



Mediating Effects of Humor Styles on the Relationship Between Cognitive Flexibility and Interpersonal Problem-Solving Skills

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Título: Efectos mediadores de los estilos de humor en la relación entre la flexibilidad cognitiva y las habilidades de resolución de problemas interpersonales.

Resumen: El objetivo de este estudio fue analizar los roles mediadores de los estilos de humor en la relación entre la flexibilidad cognitiva y los estilos de resolución de problemas interpersonales. Un total de 425 estudiantes (324 mujeres y 101 hombres) participaron en el estudio. Los resultados mostraron que la flexibilidad cognitiva tiene relaciones significativamente positivas con el estilo adaptativo de resolución de problemas interpersonales, el humor afiliativo y el humor auto-mejorador, mientras que tiene relaciones significativamente negativas con el estilo de resolución de problemas interpersonales desadaptativos y el humor agresivo. Los estilos de humor adaptativos se correlacionaron positivamente de manera significativa con los estilos adaptativos de resolución de problemas interpersonales, y negativamente con los estilos desadaptativos. Los estilos de humor desadaptativos se correlacionaron positivamente con los estilos desadaptativos de resolución de problemas interpersonales. El modelo estructural probado en el estudio reveló que los estilos de humor auto-mejorador y agresivo juegan un papel mediador parcial en la relación entre la flexibilidad cognitiva y los estilos de resolución de problemas interpersonales. Estos hallazgos sugieren que las intervenciones dirigidas a aumentar la flexibilidad cognitiva de los estudiantes y el estilo de humor auto-mejorador, y disminuir el estilo de humor agresivo, pueden mejorar sus estilos adaptativos de resolución de problemas interpersonales.

Palabras clave: Flexibilidad cognitiva. Estilos de humor. Resolución de problemas interpersonales. Rol mediador.

Abstract: The goal of this study was to test the mediating roles of humor styles in the relationship between cognitive flexibility and interpersonal problem-solving styles. A total of 425 students (324 females and 101 males) participated in the study. The results yielded that cognitive flexibility has significantly positive relationships with adaptive interpersonal problem-solving style, affiliative humor, and self-enhancing humor whereas it has significant negative relationships with maladaptive interpersonal problem-solving style and aggressive humor. Adaptive humor styles were significantly positively correlated with adaptive interpersonal problem-solving styles, and significantly negatively correlated with maladaptive interpersonal problem-solving styles. Maladaptive humor styles were significantly positively correlated with maladaptive interpersonal problem-solving style. The structural model tested in the study revealed that self-enhancing and aggressive humor styles play a partially mediating role in the relationship between cognitive flexibility and interpersonal problem-solving styles. These findings imply that interventions aimed at increasing students' cognitive flexibility and self-enhancing humor style and decreasing aggressive humor style may enhance their adaptive interpersonal problem-solving styles.

Keywords: Cognitive flexibility. Humor styles. Interpersonal problem-solving. Mediating role.

Introduction

In today's socially demanding world, interpersonal challenges are among the most pervasive sources of daily stress and are closely linked to individuals' emotional well-being, relational satisfaction, and overall life quality (Hargie, 2021). Navigating such challenges effectively requires not only emotional regulation but also cognitive and communicative flexibility. One factor that has been consistently shown to support interpersonal functioning is humor, which plays a dynamic role in forming, maintaining, and managing social relationships (Bippus, 2000; Cann & Matson, 2014; Fraley & Aron, 2004; Lefcourt, 2001; Martin & Ford, 2018; Miczo et al., 2009; Shiota et al., 2004; Ziv & Gadish, 1989). Humor is not only a source of enjoyment but also serves as a strategic social and emotional coping tool, particularly during interpersonal conflicts and stressful interactions (Dixon, 1980; Keltner et al., 2001; Lefcourt, 2001; Samson & Gross, 2012). For instance, humor can facilitate the appropriate expression of

needs in tense social encounters (Lefcourt, 2001), reduce conflict through playful teasing (Keltner et al., 2001), and ease interpersonal tension by cognitively reframing stressful experiences (Dixon, 1980). These processes point to humor's stress-buffering effect as being rooted in a cognitive shift—specifically, the capacity to reinterpret social interactions in a less threatening way, a capacity that reflects the essence of cognitive flexibility.

Humor's adaptive value lies in its potential to reframe stress-inducing experiences, enabling individuals to gain psychological distance from problems and foster connection with others (Warren et al., 2021). The ability to access humor in tense interpersonal situations may rely heavily on cognitive flexibility—an executive function that enables individuals to shift perspectives, consider alternative interpretations, and adapt their cognitive or behavioral responses based on changing social cues (Dajani & Uddin, 2015; Diamond, 2013; Uddin et al., 2019; Uddin, 2021). In this context, humor can be understood as a form of “cognitive reframing” that is made possible by flexible thinking. Individuals who can perceive and reinterpret difficult social situations through a humorous lens may be better equipped to manage interpersonal problems effectively and constructively.

Cognitive flexibility, defined as the mental ability to ad-

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just thinking strategies in response to dynamic situational demands (Dennis & Vander Wal, 2010; Diamond, 2013), plays a critical role in adaptive social interaction. Research shows that cognitively flexible individuals are more responsive, assertive, and capable of managing conflict through constructive communication (Hohl & Dolcos, 2024; Martin & Rubin, 1995). Moreover, they are more likely to engage in adaptive coping strategies such as perspective taking, self-regulation, and emotional buffering - all of which are central to successful interpersonal functioning (Gabrys et al., 2018; Genet & Siemer, 2011).

Recent research also emphasizes that humor is not a uniform construct but consists of distinct styles that reflect how individuals use humor in their daily lives. According to Martin et al. (2003), humor styles can be adaptive (affiliative and self-enhancing) or maladaptive (aggressive and self-defeating). Adaptive humor styles are positively associated with relationship satisfaction, empathy, and emotional resilience (Cann et al., 2009; Fox et al., 2018), whereas maladaptive humor styles have been linked to greater interpersonal tension, poor conflict resolution, and psychological distress (Dyck & Holtzman, 2013; Hampes, 2010). These differential outcomes suggest that humor style may be a key mediator in how cognitive flexibility translates into interpersonal problem-solving outcomes.

Although theoretical models suggest a meaningful intersection between humor, cognitive flexibility, and interpersonal competence, empirical investigations directly testing these links remain scarce. In particular, the mechanisms through which cognitive flexibility may shape the use of humor and influence how individuals approach interpersonal conflict have not been sufficiently explored. Addressing this gap, the present study examines the mediating role of humor styles in the relationship between cognitive flexibility and interpersonal problem-solving styles. By differentiating adaptive and maladaptive humor styles, the study aims to provide a more nuanced understanding of the pathways through which cognitive flexibility supports effective social functioning.

Cognitive Flexibility

Cognitive flexibility refers to the mental capacity to shift between cognitive strategies and perspectives in response to changing demands in one's environment (Dennis & Vander Wal, 2010; Diamond, 2013). It comprises three interrelated components: the ability to perceive challenging situations as manageable, to generate multiple alternative explanations for events and behaviors, and to produce a variety of solutions to problems (Dennis & Vander Wal, 2010).

Research shows that individuals high in cognitive flexibility are better equipped to simultaneously process diverse information, regulate emotional responses, and adapt to unexpected social or emotional demands (Gabrys et al., 2018; Genet & Siemer, 2011). In interpersonal settings, this flexibility facilitates the reinterpretation of social cues, the man-

agement of emotional conflict, and the formulation of adaptive coping responses. Accordingly, cognitive flexibility is increasingly viewed as a foundational cognitive skill underlying effective interpersonal functioning and problem-solving (Diamond, 2013; Esen-Aygun, 2018; OECD, 2024).

Humor Styles

Humor styles represent individual differences in how humor is expressed and utilized in daily life. Martin et al. (2003) conceptualized four distinct styles: affiliative and self-enhancing (adaptive styles), and aggressive and self-defeating (maladaptive styles).

- *Affiliative humor* promotes social connection by using jokes and lighthearted interactions to reduce tension and increase relational satisfaction.
- *Self-enhancing humor* allows individuals to maintain a humorous perspective even during hardship, supporting emotion regulation and psychological resilience.
- *Aggressive humor* involves sarcasm, teasing, and ridicule, often at the expense of others, and can damage social relationships.
- *Self-defeating humor* is characterized by excessive self-disparagement in order to gain approval, often leading to internal distress.

Recent research has shown that adaptive humor styles are positively associated with psychological well-being, emotional intelligence, and relationship quality, whereas maladaptive humor styles correlate with higher interpersonal stress, conflict, and social withdrawal (Dyck & Holtzman, 2013; Fox et al., 2018). These findings support the idea that humor, particularly its adaptive forms, can serve as a social coping strategy, possibly facilitated by underlying cognitive flexibility.

Interpersonal Problem Solving

Interpersonal problem-solving falls under the broader category of "social problem solving," which refers to the cognitive-behavioral process individuals, couples, or groups use to identify effective solutions to everyday problems, such as interpersonal disputes and relationship conflicts (D'Zurilla & Nezu, 1982; D'Zurilla et al., 2004). In interpersonal conflicts, the challenge arises from differences in behavioral expectations or demands between parties (Jacobson & Margolin, 1979). Therefore, interpersonal problem solving involves a cognitive-interpersonal process aimed at resolving conflicts in ways that are acceptable to all involved (D'Zurilla et al., 2004).

Çam and Tümkaya (2007) define interpersonal problem solving as the process through which individuals identify issues arising in social interactions, develop various solutions for these problems, and constructively resolve conflicts using appropriate strategies. Their approach views interpersonal

problem solving as a multidimensional process involving cognitive, emotional, and behavioral components. In this process, individuals' abilities to evaluate conflict situations from different perspectives, regulate their emotions, and employ effective communication skills to generate suitable solutions are emphasized.

Their inventory measures both adaptive (constructive) and maladaptive (destructive) problem-solving attitudes, highlighting that interpersonal problem-solving skills are closely related to both individual awareness and social competencies. In this context, interpersonal problem solving is seen not merely as eliminating conflict but as a conscious and flexible process aimed at establishing healthy and sustainable relationships between parties.

This framework provides an important foundation for understanding the role of cognitive flexibility and humor styles in interpersonal problem solving. While cognitive flexibility supports individuals in viewing conflict situations from multiple perspectives and producing adaptive solutions (Dennis & Vander Wal, 2010), humor—particularly affiliative and self-enhancing styles (Cann & Collette, 2014)—can reduce tension during conflicts and contribute to constructive communication (Samson & Gross, 2012).

Cognitive Flexibility, Humor Styles, and Interpersonal Problem Solving

Interpersonal problem-solving, as a specific domain of social problem-solving, involves identifying and implementing solutions to relational challenges such as misunderstandings, disagreements, or incompatible expectations (D'Zurilla et al., 2004). Effective interpersonal problem-solving depends not only on behavioral skills but also on the cognitive capacity to appraise, reframe, and respond to relational tension constructively.

Cognitive flexibility has been positively associated with numerous interpersonal competencies, including self-efficacy, assertiveness, responsiveness, and conflict resolution (Martin & Rubin, 1995; Martin & Anderson, 1998). It also supports the use of adaptive emotional and social coping strategies (Dennis & Vander Wal, 2010). Recent studies suggest that this flexibility may play a foundational role in shaping humor use, especially in stressful interpersonal contexts (Samson & Gross, 2012; Warren et al., 2021). In this sense, humor may function as a behavioral expression of underlying flexible thinking.

Humor styles, particularly affiliative and self-enhancing styles, have been shown to foster constructive conflict management, relational persistence, and reduced interpersonal stress (Cann et al., 2009; Cheng & Wang, 2015; Yip & Martin, 2006). Conversely, maladaptive styles such as aggressive humor often exacerbate interpersonal difficulties and are linked to dominant or avoidance-based conflict strategies (Caird & Martin, 2014). Thus, humor styles may represent an important mechanism through which cognitive flexibility exerts its effects on interpersonal problem-solving behavior.

The Present Study

Although theoretical perspectives have long suggested that humor and cognitive flexibility jointly contribute to social competence, empirical studies examining this relationship remain limited. The present study seeks to address this gap by investigating how humor styles mediate the relationship between cognitive flexibility and interpersonal problem-solving styles. Drawing from the theoretical framework and empirical findings discussed above, we propose that cognitive flexibility facilitates the use of adaptive humor styles, which in turn enhance individuals' interpersonal problem-solving abilities.

Hypothesis 1: Cognitive flexibility will be associated with adaptive interpersonal problem-solving styles through; a) affiliative humor style, b) self-enhancing humor style, c) aggressive humor style, and d) self-defeating humor style.

Hypothesis 2: Cognitive flexibility will be associated with maladaptive interpersonal problem-solving styles through; a) affiliative humor style, b) self-enhancing humor style, c) aggressive humor style, and d) self-defeating humor style.

Method

This study employed a cross-sectional, correlational design. Descriptive statistics and zero-order correlations were analyzed using SPSS, and structural equation modeling was conducted with AMOS. To reduce measurement error, item parceling was applied. Model fit was evaluated using CFI, TLI, RMSEA, and SRMR, based on Hu and Bentler's (1999) criteria.

Participants

The sample consisted of 425 undergraduate students (324 females, 101 males) enrolled in teaching-related programs at an education faculty in Turkey. Participants spanned all academic years: first-year (19.3%, $n = 82$), second-year (14.6%, $n = 62$), third-year (25.6%, $n = 109$), and fourth-year or higher (40.4%, $n = 172$). They were recruited from 13 departments, including Social Studies Education, Turkish Language Education, Philosophy Education, Science Education, Mathematics Education, Computer and Instructional Technologies Education, Preschool Education, Primary School Education, German Language Education, French Language Education, English Language Education, Art Education, and Guidance and Psychological Counseling. The gender distribution reflects typical demographics of education faculties in Turkey. None of the authors taught courses from which participants were drawn. Data on socioeconomic status and special needs (e.g., ADHD, autism spectrum disorders) were not collected, which is acknowledged as a study limitation. Ethical approval was obtained from the affiliated university's Ethics Committee.

Measures

Interpersonal Problem-Solving Inventory (IPSI; Çam & Tümkaya, 2007)

The IPSI is a 50-item self-report scale assessing adaptive and maladaptive interpersonal problem-solving styles on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). It includes five subscales: Negative Problem Orientation, Lack of Self-Confidence, Unwillingness to Take Responsibility, Constructive Problem Solving, and Insistent-Persevering Approach. Adaptive styles are indicated by higher scores on Constructive Problem Solving and Insistent-Persevering Approach, while maladaptive styles are reflected by higher scores on the other three subscales. In this study, subscale reliabilities ranged from .73 to .93. Composite scores for Adaptive Interpersonal Problem-Solving Style (AIPS) and Maladaptive Interpersonal Problem-Solving Style (MIPS) were calculated with high internal consistency ($\alpha = .92$ and $.94$, respectively).

The Cognitive Flexibility Inventory (CFI; Dennis & Vander Wal, 2010)

The CFI consists of 20 items rated on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree), measuring cognitive flexibility through two subscales: Control (perceived controllability) and Alternatives (ability to generate alternative explanations and solutions). However, the Control subscale has been suggested to reflect self-efficacy beliefs related to cognitive flexibility rather than cognitive flexibility itself (Johnco et al., 2014). Due to this concern and the conceptual alignment with the study's focus, only the Alternatives subscale (13 items) was used. This subscale demonstrated excellent internal consistency in the current study ($\alpha = .92$). The Turkish adaptation of the CFI (Sapmaz & Doğan, 2013) supports the original factor structure and reliability.

Humor Styles Questionnaire (HSQ; Martin et al., 2003)

The HSQ is a self-report questionnaire assessing four humor styles: Affiliative, Self-Enhancing, Aggressive, and Self-Defeating, each measured by eight items on a 7-point Likert scale (1 = totally disagree; 7 = totally agree). Higher subscale scores indicate stronger alignment with the respective humor style. Martin et al. (2003) reported good reliability for the original subscales, with Cronbach's alphas of .80–.81 and test–retest reliabilities of .80–.85. In the Turkish adaptation (Yerlikaya, 2003), internal consistency coefficients ranged from .69 to .78, and test–retest reliabilities from .82 to .88. Subscale reliabilities in this study ranged from .71 to .85.

Data Analysis

Descriptive statistics and zero-order correlations were calculated using IBM SPSS 22.0. To analyze whether humor styles mediated the relationship between cognitive flexibility and problem-solving styles, we followed a two-step approach (Anderson & Gerbing, 1988). First, the measurement model was established to confirm that latent variables were accurately represented by their indicators. Once validated, the structural model was tested using maximum likelihood estimation in AMOS 22 (Arbuckle, 2013).

To minimize measurement errors from multiple items, three item parcels were created for each latent variable. Model fit was assessed using these indices: $X^2/df \leq 5$, $CFI \geq .90$, $TLI \geq .90$, $RMSEA \leq .08$, and $SRMR \leq .08$ (Hu & Bentler, 1999). If the model met the cut-off standards of the fit indices above, it was evaluated as satisfactory. Indirect effects were tested with the 95% bias-corrected bootstrapping method ($n = 5000$), and significance was indicated if confidence intervals excluded zero (0).

Results

Descriptive Statistics and Zero-order Correlations

The means, standard deviations, and zero-order correlations for all variables are presented in Table 1.

Table 1
Means, standard deviations, and the correlation matrix for the study variables.

| | M | SD | CF(A) | AIPS | MIPS | AFH | SEH | AGH | SDH |
|-------|-------|-------|--------|--------|--------|-------|-------|-------|-----|
| CF(A) | 51.83 | 8.39 | 1 | | | | | | |
| AIPS | 83.13 | 13.96 | .65** | 1 | | | | | |
| MIPS | 70.72 | 21.60 | -.24** | -.07 | 1 | | | | |
| AFH | 42.18 | 9.34 | .13** | .13** | -.16** | 1 | | | |
| SEH | 35.98 | 9.70 | .18** | .25** | -.27** | .49** | 1 | | |
| AGH | 18.69 | 7.66 | -.17** | -.20** | .25** | .01 | .00 | 1 | |
| SDH | 25.29 | 9.42 | -.08 | -.02 | .31** | .26** | .24** | .40** | 1 |

Note. $N = 425$. CF(A) = Alternatives dimension of cognitive flexibility, AIPS = Adaptive interpersonal problem solving, MIPS = Maladaptive interpersonal problem solving, AFH = Affiliative humor, SEH = Self-enhancing humor, AGH = Aggressive humor, SDH = Self-defeating humor, ** $p < 0.01$

As shown in Table 1, all the variables were significantly correlated in the conceptually expected ways except the find-

ing that self-defeating humor was not related significantly to cognitive flexibility and adaptive interpersonal problem solv-

ing. Therefore, self-defeating humor was excluded from further analyses.

Measurement Model

The measurement model included six latent constructs (cognitive flexibility, affiliative humor, self-enhancing humor, aggressive humor, adaptive interpersonal problem solving, and maladaptive interpersonal problem solving) and 18 observed variables. The model demonstrated good fit to the data, $\chi^2(120) = 336.17$, CFI = .95, TLI = .93, RMSEA = .065, SRMR = .052. All factor loadings were high (> .63) and significant ($p < .001$), indicating that the latent constructs were well represented by their indicators.

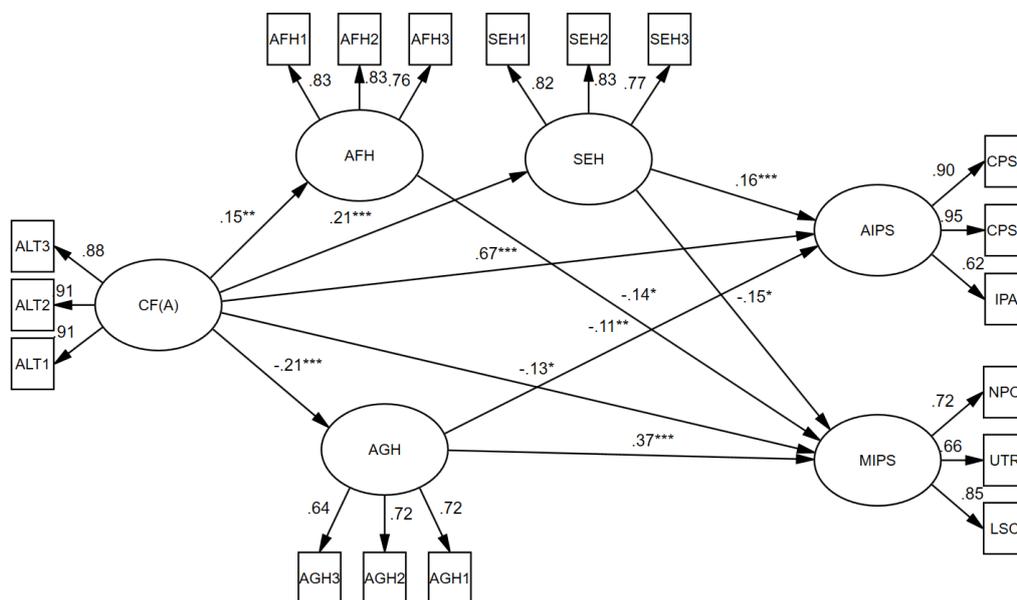
Structural Model

A partially mediated model with three mediators (affiliative, self-enhancing, and aggressive humor) and two direct

paths from cognitive flexibility to adaptive and maladaptive interpersonal problem-solving styles was tested using maximum likelihood estimation. The initial model fit was satisfactory except for SRMR, $\chi^2(124) = 453.47$, CFI = .92, TLI = .90, RMSEA = .079, SRMR = .101. The path from affiliative humor to adaptive problem-solving style was non-significant ($\beta = -.041$, $p > .05$) and was therefore removed.

According to Kline (2011), a large error covariance between variables is one of the possible reasons for poor model fit indices. Based on modification indices, error terms between affiliative and self-enhancing humor ($r = .56$) were allowed to covary. The re-specified model showed good fit, $\chi^2(124) = 353.76$, CFI = .95, TLI = .93, RMSEA = .066, SRMR = .057. As shown in Figure 1, all remaining direct effects were significant.

Figure 1
The mediating effect of humor styles on the relationship between cognitive flexibility and interpersonal problem solving.



Note. N = 425. Factor loadings are standardized. CF(A) = Cognitive flexibility, AFH = Affiliative Humor, SEH = Self-Enhancing Humor, AGH = Aggressive Humor, AIPS = Adaptive Interpersonal Problem Solving, MIPS = Maladaptive Interpersonal Problem Solving, * $p < .05$, ** $p < .01$, *** $p < .001$

The mediating effects of humor styles were tested using bias-corrected bootstrapping with 5,000 resamples in AMOS 22. Table 2 displays the indirect effects and their associated 95% confidence intervals.

Table 2
Testing the indirect effects of cognitive flexibility on problem-solving styles via humor styles.

| Indirect Effects | Estimate | 95% Confidence Interval |
|------------------|----------|-------------------------|
| CF(A) → AIPS | .057 | [.025, .105] |
| Via SEH | .033 | [.013, .065] |
| Via AGH | .024 | [.003, .058] |
| CF(A) → MIPS | -.147 | [-.229, -.085] |
| Via AFH | -.024 | [-.072, .000] |
| Via SEH | -.036 | [-.100, -.001] |
| Via AGH | -.087 | [-.159, -.040] |

Note. N = 425. Estimates are unstandardized.

As shown in Table 2, the total indirect effect of cognitive flexibility on adaptive interpersonal problem solving (AIPS) via self-enhancing and aggressive humor was significant, $B = 0.057$, 95% CI [.025, .105]. Specific indirect effects via self-enhancing humor ($B = .033$, 95% CI [.013, .065]) and aggressive humor ($B = .024$, 95% CI [.003, .058]) were also significant. These results indicate that self-enhancing and aggressive humor partially mediate the relationship between cognitive flexibility and AIPS independently. Cognitive flexibility was positively associated with self-enhancing humor, which in turn was positively related to AIPS; conversely, cognitive flexibility was negatively associated with aggressive humor, which was negatively related to AIPS.

The total indirect effect of cognitive flexibility on maladaptive interpersonal problem solving (MIPS) via affiliative, self-enhancing, and aggressive humor was significant, ($B = -.147$, 95% CI [-.229, -.085]). Specific indirect effects via self-enhancing humor ($B = -.036$, 95% CI [-.100, -.001]) and aggressive humor ($B = -.087$, 95% CI [-.159, -.040]) were significant, whereas the indirect effect via affiliative humor was not, ($B = -.024$, 95% CI [-.072, .000]). These findings suggest that self-enhancing and aggressive humor independently mediate the relationship between cognitive flexibility and MIPS. Specifically, cognitive flexibility was positively related to self-enhancing humor, which was negatively associated with MIPS; cognitive flexibility was negatively related to aggressive humor, which was positively associated with MIPS.

Overall, the findings supported Hypotheses 1b, 1c, 2b, and 2c. Specifically, self-enhancing and aggressive humor styles partially mediated the relationship between cognitive flexibility and interpersonal problem solving. Results were interpreted with reference to each hypothesis.

Discussion

This study aimed to examine whether different humor styles mediate the relationship between cognitive flexibility and interpersonal problem-solving styles. The results demonstrated that higher cognitive flexibility was significantly associated with greater use of adaptive interpersonal problem-solving styles and less use of maladaptive interpersonal problem-solving styles, both directly and indirectly through certain humor styles.

The tested structural model revealed that self-enhancing and aggressive humor styles partially mediate the relationship between cognitive flexibility and interpersonal problem-solving styles, supporting Hypotheses 1b, 1c, 2b, and 2c. Specifically, higher cognitive flexibility was positively linked to adaptive problem-solving styles and negatively linked to maladaptive problem-solving styles via increased self-enhancing humor and decreased aggressive humor. These findings suggest that cognitive flexibility influences how individuals express themselves humorously in interpersonal problem situations.

More precisely, cognitive flexibility—the ability to generate multiple alternative explanations for life events and human behavior and to devise various ways to address difficult situations (Anderson, 2002; Dennis & Vander Wal, 2010; Eslinger & Grattan, 1993; Spivack et al., 1976; Stevens, 2009)—predicts greater use of self-enhancing humor and lower use of aggressive humor. Self-enhancing humor is defined as the use of humor as a coping strategy (Martin et al., 2003). The fact that self-enhancing humor has a mediating role between cognitive flexibility and adaptive interpersonal problem-solving styles provides empirical evidence for the argument that humor is associated with cognitive flexibility (Cheng & Wang, 2015; Curran et al., 2021; Dai et al., 2017) and, therefore, serves as an adaptive coping mechanism. This finding indicates that individuals who can think about multiple aspects of an interpersonal problem situation at once and shift between them can manage to see the humorous aspect of that stressful interpersonal problem and tend to use adaptive interpersonal problem-solving styles.

Conversely, aggressive humor—marked by sarcasm or disparaging remarks intended to enhance the self at others' expense—is associated with using humor without regard for its impact on others (Martin et al., 2003). Greater cognitive flexibility appears to help individuals adopt others' perspectives and use humor more considerately. The findings indicate that those who can view situations from multiple viewpoints and empathize with others tend to use non-hostile humor and are more likely to engage in adaptive interpersonal problem-solving.

However, hypotheses 1d and 2d, pointing to the mediating role of self-defeating humor style in the relationship between cognitive flexibility and interpersonal problem-solving styles, were not accepted because cognitive flexibility and this humor style were not correlated significantly. Self-defeating humor is using humor as a coping strategy to gain approval by amusing others, typically by excessive use of self-deprecating humor. The motivation to gain approval by humiliating oneself is not related to cognitive flexibility. Both the findings of this study and those of previous studies (Aktepe, 2019; Kolburan et al., 2019) indicate that individuals with low or high cognitive flexibility are no different in terms of their tendency to use this type of humor.

Additionally, simple correlations showed significant relationships between cognitive flexibility and affiliative humor, as well as between affiliative humor and interpersonal problem-solving styles. These findings are consistent with previous studies reporting positive correlations of cognitive flexibility with affiliative humor (Aktepe, 2019; Kolburan et al., 2019; Yağan & Kaya, 2022) and between affiliative humor and interpersonal problem-solving (Didin & Köksal Akyol, 2017; Koç, 2016). Nonetheless, the structural model did not support affiliative humor as a significant mediator between cognitive flexibility and interpersonal problem-solving styles, resulting in no support for Hypotheses 1a and 2a.

Affiliative humor is defined as a non-hostile style of humor characterized by social, relationship-enhancing expres-

sions such as joking and playful banter, and is considered an adaptive form of humor. However, unlike self-enhancing humor, affiliative humor primarily focuses on strengthening interpersonal bonds rather than serving as a coping mechanism in stressful situations. The moderate correlation observed between these two humor styles may explain the non-significant indirect effect of cognitive flexibility on interpersonal problem-solving styles via affiliative humor. In other words, the functional overlap between these humor styles may have limited the unique mediating role of affiliative humor in this relationship.

Beyond the theoretical implications, these findings also hold promise for practical applications. Specifically, the results suggest that individuals' cognitive flexibility and humor styles are critical components of social functioning and may play a meaningful role in how interpersonal conflicts are managed. These insights can inform the development of intervention programs aimed at enhancing interpersonal problem-solving skills. One such example of an evidence-based training framework is the ESCI (Escala de Solución de Conflictos Interpersonales) program developed by García-Martín & Calero-García (2019) offers a structured training process designed to strengthen young individuals' social conflict resolution abilities. The findings of the present study highlight the potential value of incorporating cognitive flexibility-enhancing strategies and humor style awareness activities into such programs. By doing so, the development of interpersonal problem-solving skills can be supported through a more holistic approach that addresses underlying cognitive and emotional mechanisms.

Limitation and Conclusion

This study offers valuable insights into complex relationships among cognitive flexibility, humor styles, and interpersonal problem-solving. However, several limitations suggest caution in interpreting the findings and highlight avenues for future research.

First, although the results partially support the proposed mediation model, humor styles only explain part of the association between cognitive flexibility and interpersonal problem-solving styles. This suggests that cognitive flexibility may also influence interpersonal problem-solving through more direct pathways or via other psychological mechanisms not examined here. Future research should investigate additional mediators and moderators to better understand these complex dynamics.

Second, the cross-sectional design limits causal inferences. Longitudinal or experimental studies are needed to clarify the directionality of relationships among cognitive flexibility, humor, and problem-solving. Such designs would also allow for examining how these variables interact over time or in response to interventions.

Third, data were collected exclusively via self-report measures, which can introduce biases such as social desirability or response styles. Incorporating multiple data

sources—such as peer evaluations, behavioral observations, or ecological momentary assessments—could enhance the validity and reliability of future findings.

Fourth, the sample consisted of undergraduate students from a single university in the Eastern Mediterranean Region of Turkey. Therefore, the generalizability of the results to other cultural contexts, age groups, or educational backgrounds is limited. Future studies should include more diverse samples to examine whether these relationships hold across different populations.

Despite these limitations, this study makes a novel contribution by quantitatively modeling the interplay among cognitive flexibility, distinct humor styles, and interpersonal problem-solving strategies. Notably, it highlights that self-enhancing and aggressive humor differentially mediate these relationships, suggesting that the way individuals use humor in social interactions can influence their problem-solving approaches.

Practically, these findings have implications for educators, counselors, and therapists aiming to enhance interpersonal skills. Understanding that certain humor styles can facilitate adaptive problem solving may guide interventions designed to foster cognitive flexibility and positive social interactions. Training programs could incorporate humor-based strategies tailored to improve coping and communication skills in interpersonal contexts. In conclusion, while this study offers theoretical advancement, addressing the identified limitations, incorporating practical applications, and including broader and more diverse populations are essential for maximizing its theoretical significance and expanding its impact across educational and clinical settings.

To further enhance the practical relevance of these findings, it is important to explore their applicability in populations with unique cognitive and social profiles. An important avenue for future research involves examining how the current model performs in populations with communicative pragmatics deficits and executive dysfunction, such as individuals with high-functioning autism spectrum disorder (ASD) or attention-deficit/hyperactivity disorder (ADHD). These populations often experience challenges in cognitive flexibility and interpersonal problem-solving, making them particularly relevant for extending the applicability of our findings. A more individualized approach assessing cognitive processes, interpersonal skills, and humor styles in these groups could provide deeper insights and enhance the practical value of the model. Investigating these clinical populations may also inform tailored intervention strategies that address specific cognitive and social difficulties, thereby broadening the impact of this research.

Complementary information

Conflict of interest. -We have no known conflict of interest to disclose.

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