated cultural orientation on a personal-level. Examining students in Boston, United States, characterized by a highly individualistic society, they found personal-level individualism to be negatively correlated with depression and personal-level collectivism positively correlated with depression. However, they were not able to find associations in their sample in Istanbul, a highly collectivistic society, suggesting that these results cannot be generalized to other cultural settings. More recently, Zhang and Han (2021) examined students in Beijing, China, which is considered a more collectivistic culture. In their study, personal-level individualism emerged as a predictor for depression, whereas there was a high negative correlation between personal-level collectivism and depression. Hence, Zhang and Han's (2021) and Caldwell-Harris and Ayçiçegi's (2006) studies suggest the importance of a person-environment fit (Triandis, 2000), claiming that the congruence between personal-level and country-level cultural orientation, rather than the former itself, serves as a predictor for better mental health. However, due to limited sample variability, both studies cannot be generalized to non-urban regions, other countries, or less educated participants.

Contradicting the argument of the person-environment fit, there is further evidence suggesting depression to be negatively correlated with personal-level collectivism. Within the context of an individualistic society, a recent study of young adult US-Americans by Nezlek

and Humphrey (2021) measured psychological problems and personal-level cultural orientation in a large sample ($n = 1906$). Depression was negatively associated with personal-level collectivism and positively with personal-level individualism. Further evidence stems from the culture-gene coevolution theory (Chiao & Blizinsky, 2009). A study by Chiao and Blizinsky (2009) reported an increased prevalence of the S allele of the 5-HTTLPR, marking genetic predisposition for mood disorders, in East Asian samples compared to European ones. However, they also reported a lower prevalence of mood disorders in Eastern countries than in Western ones. Their study explains this association with the culture-gene coevolutionary theory, the adaptation of increased collectivistic values in these regions due to genetic predisposition. They suggest that collectivistic values of social support and harmony possess a buffering effect against environmental triggers such as chronic life stress, indicating a protective role of personal-level collectivism in the vulnerability-stress model. However, the reporting bias should be considered as stigma in collectivistic societies might inhibit some individuals from reporting mental health disorders and thus might show smaller national numbers of depression. Taken together, despite contradictory findings, methodological limitations, and the assumption of person-environment fit, compelling research indicates that personal-level collectivism might serve as a protective factor against depression. Further, the association between adaptive humor styles and cultural orientation remains to be investigated.

To date, cultural variation in the humor styles' usage has mostly been studied on a country-level. Generally, individuals from collectivistic countries, e.g. China and Lebanon (as categorized by Hofstede Insights, n.d.), tend to use less and differentiate less between the different humor styles than those from individualistic countries, e.g. Canada (Chen & Martin, 2007; Kuiper et al., 2010). However, this country-level categorization by Hofstede et al. (2005) should be interpreted with caution. Lebanon, for example, has a score of 40 on the

individualism-collectivism index (Hofstede Insights, n.d.). Whereas this classifies the country as collectivistic, the score is still relatively high and thus could be considered more individualistic, or less collectivistic, than, for example, China which scores 20 (Hofstede Insights, n.d.). To better differentiate cultural-specific tendencies, personal-level cultural orientation gives important insights.

Only a few studies have measured personal-level cultural orientation (Triandis & Gelfand, 1998). Using the Individualism and Collectivism Scale (ICS; Triandis & Gelfand, 1998), Kazarian and Martin (2004) found the self-enhancing and affiliative humor style to positively associate with personal-level collectivism, though the former relationship was weaker. These results suggest that the affiliative humor style might be most strongly correlated with personal-level collectivism due to its attempt at social bonding and harmony. The self-enhancing humor style, on the other hand, might show a positive association with personal-level collectivism due to the Lebanese value in maintaining a positive self-image ("Karam") to hide personal problems (Kazarian & Martin, 2004). Contrastingly, in a later study, Kazarian and Martin (2006) found a positive correlation between the self-enhancing humor style and personal-level individualism, and the affiliative humor style was unrelated. These opposing results might be explained by the latter study investigating an ethnic minority which might, due to past or present hardships and less accessible community, display a more individual, or self-enhancing, humor style rather than a social-oriented, or affiliative, one. Overall, these differential findings in cultural variation in the adaptive humor styles' usage can be attributed to investigating country-level rather than personal-level cultural orientation as well as to differences in the sample's ethnic status within a majority culture.

The current study aims to test a model incorporating adaptive humor styles, personal-level cultural orientation, and depression, measuring these constructs simultaneously in a cross-cultural context. To extend the diathesis-stress model with possible

protective factors against depression, this study will only focus on personal-level collectivism as there is evidence for its protective nature against depression (e.g. Chiao & Blizinsky, 2009). Further, this builds on Kazarian and Martin's (2004) previously found associations between adaptive humor styles and personal-level collectivism. It aims at investigating the following research question: What is the association between adaptive humor styles, personal-level collectivism, and depression? The following hypotheses will be tested:

1. There will be a negative association between the use of the self-enhancing humor style and depression.

2. There will be a negative association between the use of the affiliative humor style and depression.

3. There will be a stronger negative association between the use of self-enhancing humor style and depression than between affiliative humor style and depression.

4. There will be a negative association between personal-level collectivism and depression.

5. There will be a positive association between personal-level collectivism and self-enhancing humor style.

6. There will be a positive association between personal-level collectivism and affiliative humor style.

Further, possible moderating or mediating roles of personal-level collectivism and the adaptive humor styles in depression will be assessed to develop an overall model including all the variables.

Method

Design and Procedures

Ethics approval was obtained before recruiting participants. The digital survey was distributed via Qualtrics in English, Dutch, German, Greek, and Hungarian. Individuals

between 18-65 years of age were considered. Together with the other Master thesis students, it was passed on to peers, friends, and family through online chats and social media groups during November 2021 using the snowball method. All participants agreed to the informed consent form. The survey asked the participants for their demographic information: their gender, age, nationality, country of residence, and their highest obtained education. Further, it consisted of three questionnaires: The Humor Style Questionnaire (HSQ; Martin et al., 2003), the Individualism and Collectivism Scale (ICS; Triandis & Gelfand, 1998), and Beck's Depression Inventory (BDI; Beck et al., 1961). The study took about 15 minutes to complete. The participants had the opportunity to enter a lottery to win a €25 voucher. The data were stored and analyzed anonymously and confidentially.

Participants

A power analysis using the software *G*power* determined a minimum number of 89 participants needed. A total of 650 participants were recruited, aged between 18 - 65 years (M = 33.4, SD = 12.5), with 379 females (58.3%), 264 males (40.6%), four non-binary/ third gender (0.6%), and three who preferred not to say (0.5%). Regarding their nationalities, 234 subjects were from Greece (36.0%), 144 from the Netherlands (22.2%), 111 from Germany (17.1%), 52 from Hungary (8.0%), and 109 from other countries (16.7%). Concerning their country of residence, 221 were resident in Greece (34.0%), 169 in the Netherlands (26.0%), 100 in Germany (15.4%), 43 in Hungary (6.6%), and more in other countries (18.0%). With regard to the obtained educational level, 122 completed secondary education (18.8%), 140 completed trade/ technical/ or vocational training (21.5%), 237 obtained undergraduate education (36.5%), 140 completed postgraduate education (21.5%), and 11 completed a doctorate degree (1.7%).

Instruments

The Humor Style Questionnaire (HSQ; Martin et al., 2003) was used in the short

version, derived from the work-related short-form of the HSQ (Scheel et al., 2016) to decrease the overall survey length. It consists of 12 items using a 7-point Likert scale from 1 = "totally disagree" to 7 = "totally agree". A sample question is "If I am feeling depressed, I can usually cheer myself up with humor" for self-enhancing humor styles and "I enjoy making people laugh" for affiliative humor styles. The short version of the HSQ (Scheel et al., 2016) displayed an internal reliability of $\alpha = .75$ for self-enhancing and $\alpha = .70$ for affiliative humor style. In this study's data set of the short version, the internal reliability measured $\alpha = .74$ for the self-enhancing humor style scale and $\alpha = .64$ for the affiliative humor style scale. Hence, the latter is slightly lower than in the original 12-item version.

The Individualism and Collectivism Scale (ICS; Triandis & Gelfand, 1998) was used to assess the individual's cultural orientation. It consists of 16 items and a 9-point Likert scale from 1 = "Never/ Definitely No" to 9 = "Always/ Definitely Yes". Sample questions include "I'd rather depend on myself than others" for individualistic orientation and "I feel good when I cooperate with others" for personal-level collectivism. The Cronbach's alpha for the original ICS's individualism scale is between $\alpha = .69$ and $\alpha = .74$ for individualism and between $\alpha = .75$ and $\alpha = .76$ for collectivism (Li & Akosy, 2007). In this study, internal reliabilities were $\alpha = .74$ and $\alpha = .75$, respectively, which is highly similar to the original one.

Beck's Depression Inventory (BDI; Beck et al., 1961) consists of 21 items to self-report symptoms of depression. Scores can range from 0 to 63 and are evaluated categorically based on the degree of depression. 0 to 9 indicates no or minimal depression, 10 to18 indicates mild to moderate depression, 19 to 29 moderate to severe depression, and 30 to 63 severe depression. A sample question is "I do not feel sad/ I feel sad/ I am sad all the time and I can't snap out of it/ I am so sad and unhappy that I can't stand it". The internal consistency equals $\alpha = .81$ for non-psychiatric. In this study, the internal reliability equaled $\alpha = .91$, which

is higher than in the original one.

Processing and Analyzing Data

Response were deleted based on age or incomplete answers. Pearson's correlation coefficient r was used because variables are continuous and in related pairs. The assumption of absence of outliers was tested using Cook's distance, and linearity and normality were tested using scatterplots. To determine the relationships between the variables, bivariate correlations were conducted.

Next, hierarchical multiple linear regression analyses were administered to infer the explanatory strength of each variable for the outcome variable depression. This method was chosen because it allows for controlling for variables. Also, a mediation analysis of the two most predictive variables and the outcome variable depression as well as moderation analyses were conducted using PROCESS in SPSS. Besides the assumptions of linearity and absence of outliers, the absence of multicollinearity was tested using collinearity diagnostics (VIF) and independent values of residuals were tested using the Durbin-Watson statistic. Further, homoscedasticity was examined by plotting the standardized values against the standardized residuals and the normal distribution of residuals was tested using the normal probability plot.

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Results

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Assumption Testing and Descriptives

For the Pearson's correlation, Cook's Distance confirmed the absence of outliers. The Scatterplots only roughly confirmed the linearity and normality of the variables. The distribution of depression was right-skewed, calculated with corresponding values between one to four with total scores between 21 and 84 ($M = 32.3$, $SD = 9.6$), suggesting mild to moderate levels of depression. The self-enhancing humor style distribution was right-skewed ($M = 12.3$, $SD = 4.7$) and the affiliative humor style distribution left-skewed ($M = 16.7$, $SD =$

3.2). Further, scores on personal-level collectivism were left-skewed ($M = 53.2$, $SD = 9.2$).
For the multivariate analyses, the absence of multicollinearity was confirmed (VIF < 1.3).
The residual's values were independent (Durbin-Watson value = 1.7). The scatterplot showed
no obvious signs of funneling and thus confirmed homoscedasticity. The normal probability
plot suggested that the assumption of normality of the residuals was violated. However, it
was not interpreted as an extreme violation, hence the multivariate analyses were still
conducted.

Correlational Analyses

To examine the hypothesized associations between the independent variables self-
enhancing humor style, affiliative humor style, and personal-level collectivism with the
dependent variable depression, bivariate correlational analyses were conducted. Results are
presented in Table 1. Higher scores in the self-enhancing humor style were associated with
lower ones in depression. The affiliative humor style did not show a significant relationship
with depression. Higher scores in personal-level collectivism, however, were associated with
lower levels of depression. Both higher levels of the self-enhancing and adaptive humor style
were related to higher ones in personal-level collectivism.

Multivariate Analyses

To examine the predictive value of the correlated independent variables on depression, a
two-step hierarchical multiple regression was conducted. Independent variables were entered
subsequently, with self-enhancing humor style in block 1 and personal-level collectivism in
block 2. Depression was the dependent variable. The first model explained 4.1% of the
variance and was a significant predictor of depression, $F(1, 648) = 28.01$, $p < .001$. Adding
personal-level collectivism, model 2 explained 7.5% of the variance in depression, see Table
2. Hence, the best predicting model for depression comprised the self-enhancing humor style
and personal-level collectivism.

Table 1

Pearson Correlation Matrix between the Self-enhancing Humor Style, the Affiliative Humor

Style, Personal-level Collectivism, and Depression

	Self-enhancing Humor Style	Affiliative Humor Style	Collectivistic Orientation
Self-enhancing Humor Style			
Affiliative Humor Style	.405**		
Collectivistic Orientation	.307**	.234**	
Depression	-.204**	-.036 (n.s.)	-.237**

** $p < 0.01$.

Table 2

Hierarchical Multiple Regression Model of the Self-enhancing Humor Style and Personal-

level Collectivism on Depression

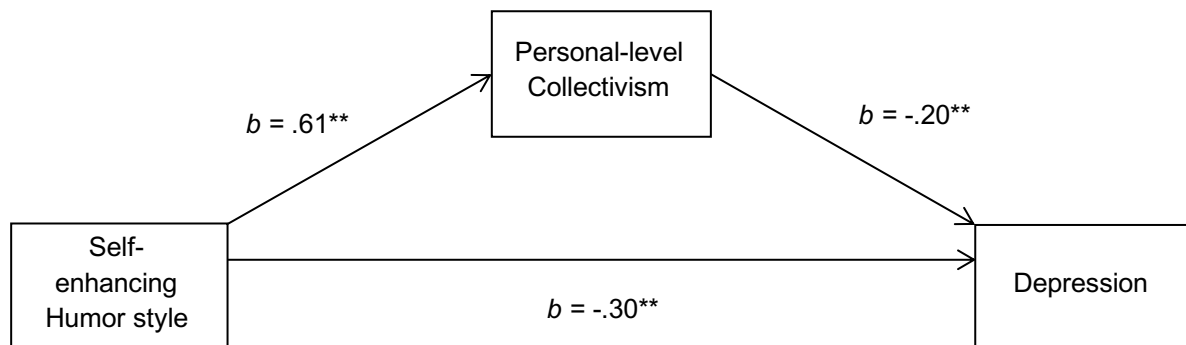| Model		R^2	ΔR^2	β	F
1		.04	.04		28.01**
	Self-enhancing Humor Style			-.20**	
2		.08	.03		26.20**
	Self-enhancing Humor Style			-.14**	
	Personal-level Collectivism			-.19**	

**$p < .001$.

As the affiliative humor style was not significantly correlated with depression, the

mediation analysis was conducted to explore the possible mediation effect of personal-level

collectivism on the relationship between the predictive variable, self-enhancing humor style,

and the outcome variable, depression. Hence, the mediator variable was personal-level

collectivism. Direct effects are presented in Figure 1. The indirect effect of the self-enhancing

humor style on depression mediated by personal-level collectivism was also statistically

significant, $b = -.12$, 95% CI [-.18, -.07], $p < .001$. Likewise, the total effect of self-enhancing

humor style mediated by personal-level collectivism on depression was also significant, $b = -.42$, $SE = .08$, $t = -5.29$, 95% CI [-.57, -.26], $p < .001$.

Figure 1

Mediation of Personal-level Collectivism on the Relationship of the Self-enhancing Humor
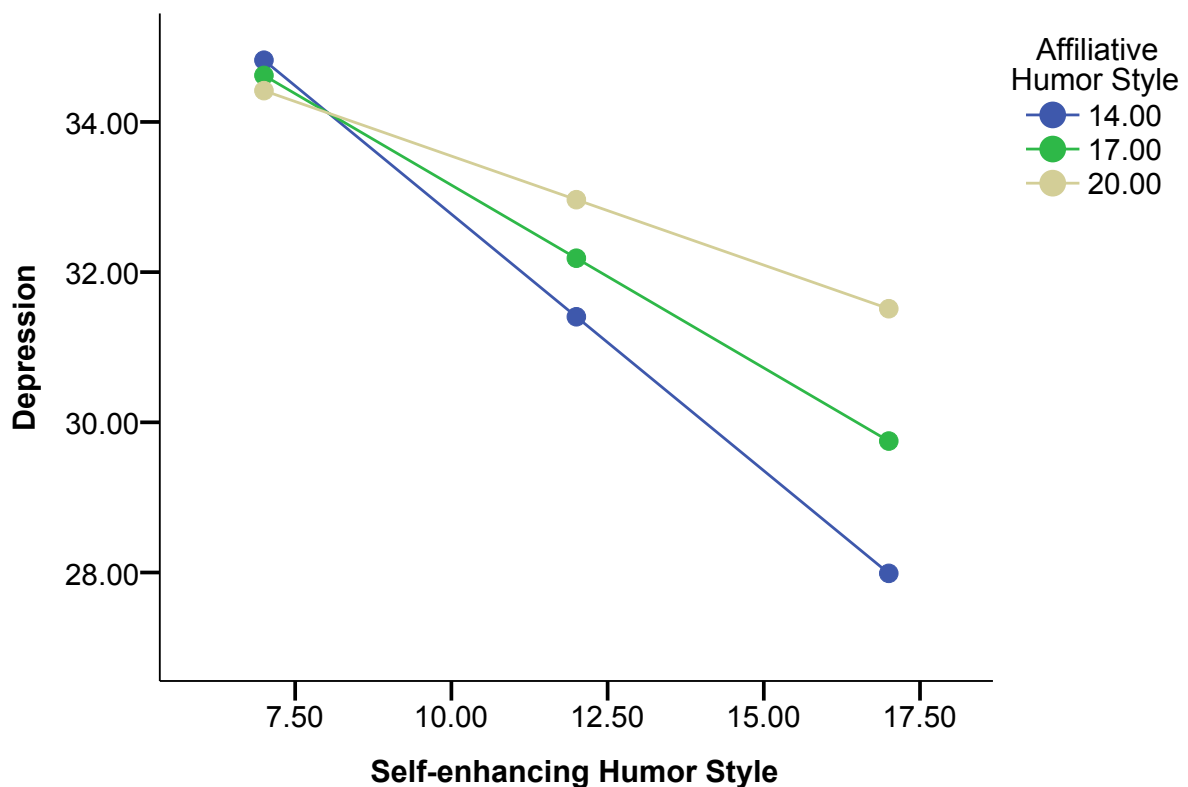
Style and Depression

**$p < .001$.

The moderation analyses were conducted to explore possible interaction effects of the

independent variables, the adaptive humor styles and personal-level collectivism, and their

effect on the dependent variable, depression. The interaction between the self-enhancing

humor style and personal-level collectivism on depression was not statistically significant, b

$= .001$, $SE = .01$, $t = .17$, $p = .867$. The interaction between the affiliative humor style and

personal-level collectivism on depression was also not significant, $b = .02$, $SE = .01$, $t = 1.64$,

$p = .101$. Next, the interaction between the self-enhancing humor style and affiliative humor

style on depression was significant ($b = .07$, $SE = .02$, $t = 3.41$, $p < .001$), see Figure 2. This

suggests that the affiliative humor style moderated the relation between the self-enhancing

humor style and depression, $F (3, 646) = 13.98$, $p < .001$, $R^2 = .06$. At a lower degree of the affiliative humor style (i.e. at score 14), the conditional effect was negative and significant, b = -.68, 95% CI [-.89, -.47], $p < .001$. Similarly, at a medium level of the affiliative humor style (i.e. at score 17), the conditional effect was negative and significant, $b = -.49$, 95% CI [-.65, -.32], $p < .001$. At a high level of the affiliative humor style (i.e. at score 20), the conditional effect was also negative and statistically significant, $b = -.29$, 95% CI [-.48, -.10], $p = .004$.

Figure 2

Interaction Effects of the Affiliative Humor Style and the Self-enhancing Humor Style on

Depression

Note. Depression scores are not presented in the original BDI scale but on a correspondent scale between 21 and 84.

Discussion

The objective of this study was to explore a model of depression predicted by the self-enhancing and affiliative humor styles as well as the effect of personal-level collectivism. The results of the present study support the hypothesis that a high level of self-enhancing humor style would be associated with low levels of depression. However, it did not support the hypothesis that the affiliative humor style would likewise lead to lower scores of depression as no significant correlation was found. As expected, the self-enhancing humor style was thus more strongly negatively associated with depression than the affiliative humor style. Regarding personal-level collectivism, the present study confirmed that those with higher personal-level collectivism would show lower levels of depression. Likewise, it confirmed the hypotheses that high scores in personal-level collectivism would be associated with high levels in both adaptive humor styles. The hierarchical multiple regression showed that the self-enhancing humor style and personal-level collectivism explained 7.5% of the variance in depression. The mediation analysis displayed that the relationship between the self-enhancing humor style and depression can be partly explained by personal-level collectivism. Further, the moderation analysis indicated that the affiliative humor style in interaction with the self-enhancing humor style diminished the protective effect of the self-enhancing humor style on depression.

This study's findings, therefore, confirm the protective relationship between the self-enhancing humor style and depression proposed by previous research (e.g. Schneider et al., 2018). This is aligned with the notion of adaptiveness of the self-enhancing humor style, as proposed by Martin et al. (2003), which offers a friendly and optimistic view toward self and (adverse) situations. However, previous research also suggested a negative relationship between the affiliative humor style and depression (e.g. Schneider et al., 2018), which this study did not find. A possible explanation is the tendency of the affiliative humor style to

create harmony with others, which might, on a more subtle level, lead to people-pleasing behaviors. This was not expected as the theoretical understanding of the affiliative humor style is meant to describe a self-respecting way of creating social bonds (Martin et al., 2003). This lack of effect might alternatively be a result of the lower reliability of the affiliative humor style scale in this study's adapted version of the 12-item HSQ. Moreover, personal-level collectivism had also been previously suggested to be associated with better mental health, likely due to the protection and loyalty received from social support systems (e.g. Chiao & Blizinsky, 2009). Further, the positive correlations between both adaptive humor styles and personal-level collectivism replicate the findings of Kazarian and Martin (2004) and extend them beyond their Lebanese sample to a cross-cultural context. A possible explanation could be that collectivistic-oriented people show better mental health and thus use more adaptive styles of humor. Alternatively, the affiliative, and even self-enhancing, humor style might be used to improve one's social image in collectivistic-oriented individuals (Kazarian & Martin, 2004). Furthermore, the mediation analysis showed that the positive effect of the self-enhancing humor style on depression is partially explained by demonstrating personal collectivistic values such as social support, group harmony, and loyalty. This seems plausible as the combination of both a healthy self- and other-focus, i.e. both enhancing one's sense of self and valuing the connection to others, and neither of these alone, are likely to offer greater protection against depression (İmamoğlu, 1998). Further, contrary to comparable previous research (e.g. Chuang et al., 2021), the affiliative humor style weakened the protective role of the self-enhancing humor style on depression, possibly due to counteracting maladaptive people-pleasing effects. However, it should be noted that the explanatory strength of the moderation model, as well as the scale reliability of the affiliative humor style, remain low. Overall, building on the vulnerability-resilience model, the self-enhancing humor style can be regarded as a resilience factor toward depression,

which is partially explained by also being collectivistically orientated but diminished by higher scores of the affiliative humor style.

These findings contribute to important theoretical and practical implications. Firstly, the mediating role of personal-level collectivism on the relationship between the self-enhancing humor style and depression offers a unique contribution to the field and thus provides a more differentiated view on the importance of both adaptive self- and other-focus. Moreover, the lack of relationship between the affiliative humor style and depression and its negative moderation effect on the relationship between the self-enhancing humor style and depression indicates that the affiliative humor style might not necessarily be adaptive. Practically, the self-enhancing humor style should also be encouraged in patients with (a risk of) depression, e.g. in the form of daily exercises, as this has previously been shown to lower state anxiety associated with a stressful event (Ford et al., 2017). Similarly, these interventions should integrate community- and social support-based values to decrease the likelihood of depression. When clients use affiliative humor styles, therapists should be especially aware of potential people-pleasing mechanisms and in this case encourage more self-respect while using humor to create social bonds. Generally, individualistic societies might benefit from emphasizing more collectivistic values to counteract rising numbers of depression (Bueno-Notivol et al., 2021).

The current study displays several strengths and limitations. On the one hand, it offers a unique contribution to the field of clinical and positive psychology by being the first study to investigate the adaptive humor styles, personal-level collectivism, and depression simultaneously within a wide cross-cultural setting. Further, the high sample size and demographic variability in gender, age, country of origin and residence, as well as educational level contribute to the strength of this study. On the other hand, several methodological limitations should also be considered when interpreting the results. Firstly,

based on Hofstede et al.'s (2005) categorization, it was expected that personal-level individualism and collectivism would display two opposite sides of a spectrum, i.e. a relatively high negative correlation. However, they were positively associated with each other, with $r = .11$, $p = .004$. This shows a methodological weakness in the conceptualization of personal-level cultural orientation in the ICS (Triandis & Gelfand, 1998). It might also be due to this study disregarding the original horizontal and vertical dimensions of the ICS. This could have offered a more differentiated and realistic view on personal-level cultural orientation by adding insight into individuals' status- or competition-focus. Secondly, previous research suggested the importance of the person-environment fit in the effect of cultural orientation on depression (Triandis, 2000) and of the individuals' ethnic status within their broader society (Kazarian & Martin, 2006). However, this study did not measure the congruence of the personal- and country-level cultural orientation nor the ethnic status as it would have been beyond the scope of this study. Thirdly, regarding the questionnaires used, the short-formed HSQ in this study displayed slightly lower reliability scores than the original short-formed HSQ (Scheel et al., 2016). Also, the BDI (Beck et al., 1961) might be too outdated for the current understanding of pathological depressive symptoms (Kühner et al., 2007) as it was revised into the BDI-II in 1996 based on the new diagnostic criteria published in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; American Psychiatric Association, 1994). Further, this study's findings were retrieved from a non-clinical sample and cannot necessarily be generalized to clinical populations. Also, self-report might have caused distorted results due to a possibly limited introspective capability in participants. Lastly, the observed correlations were overall weak, except for the correlation between personal-level collectivism and the self-enhancing humor style, which was considered moderate. Given these limitations, there are several recommendations for future research.

To conclude, future studies should use non-self-report methods such as structured interviews conducted by clinical professionals as well as consider the horizontal and vertical dimensions of the ICS (Triandis & Gelfand, 1998). Further, the effect of the person-environment fit of cultural orientation on depression should be studied (Triandis, 2000). Moreover, other potential aspects influencing the effect of adaptive humor styles on depression should be studied, such as social support, socioeconomic status, or potential people-pleasing behavior for those displaying the affiliative humor style. Further, this study can be extended by investigating other mental disorders as well as positive mental health measures such as subjective well-being or resilience to further expand theoretical implications to the field of positive psychology. Furthermore, self-enhancing humor-based interventions, e.g. therapeutic exercises, and their effect on depression should be investigated in studies using RCTs (e.g. Ford et al., 2017) and longitudinal designs. Similarly, the effect of implementing interventions to enhance personal-level collectivism on depression levels should be examined in RCTs and clinical settings. In summary, this study can be seen as a first step toward integrating the research of the adaptive humor styles, personal-level collectivism, and depression, offering important theoretical and practical implications for future research and clinical practice.

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