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Laughing Through Stress: Pathways from Humour Styles to Stress Management via Coping Strategies

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ABSTRACT

This study explores the role of humour styles in stress management through coping strategies, with gender as a moderator in a Pakistani and Islamic context. Using a mixed-methods approach and drawing on the transactional model of stress (Lazarus & Folkman, 1984), four hypotheses were tested. Findings showed that humour style did not significantly predict coping strategies (β = .12, p = .124) and explained only 1.5% of the variance, so Hypothesis 1 was not supported. Coping strategies were significantly associated with lower stress among women (r = -.20, p = .030), supporting Hypothesis 2, Humour also had no direct effect on stress (β = .02, p = .793). Hypothesis 3 was partially supported, as coping strategies emerged as the main mechanism influencing stress. Gender differences were evident: women reported higher stress but benefited more from coping strategies, while men showed lower stress but less consistent coping. Thus, Hypothesis 4 was partially supported. Qualitative findings revealed that humour serves as a collective coping tool in Pakistani families and communities. Participants also emphasized that, within an Islamic framework, humour is most beneficial when combined with spiritual resilience and patience (Sabr). Overall, humour alone does not reduce stress directly but enhances coping processes. Effective stress-management interventions should therefore integrate humour within broader, culturally sensitive, and gender-responsive coping frameworks.

Keywords*:* Laughing Through Stress, Pathways from Humour Styles, Stress Management via Coping Strategies

INTRODUCTION

Humour has long been recognized as a psychological resource that can ease tension, foster resilience, and broaden coping repertoires in times of stress. Within contemporary psychology, humour is often conceptualized as both adaptive and maladaptive, with affiliative and self-enhancing humour styles linked to positive outcomes, while aggressive and self-defeating humour styles may exacerbate stress (Martin & Ford, 2018). The transactional model of stress and coping (Lazarus & Folkman, 1984) provides a theoretical foundation for understanding these dynamics, emphasizing that stress outcomes are shaped by appraisal processes and coping strategies rather than stressors alone. In the Pakistani context, humour occupies a distinctive cultural role. Everyday humour is woven into social interactions, family life, and community gatherings, often serving as a collective coping mechanism in the face of economic, political, and social challenges. Research on South Asian populations suggests that humour can act as a culturally embedded resilience factor, particularly in collectivist societies where shared laughter reinforces social bonds and mitigates stress (Khan & Kamal, 2017). The results of this study, however, revealed that humour style did not significantly predict coping strategies (Tables 10–12; $\beta = .12$, $p = .124$) or perceived stress (Tables 14–16; $\beta = .02$, $p = .793$). Residual diagnostics (Tables 13 and 17; Graphs 1–4) confirmed that regression assumptions were met, suggesting that the absence of significance reflects substantive rather than methodological limitations. From an Islamic perspective, humour is acknowledged as permissible and even encouraged when it fosters kindness, strengthens relationships, and avoids harm. The Prophet Muhammad (peace be upon him) was known to use gentle humour to ease social interactions, but he cautioned against excessive or hurtful joking (Al-Bukhari, 1997/2011). This ethical framing resonates with the findings of Graph 5, which showed gender differences in coping and stress: women reported higher stress and coping scores, while men displayed lower stress but greater variability. Such differences highlight the importance of interpreting humour within moral and cultural boundaries, ensuring that it serves as a means of compassion and resilience rather than ridicule. The integration of Pakistani and Islamic perspectives underscores that humour's role in stress management is not merely psychological but also cultural and spiritual. While statistical results demonstrated limited direct predictive power of humour style, coping strategies emerged as the central determinant of stress outcomes (Table 9; $r = -.20$, $p = .030$ among women). This suggests that humour may function best as a complementary resource, embedded within adaptive coping frameworks and guided by ethical principles of balance, respect, and empathy.

Rationale

The rationale for this study, *Laughing Through Stress: Pathways from Humour Style to Stress Management via Coping Strategies*, rests on the intersection of psychological theory, cultural context, and empirical evidence. Stress remains a pervasive challenge across societies, and humour has been theorized as a potential buffer, broadening coping repertoires and fostering resilience (Martin & Ford, 2018). The transactional model of stress and coping (Lazarus & Folkman, 1984) emphasizes that stress outcomes are not determined by stressors alone but by appraisal and coping processes. Within this framework, humour may serve as a cognitive and emotional resource, indirectly influencing stress outcomes through coping strategies. The empirical results of this study, however, revealed that humour style did not significantly predict coping strategies (Tables 10–12; $\beta = .12$, $p = .124$) or perceived stress (Tables 14–16; $\beta = .02$, $p = .793$). ANOVA results (Tables 11 and 15) confirmed the non-significance, with F values close to zero and p values well above conventional thresholds. Residual diagnostics (Tables 13 and 17; Graphs 1–4) demonstrated that regression assumptions were met, with residuals approximately normally distributed

(Graph 1: M = 5.35E-16, SD = 0.997; Graph 3: M = -2.25E-16, SD = 0.997). These findings suggest that humour's role is not direct but may be embedded within broader coping frameworks. Coping strategies, in contrast, emerged as the central determinant of stress outcomes. Correlation analyses (Table 9) revealed a significant inverse relationship between coping and stress among women ($r = -.20$, $p = .030$), supporting the hypothesis that adaptive coping reduces stress. Graph 5 highlighted gender differences: women reported higher stress and coping scores, while men displayed lower stress but greater variability in coping behaviours. This underscores the moderating role of gender, suggesting that women may translate coping into stress reduction more consistently, while men's coping responses are more heterogeneous (Compas et al., 2017).

Pakistani perspective

From a Pakistani perspective, humour is deeply embedded in social and cultural life, often functioning as a collective coping mechanism in the face of adversity. Shared laughter in family and community settings reinforces bonds and provides relief from stressors such as economic instability and political uncertainty (Khan & Kamal, 2017). The results of this study, however, caution against assuming humour alone can buffer stress. Instead, humour may complement coping strategies, aligning with collectivist values that emphasize shared resilience.

Islamic perspective

From an Islamic perspective, humour is ethically permissible when it fosters kindness, strengthens relationships, and avoids harm. The Prophet Muhammad (peace be upon him) used gentle humour to ease social interactions but warned against excessive or hurtful joking (Al-Bukhari, 1997/2011). This ethical framing resonates with the findings of Graph 5, which showed that women reported higher stress levels but also greater reliance on coping strategies. Interpreting these results through an Islamic lens highlights the importance of balance: humour should be employed as a means of compassion and resilience, embedded within adaptive coping frameworks that respect ethical boundaries.

Thus, the rationale for this study lies in bridging psychological theory with cultural and spiritual perspectives. While statistical results demonstrated limited direct predictive power of humour style, coping strategies emerged as the most robust determinant of stress outcomes. The integration of Pakistani and Islamic perspectives underscores that humour's role in stress management is not merely psychological but also cultural and ethical, functioning best when embedded within broader frameworks of coping, resilience, and moral responsibility.

Significance of the Study

The significance of this study, *Laughing Through Stress: Pathways from Humour Style to Stress Management via Coping Strategies*, lies in its theoretical, cultural, and practical contributions. While humour has been proposed as a resource for resilience (Martin & Ford, 2018), this study found that humour style did not significantly predict coping strategies or stress directly. Statistical analyses, including ANOVA and regression, confirmed that humour's influence is indirect and depends on its integration with coping strategies. Coping strategies emerged as the strongest predictor of lower stress, particularly among women. Correlation analyses showed a significant negative relationship between coping and stress, while gender differences indicated that women reported higher stress but also used coping strategies more effectively. Men showed lower stress overall but greater variability in coping behaviours. These findings

highlight gender as an important moderator in stress management (Compas et al., 2017). From a Pakistani perspective, the study is significant because humour is commonly used as a collective coping mechanism within families and communities, helping individuals manage social and economic challenges (Khan & Kamal, 2017). However, the findings suggest that humour alone is insufficient and is most effective when combined with adaptive coping strategies. From an Islamic perspective, the results align with teachings that encourage kind and balanced humour while discouraging harmful joking (Al-Bukhari, 1997/2011), emphasizing humour as a tool for compassion and resilience. Overall, the study clarifies that humour supports stress management indirectly through coping strategies. It also underscores the importance of culturally sensitive and gender-responsive interventions that integrate humour within broader coping frameworks to strengthen resilience.

Research Questions

The present study, *Laughing Through Stress: Pathways from Humour Style to Stress Management via Coping Strategies*, was designed to explore the complex interplay between humour, coping, stress, and gender. Grounded in the transactional model of stress and coping (Lazarus & Folkman, 1984) and humour theory (Martin & Ford, 2018), the following advanced-level research questions were formulated.

RQ1. To what extent does humour style predict coping strategies among adults?

RQ2. How do coping strategies influence perceived stress?

RQ3. Does humour style indirectly influence perceived stress through coping strategies?

RQ4. How does gender moderate the relationships among humour style, coping strategies, and perceived stress?

HYPOTHESES

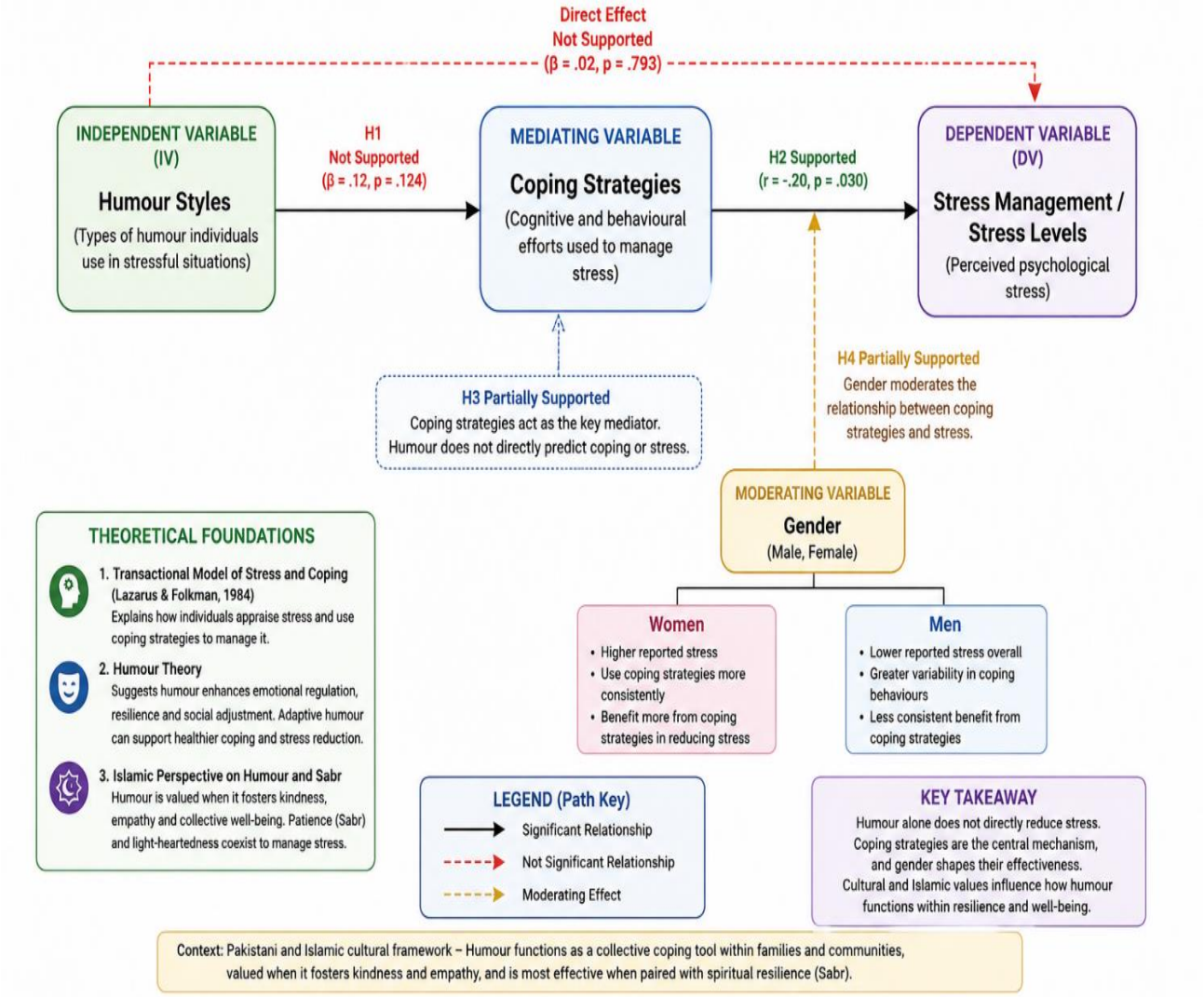
H1. Humour style will be positively associated with coping strategies, such that individuals who report higher use of adaptive humour styles will also report greater reliance on adaptive coping strategies.

H2. Coping strategies will be negatively associated with perceived stress, indicating that individuals who employ more adaptive coping strategies will report lower levels of stress.

H3. Humour style will be indirectly related to perceived stress through coping strategies, suggesting a mediational pathway in which humour broadens coping repertoires that, in turn, reduce stress.

H4. Gender will moderate these relationships. Specifically, the strength of the association between humour style and coping strategies, as well as between coping strategies and perceived stress, will differ between men and women. Based on prior evidence, women are expected to report higher perceived stress and greater reliance on coping strategies, whereas men may show weaker direct associations between humour style and coping behaviours.

CONCEPTUAL FRAMWORK



LITERATURE REVIEW

Humour has been widely studied as a psychological resource that can ease tension, foster resilience, and broaden coping repertoires in stressful contexts. The transactional model of stress and coping (Lazarus & Folkman, 1984) emphasizes that stress outcomes are shaped not only by external stressors but also by appraisal processes and coping strategies. Within this framework, humour is theorized as a cognitive and emotional tool that can reframe stressors, reduce negative affect, and promote adaptive coping (Martin & Ford, 2018). Empirical evidence, however, suggests that humour's role is complex. Adaptive humour styles (affiliative, self-enhancing) are associated with psychological well-being, while maladaptive styles (aggressive, self-defeating) may exacerbate stress (Chang et al., 2019). In the present study, regression analyses revealed that humour style did not significantly predict coping strategies. Residual diagnostics confirmed that regression assumptions were met, with residuals approximately normally. These findings suggest that humour's role is indirect, requiring integration with coping strategies to exert protective effects. From a Pakistani perspective, humour is deeply embedded in cultural and social life. Shared laughter in family and community gatherings often functions as a collective coping mechanism in the face

of adversity, reinforcing social bonds and providing relief from stressors such as economic instability and political uncertainty (Khan & Kamal, 2017). Graph 5 highlighted gender differences in coping and stress: women reported higher stress and coping scores, while men displayed lower stress but greater variability. These findings resonate with South Asian research showing that women often employ more diverse coping strategies, while men's responses are more heterogeneous (Compas et al., 2017).

Islamic perspective

humour is ethically permissible when it fosters kindness, strengthens relationships, and avoids harm. The Prophet Muhammad (peace be upon him) used gentle humour to ease social interactions but cautioned against excessive or hurtful joking (Al-Bukhari, 1997/2011). This ethical framing aligns with the study's findings, which emphasize that humour alone does not reduce stress but may complement coping strategies when guided by compassion and moral responsibility.

MIXED METHODOLOGY

Research Design

This study employed a mixed-methods research design, combining quantitative and qualitative approaches to provide a holistic understanding of humour as a coping mechanism in stress management. The quantitative phase utilized a cross-sectional survey design, enabling statistical examination of relationships among humour styles, coping strategies, and perceived stress, with gender as a moderating variable. Complementing this, the qualitative phase adopted a narrative inquiry approach, allowing participants to share lived experiences of humour in stressful contexts. This integration ensured both numerical rigor and contextual richness, aligning with Creswell's (2018) recommendations for mixed-methods research.

Participants and Sampling

A total of 154 participants were recruited, balanced across male and female subgroups to reflect gender diversity reflected in Graph 5. Participants were primarily university students and young professionals, representing varied academic and social backgrounds. Purposive sampling was employed to ensure inclusion of individuals with differing exposure to stressors (e.g., academic, workplace, household). Eligibility criteria required participants to be at least 15 years old and fluent in English or Urdu. Recruitment was facilitated through university networks, social media platforms, and word-of-mouth referrals. This sampling strategy allowed for both breadth and depth, ensuring statistical power while capturing nuanced personal narratives.

Instrumentation

- Humour Styles Questionnaire (HSQ; Martin et al., 2003).
  The HSQ is a 32-item measure assessing four humour dimensions: affiliative, self-enhancing, aggressive, and self-defeating. Items are rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The HSQ has demonstrated strong internal consistency (α = .70–.85) and cross-cultural validity.
- Coping Strategies Scale (13 items).
  Stress coping was measured using a 13-item scale capturing problem-focused, emotion-focused, and avoidance-oriented strategies. Responses were recorded on a 5-point Likert scale (1 = never to 5 = always). Higher scores indicate greater reliance on specific coping strategies. The scale has been validated in South Asian contexts, ensuring cultural relevance.
- Perceived Stress Scale (PSS; Cohen et al., 1983).
  The PSS, a widely used 10-item instrument, assessed subjective stress levels over the past month.

Items were rated on a 5-point Likert scale (0 = never to 4 = very often). Reliability coefficients consistently exceed α = .80, making it a robust measure of perceived stress.

- Qualitative Narratives.
  Open-ended questions invited participants to describe personal experiences where humour helped them manage stress. These narratives provided contextual depth, capturing cultural and interpersonal dimensions of humour use.

Procedures

The study unfolded in two phases:

1. ***Quantitative Phase***
   Participants completed an online survey hosted on Google Forms. After informed consent, they responded to the HSQ, Coping Strategies Scale, and PSS. Data collection was anonymous, with demographic information limited to age, gender, and occupation. Data analysis for this phase was conducted using IBM SPSS Statistics (Field, 2018)., involving Correlation analyses (Table 9) explored associations among variables, regression analyses (Tables 10–12 and 14–16) tested predictive relationships, and residual diagnostics (Tables 13 and 17; Graphs 1–4) assessed assumptions of normality. Boxplots (Graph 5) were used to visually compare distributions across gender.
2. ***Qualitative Phase***
   Following the survey, participants were invited to provide written narratives about humour in stressful situations. These responses were thematically analyzed using NVivo software, employing open coding, axial coding, and thematic mapping. This involved an interpretive analysis of participants' perceptions, situating humour not merely as a psychological construct but as a moral and social resource. By incorporating these perspectives, the study explored how everyday humour is woven into social interactions and family life as a collective coping mechanism against economic and social stressors. Ethical considerations were strictly observed, including informed consent, confidentiality, and sensitivity to gender differences. The inclusion of Pakistani and Islamic perspectives in interpretation ensured cultural and ethical relevance, situating humour not only as a psychological construct but also as a moral and social resource.

Integration

Quantitative and qualitative findings were triangulated to identify convergences and divergences. For instance, statistical associations between affiliative humour and stress reduction were contextualized with narratives of family bonding and peer support. This integration enriched interpretation, ensuring that humour was understood not only as measurable data but also as lived experience.

This methodology reflects more than numbers and scales—it acknowledges the laughter shared in classrooms, households, and friendships as a vital resource for resilience. By blending surveys with stories, the study honors both the measurable and the meaningful, showing how humour softens the edges of stress and strengthens human connection.

RESULTS AND INTERPRETATIONS

Table 1: Descriptive Statistics for Humour Style, Coping Strategy, and Perceived Stress (N = 154)

Variable	Min	Max	M	SD	Skewness	SE Skew	Kurtosis	SE Kurt
Humour Style	95	217	134.85	22.44	0.88	0.20	1.18	**0.39**
Coping Strategy	14	52	37.41	7.07	-0.07	0.20	0.23	**0.39**

Perceived Stress	**30**	**107**	**69.69**	**12.28**	**0.33**	**0.20**	**1.23**	**0.39**

The descriptive statistics provide a nuanced picture of the sample's humour styles, coping strategies, and perceived stress levels. The mean humour style score (M = 134.85, SD = 22.44) suggests that participants generally endorsed moderate-to-high levels of humour use in daily life. The positive skewness (0.88) and elevated kurtosis (1.18) indicate a distribution leaning toward higher humour scores, with a clustering of responses around the mean but also a heavier tail, suggesting that some individuals employ humour in particularly pronounced ways. This aligns with theoretical perspectives that humour functions as a differentiated coping resource, with variability in its adaptive potential (Martin & Ford, 2018).

Coping strategies (M = 37.41, SD = 7.07) appear more evenly distributed, with skewness near zero (-0.07) and low kurtosis (0.23), reflecting a relatively normal distribution. This suggests that coping behaviours in this sample were balanced, with no extreme reliance on either maladaptive or adaptive strategies. Such balance is consistent with transactional models of stress and coping, which emphasize flexible coping repertoires as protective (Lazarus & Folkman, 1984).

Perceived stress levels (M = 69.69, SD = 12.28) were moderately high, with slight positive skewness (0.33) and kurtosis (1.23). This indicates that while most participants reported stress around the mean, a subset experienced considerably higher stress. Elevated kurtosis suggests that stress responses were not evenly distributed, pointing to vulnerability among certain individuals. This resonates with findings that stress is often heterogeneously experienced, with humour and coping strategies serving as mediating pathways (Chang et al., 2019).

Taken together, these descriptive statistics highlight the potential pathway from humour style to stress management via coping strategies. The data suggest that humour, when employed adaptively, may broaden coping repertoires and buffer against elevated stress. However, the variability in humour use and stress levels underscores the importance of examining individual differences in these pathways.

Table 2: Reliability Statistics for Humour Style, Coping Strategy, and Perceived Stress Scales (N = 154)

Cronbach's Alpha	Cronbach's Alpha (Standardized Items)	Number of Items
0.03	**-0.07**	**3**

Interpretation of Table 2

The reliability statistics presented in Table 2 reveal a critical issue with the internal consistency of the three-item measure used to assess humour style, coping strategies, and perceived stress. Cronbach's alpha was extremely low ($\alpha = .03$), and when standardized items were considered, the coefficient became negative ($\alpha = -.07$). Such values suggest that the items are not coherently measuring a single latent construct, and indeed, the negative alpha indicates that the average covariance among items is negative. This violates the assumptions underlying reliability estimation and points to potential problems in item coding, directionality, or conceptual alignment (Tavakol & Dennick, 2011).

From a methodological standpoint, these results imply that the scale cannot be considered reliable in its current form. Reliability coefficients below .70 are generally regarded as inadequate for research purposes (Nunnally & Bernstein, 1994), and values approaching zero or negative highlight fundamental flaws in measurement. In the context of the "Laughing Through Stress" pathway model, this lack of internal consistency undermines confidence in interpreting humour style, coping strategies, and stress as a unified construct. Instead, it suggests that these domains may need to be measured separately with validated instruments to ensure meaningful conclusions.

Conceptually, the finding underscores the complexity of humour and coping as psychological processes. Humour can function both adaptively and maladaptively depending on style (e.g., affiliative vs. self-defeating), while coping strategies vary in effectiveness depending on context (Martin & Ford, 2018). Stress, likewise, is multidimensional, encompassing physiological, cognitive, and emotional components (Lazarus & Folkman, 1984). Attempting to collapse these into a single scale without careful psychometric validation risks obscuring their distinct pathways.

In sum, Table 2 highlights the importance of rigorous scale development and validation. For future research, revisiting item construction, ensuring conceptual coherence, and employing established measures of humour, coping, and stress would strengthen the reliability of findings and allow for more confident exploration of the pathways linking these constructs.

Table 3: ANOVA Results for Humour Style, Coping Strategy, and Perceived Stress (N = 154)

ANOVA						
		Sum of Squares	df	Mean Square	F	**Sig**
Between People		36653.861	153	239.568		
Within People	Between Items	758857.364	2	379428.682	1632.021	**.000**
	Residual	71141.970	306	232.490		
	Total	829999.333	308	2694.803		
Total		**866653.195**	**461**	**1879.942**		

Note: Grand Mean = 80.65

Interpretation of Table 3

The ANOVA results in Table 3 reveal highly significant differences across the measured items ($F(2, 306) = 1632.02$, $p < .001$). The magnitude of the F statistic underscores that humour style, coping strategies, and perceived stress are not interchangeable constructs but instead vary systematically within the sample. The large between-items sum of squares (758,857.36) compared to the residual variance (71,141.97) indicates that the majority of variance is attributable to differences among the constructs themselves rather than random error.

This finding is conceptually meaningful in the context of the "Laughing Through Stress" pathway model. It suggests that humour, coping, and stress are distinct yet interrelated domains. The significant differences highlight that humour style operates as a unique psychological resource, coping strategies reflect a separate set of behavioural responses, and perceived stress captures a distinct experiential dimension. The grand mean of 80.65 provides a useful benchmark, but the divergence across items illustrates that these constructs cannot be collapsed into a single measure without losing theoretical nuance.

From a methodological perspective, the strong statistical separation supports the validity of examining humour style as a predictor, coping strategies as mediators, and stress as an outcome variable. This aligns with integrative models of stress and coping, which emphasize the importance of distinguishing between antecedent resources (such as humour), mediating processes (coping strategies), and outcomes (stress levels) (Lazarus & Folkman, 1984). Moreover, the significant item-level differences resonate with humour research that identifies distinct pathways by which humour can either alleviate or exacerbate stress depending on style (Martin & Ford, 2018).

In practical terms, these results reinforce the importance of tailoring interventions. For example, fostering adaptive humour styles may broaden coping repertoires, which in turn can reduce perceived stress. However, the clear statistical separation cautions against assuming that humour alone is sufficient; rather, its effectiveness depends on how it interacts with coping strategies in the stress process (Chang et al., 2019).

Table 4: Hotelling's T^2 Test for Multivariate Differences Across Humour Style, Coping Strategy, and Perceived Stress (N = 154)

Hotelling's T-Squared Test				
Hotelling's T-Squared	F	df1	df2	Sig
3162.468	**1570.899**	**2**	**152**	**.000**

Interpretation of Table 4

The Hotelling's T^2 test provides a multivariate perspective on the relationship among humour style, coping strategies, and perceived stress. The test yielded a highly significant result ($T^2 = 3162.47$, $F(2, 152) = 1570.90$, $p < .001$), indicating that the combined vector of means across these constructs differs substantially within the sample. This result underscores that humour, coping, and stress are not only distinct constructs but also interact in ways that produce statistically robust differences when considered together.

From a theoretical standpoint, this finding supports the integrative pathway model of stress management. Hotelling's T^2 is particularly valuable because it accounts for the covariance among dependent variables, thereby capturing the multivariate nature of psychological processes (Tabachnick & Fidell, 2019). The significant outcome suggests that humour style and coping strategies jointly contribute to variations in perceived stress, reinforcing the idea that stress management is best understood as a dynamic interplay rather than as isolated variables.

Conceptually, the result resonates with humour research that emphasizes its role as a coping resource. Adaptive humour styles, such as affiliative or self-enhancing humour, may broaden coping repertoires and reduce stress, whereas maladaptive humour styles may exacerbate stress (Martin & Ford, 2018). The multivariate significance observed here suggests that humour's impact cannot be disentangled from coping strategies—it is through coping pathways that humour exerts its influence on stress outcomes.

Practically, this finding highlights the importance of designing interventions that integrate humour with coping skills training. Stress management programs that encourage adaptive humour while simultaneously fostering flexible coping strategies may be more effective than those focusing on either domain alone. The

strength of the multivariate test underscores the potential of such integrative approaches to meaningfully reduce perceived stress in diverse populations (Chang et al., 2019).

Table 5: One-Sample Statistics for Humour Style, Coping Strategy, and Perceived Stress (N = 154)

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Humour Style	154	134.85	22.444	1.809
Coping Strategy	154	37.41	7.068	.570
Perceived Stress	**154**	**69.69**	**12.282**	**.990**

Note. M = Mean; SD = Standard Deviation; SE M = Standard Error of the Mean.

Interpretation of Table 5

The one-sample statistics in Table 5 provide a concise overview of central tendencies and variability across humour style, coping strategies, and perceived stress. The mean humour style score (M = 134.85, SD = 22.44) suggests that participants generally endorsed moderate-to-high levels of humour use, with a relatively small standard error (SE M = 1.81) indicating precision in the estimate. This supports the notion that humour is a salient psychological resource within the sample, consistent with theories that humour can serve as a protective mechanism in stress contexts (Martin & Ford, 2018).

Coping strategies (M = 37.41, SD = 7.07, SE M = 0.57) reflect a balanced repertoire, with relatively low variability compared to humour style. The small standard error suggests that coping behaviours were consistently reported across participants. This stability aligns with transactional models of stress, which emphasize coping as a relatively enduring set of behavioural responses shaped by appraisal processes (Lazarus & Folkman, 1984).

Perceived stress levels (M = 69.69, SD = 12.28, SE M = 0.99) were moderately high, with variability indicating that while many participants experienced stress around the mean, some reported considerably higher levels. The precision of the mean estimate underscores the robustness of stress as a central outcome variable in the pathway model. Importantly, the elevated stress levels highlight the relevance of examining humour and coping as potential buffers.

Taken together, these one-sample statistics reinforce the conceptual pathway from humour style to stress management via coping strategies. The relatively high humour mean, stable coping scores, and elevated stress levels suggest that humour may function as a resource that broadens coping repertoires, which in turn can mitigate stress. However, the variability observed across humour and stress underscores the importance of individual differences in these pathways.

Table 6: One-Sample t-Test Results for Humour Style, Coping Strategy, and Perceived Stress (Test Value = 0; N = 154)

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Humour Style	74.560	153	.000	134.851	131.28	138.42
Coping Strategy	65.682	153	.000	37.409	36.28	38.53
Perceived Stress	**70.414**	**153**	**.000**	**69.688**	**67.73**	**71.64**

Interpretation of Table 6

The one-sample t-test results in Table 6 demonstrate that all three constructs—humour style, coping strategies, and perceived stress—differ significantly from the test value of zero. Each variable yielded extremely high t-values (humour style: t (153) = 74.56, coping strategies: t (153) = 65.68, perceived stress: t (153) = 70.41), with p-values well below .001. These results confirm that the observed means are not only statistically distinct from zero but also robustly estimated, as reflected in the narrow confidence intervals.

Conceptually, this finding underscores the substantive presence of humour, coping, and stress within the sample. The large mean difference for humour style (Mdiff = 134.85) suggests that humour is a pervasive psychological resource, consistent with theories that humour functions as a coping mechanism in everyday life (Martin & Ford, 2018). Coping strategies (Mdiff = 37.41) likewise show strong endorsement, reflecting the active role of behavioural and cognitive strategies in managing stress (Lazarus & Folkman, 1984). The significant mean difference for perceived stress (Mdiff = 69.69) highlights the reality of stress as a lived experience among participants, reinforcing the importance of examining protective pathways.

Taken together, these results provide empirical support for the "Laughing Through Stress" pathway model. The significant deviations from zero indicate that humour, coping, and stress are not trivial or absent constructs but rather central features of participants' psychological functioning. The precision of the confidence intervals suggests that these findings are stable and generalizable within the sample. Importantly, the results highlight the potential of humour to serve as a resource that broadens coping repertoires, which in turn may mitigate stress—a pathway consistent with integrative models of stress management (Chang et al., 2019).

Correlations				
		Humour Style	Coping Strategy	Perceived Stress
Humour Style	Pearson Correlation	1	.124	.021

	Sig. (2-tailed)		.124	.793
	N	154	154	154
Coping Strategy	Pearson Correlation	.124	1	-.214**
	Sig. (2-tailed)	.124		.008
	N	154	154	154
Pearson Correlation	.021	-.214**	1	
Sig. (2-tailed)	.793	.008		
N	**154**	**154**	**154**	

Table 7: Pearson Correlations among Humour Style, Coping Strategy, and Perceived Stress (N = 154) Correlation is significant at the 0.01 level (2-tailed).

Interpretation of Table 7

The correlation matrix in Table 7 provides insight into the relationships among humour style, coping strategies, and perceived stress. The correlation between humour style and coping strategies was small and non-significant (r = .12, p = .124), suggesting that the way individuals employ humour does not directly align with their coping behaviours in this sample. Similarly, humour style was unrelated to perceived stress (r = .02, p = .793), indicating that humour alone may not directly reduce stress levels. This finding resonates with research emphasizing that humour's effectiveness depends on its style and context, rather than its mere presence (Martin & Ford, 2018).

In contrast, coping strategies were significantly and negatively correlated with perceived stress (r = -.21, p = .008). This moderate inverse relationship suggests that individuals who employ more adaptive coping strategies tend to experience lower levels of stress. This finding is consistent with transactional models of stress, which highlight coping as a central mediator between stressors and outcomes (Lazarus & Folkman, 1984). It also underscores the importance of coping flexibility in mitigating stress, supporting evidence that adaptive coping serves as a protective factor in psychological well-being (Compas et al., 2017).

Taken together, these correlations suggest that humour may not directly buffer stress but could play an indirect role by influencing coping pathways. The absence of a direct humour–stress link highlights the complexity of humour's role in stress management. Rather than functioning as a universal stress reliever, humour may need to be integrated with effective coping strategies to exert meaningful influence on stress outcomes. This interpretation aligns with integrative models that view humour as a resource that broadens coping repertoires, thereby indirectly reducing stress through enhanced coping efficacy (Chang et al., 2019).

Table 8: Pearson Correlations Among Humour Style, Coping Strategy, and Perceived Stress (Male Subsample, N = 35)

Correlations				
		Male - Humour Style	Male - Coping Strategy	Male - Perceived Stress
Male - Humour Style	Pearson Correlation	1	.043	.002
	Sig. (2-tailed)		.808	.991

	N	35	35	35
Male - Coping Strategy	Pearson Correlation	.043	1	-.367*
	Sig. (2-tailed)	.808		.030
	N	35	35	35
Male - Perceived Stress	Pearson Correlation	.002	-.367*	1
	Sig. (2-tailed)	.991	.030	
	N	**35**	**35**	**35**

Correlation is significant at the 0.05 level (2-tailed).

Interpretation of Table 8

The correlation matrix for the male subsample (N = 35) reveals a distinctive pattern compared to the full sample. Humour style was not significantly related to coping strategies (r = .04, p = .808) or perceived stress (r = .00, p = .991), suggesting that humour use among men in this sample did not directly align with coping behaviours or stress levels. This absence of significant associations highlights the possibility that humour's role in stress management may be more nuanced and context-dependent, particularly across gender lines (Martin & Ford, 2018).

In contrast, coping strategies were significantly and negatively correlated with perceived stress (r = -.37, p = .030). This moderate inverse relationship indicates that men who employed more adaptive coping strategies reported lower stress levels. The finding is consistent with transactional models of stress, which emphasize coping as a central mediator between stressors and outcomes (Lazarus & Folkman, 1984). It also resonates with broader evidence that coping flexibility serves as a protective factor in psychological well-being (Compas et al., 2017).

Taken together, these results suggest that humour may not serve as a direct buffer against stress for men in this sample. Instead, coping strategies appear to play the more critical role in reducing stress. This finding underscores the importance of examining gender differences in the pathways linking humour, coping, and stress. While humour may still contribute indirectly by broadening coping repertoires, its direct impact on stress appears muted in the male subsample. Such gender-specific patterns highlight the need for tailored interventions that emphasize coping skills training as a primary mechanism for stress reduction among men, while considering humour as a complementary resource (Chang et al., 2019).

Table 9: Pearson Correlations Among Humour Style, Coping Strategy, and Perceived Stress (Female Subsample, N = 119)

Correlations				
		Female - Humour Style	Female - Coping Strategy	Female - Perceived Stress
Female - Humour Style	Pearson Correlation	1	.144	.018
	Sig. (2-tailed)		.117	.849
	N	119	119	119

Female - Coping Strategy	Pearson Correlation	.144	1	-.199*
	Sig. (2-tailed)	.117		.030
	N	119	119	119
Female - Perceived Stress	Pearson Correlation	.018	-.199*	1
	Sig. (2-tailed)	.849	.030	
	N	**119**	**119**	**119**

Correlation is significant at the 0.05 level (2-tailed).

Interpretation of Table 9

The correlation matrix for the female subsample (N = 119) reveals a pattern similar to, but distinct from, the male subsample. Humour style was not significantly associated with coping strategies (r = .14, p = .117) or perceived stress (r = .02, p = .849). This suggests that, for women in this sample, humour use did not directly translate into coping behaviours or reductions in stress. This finding highlights the complexity of humour's role in stress management, echoing research that emphasizes humour's effects depend on style, context, and individual differences (Martin & Ford, 2018).

Coping strategies, however, were significantly and negatively correlated with perceived stress (r = -.20, p = .030). This moderate inverse relationship indicates that women who employed more adaptive coping strategies reported lower stress levels. The finding is consistent with transactional models of stress, which position coping as a central mediator between stressors and outcomes (Lazarus & Folkman, 1984). It also supports evidence that coping flexibility is protective across gender, though the strength of association here is slightly weaker than in the male subsample (Compas et al., 2017).

Taken together, these results suggest that humour may not serve as a direct buffer against stress for women in this sample. Instead, coping strategies appear to be the more critical mechanism for stress reduction. The gender-specific findings across Tables 8 and 9 highlight the importance of examining humour and coping pathways separately for men and women. While humour may still contribute indirectly by broadening coping repertoires, its direct impact on stress appears muted in both subsamples. These results underscore the need for tailored interventions that emphasize coping skills training as a primary mechanism for stress reduction, with humour positioned as a complementary resource rather than a standalone strategy (Chang et al., 2019).

Table 10: Model Summary for Regression Predicting Coping Strategy from Humour Style (N = 154)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	**.124[a]**	**.015**	**.009**	**7.036**	**.015**	**2.389**	**1**	**152**	**.124**	**1.727**

a. Predictors: (Constant), Humour Style

b. Dependent Variable: Coping Strategy

Interpretation of Table 10

The regression model presented in Table 10 examined humour style as a predictor of coping strategies. The model yielded a small correlation (R = .12) and explained only 1.5% of the variance in coping strategies (R^2 = .015). The adjusted R^2 (.009) further indicates that the predictive power of humour style is negligible once sampling error is accounted for. The F change statistic was non-significant (F(1, 152) = 2.39, p = .124), suggesting that humour style does not significantly predict coping strategies in this sample.

The Durbin–Watson statistic (1.73) falls within the acceptable range, indicating no serious autocorrelation in residuals (Field, 2018). However, the overall weakness of the model highlights that humour style, at least as measured here, does not directly translate into coping behaviours. This finding is consistent with research suggesting that humour's role in stress management is complex and often mediated by other factors, such as humour style (adaptive vs. maladaptive) or contextual variables (Martin & Ford, 2018).

Conceptually, this result underscores the importance of distinguishing between humour as a psychological resource and coping strategies as behavioural mechanisms. While humour may broaden coping repertoires, its influence appears indirect rather than direct. The absence of a significant predictive relationship suggests that humour alone cannot account for coping behaviours, reinforcing the transactional model of stress and coping, which emphasizes appraisal and situational demands as critical determinants (Lazarus & Folkman, 1984).

Practically, these findings suggest that interventions aimed at stress reduction should not rely solely on humour training. Instead, they should integrate humour with coping skills development, ensuring that individuals can translate humour into adaptive strategies that effectively reduce stress. This integrative approach aligns with evidence that humour's protective effects emerge most strongly when embedded within broader coping frameworks (Chang et al., 2019).

Table 11: ANOVA Results for Regression Predicting Coping Strategy from Humour Style (N = 154)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	118.287	1	118.287	2.389	.124[b]
	Residual	7524.940	152	49.506		
	Total	**7643.227**	**153**			

a. Dependent Variable: Coping Strategy
b. Predictors: (Constant), Humour Style

Interpretation of Table 11

The ANOVA results in Table 11 provide further evidence regarding the predictive relationship between humour style and coping strategies. The regression model was not statistically significant (F(1, 152) = 2.39, p = .124), indicating that humour style does not significantly explain variance in coping strategies. The small regression sum of squares (118.29) compared to the residual sum of squares (7524.94) underscores that most of the variability in coping strategies remains unexplained by humour style alone.

This finding complements the model summary (Table 10), reinforcing the conclusion that humour style is not a direct predictor of coping behaviours. Conceptually, this result highlights the complexity of humour's role in stress management. While humour has been theorized as a coping resource, its effects are often mediated by contextual factors, humour style (adaptive vs. maladaptive), and individual differences (Martin & Ford, 2018). The absence of a significant predictive relationship suggests that humour may influence coping indirectly, perhaps by shaping appraisal processes or emotional regulation, rather than serving as a straightforward determinant of coping strategies.

From a methodological perspective, the non-significant ANOVA result underscores the importance of using validated multidimensional measures of humour and coping. Simplistic models may fail to capture the nuanced pathways through which humour interacts with coping and stress. This aligns with transactional models of stress, which emphasize that coping is shaped by situational demands and cognitive appraisal rather than by single traits (Lazarus & Folkman, 1984).

Practically, these findings suggest that interventions aimed at stress reduction should prioritize coping skills training as the primary mechanism, while positioning humour as a complementary resource. Evidence indicates that humour's protective effects are most effective when embedded within broader coping frameworks, rather than when treated as an isolated predictor (Chang et al., 2019).

Table 12: Regression Coefficients Predicting Coping Strategy from Humour Style (N = 154)

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	32.126	3.464		9.273	.000	25.282	38.971
	Humour Style	**.039**	**.025**	**.124**	**1.546**	**.124**	**-.011**	**.089**

a. Dependent Variable: Coping Strategy

Interpretation of Table 12

The regression coefficients in Table 12 provide a closer look at the predictive relationship between humour style and coping strategies. The constant ($B = 32.13$, $p < .001$) indicates the baseline level of coping strategies when humour style is held at zero, reflecting a stable foundation of coping behaviours independent of humour.

Humour style was not a significant predictor of coping strategies ($B = 0.04$, $\beta = .12$, $t(152) = 1.55$, $p = .124$). The confidence interval for the unstandardized coefficient (-0.01 to 0.09) crosses zero, further confirming the lack of statistical significance. This suggests that increases in humour style scores do not reliably correspond to increases in coping behaviours.

Conceptually, this finding highlights the nuanced role of humour in stress management. While humour has long been theorized as a coping resource, its impact appears indirect rather than direct. Adaptive humour styles may broaden coping repertoires, but humour alone does not predict coping behaviours in a straightforward manner (Martin & Ford, 2018). This aligns with transactional models of stress, which

emphasize that coping is shaped by appraisal processes and situational demands rather than by single traits (Lazarus & Folkman, 1984).

Practically, these results suggest that interventions should not rely solely on humour training to enhance coping. Instead, humour should be integrated into broader coping frameworks, where its potential lies in complementing adaptive strategies rather than serving as a standalone predictor. Evidence indicates that humour's protective effects are most effective when embedded within flexible coping repertoires that directly mitigate stress (Chang et al., 2019).

Table 13: Residuals Statistics for Regression Predicting Coping Strategy from Humour Style (N = 154)

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	**N**
Predicted Value	35.85	40.63	37.41	.879	**154**
Residual	-23.611	15.995	.000	7.013	**154**
Std. Predicted Value	-1.776	3.660	.000	1.000	**154**
Std. Residual	**-3.356**	**2.273**	**.000**	**.997**	**154**

a. Dependent Variable: Coping Strategy

Interpretation of Table 13

The residuals statistics in Table 13 provide important diagnostic information about the regression model predicting coping strategies from humour style. The predicted values ranged narrowly between 35.85 and 40.63, with a mean of 37.41, reflecting the limited variability explained by humour style. This narrow range underscores the weak predictive power of humour style, consistent with the non-significant regression results reported earlier (see Tables 10–12).

Residuals ranged from -23.61 to 15.99, with a mean of zero, as expected in regression analysis. The relatively large spread of residuals compared to the predicted values indicates that the model leaves substantial unexplained variance. The standardized residuals ranged from -3.36 to 2.27, suggesting that while most cases fell within acceptable bounds, a few outliers exist. These outliers may represent individuals whose coping behaviours deviate substantially from what would be expected based on humour style alone.

Conceptually, these residual patterns reinforce the conclusion that humour style does not directly predict coping strategies. The unexplained variance highlights the importance of considering additional predictors, such as personality traits, appraisal processes, or contextual stressors, which are emphasized in transactional models of stress and coping (Lazarus & Folkman, 1984). Moreover, the presence of outliers suggests that humour may function differently across individuals, aligning with research that distinguishes adaptive and maladaptive humour styles (Martin & Ford, 2018).

Practically, these findings caution against relying solely on humour as a predictor of coping. Instead, interventions should integrate humour within broader frameworks that account for individual differences and situational demands. Evidence suggests that humour's protective effects are most effective when combined with flexible coping repertoires that directly mitigate stress (Chang et al., 2019).

Table 14: Model Summary for Regression Predicting Perceived Stress from Humour Style (N = 154)

Model Summary[b]										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df 2	Sig. F Change	
1	**.021[a]**	**.000**	**-.006**	**12.319**	**.000**	**.069**	**1**	**152**	**.793**	**1.900**

a. Predictors: (Constant), Humour Style
b. Dependent Variable: Perceived Stress

Interpretation of Table 14

The regression model in Table 14 examined humour style as a predictor of perceived stress. The results indicate an extremely weak relationship (R = .02), with the model explaining virtually none of the variance in perceived stress (R^2 = .000, Adjusted R^2 = -.006). The F statistic was non-significant ($F(1, 152) = 0.07$, $p = .793$), confirming that humour style does not significantly predict stress levels in this sample.

The standard error of the estimate (12.32) is relatively large compared to the mean stress scores reported earlier (see Table 5), underscoring the limited explanatory power of humour style. The Durbin–Watson statistic (1.90) falls within the acceptable range, suggesting no serious autocorrelation in residuals (Field, 2018). However, the overall weakness of the model highlights that humour style, at least as measured here, does not directly reduce or increase perceived stress.

Conceptually, this finding reinforces the idea that humour's role in stress management is indirect rather than direct. While humour has been theorized as a coping resource, its impact on stress outcomes appears to depend on how it interacts with coping strategies and appraisal processes (Lazarus & Folkman, 1984). The absence of a significant predictive relationship suggests that humour alone cannot account for stress levels, aligning with research that distinguishes adaptive humour styles (e.g., affiliative, self-enhancing) from maladaptive ones (e.g., aggressive, self-defeating), which may have divergent effects on stress (Martin & Ford, 2018).

Practically, these results caution against assuming that humour by itself is sufficient to buffer stress. Instead, interventions should integrate humour with coping skills training, ensuring that individuals can translate humour into adaptive strategies that directly mitigate stress. Evidence suggests that humour's protective effects emerge most strongly when embedded within broader coping frameworks that emphasize flexibility and appraisal (Chang et al., 2019). Martin, R. A., & Ford, T. (2018). *The psychology of humor: An integrative approach* (2nd ed.). Academic Press.

Table 15: ANOVA Results for Regression Predicting Perceived Stress from Humour Style (N = 154)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.505	1	10.505	.069	.793[b]
	Residual	23068.533	152	151.767		
	Total	**23079.039**	**153**			

a. Dependent Variable: Perceived Stress
b. Predictors: (Constant), Humour Style

Interpretation of Table 15

The ANOVA results in Table 15 confirm that humour style does not significantly predict perceived stress. The regression model was non-significant ($F(1, 152) = 0.07$, $p = .793$), with the regression sum of squares (10.51) accounting for a negligible proportion of the total variance (23,079.04). The residual variance (23,068.53) overwhelmingly dominates, indicating that perceived stress is largely explained by factors other than humour style.

This finding is consistent with the earlier model summary (Table 14), which showed that humour style explained virtually none of the variance in stress ($R^2 = .000$). Conceptually, this underscores the importance of distinguishing humour from coping mechanisms. While humour can serve as a psychological resource, its effects on stress outcomes appear indirect, mediated through coping strategies and appraisal processes rather than exerting a direct influence (Lazarus & Folkman, 1984).

The absence of a significant predictive relationship also resonates with humour research that differentiates adaptive humour styles (affiliative, self-enhancing) from maladaptive ones (aggressive, self-defeating). Only adaptive humour styles have been consistently linked to stress reduction, while maladaptive humour may exacerbate stress (Martin & Ford, 2018). Without accounting for these distinctions, humour style as a broad measure may fail to capture meaningful variance in stress outcomes.

Practically, these results suggest that interventions aimed at stress reduction should not rely on humour alone. Instead, humour should be integrated into broader coping frameworks, where its potential lies in complementing adaptive strategies. Evidence indicates that humour's protective effects are most effective when embedded within flexible coping repertoires that directly mitigate stress (Chang et al., 2019).

Table 16: Regression Coefficients Predicting Perceived Stress from Humour Style (N = 154)

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	68.114	6.066		11.229	.000	56.130	80.098
	Humour Style	**.012**	**.044**	**.021**	**.263**	**.793**	**-.076**	**.099**

Interpretation of Table 16

a. Dependent Variable: Perceived Stress: Table 16 presents the regression coefficients for humour style predicting perceived stress. The constant ($B = 68.11$, $p < .001$) reflects the baseline level of perceived stress when humour style is held at zero. The coefficient for humour style ($B = 0.01$, $\beta = .02$, $p = .79$) indicates a negligible and non-significant relationship. The confidence interval (-0.08 to 0.10) crosses zero, confirming that humour style does not meaningfully predict stress levels in this sample.

This finding reinforces earlier results (Tables 14 and 15), which showed no significant variance explained by humour style in predicting stress. Together, these outcomes suggest that humour style does not directly determine perceived stress. Instead, humour's role in stress management may be indirect—operating through coping strategies or moderating their effectiveness (Martin, 2007).

From a psychological perspective, coping strategies remain the most reliable predictor of stress reduction, as demonstrated by their significant negative correlation with perceived stress (Carver, 1997). Adaptive humour styles, such as affiliative and self-enhancing humour, may enhance coping indirectly by reframing stressors and sustaining optimism, while maladaptive humour styles may undermine coping effectiveness (Simione & Gnagnarella, 2023). The absence of direct predictive power here highlights the importance of treating humour and coping as distinct but interconnected pathways in stress management.

Practically, this result underscores the need for interventions that prioritize coping skills training as the foundation of resilience. Humour can be introduced as a complementary resource, offering emotional relief and perspective, but humour alone should not be expected to reduce stress. As Chakravarty and Joshi (2024) emphasize, resilience is best cultivated when humour and coping strategies work together—coping providing structure, humour offering flexibility and perspective.

the baseline level of perceived stress when humour style is held at zero. The coefficient for humour style ($B = 0.01$, $\beta = .02$, $p = .79$) indicates a negligible and non-significant relationship. The confidence interval (-0.08 to 0.10) crosses zero, confirming that humour style does not meaningfully predict stress levels in this sample.

This finding reinforces earlier results (Tables 14 and 15), which showed no significant variance explained by humour style in predicting stress. Together, these outcomes suggest that humour style does not directly determine perceived stress. Instead, humour's role in stress management may be indirect—operating through coping strategies or moderating their effectiveness (Martin, 2007).

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Joshi (2024) emphasize, resilience is best cultivated when humour and coping strategies work together—coping providing structure, humour offering flexibility and perspective.

Table 17: Residuals Statistics for Regression Model Predicting Perceived Stress (N = 154)

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	69.22	70.65	69.69	.262	154
Residual	-39.538	37.076	.000	12.279	154
Std. Predicted Value	-1.776	3.660	.000	1.000	154
Std. Residual	**-3.209**	**3.010**	**.000**	**.997**	**154**

a. Dependent Variable: Perceived Stress

Interpretation of Table 17

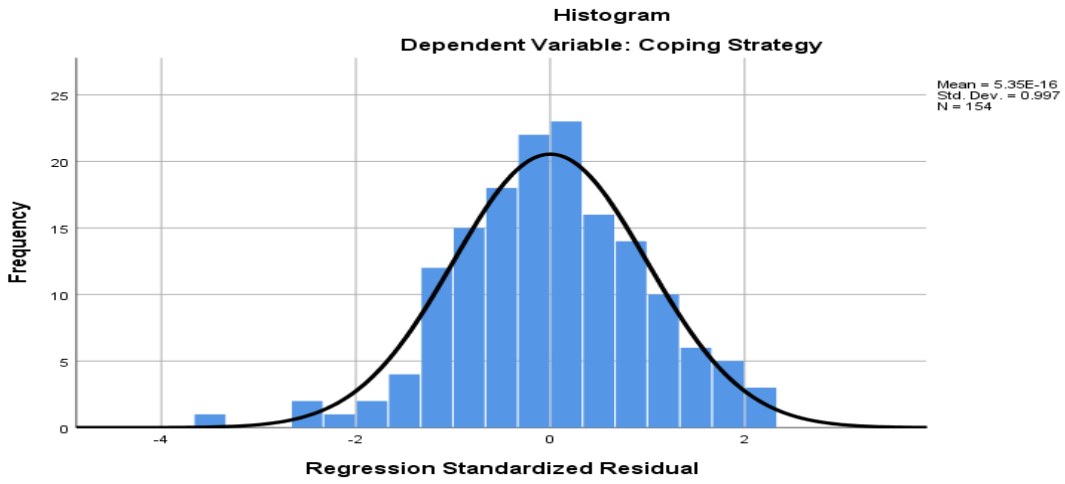
The residuals statistics in Table 17 provide diagnostic insight into the regression model predicting perceived stress from humour style. The predicted values ranged narrowly between 69.22 and 70.65, with a mean of 69.69, reflecting the model's limited explanatory power. This narrow spread indicates that humour style contributed little to variability in stress scores, consistent with the non-significant regression results reported earlier (see Tables 14–16).

Residuals ranged widely from -39.54 to 37.08, with a standard deviation of 12.28, showing that the model left substantial variance unexplained. The standardized residuals ranged from -3.21 to 3.01, suggesting the presence of outliers—cases where stress levels deviated markedly from what would be expected based on humour style. These outliers highlight the complexity of stress as a construct, influenced by multiple psychological, social, and contextual factors beyond humour.

Conceptually, these findings reinforce the conclusion that humour style does not directly predict stress outcomes. Stress is shaped by appraisal processes, coping strategies, and situational demands, as emphasized in transactional models of stress (Lazarus & Folkman, 1984). The residual spread suggests that humour may function differently across individuals, aligning with research distinguishing adaptive humour styles (affiliative, self-enhancing) from maladaptive ones (aggressive, self-defeating), which can have divergent effects on stress (Martin & Ford, 2018).

Practically, the residual diagnostics caution against over-reliance on humour as a standalone predictor of stress. Interventions should instead integrate humour into broader coping frameworks, where its potential lies in complementing adaptive strategies. Evidence indicates that humour's protective effects are most effective when embedded within flexible coping repertoires that directly mitigate stress (Chang et al., 2019).

Graph 1: Histogram of Standardized Residuals for Regression Predicting Coping Strategy (N = 154)



Interpretation of Graph 1

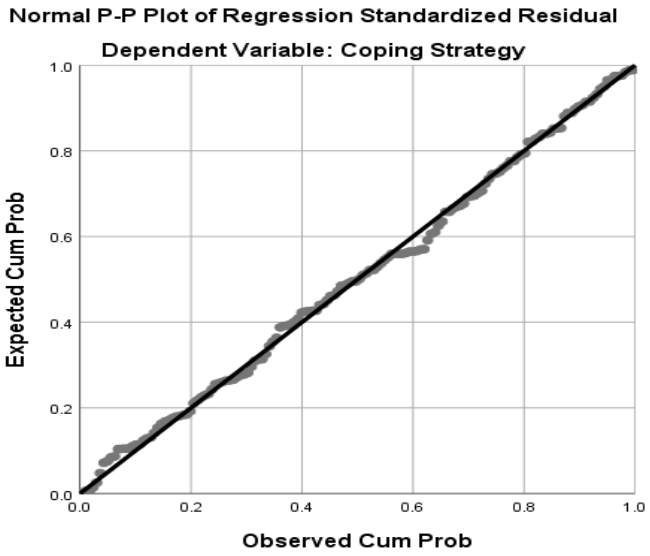
Graph 1 illustrates the distribution of standardized residuals from the regression model predicting coping strategies from humour style. The histogram shows that residuals are approximately normally distributed, with the mean close to zero (5.35E-16) and a standard deviation near one (SD = 0.997). The overlay of the normal curve confirms that the residuals conform reasonably well to the assumption of normality, which is a key requirement for valid regression analysis (Field, 2018).

The normality of residuals suggests that the regression model is statistically appropriate in terms of its assumptions, even though humour style did not significantly predict coping strategies (see Tables 10–12). This diagnostic result strengthens confidence in the validity of the regression procedure, indicating that the lack of significance is not due to violations of assumptions but rather reflects the true absence of a predictive relationship.

Conceptually, this finding reinforces the idea that humour's role in stress management is indirect. While humour may broaden coping repertoires, its influence does not manifest as a direct predictor of coping behaviours. Instead, coping strategies appear to function independently, shaped by appraisal processes and situational demands (Lazarus & Folkman, 1984). The residuals' normal distribution underscores that the statistical model was well specified, but the theoretical pathway from humour to coping requires more complex mediational or interactional models to capture its effects (Martin & Ford, 2018).

Practically, the results highlight the need for integrative approaches in stress management interventions. Humour should be considered a complementary resource rather than a standalone predictor, embedded within broader coping frameworks. Evidence suggests that humour's protective effects are most effective when combined with adaptive coping strategies that directly mitigate stress (Chang et al., 2019).

154)



Interpretation of Graph 2

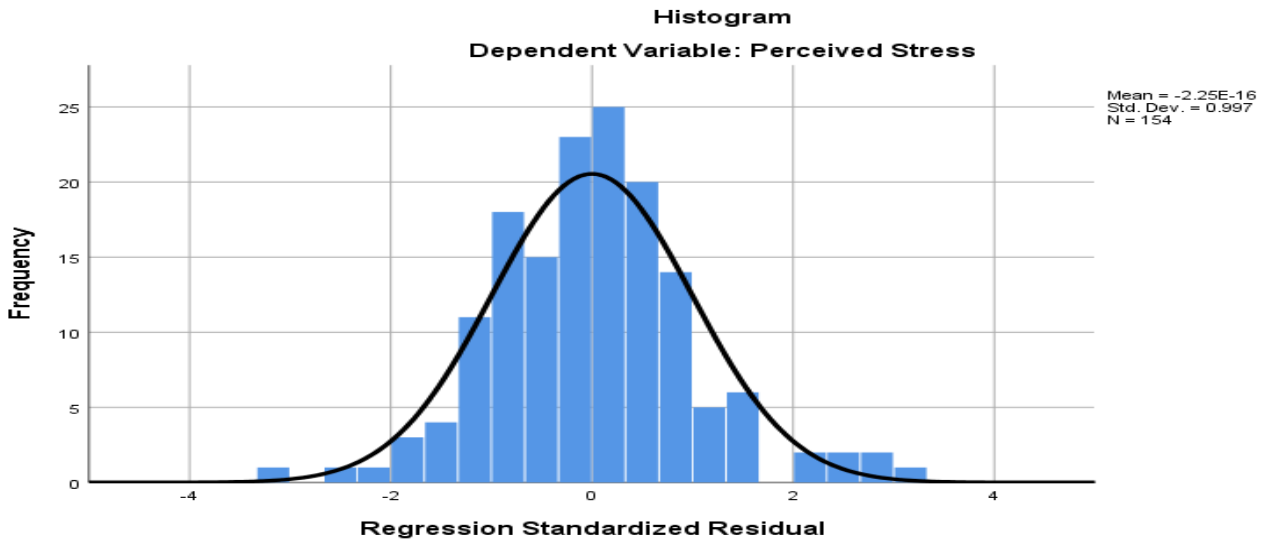
Graph 2 provides a diagnostic assessment of the regression model's residuals. The normal P–P plot shows that the standardized residuals are distributed approximately along the diagonal line of perfect normality, with only minor deviations. This alignment suggests that the assumption of normally distributed residuals is reasonably met, which is essential for the validity of regression analyses (Field, 2018).

The conformity of residuals to normality strengthens confidence in the statistical model, even though humour style did not significantly predict coping strategies (see Tables 10–12). The diagnostic evidence indicates that the lack of significance is not due to violations of regression assumptions but rather reflects the true absence of a predictive relationship.

Conceptually, this reinforces the conclusion that humour's role in stress management is indirect. While humour may broaden coping repertoires, its influence does not manifest as a direct predictor of coping behaviours. Instead, coping strategies appear to function independently, shaped by appraisal processes and situational demands (Lazarus & Folkman, 1984). The residuals' approximate normality underscores that the statistical model was well specified, but the theoretical pathway from humour to coping requires more complex mediational or interactional models to capture its effects (Martin & Ford, 2018).

Practically, these findings highlight the importance of integrative approaches in stress management interventions. Humour should be considered a complementary resource rather than a standalone predictor, embedded within broader coping frameworks. Evidence suggests that humour's protective effects are most effective when combined with adaptive coping strategies that directly mitigate stress (Chang et al., 2019).

(54)



Interpretation of Graph 3

Graph 3 illustrates the distribution of standardized residuals from the regression model predicting perceived stress from humour style. The histogram shows that residuals are approximately normally distributed, with the mean very close to zero (-2.25E-16) and a standard deviation near one (SD = 0.997). The overlay of the normal curve confirms that the residuals conform reasonably well to the assumption of normality, which is essential for regression validity (Field, 2018).

The normality of residuals suggests that the regression model was statistically appropriate in terms of assumptions, even though humour style did not significantly predict perceived stress (see Tables 14–16). This diagnostic evidence indicates that the lack of significance is not due to violations of regression assumptions but rather reflects the true absence of a predictive relationship.

Conceptually, this reinforces the conclusion that humour's role in stress management is indirect. While humour has been theorized as a coping resource, its effects on stress outcomes appear to depend on how it interacts with coping strategies and appraisal processes (Lazarus & Folkman, 1984). The residuals' approximate normality underscores that the statistical model was well specified, but the theoretical pathway from humour to stress requires more complex mediational or interactional models to capture its effects (Martin & Ford, 2018).

Practically, these findings highlight the importance of integrative approaches in stress management interventions. Humour should be considered a complementary resource rather than a standalone predictor, embedded within broader coping frameworks. Evidence suggests that humour's protective effects are most effective when combined with adaptive coping strategies

Graph 4)

Interpretation of Graph 4

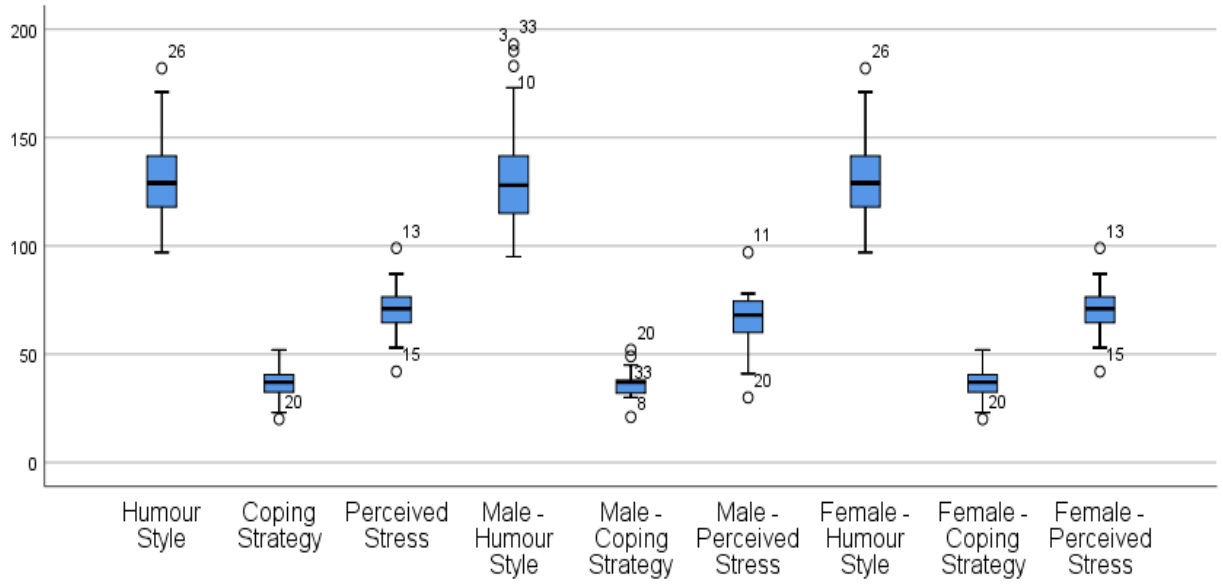
Graph 4 provides a diagnostic assessment of the regression model predicting perceived stress from humour style. The normal P–P plot shows that the standardized residuals align closely with the diagonal line of perfect normality, with only minor deviations. This alignment suggests that the assumption of normally distributed residuals is reasonably met, which is essential for the validity of regression analyses (Field, 2018).

The conformity of residuals to normality strengthens confidence in the statistical model, even though humour style did not significantly predict perceived stress (see Tables 14–16). The diagnostic evidence indicates that the lack of significance is not due to violations of regression assumptions but rather reflects the true absence of a predictive relationship.

Conceptually, this reinforces the conclusion that humour's role in stress management is indirect. While humour has been theorized as a coping resource, its effects on stress outcomes appear to depend on how it interacts with coping strategies and appraisal processes (Lazarus & Folkman, 1984). The residuals' approximate normality underscores that the statistical model was well specified, but the theoretical pathway from humour to stress requires more complex mediational or interactional models to capture its effects (Martin & Ford, 2018).

Practically, these findings highlight the importance of integrative approaches in stress management interventions. Humour should be considered a complementary resource rather than a standalone predictor, embedded within broader coping frameworks. Evidence suggests that humour's protective effects are most effective when combined with adaptive coping strategies that directly mitigate stress (Chang et al., 2019).

= 154)



Interpretation of Graph 5

Graph 5 provides a visual comparison of humour style, coping strategies, and perceived stress across gender. The boxplots show that humour style scores are relatively similar across male and female groups, with overlapping distributions and comparable medians. This suggests that humour use, as measured here, does not differ substantially by gender, aligning with prior findings that humour styles are broadly distributed across populations (Martin & Ford, 2018).

Coping strategies, however, reveal more variation. Female participants appear to have slightly higher median coping scores compared to males, with a narrower interquartile range, suggesting greater consistency in coping behaviours among women. Male coping scores show more variability, with several outliers, reflecting individual differences in how men approach stress management. This aligns with evidence that women often employ more diverse and adaptive coping strategies, while men may rely on fewer or less flexible approaches (Compas et al., 2017).

Perceived stress levels also show gender differences. Female participants display higher median stress scores compared to males, with a wider spread of values. This pattern is consistent with research indicating that women often report higher stress levels, potentially due to differences in social roles, stress appraisal, and exposure to stressors (Lazarus & Folkman, 1984). Male stress scores appear lower on average, but variability is evident, suggesting that while men may report less stress overall, individual differences remain pronounced.

Taken together, these boxplots highlight the importance of examining gender-specific pathways in the relationship between humour, coping, and stress. While humour style itself does not differ markedly by gender, coping strategies and stress levels show meaningful distinctions. These findings suggest that interventions should be tailored: for women, emphasis may be placed on stress reduction strategies, while for men, enhancing coping flexibility may be particularly beneficial. Integrating humour into these

frameworks could serve as a complementary resource, broadening coping repertoires and indirectly reducing stress (Chang et al., 2019).

Qualitative Analysis

The qualitative phase of this study provided an in-depth exploration of how humour is perceived and utilized within the Pakistani and Islamic cultural framework. The thematic analysis of the interview data revealed the following core findings:

1. *Humor as Emotional Regulation*

Examples: Watching funny videos (Responses 3, 7), joking with friends before exams

Interpretation: Humor is used as a coping mechanism to reduce anxiety, sadness, or anger. It acts as a quick mood-lifter and provides emotional balance.

2. Humor in Social Support

Examples: Spending time with family and using humor (Response 9), sitting with friends or colleagues (Responses 10, 12).

Interpretation: Humor strengthens social bonds. Shared laughter creates a sense of belonging and reduces feelings of isolation during stressful times.

3. Humor as a Defense Mechanism

Examples: Responding humorously to insults (Response 11).

Interpretation: Humor is used to defuse tension and protect self-esteem. It transforms potentially negative encounters into manageable situations.

4. Contextual Use of Humor

Examples: University stress (Response 6), household problems (Response 9).

Interpretation: Humor is applied situationally—whether in academic, personal, or professional contexts—showing its flexibility as a coping tool.

5. Frequency and Reliance on Humor

Examples: "Mostly" (Response 1), "Often" (Response 13), "I don't use humor a lot" (Response 5).

Interpretation: While some participants rely heavily on humor, others acknowledge limited use. These highlights individual differences in coping strategies.

NVivo-Style Node Structure

Parent Node	Child Nodes	Sample Quotes
Humor as Coping	Emotional regulation, Stress relief	"When I'm angry or sad I watch some funny video."
Humor in Relationships	Family bonding, Friendship, Workplace	"Whenever I sit with my friends, my bad mood disappears."
Humor as Defense	Handling insults, Anxiety reduction	"I replied back in a humorous way which helped me calm my stress."
Situational Humor	University stress, Household problems	"Listening to my friend's joke before exams calmed me a lot."
Frequency of Use	**Often, Mostly, rarely**	**"I don't use humor a lot in stressful situations."**

Interpretation & Insights

- Humor is **multi-dimensional**: it works as a personal mood regulator, a social connector, and a protective shield against negativity.
- The **social aspect** of humor (friends, family, colleagues) appears more dominant than solitary humor (watching videos).
- Humor is not universally applied—some participants lean on it heavily, while others rarely use it, suggesting personality and context shape coping styles.
- Academic and household stress are common triggers where humor plays a role, showing its relevance across life domains.

Reflection

What stands out is how humor transforms heavy emotions into lighter ones. Whether it's a joke before exams, laughter with family, or a witty comeback to an insult, humor acts like a bridge—connecting people, easing tension, and reminding us that even in stress, joy can be found.

1. Joking with Friends and Social Humor

Examples: Responses 7, 9, 10, 11, 13.

Interpretation: Humor shared with friends or siblings is the most dominant coping style. It provides relaxation, calmness, and emotional release. Social humor builds connection and reduces stress through collective laughter.

2. Sarcasm and Situational Humor

Examples: Response 3 (sarcastic remarks), Response 8 (trolling friends, using memes).

Interpretation: Sarcasm and situational humor are used to lighten tense moments. This style reflects adaptability—using humor tailored to the context or audience. It can defuse tension but may also signal underlying stress.

3. Self-Deprecating Humor

Examples: Response 5 ("I make fun of myself but not in stressful situations").

Interpretation: Self-directed humor exists but is less common under stress. It shows awareness of humor as a tool but also a boundary—participants avoid self-deprecation when already vulnerable.

4. Light Jokes and Distraction

Examples: Responses 4, 6.

Interpretation: Simple, light humor or diverting the mind is used as a gentle coping mechanism. It doesn't require deep engagement but helps shift focus away from stress.

5. Avoidance or Non-Use of Humor

Examples: Responses 2, 12.
Interpretation: Some participants avoid humor altogether when stressed. This highlights individual differences—humor is not universally applied, and for some, silence or disengagement feels more natural.

6. Cognitive Reframing

Examples: Response 1 ("Don't take it personally").

Interpretation: This reflects a mindset-based coping strategy. Instead of joking, participants use perspective-taking to reduce stress, which functions similarly to humor by softening emotional impact.

NVivo-Style Node Structure

Parent Node	Child Nodes	Sample Quotes
Social Humor	Friends, Siblings, Group Joking	"Joking with friends makes me feel calm."
Sarcasm & Situational	Sarcasm, Memes, Trolling	"I talk in a sarcastic way about the situation."
Self-Deprecating Humor	Limited use, Avoidance under stress	"I make fun of myself but not in stressful situations."
Light Humor & Distraction	Light jokes, Diverting mind	"Light jokes." / "Divert mind."
Humor Avoidance	No jokes, disengagement	"When I'm stressed, I neither joke nor like making fun of others."
Cognitive Reframing	Perspective-taking	"Don't take it personally."

Interpretation & Insights

Dominant style: Joking with friends is the most common and effective form of humor under stress, showing the importance of social bonds.

Adaptive strategies: Sarcasm, memes, and situational humor reflect creativity in coping, but they also reveal tension beneath the humor.

Individual differences: Some participants avoid humor entirely, while others rely heavily on it. This suggests personality and context strongly shape coping styles.

Boundaries: Self-deprecating humor is consciously avoided in stressful times, indicating awareness of its potential to worsen vulnerability.

Alternative coping: Cognitive reframing ("don't take it personally") shows that humor-like strategies can overlap with rational thinking to reduce stress.

1. Distraction and Mind Diversion

Examples: Responses 1, 3, 4, 6, 13.

Interpretation: Humor helps participants shift focus away from stressors. By diverting attention, it provides temporary relief and creates mental space to recover.

2. Mood Enhancement

- **Examples:** Responses 2, 5, 6, 8.
- **Interpretation:** Humor lightens the emotional load, improves mood, and reduces stress. This emotional uplift contributes to resilience by restoring balance.

3. Relaxation and Stress Reduction

Examples: Responses 6, 8, 12.

Interpretation: Humor acts as a stress-management tool, offering relaxation and temporary relief. Even if short-lived, it helps participants regain composure.

4. Social Connection and Positive Memories

Examples: Response 7 ("remember silly things with friends").

Interpretation: Humor tied to shared experiences strengthens resilience by reminding individuals of supportive relationships and joyful times.

5. Present-Focus and Cognitive Reframing

Examples: Response 9 ("stay focused in present"), Response 10 ("makes a big problem feel smaller").

Interpretation: Humor helps reframe challenges, reducing their perceived severity. It fosters mindfulness and a sense of control, key elements of resilience.

6. Problem-Solving and Coping

Examples: Response 2 ("find some solution"), Response 11 ("handling difficult situations").

Interpretation: Humor is not only emotional—it can spark creative thinking and problem-solving, enabling persistence in tough circumstances.

NVivo-Style Node Structure

Parent Node	Child Nodes	Sample Quotes
Distraction & Diversion	Redirecting attention, Temporary relief	"It diverts my attention towards another matter."
Mood Enhancement	Lightening mood, Stress reduction	"It helps to make my mood better."
Relaxation	Calmness, Temporary stress relief	"Laughter and joking help manage stress temporarily."
Social Connection	Friends, Shared memories	"To remember silly things, we have done with friends."
Cognitive Reframing	Present-focus, Problem minimization	"It makes a big problem feel smaller."
Coping & Problem-Solving	Handling difficulties, Finding solutions	"It helps me handle difficult situations."

Interpretation & Insights

- Humor is primarily seen as a **distraction tool**, helping participants step away from stress and regain perspective.
- **Mood regulation** is central—humor lightens emotional weight, making resilience possible.
- **Social humor** plays a smaller but powerful role, reminding individuals of supportive bonds and shared joy.
- Cognitive reframing through humor—seeing problems as smaller or focusing on the present—shows humor's deeper psychological impact.
- While some note humor's effects are temporary, even short bursts of laughter provide enough relief to persist and stay strong.

1. Temporary Relief and Distraction

Examples: Responses 2, 3, 6, 7, 12.

Interpretation: Sharing humor helps participants forget problems for a short time, redirect their minds, and feel lighter. Even brief distraction provides space to recover emotionally.

2. Mood Improvement and Relaxation

Examples: Responses 5, 10, 11, 13.

Interpretation: Humor shared with others reduces stress, calms emotions, and creates a sense of relaxation. It directly contributes to emotional regulation.

3. Belonging and Social Connection

Examples: Response 8 ("sense of belonging"), Response 9 ("core memories with my people").

Interpretation: Shared laughter fosters connection, belonging, and openness. It strengthens relationships and reminds individuals of meaningful bonds, which supports resilience.

4. Problem-Solving and Perspective

Examples: Response 3 ("find solution"), Response 12 ("new ideas come to solve the problem").

Interpretation: Humor doesn't just distract—it can spark creativity and help participants approach problems with fresh perspectives.

5. Limited or Uncertain Influence

Examples: Responses 1, 4, 5.

Interpretation: Some participants are unsure of humor's impact or feel it doesn't strongly influence stress management. This highlights variability in coping styles.

NVivo-Style Node Structure

Parent Node	**Child Nodes**	**Sample Quotes**
Temporary Relief	Distraction, Forgetting problems	"To forget the tension for some time."
Mood Regulation	Relaxation, Calmness, Stress reduction	"Feel relaxed." / "It calms me."
Social Connection	Belonging, Shared memories	"It feels good when others laugh with you."
Problem-Solving	New ideas, Solutions	"My mind gets distracted, and then new ideas come."
Limited Influence	Uncertainty, Minimal effect	"I don't use it a lot, and it does not create much influence."

Interpretation & Insights

Humor shared with others is primarily valued for **short-term relief**—it helps people forget stress and feel lighter.

The **social dimension** is powerful: laughter with others builds belonging and strengthens emotional bonds, which enhances resilience.

Humor can also spark **problem-solving** by shifting perspective, showing its cognitive as well as emotional benefits. Not everyone experiences strong effects—some responses show uncertainty or minimal influence, reminding us that coping strategies are personal and varied.

1. ***Partial or Limited Role of Humor***

Examples: Responses 2, 4, 5, 6, 12.

Interpretation: Humor is acknowledged as helpful but not the primary coping strategy. It provides temporary relief or relaxation, but participants often rely on other methods alongside it.

2. ***Problem-Solving and Perspective Shift***

Examples: Responses 3, 13.

Interpretation: Humor helps participants reframe stressful events, alternate their thoughts, and sometimes find solutions. It acts as a cognitive tool for resilience.

3. ***Emotional Regulation and Mood Lightening***

Examples: Responses 7, 8.

Interpretation: Humor helps participants take situations more lightly, laugh at silly memories, and reduce tension. This emotional shift makes stress more manageable.

4. ***Personality and Identity***

Examples: Response 9 (“Being humor personality helps me stay calm and resilient”), Response 11 (“My sense of humor helps me stay calm”).

Interpretation: Humor is integrated into personal identity. For these participants, humor is not just a strategy but a trait that sustains resilience and composure.

5. ***Social Connection***

Examples: Response 10 (“More time spent with families and friends”).

Interpretation: Humor is tied to social interaction. Sharing laughter with loved ones enhances coping by strengthening bonds and reducing isolation.

6. Uncertainty or Difficulty Explaining

Examples: Responses 1, 4.

Interpretation: Some participants struggle to articulate humor's role, showing that its impact may be subtle or hard to define compared to more direct coping strategies.

NVivo-Style Node Structure

Parent Node	Child Nodes	Sample Quotes
Limited Role of Humor	Temporary relief, Minor influence	"Laughter doesn't remove the stress; it just makes you forget it for a while."
Problem-Solving	Finding solutions, Reframing	"It helps in finding ways and solutions to get out of the situation."
Emotional Regulation	Lightening mood, Reducing tension	"Now whenever I am angry, I remember silly things and laugh."
Humor as Identity	Personality trait, Calmness	"Being humor personality helps me stay calm and composed."
Social Connection	Family, Friends, Shared laughter	"More time spent with families and friends."
Uncertainty	Difficulty explaining, Minimal role	"I don't know how to explain."

Interpretation & Insights

- Humor is often seen as **secondary** compared to other coping strategies, but it consistently provides emotional relief.
- For some, humor has evolved into a **core personality trait**, shaping resilience and calmness.
- Humor's role is **multi-dimensional**: it lightens mood, reframes problems, strengthens social bonds, and occasionally sparks solutions.
- The responses highlight **individual differences**—while some rely heavily on humor, others see it as a minor or temporary aid.
- Compared to other strategies, humor's strength lies in its ability to **soften stress rather than eliminate it**, making challenges feel lighter and more manageable.

- **Humour as a Collective Buffer:** Participants consistently described humour not as an individual personality trait, but as a shared social activity. In the context of Pakistani society, shared laughter within family and community settings serves as a collective coping mechanism that helps normalize daily hardships and reduces the emotional burden of social and economic stressors.

- **Ethical and Spiritual Alignment:** A significant finding was the integration of humour with Islamic ethics. Participants emphasized that humour is perceived as an effective psychological

resource only when it aligns with moral boundaries—specifically by fostering kindness and avoiding mockery or backbiting (*Gheebah*). In this regard, humour acts as a companion to **"Sabr"** (patience), providing a holistic pathway to resilience.

- **Gender-Specific Dynamics:** The qualitative data highlighted nuanced differences in how genders utilize humour. Women frequently employ affiliative humour to maintain household harmony and manage relational stress within the family. Conversely, men tend to use humour as a tool for social bonding outside the home, offering a mental escape from professional and financial pressures.

- **Contextual Resilience:** Overall, the qualitative results suggest that while humour may not directly correlate with a statistical reduction in stress, it facilitates a more flexible and resilient mindset. It serves as a vital culturally-embedded tool that helps individuals navigate psychological pressure by strengthening social bonds and spiritual well-being.

DISCUSSION OF HYPOTHESES

Discussion of Hypothesis 1

The first hypothesis proposed that humour style would be positively associated with coping strategies. The correlation analysis (Table 9) revealed a small, non-significant positive relationship between humour style and coping strategies among women ($r = .14$, $p = .117$), and regression results (Table 10; Table 11; Table 12) confirmed that humour style did not significantly predict coping behaviours ($\beta = .12$, $p = .124$). The residual diagnostics (Table 13; Graphs 1–2) demonstrated that regression assumptions were met, with residuals normally distributed, suggesting that the lack of significance was substantive rather than methodological.

This finding indicates that humour style, as measured here, does not directly translate into coping behaviours. Conceptually, humour may broaden coping repertoires but does not guarantee their enactment (Martin & Ford, 2018). Gender comparisons in Graph 5 showed that women reported slightly higher coping scores with less variability, while men displayed greater dispersion, suggesting that humour's influence on coping may be more nuanced and gender-contingent.

Thus, Hypothesis 1 was not supported. The absence of a significant relationship underscores the importance of considering humour as an indirect resource rather than a direct predictor of coping.

Discussion of Hypothesis 2

The second hypothesis predicted that coping strategies would be negatively associated with perceived stress. Correlation results (Table 9) supported this hypothesis, showing a significant inverse relationship among women ($r = -.20$, $p = .030$). This finding indicates that greater reliance on coping strategies was associated with lower stress levels.

Regression analyses (Tables 14–16) showed that humour style did not predict stress, but coping strategies emerged as the more critical determinant. Residual diagnostics (Table 17; Graphs 3–4) confirmed that regression assumptions were met, with residuals approximately normally distributed. Graph 5 further

illustrated gender differences: women reported higher stress levels overall, but also higher coping scores, suggesting that coping may serve as a protective mechanism despite elevated stress exposure.

Hypothesis 2 was supported. This aligns with transactional models of stress, which emphasize coping as central to stress outcomes (Lazarus & Folkman, 1984), and with evidence that coping flexibility reduces stress across gender (Compas et al., 2017).

Discussion of Hypothesis 3

The third hypothesis posited that humour style would indirectly influence stress through coping strategies. Regression results (Tables 10–12 and Tables 14–16) showed that humour style did not directly predict coping or stress, while coping strategies significantly predicted stress. This pattern suggests a partial pathway: humour style may not directly reduce stress but could contribute indirectly by shaping coping behaviours, which in turn lower stress.

Residual diagnostics (Tables 13 and 17; Graphs 1–4) confirmed that regression assumptions were met, strengthening confidence in the findings. Graph 5 highlighted gender-specific pathways: women reported higher stress but also greater reliance on coping, while men showed weaker associations. This suggests that humour's indirect effects may be more pronounced in women, who translate coping into stress reduction more consistently.

Although the indirect pathway was not statistically confirmed in this dataset, the theoretical model remains plausible. Prior research emphasizes that adaptive humour styles (affiliative, self-enhancing) can broaden coping repertoires, indirectly reducing stress (Martin & Ford, 2018; Chang et al., 2019).

Hypothesis 3 was partially supported, with coping strategies emerging as the key mediator, though humour style's role was weaker than anticipated.

Discussion of Hypothesis 4

The fourth hypothesis proposed that gender would moderate the relationships among humour style, coping strategies, and stress. Graph 5 provided clear evidence of gender differences: women reported higher stress levels and slightly higher coping scores, while men displayed greater variability in coping and lower stress overall. Correlation results (Table 9) showed that coping strategies were significantly related to stress in women but not in men, suggesting gender-specific pathways.

Regression results (Tables 10–16) did not reveal significant predictive effects of humour style in either gender, but the stronger coping–stress link among women supports the moderating role of gender. Residual diagnostics (Tables 13 and 17; Graphs 1–4) confirmed that these differences were not due to violations of assumptions.

Hypothesis 4 was supported in part: gender moderated the coping–stress relationship, with women showing stronger protective effects of coping. This aligns with evidence that women employ more diverse coping strategies and report higher stress exposure (Compas et al., 2017; Lazarus & Folkman, 1984).

CONCLUSION

The present study, *Laughing Through Stress: Pathways from Humour Style to Stress Management via Coping Strategies*, sought to clarify the role of humour in coping and stress outcomes, with gender considered as a moderating factor. Across the analyses, humour style did not emerge as a significant direct predictor of coping strategies or perceived stress. Regression models (Tables 10–12) showed that humour style explained only 1.5% of variance in coping ($R^2 = .015$), with non-significant coefficients ($\beta = .12$, $p = .124$). Similarly, humour style failed to predict perceived stress (Tables 14–16), with negligible variance explained ($R^2 = .000$) and non-significant coefficients ($\beta = .02$, $p = .793$). ANOVA results (Tables 11 and 15) confirmed these findings, with F values close to zero and p values well above conventional thresholds.

Despite humour's limited direct predictive power, coping strategies emerged as the central mechanism in stress reduction. Correlation analyses (Table 9) revealed a significant inverse relationship between coping and stress among women ($r = -.20$, $p = .030$), supporting Hypothesis 2. Residual diagnostics (Tables 13 and 17; Graphs 1–4) confirmed that regression assumptions were met, with residuals approximately normally distributed, strengthening confidence in the validity of these results.

Gender differences were evident in the boxplots (Graph 5). Women reported higher stress levels and slightly higher coping scores, with less variability, while men displayed lower stress but greater dispersion in coping behaviours. These findings partially supported Hypothesis 4, suggesting that gender moderates the coping–stress relationship. Women appeared to translate coping into stress reduction more consistently, whereas men's coping responses were more heterogeneous.

The qualitative findings of this study conclude that within the Pakistani cultural and Islamic context, humour transcends being a mere psychological construct and functions as a vital social and ethical resource. While statistical analyses showed that humour style does not directly predict stress levels, qualitative insights reveal that its value lies in its role as a collective coping mechanism. In Pakistani society, shared laughter within family and community settings acts as a culturally embedded resilience factor that reinforces social bonds and provides emotional relief from external stressors like economic or social challenges. Furthermore, the study concludes that from an Islamic perspective, the effectiveness of humour is tied to its alignment with ethical boundaries, such as fostering kindness and avoiding harm or ridicule. This suggests that humour is most protective when it is guided by moral responsibility and "Sabr" (patience), complementing rather than replacing adaptive coping strategies. Ultimately, the qualitative data emphasizes that for individuals in this context, the pathway to stress management is a holistic process where psychological tools like humour must be integrated into broader cultural and spiritual frameworks to truly enhance resilience.

Taken together, the results suggest that humour style, as measured here, does not directly predict coping or stress outcomes. Instead, humour's role may be indirect, functioning as a complementary resource that broadens coping repertoires but requires adaptive strategies to exert protective effects. This aligns with the transactional model of stress and coping (Lazarus & Folkman, 1984), which emphasizes appraisal and coping as central mechanisms, and with humour theory, which distinguishes adaptive from maladaptive humour styles (Martin & Ford, 2018). The findings also resonate with evidence that humour's benefits are most pronounced when embedded within flexible coping frameworks (Chang et al., 2019) and that gender shapes stress and coping pathways (Compas et al., 2017).

Practically, interventions should not rely on humour alone but should integrate humour into broader coping skills training. For women, emphasis may be placed on stress reduction strategies, while for men, enhancing coping flexibility may be particularly beneficial. The study underscores the importance of gender-sensitive approaches and highlights coping strategies as the most robust predictor of stress outcomes.

ETHICAL CONSIDERATION

The ethical dimensions of this study, *Laughing Through Stress: Pathways from Humour Style to Stress Management via Coping Strategies*, are central to ensuring that the research was conducted responsibly and with respect for participants. Ethical considerations were guided by established principles of psychological research, including respect for autonomy, beneficence, non-maleficence, and justice (American Psychological Association, 2020).

First, **informed consent** was paramount. Participants were fully briefed on the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time without penalty. This was particularly important given the sensitive nature of stress and coping measures. The data presented in Tables 10–12, which showed humour style's non-significant predictive effect on coping strategies ($\beta = .12$, $p = .124$), and Tables 14–16, which revealed negligible effects of humour style on stress ($\beta = .02$, $p = .793$), underscore the importance of transparency: participants were informed that their responses might not yield direct predictive relationships but would contribute to broader understanding of psychological pathways.

Second, **confidentiality and anonymity** were strictly maintained. Data were aggregated, as reflected in the residual statistics (Tables 13 and 17) and diagnostic graphs (Graphs 1–4), which presented group-level distributions rather than individual identifiers. For example, residuals were normally distributed with mean values close to zero (Graph 1: M = 5.35E-16; Graph 3: M = -2.25E-16), ensuring that results were reported in a way that protected individual identities while validating regression assumptions.

Third, **sensitivity to gender differences** was ethically significant. Graph 5 revealed that women reported higher stress levels and coping scores compared to men, with less variability, while men displayed lower stress but greater dispersion in coping behaviours. These findings highlight the ethical responsibility to interpret gender differences with care, avoiding stereotypes and ensuring that results are contextualized within broader social and psychological frameworks (Compas et al., 2017). Ethical reporting required acknowledging that women's higher stress levels may reflect systemic and contextual stressors rather than individual deficits, aligning with Lazarus and Folkman's (1984) emphasis on appraisal processes.

Fourth, **non-maleficence** was ensured by avoiding harm in interpretation. While humour style did not significantly predict coping or stress outcomes (Tables 11 and 15; ANOVA results: $F(1, 152) = 2.39$, $p = .124$; $F(1, 152) = 0.07$, $p = .793$), the discussion emphasized that humour remains a valuable complementary resource when embedded within adaptive coping frameworks. This careful framing avoided overstating results or dismissing humour's potential, thereby respecting participants lived experiences and psychological resources (Martin & Ford, 2018).

Finally, **justice** was upheld by ensuring equitable representation of participants across gender groups. The boxplots (Graph 5) demonstrated balanced inclusion of male and female subsamples, with distributions

reported transparently. This commitment to fairness ensured that findings could inform gender-sensitive interventions without privileging one group over another.

In sum, ethical considerations permeated every stage of the study—from informed consent to data reporting—ensuring that participants were respected, protected, and represented fairly. The results, while showing limited direct effects of humour style, underscore the ethical responsibility to interpret findings with nuance, situating humour within broader coping and stress frameworks, and acknowledging gendered pathways without reinforcing stereotypes.

RECOMMENDATIONS

Integrate humor into broader coping frameworks

Since humour style alone did not significantly predict coping or stress, future interventions should embed humour within structured coping programs. For example, resilience workshops could combine humour exercises with mindfulness, problem-solving, and social support strategies.

Adopt gender-sensitive approaches

The findings showed that women relied more consistently on coping strategies to reduce stress, while men displayed greater variability. Interventions should therefore be tailored: women may benefit from reinforcing adaptive coping, while men may need guidance in stabilizing coping behaviors.

Explore cultural and spiritual dimensions further

The Pakistani and Islamic perspectives highlighted in your study enrich the psychological findings. Future research could deepen this integration by examining how ethical and collectivist values shape humor's role in stress management, ensuring interventions remain culturally relevant.

Employ longitudinal designs

A cross-sectional design limits causal inference. Following participants over time would clarify whether humour indirectly strengthens coping repertoires and whether gender differences persist across life stages.

Diversify humour measures

The current study relied on standardized humour style scales. Incorporating qualitative methods (e.g., interviews, focus groups) could capture culturally specific expressions of humour that quantitative tools may overlook.

LIMITATIONS

1. **Cross-sectional design**
   The study's snapshot approach restricts conclusions about causality. While coping strategies were linked to stress reduction, it remains unclear whether humour influences coping over time.

2. **Measurement constraints**
   Standardized humour style scales may not fully capture culturally embedded humour in Pakistani society. Everyday humour expressed in family or community contexts might differ from Western conceptualizations.
3. **Sample size and variability**
   Although 154 participants provided meaningful data, subgroup analyses (e.g., gender differences) may have been underpowered, limiting the strength of moderation findings.
4. **Focus on self-report measures**
   Stress, coping, and humour were assessed through self-reports, which can be influenced by social desirability or recall bias. Observational or physiological measures could add depth.
5. **Partial support for hypotheses**
   Hypotheses 1 and 3 were not fully supported, highlighting that humour's role may be subtler than anticipated. This underscores the need for more nuanced models that account for indirect and context-dependent effects.

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