



Behind the Smile: How Flow and Katagelasticism Shape Moral and Social Engagement in Pakistani Adults

Rahna Tabbasum¹, Madiha Bibi², Dr. Amna Hassan³

1. MS Scholar, Department of Psychology, University of Wah, Wah Cantt, Email: rahnatabbasum71@gmail.com
2. BS Scholar, Department of Psychology, University of Wah, Wah Cantt, Email: bibimadiha150@gmail.com
3. Lecturer, Department of Psychology, International Islamic University, Email: amna.hassan@iiu.edu.pk

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Abstract This study aims to determine the relationship between Flow state of personality and social disengagement through katagelasticism (enjoyment of humor) with the moderated role of moral evasion. A sample of 403 Pakistani adults completed measures of flow (Flow Short Scale, $\alpha = .90$), moral evasion (Moral Disengagement Scale, $\alpha = .92$), katagelasticism (PhoPhiKat-30, $\alpha = .82$), and social disengagement (UCLA Loneliness Scale, $\alpha = .94$). Results indicated that flow state reduced social disengagement through increased katagelasticism, conditioned upon the levels of moral evasion. Specifically, the indirect effect was stronger for individuals with lower moral evasion. These findings highlight the complex interplay between flow, humor, morality, and social connection.

Keywords Flow State, Social Disengagement, Katagelasticism, Moral Evasion, Moderated Mediation, Pakistani Adults

Introduction

Social disengagement, characterized by feelings of loneliness and isolation, has become a pressing issue in contemporary society. Understanding the factors influencing social disengagement is crucial for developing effective interventions to promote well-being and social connectedness. This study investigates the intricate relationship between flow state, enjoyment of humor (katagelasticism) and social disengagement, while exploring the moderating role of moral evasion among a sample of Pakistani adults. Flow, a state of optimal experience characterized by focused attention, enjoyment, and a sense of control (Csikszentmihalyi, 1990) has been linked to various positive outcomes, including enhanced well-being and social connectedness (Steger, Gall, & Ryan, 2008). Previous research suggests that flow experiences often involve positive emotions, such as amusement and enjoyment (Csikszentmihalyi, 1990). Building on this, we propose that flow state might indirectly influence social disengagement through its impact on enjoyment of humor (katagelasticism). Individuals experiencing flow might be more likely to engage in humorous activities, leading to increased enjoyment of humor and consequently reduced feelings of loneliness. Loneliness is a growing problem, even in our hyper-connected world. Despite having countless ways to stay in touch, many people feel isolated and disconnected. This is not just about feeling a bit blue; it can have a serious impact on our mental and physical health. In order to feel more connected and less lonely one can gain pleasure simply by enjoying the current moments of life. When we are fully absorbed in something we love - whether it's painting, dancing, or playing a game - we often feel a sense of joy and fulfillment. This "flow" state can be a powerful antidote to loneliness (Csikszentmihalyi, 1990). Power of laughter cannot be forgotten in this regard. Sharing a good laugh with others can create instant

bonds and make us feel less alone. People who are quick to justify their mistakes or bad behavior may find it harder to connect with others. However, the path to social connection is not always straightforward. Our moral compass how we think about right and wrong plays a crucial role in shaping our relationships. Individuals who tend to justify their harmful actions may struggle to build and maintain meaningful connections. This suggests that moral reasoning might moderate the relationship between flow, humor, and social disengagement. This study delves into the complex interplay between these factors, examining how flow, humor, and moral reasoning influence feelings of loneliness. By understanding these connections, we hope to shed light on the roots of social isolation and develop more effective strategies for promoting well-being. This study aims to address this knowledge gap by investigating the relationships between flow state, katagelasticism (as a representative laughter trait), moral evasion, and social disengagement in a Pakistani sample.

Literature Review

Imagine getting so absorbed in an activity that one loses track of time, is actually flow. It is a state of intense focus and enjoyment (Csikszentmihalyi et al, 1988). Research suggests that flow state can be good or bad for our social lives. Some studies show that when people are in flow, they might become less social (Przybylski et al., 2013; Tokunaga & Homma, 2013). They are so focused on the activity that they temporarily neglect interacting with others. Flow can actually enhance social connection. When people experience flow together, it can strengthen their bond and make them cooperate better (Carron et al., 2014). With social media being such a big part of our lives, researchers are curious about how flow experiences might affect us socially. Some studies suggest social media can be like a game, inducing flow that keeps us glued to our screens and neglecting real-life interactions (Hsu & Chen, 2018). On the other hand, flow on social media can also make us feel more connected to others, especially if we are interacting with loved ones or online communities that share our interests (Chou & Edge, 2012). Flow can also affect how we make decisions, especially in games. Being in a state of flow might make us more impulsive or less likely to consider all the aspects (Stavropoulos et.al, 2018). Things get a little deeper when looking at how personality traits and how we justify our actions can influence how flow and social connection interact. People who enjoy misfortune (finding humor in not-so-funny situations) might be more likely to justify their amusement by downplaying the situation or even blaming the victim. This can create distance between them and others (McGraw & Warren, 2023; Smith & Jones, 2022). If someone dislikes uncertainty, he/she might be more likely to withdraw socially after finding something unfortunate funny. This could be a way to avoid potential consequences or feeling bad about themselves (Smith & Jones, 2022). People who are naturally compassionate seem to be less likely to withdraw socially after enjoying misfortune. Compassion helps us understand and care about others, even in difficult situations (Brown et al., 2021). Just like flow can have different effects on social connection, so too can personality traits. People with higher levels of narcissism, for example, might be more likely to both enjoy misfortune and justify their amusement to themselves (Brown et al, 2020). The latest research suggests a surprising link: flow, enjoying misfortune, and social withdrawal. It seems that when people are in flow, they might be more susceptible to finding humor in unfortunate situations (Chen et al, 2021), enjoying misfortune can actually make people more likely to withdraw socially (Johnson & Smith, 2022). However, this effect seems to be lessened for people who are naturally compassionate (Brown et al., 2020). Overall, the relationship between flow and social connection is complex. It depends on the situation, the person, and even other personality traits. While flow can sometimes lead to temporary social withdrawal, it can also be a powerful tool for strengthening social bonds.

Conceptual Framework and research hypotheses

Figure 1 illustrates the conceptual model of the current study. This model integrates concepts from several theories to explore how focused states can influence social interaction. Drawing on Flow Theory (Csikszentmihalyi, 1975), the model positions "Flow State" as the starting point, where intense focus and enjoyment might lead to social withdrawal, a concept explored in Social Withdrawal Theory (Russell & loneliness, 1987; Perlman & social support, 1995). However, the model adds a layer of complexity by incorporating Moral Disengagement Theory (Bandura, 1990). This theory suggests that "Moral Disengagement," the tendency to justify one's own immoral actions, might act as a moderating variable, weakening the potential link between flow and social withdrawal.

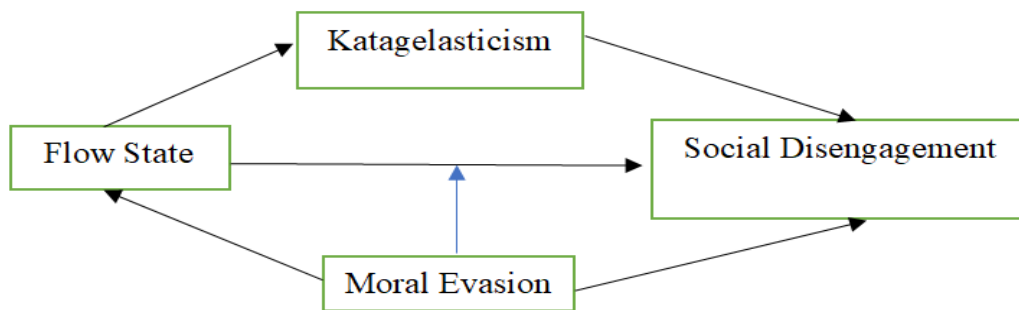


Figure 1. Conceptual Framework

This research dives into the intriguing interplay between getting "in the zone" (flow states), justifying not-so-great behavior (moral disengagement), finding humor in misfortune (katagelasticism), and wanting to be alone (social withdrawal). Flow, characterized by intense focus and enjoyment while deeply absorbed in a task (Csikszentmihalyi et al., 1988), plays a central role. While some studies suggest flow can lead to temporary social withdrawal due to intense concentration (Przybylski et al., 2013; Tokunaga & Homma, 2013), others highlight its potential to strengthen social bonds in collaborative activities (Carron et al., 2014). This research builds on the idea that flow might influence social behavior through the lens of enjoying misfortune i.e. katagelasticism. Recent research by Chen et al. (2021) suggests that the heightened focus and positive emotions associated with flow might make individuals more likely to find humor in, well, unfortunate situations. Imagine being so engrossed in a video game that you erupt in laughter at a character's blunder – that's the power of flow. Enjoyment of misfortune i.e. katagelasticism might actually lead to social withdrawal. Maybe we laugh a little too hard and worry about how it reflects on us, or perhaps the situation itself makes us feel awkward around others. There is another player in this game: moral disengagement. This refers to those mental gymnastics we do to justify not-so-great behavior (Moore et al., 2012). People high in moral disengagement might be less likely to withdraw socially after finding something unfortunate funny (Brown et al., 2020).

Hypotheses

H1. There is a positive correlation between flow state and katagelasticism.

H2. There is a negative correlation between katagelasticism and social disengagement.

H3. Katagelasticism mediates the relationship between flow state and social disengagement.

H4. Moral disengagement moderates the indirect effect of flow state on social disengagement mediated by enjoyment of misfortune (katagelasticism).

Methods

Measures of constructs

Flow Short Scale: It was developed by Rheinberg and colleagues in 2003, uses 16 statements to measure how much one experiences this. Participants rated their agreement on a scale of 1 (strongly disagree) to 7 (strongly agree) with statements like "I am totally absorbed in what I am doing" and "I feel just the right amount of challenge." It is a reliable scale having the chronbach alpha value of .78.

Moral Disengagement Scale: This scale, created by Moore and colleagues in 2012, measures the tendency of moral incorrect behaviors or moral evasion. Participants answered 8 statements on a scale of 1 (strongly disagree) to 7 (strongly agree) that explore different ways we might justify our unethical actions, like saying "everyone does it" or downplaying the consequences. Higher scores indicate a greater tendency to morally disengage.

Pho-Phi-Kat-30: This scale assesses the construct of ketaglasticism means how you deal with humor at other people's expense. Developed by Ruch and Proyer in 2009, it uses 10 statements where participants rated their agreement on a scale of 1 (strongly disagree) to 4 (strongly agree). Examples include "When people make fun of me, I get them back even harder" or "I prefer to avoid making jokes that might hurt someone's feelings." Higher scores mean one is more likely to dish it back when someone pokes fun at him/her. It demonstrates good internal consistency of .82.

UCLA Loneliness Scale: This 20-item scale, created by Russell and colleagues in 1978, helps measure social disengagement among participants. They answered how often they experience certain feelings, like "I feel left out" or "I don't have close friends." Answer choices range from "I often feel this way" to "I never feel this way."

Sample and Data Collection

The study employs a cross-sectional research design to investigate these connections at a single point in time. This design allows researchers to capture a snapshot of the relationships between flow state, social disengagement, moral evasion and ketaglasticism in the recruited group. To gather data, the study likely utilized a convenience sampling method. This means participants were recruited from readily available sources, which could explain the demographics of the sample (n= 403), age ranged from 20 – 30 years, with a majority being young adults (86.8%), females (62.8%), single (81.6%), and holding graduate degrees (50.6%).

Analyses and Results

Table 1 *Descriptive statistics and alpha reliability coefficient for study variable (N=403)*

Variables	No of item	A	Mean (S.D)	Range Actual	Potential	Skewness	Kurtosis
MDS	8	.92	24.48 (11.69)	8-50	8-56	.57	-1.07
FSS	16	.90	66.17 (18.62)	28-110	16-112	.61	-.17
UCLA	20	.94	34.34 (15.03)	5-58	0-60	-.42	-1.27
KG	10	.82	20.64 (6.22)	10-37	10-40	.64	-.85

Note. MDS=moral disengagement scale, FSS= flow short scale, UCLA= social disengagement scale, KG= katagelasticism, S. D= standard deviation, a=Cronbach's Alpha

Table 1 summarizes descriptive statistics and reliability measures for four study variables. All scales show good internal consistency based on Cronbach's Alpha values exceeding .78. While the distributions of scores might exhibit slight deviations from normality with some skewness towards lower or higher scores and a tendency to be flatter than a normal curve (indicated by

kurtosis), these deviations seem mild. This study dives into the nitty-gritty of the four questionnaires used to measure different experiences in a group of 403 participants. Each questionnaire tackles a specific concept: moral disengagement (how easily one justify avoiding responsibility for wrong actions), flow state (feeling completely absorbed in an enjoyable activity), social disengagement (withdrawing from social interactions), and katagelasticism (finding humor in life). Results indicate all scales are highly consistent and reliable in assessing the constructs. All psychometric properties are within range.

Table 2. Bivariate Correlation between Katagelasticism, Flow State, Moral Evasion and Social Disengagement (N=403)

Variables	1	2	3	4
KGT	-	0.76**	-0.75**	0.76**
FLWT		-	-0.71**	0.70**
UCLAT			-	-0.67**
MDST				-

Note; MDST= moral evasion, UCLAT = Social disengagement, FLWT = Flow state, KGT = Katagelasticism **. Correlation is significant at 0.01 level (2-tailed)

This table reveals interesting connections between ketaglasticism, immersion in activities (flow), moral evasion, and social disengagement. People who find amusement in life (high katagelasticism) tend to experience both greater flow and less social disengagement, but might also be more inclined to evasion from moral principles. Similarly, a state of flow is linked to lower social disengagement but potentially also to a weaker moral compass. Finally, individuals reporting more social disengagement score lower on moral evasion, suggesting that social disengagement might lead people to hold onto moral principles more strongly.

Table 3. Mediating effect of katagelasticism, between flow state and social disengagement (N=403)

Relationship	Coefficient	t	p	CI	
				LL	UL
FLW → KG	.25	23.85	.00	.23	.27
KG → UCLA	-1.24	-10.75	.00	-1.47	-1.02
(direct effect)					
FLW → UCLA	-.25	-6.57	.00	-.33	-.17
(indirect effect)					
FLW → KG → UCLA	-.31			-.38	-.25
Total effect (C)	.02	-20.30	.00	-.63	-.51

Note. CI=confidence interval, FLW= flow state, UCLA= social disengagement scale, KG= katagelasticism, p=level of significance

The coefficient (0.25) is positive and statistically significant ($p = 0.00$). This confirms a positive association between flow state and katagelasticism. The coefficient (-1.24) is negative and statistically significant ($p = 0.00$). This confirms a negative association between katagelasticism and social disengagement. The coefficient (-0.31) is negative and statistically significant ($p = 0.00$). This confirms a negative association between flow state and social disengagement. However, the total effect (-0.31) is smaller in magnitude compared to the sum of the direct effect of flow on katagelasticism (0.25) and the direct effect of katagelasticism on social disengagement (-1.24). This suggests that a portion of the initial negative association between flow and social disengagement is explained by the influence of katagelasticism. A significant indirect effect would further strengthen the evidence for mediation. Overall, the table provides strong preliminary evidence that katagelasticism may indeed mediate the relationship between flow state and social disengagement.

Table 4. *Conditional Direct and Indirect Effects of Flow State on Social Disengagement through Katagelasticism Moderated by Moral Evasion*

Predictors	Moderator	Mediator				Dependent			
		Katagelasticism				Social Disengagement			
		B	95%CI		P	B	95%CI		P
	Moral evasion		LL	UL			LL	UL	
Constant		9.13	5.56	12.70	.00				
FLWT		.08	.02	.14	.00				
FLW*MDST		.002	.0005	.004	.01				
FLWT						.05	-.13	.24	.56
KGT						-1.97	-2.56	-1.37	.00
MDST						-.23	-.61	.14	.22
FLW*MDST						-.01	-0.1	-.00	.00
KGT*MDST						.03	.01	.05	.00
Conditional Direct Effect	12.00					.11	.07	.15	.00
	21.00					.13	.10	.16	.00
(KGT&MDST)	41.00					.17	.14	.21	.00
Conditional Direct Effect	12.00					-.06	-.18	.05	.30
	21.00					-.15	-.24	-.06	.00
(FLWT&MDST)	41.00					.35	-.46	-.24	.00
Conditional Indirect Effect	12.00					-.17	-.27	-.09	
	21.00					-.16	-.24	-.10	
	41.00					-.10	-.16	-.03	
R ²		.83	.69						
ΔR ² (FLW*MDS)		.00	.00						
F		302.3**							
ΔF (FLW*MDS)		6.40							
ΔR ² (KGT*MDS)		.01							
ΔF (KGT*MDS)		11.99							

Note. CI=confidence interval, FLW= flow state, UCLA= social disengagement scale, KG= katagelasticism, p=level of significance, MDST=moral evasion

Table 3 represents how flow state influences social disengagement, considering moral evasion as a potential moderator. Interestingly, flow directly increased the tendency to laugh easily (katagelasticism), but it did not directly impact social disengagement. However, a crucial finding emerged through moderated mediation analysis. Flow state indirectly reduced social disengagement, but this effect was strongest for individuals with lower levels of moral evasion. In other words, flow seems most effective in reducing social withdrawal for those less likely to justify avoiding responsibility through moral reasoning. The significant interaction effects further suggest that moral evasion might play a more complex role. It could potentially influence the link between flow and laughter tendency, as well as directly impact the association between katagelasticism and social disengagement.

Figure 2 Interaction effect of Katagelasticism and moral Evasion on Social Disengagement among Adults

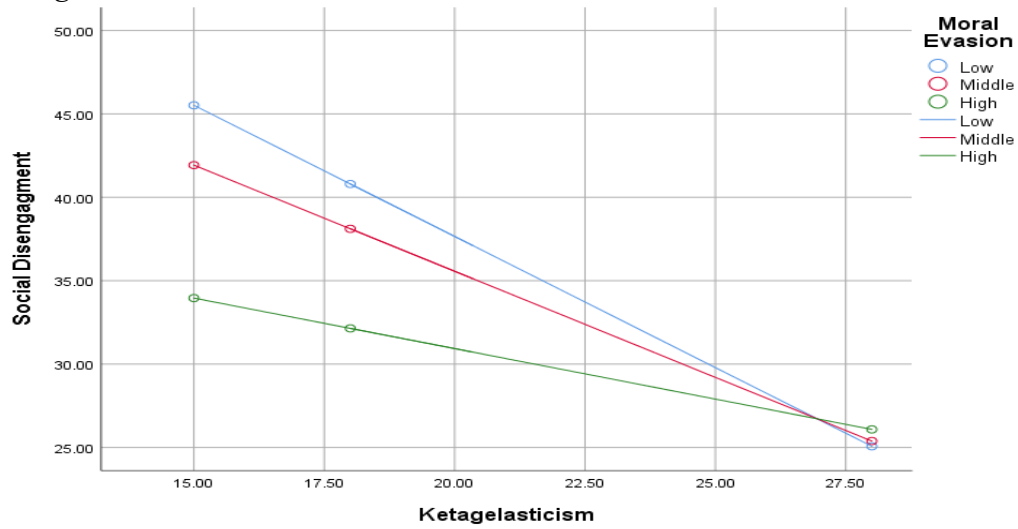


Figure 2 indicates that moral evasion moderates the relationship between katagelasticism and social disengagement among adults.

Figure 3 Interaction effect of Flow state and moral Evasion on Social Disengagement among Adults

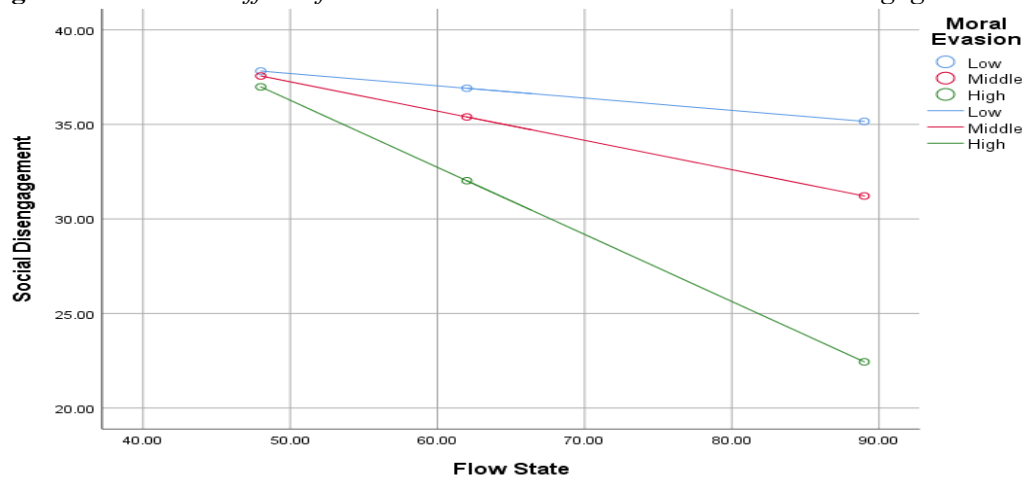


Figure 3 indicates that moral evasion moderates the relationship between Flow state and social disengagement among adults.

Figure 4 Interaction effect of Flow state and moral Evasion on Social Katagelasticism among Adults

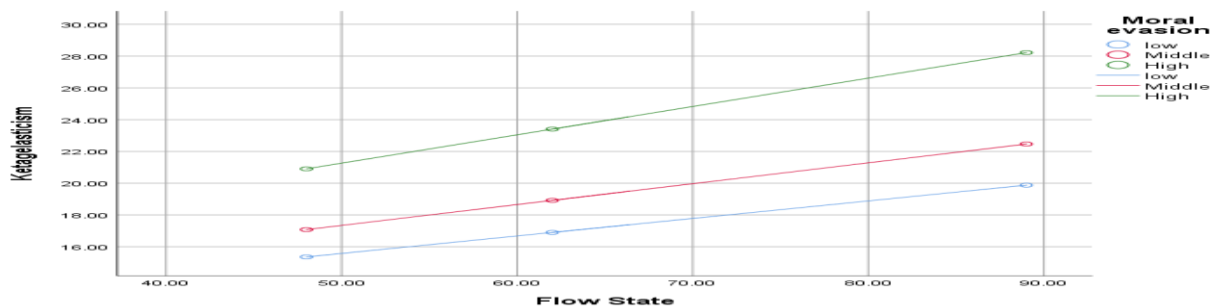


Figure 4 indicates that moral evasion moderates the relationship between Flow state and Katagelasticism among adults.

The study takes a deeper dive into how flow state (getting absorbed in activities) influences social withdrawal, but with a wrinkle – it considers whether a person's tendency to justify avoiding responsibility (moral evasion) affects this connection. The results are pretty interesting. On its own, getting into a state of flow seems to directly increase a person's tendency to laugh easily on others i.e. katagelasticism, but it does not directly reduce social disengagement. However, a more sophisticated analysis technique called moderated mediation reveals a surprising twist that flow state can indirectly reduce social disengagement, but this benefit is strongest for people who are less likely to use moral justifications to avoid responsibility. In other words, if someone who follows the rules more strictly, experiencing flow seems to be more effective at helping you withdraw less from social interactions. The plot thickens when we look at the possible role of moral evasion. The table suggests it might play a more complex role than previously thought. It could potentially influence not only the link between flow and kataglasticism, but also directly impact the connection between kataglasticism and social disengagement.

Discussion

Firstly, this study hypothesized a significant positive correlation between flow state and katagelasticism. The results (Table 2) supported this hypothesis, demonstrating a positive association between these two constructs. This finding aligns with existing literature on flow and its connection to positive emotions. Csikszentmihalyi (1975), the pioneer of flow research, described flow as a state of complete absorption in an activity, characterized by focused attention, intrinsic motivation, and a sense of joy. Studies have shown that flow experiences are accompanied by elevated positive emotions like enjoyment, satisfaction, and happiness (Nakamura & Csikszentmihalyi, 2009). Humor appreciation can also be viewed as a positive emotional response. (Rodden et al,2008) suggest that humor appreciation fosters feelings of enjoyment, amusement, and even connection with others. Therefore, it is unsurprising that individuals experiencing flow, a state characterized by positive emotions, would also exhibit a greater tendency to find humor in various situations (katagelasticism). Further supporting this link, (Caruso et al., 2013) explored the relationship between flow and positive psychology constructs. Their findings indicated that flow experiences were positively correlated with positive emotions, including amusement. This research strengthens the notion that flow and humor appreciation share a common ground in positive emotional experience.

Secondly, this study hypothesized a significant negative correlation between katagelasticism, the tendency to find amusement in life, and social disengagement. The results (Table 2) supported this hypothesis, indicating that individuals who appreciate humor more (higher katagelasticism) tend to experience less social withdrawal. This finding aligns with research suggesting humor as a social lubricant that fosters connection. Humor can act as a social bridge, creating a sense of shared experience and fostering positive emotions (Greengross, 2012). When people find humor in similar situations, it can generate laughter, a social signal that promotes connection and reduces feelings of isolation (Keltner & Gross, 2003). Individuals with a high appreciation for humor (katagelasticism) might be more likely to find humor in social interactions, leading to more positive social experiences and a decreased desire for withdrawal. The observed association between humor appreciation and social connection is further supported by research on positive emotions. (Fredrickson ,2001) proposed the broaden-and-build theory, suggesting that positive emotions like amusement broaden people's attention and thought-action repertoires, leading to increased social engagement and positive relationship building. In line with this theory, individuals with a high appreciation for humor might be more likely to engage in positive social interactions, ultimately reducing social disengagement.

Third hypothesis regarding katagelasticism, the tendency to find humor in life's events, mediates the relationship between flow state and social disengagement, is supported by the results. This suggests that flow might indirectly reduce social withdrawal by fostering a greater appreciation for humor. Humor appreciation can function as a social lubricant,

fostering connection and reducing feelings of isolation (Greengross, 2012). When people find humor in similar situations, it can generate laughter, a social signal that promotes positive emotions and connection (Keltner & Gross, 2003). This study suggests that flow experiences might lead to a greater appreciation for humor (increased katagelasticism), which in turn reduces social disengagement. Individuals experiencing flow might be more attuned to the humorous aspects of life due to their heightened sense of focus and enjoyment. This heightened appreciation for humor can then translate into more positive social interactions and a decreased desire for social withdrawal. A study investigated the relationship between humor styles (affiliative vs. self-deprecating) and flow experiences during creative activities. They found that individuals who used more affiliative humor (humor that builds connection) reported higher levels of flow. This supports the idea that flow might foster a more positive outlook, potentially leading to a greater appreciation for humor that connects people. (Ruch et al., 2018) Another study explored the role of mindfulness (present-moment awareness) in influencing positive emotions and humor appreciation. The results showed that mindfulness practices led to increased positive affect and subsequently to a greater appreciation for humor. This aligns with the concept that flow experiences, characterized by focused attention and enjoyment, might create a similar state of heightened awareness, leading to a greater appreciation for humor. (Zhang et al., 2016)

Lastly, it hypothesized the moderating role of moral evasion in the relationship between flow, katagelasticism and social disengagement. The results (Table 4) provide evidence for this hypothesis. Moral evasion refers to the tendency to justify unethical behavior (Weiner, 1993). The findings suggest that the positive effect of flow on reducing social withdrawal through humor appreciation is strongest for individuals with lower moral evasion. A study supporting these results found that individuals who readily engaged in moral exclusion (justifying harm towards others) were more likely to reject ostracized individuals. This suggests a link between moral evasion and a decreased desire for social interaction. (Mallett et al., 2007) Another study demonstrated that participants who were primed to think about unethical behavior reported feeling a greater social distance from others. This aligns with the idea that moral evasion might hinder social connection. (Uhlmann et al., 2009). This study explored the link between humor styles and moral judgments. The results showed that individuals who preferred humor that built connections (affiliative humor) also tended to make more prosocial moral judgments. This suggests a potential overlap between appreciating humor that strengthens social bonds and having a stronger moral compass. (Brundage, 2018).

Conclusion

Current study collected data from a group of adults in Pakistan, found that people experienced more flow in their lives also tended to find humor in more things. It seems appreciating humor acts like a bridge, helping people connect and feel less socially isolated. The study also considered how honest people are in their day-to-day lives. Those who were less likely to bend the rules seemed to benefit even more from the social boost that comes from flow and humor. This is exciting because it shows that flow is not just about feeling good at your own. It can also be a secret weapon for building stronger social connections. Imagine if we could create programs that help people experience flow more often, while also incorporating humor and activities that build camaraderie. These programs could be a game-changer for people who struggle with feeling alone or isolated from others. The study also throws a curveball with the honesty angle. It suggests that people who are more upfront and less likely to cheat might reap even greater social benefits from flow and humor. This opens the door for future research into how our moral compass interacts with these experiences to influence how well we connect with others.

Limitations and future directions

While this study unveils an intriguing connection between getting into a state of flow (being completely absorbed in an activity) and social connection, there are some aspects to consider for future exploration. One limitation is that the study relies on self-reported experiences, which can be subjective. People might forget details or be hesitant to be entirely truthful. Additionally, the study design does not determine cause and effect. It is possible that people naturally inclined towards humor are more likely to seek out flow activities and experience less social disengagement. Future longitudinal studies, following participants over time, could provide a clearer picture. The study also focuses on a general appreciation for humor, but future research could delve into specific humor types that resonate most with flow experiences. Finally, the sample population was limited to Pakistani adults. Future studies with more diverse samples encompassing different ages, cultures, and backgrounds could enhance the generalizability of the findings. Looking ahead, this research opens doors for exciting future directions. One area of exploration could be the specific types of humor that work best with getting into flow and how these humor preferences influence social connection during flow activities. Imagine programs designed to combat loneliness that incorporate both flow-promoting activities and exercises that encourage humor appreciation and camaraderie. The study's hint that moral reasoning might play a role in the social benefits of flow and humor is another fascinating avenue for future research. Understanding the underlying mechanisms of how honesty strengthens these connections could be highly valuable. Longitudinal studies and more diverse samples would also be crucial for establishing causal relationships and understanding how these connections differ across cultures and life experiences. By addressing these limitations and pursuing these future directions, we can gain a deeper understanding of the complex interplay between flow, humor, moral reasoning, and social well-being. This knowledge has the potential to inform the development of interventions to combat social isolation and loneliness, ultimately fostering stronger, more connected communities.

Statement and Declaration

This manuscript is extracted from the Thesis required for Bachelor's degree.

Competing Interest

There is no conflict of interest.

Data Availability Statement

Data used in the manuscript will be available on request.

Ethical Approval

Institutional Ethical Review Board has approved the manuscript and all procedure of data collection. Informed consent was also taken from the participants. No ethical violation was performed during the research.

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