negotiation and conflict management research

Impact of job insecurity on work-family conflict: The role of job-related anxiety and insomnia

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Abstract

The purpose of this study is to examine the impact of job insecurity on work-family conflict through the mediating role of job-related anxiety and insomnia and how these variables contribute to increased work-family conflict. The study was conducted on 224 construction sector employees in Islamabad, Pakistan. To test the hypotheses, we employed structural equation modeling using Smart-PLS 4.0. This study contributes to the job insecurity and conflict literature by clarifying the linking role of job-related anxiety and insomnia. The findings suggest that job insecurity can be a significant source of stress, leading to higher levels of job-related anxiety and insomnia. It is necessary to take into account employees' insomnia and job-related anxiety problems since they can significantly impact the association between work insecurity and work-family conflict. This study extends our understanding of the mechanism between job insecurity and work-family conflict by testing the mediating impact of job-related anxiety and insomnia.

Introduction

Job insecurity (JI) has been recognized as a prominent stressor in the modern workplace, exerting adverse effects on both individuals and organizations (Shoss, 2017; Richter & Näswall, 2019), and has become increasingly significant in contemporary work settings (Lee et al., 2018). The phenomenon of JI has been identified as a source of considerable frustration, leading individuals to experience a range of negative emotions and psychological difficulties (Wilson et al., 2020). JI has been highlighted as a major stressor (Demirović Bajrami et al., 2021; Wong et al., 2021). Therefore, the issue of JI remains a paramount concern that necessitates additional investigation within the context of scholarly literature. Recent studies highlighted the imperative need for further exploration and examination within this domain (Abbas et al., 2021; C.-C. Chen et al., 2022).

Work-family conflict (WFC) is when employees are overly preoccupied and engrossed in work-related matters during their leisure time, impeding their capacity to carry out familial obligations and creating a dichotomy between work-related and family-related responsibilities (Wayne et al., 2017). An acknowledged aspect of the workplace, JI is a recognized element of the workplace and has been related to work-related stress (Jiang & Lavaysse, 2018). The studies (De Witte et al., 2016; Greenhalgh & Rosenblatt, 2010) examined the relationship between WFC and health outcomes. These findings suggest that WFC and JI have significant health and family life consequences. A few meta-analyses (Cheng & Chan, 2008; Jiang & Lavaysse, 2018) and articles (Guerola, 2023; Petitta et al., 2024; Portovedo et al., 2023) have consistently found essential associations between JI and various dimensions of individual health and well-being, performance and behavior at work, interpersonal contagion and spillover effects, life satisfaction, work-family balance, depression, psychological contract breach, violation, strain, general health, anxiety, and organizational citizenship behavior (Baldissarri et al., 2023; Lee et al., 2018). Many employees worry about their job stability, which causes them to feel more stressed (Giunchi et al., 2016). Due to this, employees' sleep quality is affected, resulting in insomnia and sleep disorders (De Lange et al., 2009). Insomnia is a common sleep disorder recognized as a prominent public health concern (Morin & Benca, 2012). Prior studies have indicated that insomnia has been associated with several health issues, including work-related challenges (Bos & Macedo, 2019), both physical and mental health issues (Léger et al., 2012), and a higher mortality risk (Sivertsen et al., 2014).

According to recent research, JI has emerged as a notable source of stress for employees (Z. Li et al., 2023). JI is often seen as an essential source of stress for employees, as it puts their economic well-being at risk and affects their family's well-being (Nauman et al., 2020). Anxiety and depression have an essential relationship with WFC and multiple adverse health outcomes (Hammen, 2005; Khudaykulov et al., 2024). Those can be life-threatening or subsequently involve risky behaviors like violence and suicide. In an organizational context, this issue develops when workers perceive a lack of resources to meet their job demands. JI is a cause of anxiety among employees when they perceive that the work environment poses a risk to their overall well-being (Wong et al., 2021). Research has shown that individuals who experienced stress during the pandemic were more susceptible to developing symptoms of depression and anxiety (Antino et al., 2022). The domains of work and family are essential in a person's life. It is noteworthy that the relationship between these domains, together with factors such as JI, can affect family relationships, specifically regarding JRA and insomnia. Hence, it is crucial to carefully analyze the relationship between JI and JRA, including insomnia, with the potential impact of WFC. Additionally, it is

essential to highlight that a relationship has been found between JRA, insomnia, and WFC. Previous studies have consistently shown that the relationship between insomnia and JRA can have adverse impacts on family relationships, leading to negative outcomes.

This study provides several contributions to the domain of JI and WFC research. The investigation of JRA and insomnia within the organizational context as mediators connecting JI with WFC presents a less explored path for research. By identifying the novel mechanism, the present study can enhance the theoretical farmwork related to processes that connect JI with its subsequent outcomes (Richter et al., 2015). Secondly, our research employs a two-wave data collection design to examine the impact of JI on WFC outcomes. By adopting this approach, we aim to enhance our understanding of the temporal dynamics that support the relationship between JI and WFC. Finally, this study of the fundamental mechanism behind JI bears essential implications. These findings in this area possess and create recommendations specifically designed to reduce the negative impact of JI within real-life situations.

Theoretical Background

JI is a widely known determined and potential risk in the work environment (Heaney et al., 1994) and has garnered attention from scholars (Chih et al., 2017; Giunchi et al., 2016; J. Shin & Shin, 2020). Research shows that JI can harm employees. It profoundly impacts how an employee behaves at work and even outside of work. The JI can affect people's behavior both at work and home and their balance between work and home (Chirumbolo & Areni, 2010). JI is a psychological state characterized by a feeling of powerlessness that stems from the inability to secure a desired job due to unstable working conditions (Greenhalgh & Rosenblatt, 1984). JI has a notable negative influence on work, but the impact remains in the workplace. It has been observed that JI entails decreased marital satisfaction, negative impacts on parenting, and enhanced WFC (Mauno et al., 2017). The current economic environment has a very high rate of unemployment.

Consequently, the employees face raised anxiety about employment security and occupational stability. JI is a major threat to employees' quality of life and ability to manage their work-life balance successfully (Begum et al., 2022). The existence of JI can be detrimental both to the mental health of the employee and their ability to keep a healthy work-life balance. Over the last few decades, employees and organizations have notably emphasized achieving a work-life balance. WFC refers to the adverse interplay between work and personal life, wherein individuals allocate excessive resources, such as energy and time, to their professional or familial roles, resulting in a perceived difficulty in effectively fulfilling the other role (Greenhaus & Beutell, 1985). Work-life balance is challenging to maintain in modern workplaces due to escalating pressures in both professional and familial contexts. Workers are expected to concurrently handle several tasks, effectively distributing their resources between their professional and personal lives (Fotiadis et al., 2019).

The previous studies have come with empirical proof that workers who experience job security are prone to WFC (Finstad et al., 2024; Nauman et al., 2020). WFC is a phenomenon that arises when employees perceive a lack of compatibility between their work and family domains (Greenhaus & Beutell, 1985). More precisely, this phenomenon can be characterized as a form of inter-role conflict in which the demands of one's work and family roles are somewhat incompatible (Molina, 2021). There is a strong connection between JI and WFC, and this connection tends to have a greater impact on men (Richter et al., 2015). However, JI can significantly impact an employee's personal life, decreasing the quality of family time and negatively affecting work-life

balance. JI is widely recognized as a cause of stress in the workplace. It is associated with increased rates of physical complaints, psychological strain, and adverse effects on mental health (Chirumbolo & Areni, 2010). Family demands include caring for loved ones and taking care of household tasks. Balancing cross-generational responsibilities can significantly reduce family work disputes. Being a caregiver for aging parents is both challenging and rewarding at the same time, as it includes taking care of their physical and emotional needs (Young & Wallace, 2009).

This study is grounded on the Conservation of Resources (COR) theory (Hobfoll & Ford, 2007), which suggests that individuals exert effort to obtain, preserve, and secure resources that they consider important. JI is a multidimensional stressor that harms both individuals and organizations. Similarly, it can sometimes have economic implications for people since they may have difficulties planning their family's finances. They are like this because employment contributes hugely to families' income; the knowledge that forces beyond their control may distract their income source and disorientate their livelihoods. Jiang and Lavaysse (2018) suggested that JI could have the worst effect on families by depleting their economic sources.

Moreover, the presence of JI in the work environment will likely lead to an increase in anxiety levels, which in turn can have a significant effect on an individual's mood and subsequently affect their personal life (Lee et al., 2018). Thus, the COR theory offers a comprehensive framework for comprehending the impact of JI on individuals and organizations from several angles by incorporating economic, psychological, and organizational viewpoints. This study focuses on establishing the relation between JI and WFC. So, we proposed:

Hypothesis 1: *JI positively related to WFC.*

The COVID-19 pandemic has impacted employees' perception of JI, particularly in regions with strict regulations (Aguiar-Quintana et al., 2021). Research has established a relationship between anxiety and various negative outcomes, including but not limited to depression and WFC. These outcomes have been found to contribute to developing severe illness (Khudaykulov et al., 2024; Sultana et al., 2022). Anxiety can be understood as more than just a subjective experience that includes feelings of irritability, uncertainty, and fear. It can also be seen as a deeper internal state where individuals strive to navigate and exert control over their environment to ensure survival (Banerjee, 2020). In the organizational context, limited resource availability arises when employees perceive a lack of resources necessary to fulfill the prescribed job requirements. Anxiety is a complex phenomenon that can present itself in various symptoms. These include negative thoughts, an unusual drop in energy levels, enhanced irritability, and general hopelessness.

In some cases, anxiety may grow to the point of developing into a generalized anxiety disorder, which is characterized by intense and overwhelming feelings of anxiety that border on panic (An et al., 2023; Leung et al., 2022; Q. Li et al., 2020). According to research findings, JI has been identified as a prominent stressor that can substantially impact employees' psychological well-being (Antino et al., 2022). This stressor is particularly pronounced when employees perceive their work environment as being threatening or uncertain. The perception of JI can lead to heightened levels of stress and anxiety, as individuals may experience concerns about their job stability and prospects. Consequently, organizations should recognize the detrimental effects of JI and take proactive measures to mitigate its impact on employee well-being (Aguiar-Quintana et al., 2021; Ganson et al., 2021; Lai et al., 2020). Thus, we proposed that:

Hypothesis 2: *JI positively related to JRA.*

Construction site workers are at a higher risk of industrial safety accidents due to negligence and fatigue during the operation of machinery and equipment. During the pandemic, construction workers at primary sites experienced increasing JI and insomnia (Wu et al., 2024). Disrupted sleep patterns indicate insomnia, difficulties initiating sleep, and low sleep quality, all of which can negatively impact regular bodily functions and well-being, consequently impacting daily activities (Doi, 2005; Sateia et al., 2000). Several studies have indicated that JI is a source of stress that can worsen issues with insomnia (Piccoli et al., 2021). The JI concerns are linked with anxiety and insomnia. Sleep restores individuals' energy levels and cognitive functioning by participating in the renewal of self-regulatory capacities.

Sleep also gives people enough energy sources to follow safety rules. Research studies carry evidence that sleep disorder victims are more likely to get involved in work accidents compared to those without any sleep problems (Kao et al., 2016; Wu et al., 2024). Sleep difficulties with emotions include reduced ability to identify and express feelings and increased simple emotional reactivity associated with more conflict with others (Gordon et al., 2021). People with JI usually have mental problems (e.g., depressive symptoms, psychosomatic complaints, psychological discomfort) and physical (e.g., somatic symptoms, coronary heart disease, hypertension) health issues (De Witte et al., 2016). As (Bernhard-Oettel et al., 2020) point out, the sense of JI has been associated with sleep disturbances, although this association is being studied far less frequently. Hence, we postulate that when a person faces a higher JI than the one they typically undergo (based on the total number of JI data waves that the person is experiencing), this will positively be associated with the occurrence of sleep difficulties right at that specific moment. Thus, we proposed:

Hypothesis 3: *JI positive related to insomnia.*

Anxiety, as a psychological phenomenon, encompasses more than just a singular experience of frustration, insecurity, and fear. Individuals struggle with a complex mental state in their efforts to navigate and exert control over their environment to ensure their survival (Banerjee, 2020). JI can worsen work-life conflicts, adding to the stress experienced by individuals. Ultimately, this can harm employee well-being and overall health (Hu et al., 2021). JRA has been associated with depression, WFC, and other adverse consequences that can lead to serious illness (Khudaykulov et al., 2024). Anxiety presents itself in several manifestations, encompassing pessimistic thoughts, fatigue, irritation, and a sense of despair, as well as a potential progression to a state of generalized anxiety disorder approaching panic (Q. Li et al., 2020). JRA can act as a mediator between JI and WFC. JRA, a state characterized by psychological discomfort, is commonly linked to barriers that are related to stress (L. Yuan et al., 2023). The main stressors contributing to WFC include work stress, extended working hours, and role conflict (Ford et al., 2007; Spector et al., 2004). Excessive workloads and stressful situations in the workplace can lead to physical and emotional exhaustion in employees, resulting in WFC (Baeriswyl et al., 2016). When employees feel that their mental health is at risk, JI can become a major source of stress. When people are unsure about their job security, they often feel anxious because they worry that they will not have enough resources to handle the demands of their work (Aguiar-Quintana et al., 2021; An et al., 2023). Managing the threat becomes a challenge, resulting in insensitive coping

mechanisms like excessive stress, depression, and anxiety (X. Chen & Wei, 2019). Thus, we proposed that.

Hypothesis 4: *JRA mediates the relationship between job insecurity and work-family conflict.*

Insomnia is a sleep disorder that involves several symptoms. The symptoms include having a hard time in both beginning and maintaining sleep, keeping awake during the night, and the inability to go back to sleep after waking up. Furthermore, individuals with insomnia tend to wake up early in the morning, and it is hard for them to fall asleep again. All these symptoms disturb the person's sleep pattern (American Psychiatric Association & Association, 2013; Riemann, 2010). The presence of sleep continuity problems is widely observed across various mental disorders (Gordon & Chen, 2014). Insomnia symptoms are associated with WFC (Seo et al., 2023). The previous research about JI was conducted mainly to study the connection between JI and psychological well-being, focusing on stress-related mechanisms as mediators. These processes are assumed to be the primary instruments for assessing the JI effects on a person's psychological well-being.

The evidence from previous studies shows that JI is a major job stressor that leads to the deterioration of psychological health. JI has been reported to raise stress levels (De Cuyper et al., 2010; Y. Shin & Hur, 2019), which may result in anxiety and emotional exhaustion. Previous studies have focused on how JI influences service employees' psychological well-being and job performance. Nevertheless, few studies have examined the links between JI and sleeping problems or poor-quality sleep. Scholars commonly recognize JI as a stressor that hinders progress (Piccoli et al., 2021). According to the established definition, JI is characterized as the apprehension and concern experienced by an employee regarding the possibility of losing their employment. The fear and worry experienced by employees can result in psychological stress after work (Burgard & Ailshire, 2009), potentially leading to insomnia during the night. For instance, few studies by researchers (Bernhard-Oettel et al., 2020; Kim et al., 2021) have looked at the influence of JI on sleep-related issues. Hence, our research study aims to investigate the connection between JI and sleep issues. This research is driven by the expanding data showing the relevance of sleep to workers' well-being and job performance, specifically decision-making and safety, as we already know from some previous studies (Barnes, 2012; Bos & Macedo, 2019). Sleep disturbances can lead to WFC and affect mental health (Han & Kwak, 2022). We proposed that:

Hypothesis 5: *Insomnia mediates the relationship between job insecurity and work-family conflict. A conceptual model is developed in Figure 1 based on the above research hypotheses.*

Method

Procedure and Sample

The population of this study is the construction industry workers in Islamabad, Pakistan. To minimize the standard biased method, data were collected in a two-time phase; for phase 1, data were collected from August 2023 to November 2023. For this phase, questionnaires were distributed to measure the JI and WFC. JRA and insomnia were measured for the second phase,

and data were collected from January 2024 to March 2024. In phase 1, a total of 350 questionnaires were distributed to employees from the construction industry using simple random sampling. There were 224 answers out of 350 questionnaires, with a response rate of 64%. During the second phase, we distributed 400 questionnaires, amongst which we received 233 responses with a response rate of 58%.

Figure 1. Conceptual Model
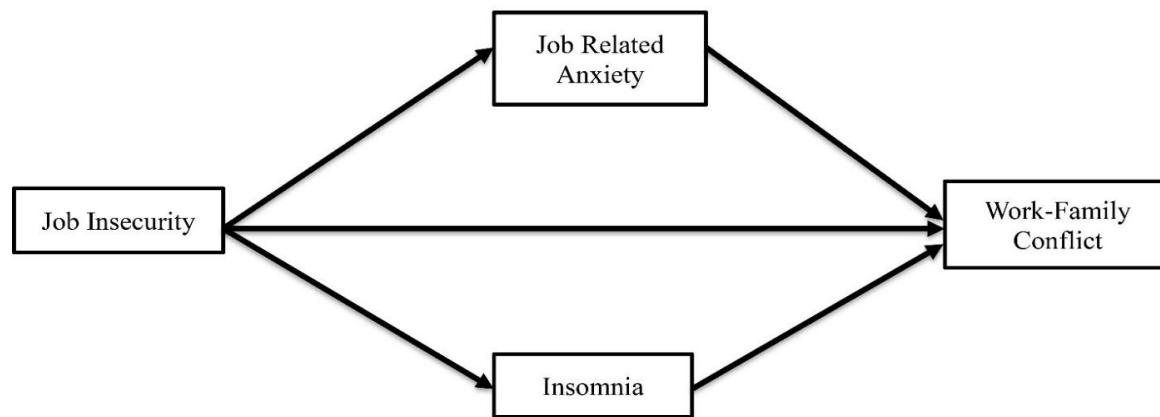
The study encompassed 224 participants, and their gender distribution was as follows: 36.1% (n = 81) is female, and 63.9% (n = 143) is male. Regarding age, a large proportion of participants (35.27 %, n = 79) were between 32 and 38. The sampling comprised 11 respondents, 4.91 % of the population between 18 and 24 years old. Also, there was an age group of 25 to 31 years consisting of 67 people, which accounted for 29.91 % of the sample. The age group aged 39-45 and 46 and above hit the participation margin, with 29.91% (n = 67). As for education, most participants held a bachelor's degree (63.8%, n = 143), whereas a smaller portion had a master's degree (24.5%, n = 55). A small number of those participants owned a diploma (10.3%, n = 23), and those who had attained a Ph.D. or higher were also minimal (1.3%, n = 3). As for their experience, 9.82% (n = 22) reported less than 1 year. The sample comprised 45 individuals (20.09%) with 1-5 years of experience. Also, about 40.18 % (n = 90) and 29.91% (n = 67) of the participants had 6-10 years and 11 or more years of experience, respectively. Table 1 presents the characteristics of the participants in detail.

Measures

This research used a measurement scale adapted from previous research to measure each variable under study. JI, insomnia, JRA, and WFC are the four components of this research. Job insecurity (JI) was measured in a 7-item developed by (Johnson et al., 1984). All items of the questionnaire were rated on a 5 Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree")."One sample item is " Working hard would keep me from getting fired." The variable insomnia was measured on a 7-item scale developed by (Bastien, 2001). One sample item is "How satisfied/dissatisfied are you with your current sleep pattern?". The overall 9-item measures JRA were adopted from (Parker & DeCotiis, 1983). Nine items measured WFC, which was developed

by (Carlson et al., 2000). One item is "My job produces strain that makes it difficult to fulfill family duties."

Table 1. Details regarding the profile of the participants.

Characteristic	Variable	Frequency (N =224)	Percentage %
Gender	Female	81	36.1
	Male	143	63.9
Age	18-24	158	70.5
	25-31	58	25.8
	32-38	6	2.7
	39-45	2	0.9
Education	Bachelor	143	63.8
	Master	55	24.5
	Ph.D. or above	3	1.3
Experience	Less than a year	114	50.9
	1-5 years	94	42
	6-10 years	7	3.1
	11 or above	9	4

Results

Statistical Analyses

In the present study, we employed structural equation modeling in Smart-PLS 4.0 to test the hypotheses. Multiple fit indices were used to evaluate the model, such as factor loading or indicator loading, internal consistency reliability, convergent validity, and discriminant validity. The minimum allowable factor loading can be 0.708 (Hair et al., 2021). Internal consistency reliability is measured in two ways: Cronbach alpha and composite reliability (CR). The minimum value is 0.70 (Hair et al., 2020). Convergent validity access by average variance extracted (AVE). The criteria for AVE are 0.5 or higher (Hair et al., 2021).

Discriminant validity is examined by the Fornell and Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. A commonly suggested threshold for the HTMT Ratio of Correlations is below 0.85. According to scholarly literature (Hair et al., 2021), the HTMT threshold value for conceptually distinct constructs is below 0.85, while the threshold value for conceptually similar constructs is below 0.90. Fornell and Larcker (1981) proposed that discriminant validity can be established when the square root of AVE for constructs is more significant than their correlation with all other constructs.

Measurement Model Assessment

The measurement model is evaluated to assess the quality of the constructs. The first step in evaluating quality standards involves assessing the factor loading and determining the construct's validity and reliability.

Factor loading

The degree to which each item in the correlation matrix correlates with the specified principal component. Higher absolute values indicate a correlation between the item and the fundamental factor (Pett et al., 2003). The suggested factor loading value is 0.708 (Sarstedt et al., 2022).

Table 2 illustrates the factor loadings of items; it demonstrates the strength and direction of each variable with the underlying factors. Factor loadings IN-1 to IN-7 present a vital, meaningful associated factor between 0.676 and 0.800 for the "IN." Similarly, for the "JI" factor, items JI-1 to JI-7 yield strong factor loadings between 0.742 and 0. 786. Thus, for the "JRA" factor, items JRA-1 to JRA-9 produced substantial factor loadings between 0.697 and 0.799, illustrating a vital, meaningful associated factor with "JRA." Factor WFC presents strong factor loadings for the items WFC-1 through WFC9, which yielded 0.720 and 0. 745. This suggests a relationship between these items and the WFC factor.

Construct Validity

Table 3 presents information on the construct validity and reliability, which includes the internal consistency index and the convergent validity index for the variable. This information gives information about how consistent the various factors are and how much the factors influence each other. The Cronbach's Alpha coefficients for each element are reported as follows: Insomnia (α= 0.882), JI (α= 0.879), JRA (α= 0.906), and WFC (α= 0.874). The values above demonstrate an exceptional level of internal consistency within each factor, surpassing the typically suggested threshold of 0.7. The CR values for each factor have been computed and are reported as follows: IN (CR = 0.883), JI (CR = 0.880), JRA (CR = 0.910), and WFC (CR = 0.882). The above values evidence that the factors exhibit internal solid consistency, creating a score greater than 0.7. For each factor have been computed the AVE values: IN (AVE = 0.585), JI (AVE = 0.580), JRA (AVE = 0.571), WFC (AVE = 0.503). The variables addressed here meet or exceed the suggested 0.5 thresholds, illustrating that they explain a moderate proportion of variance.

Discriminant Validity

The Fornell-Larcker criterion can serve as a very useful criterion for the validity assessment of factors. This criterion computes the root of the AVE for each element and of the inter-factor correlations. From the Fornell-Larcker criterion shown in Table 4, the matrix diagonal reveals each factor's root of the AVE. Off-diagonal pieces present intercorrelations between the factors. The diagonal aspects of the matrix reflect the square root of the AVE for the ratio of each factor. The main factors provided above are IN (0.765), JI (0.762), JRA (0.755), and WFC (0.709). The elements outside a matrix's main diagonal denote the interrelationships or correlations among the underlying factors. The values mentioned above serve as indicators of the magnitude of the

associations among the variables. The study reveals a correlation between IN and JI with a coefficient of 0.546.

Table 2. Factor loading

	IN	JI	JRA	WFC
IN-1	0.783			
IN-2	0.771			
IN-3	0.794			
IN-4	0.779			
IN-5	0.800			
IN-6	0.676			
IN-7	0.746			
JI-1		0.742		
JI-2		0.744		
JI-3		0.760		
JI-4		0.766		
JI-5		0.758		
JI-6		0.774		
JI-7		0.786		
JRA-1			0.697	
JRA-2			0.770	
JRA-3			0.738	
JRA-4			0.799	
JRA-5			0.779	
JRA-6			0.733	
JRA-7			0.787	
JRA-8			0.730	
JRA-9			0.759	
WFC-1				0.730
WFC-2				0.745
WFC-3				0.733
WFC-4				0.720
WFC-5				0.728
WFC-6				0.764
WFC-7				0.730
WFC-8				0.744
WFC-9				0.742

Note. IN: Insomnia, JI: Job Insecurity, JRA: Job-Related Anxiety, WFC: Work-Family Conflict

Additionally, the correlation between IN and JRA is found to be 0.696, while that between JI and JRA is 0.507. Moreover, the correlation coefficient between JRA and WFC is 0.643. To assess the discriminant validity of a construct, it is recommended to compare the square root of each factor's AVE with the correlations between that factor and other factors. The construct has discriminant validity if the former is greater than the latter. The discriminant validity among the elements is deemed acceptable as the square root of the AVE for each factor surpasses the correlations in this instance.

Table 3. Convergent validity

	Cronbach's alpha (α)	Composite reliability	AVE
IN	0.882	0.883	0.585
JI	0.879	0.880	0.580
JRA	0.906	0.910	0.571
WFC	0.874	0.882	0.503

Note. IN: Insomnia, JI: Job Insecurity, JRA: Job-Related Anxiety, WFC: Work-Family Conflict

Table 4. Discriminant validity- Fornell – Larcker

	IN	JI	JRA	WFC
IN	**0.765**			
JI	0.546	**0.762**		
JRA	0.696	0.507	**0.755**	
WFC	0.601	0.682	0.643	**0.709**

Note. Bold italic constructs represent the square root of AVE, IN: Insomnia, JI: Job Insecurity, JRA: Job-Related Anxiety, WFC: Work-Family Conflict

Table 5 calculates the HTMT ratios for every pair of factors. The terms on the diagonals are of no concern here because they denote the HTMT ratio that one factor has with itself, which is always equal to 1. The numbers outside the matrix's main diagonal read as the ratio of HTMT between the factors. Hence, for example, the HTMT ratio between the indicators IN and JI is calculated to be 0.617.

Moreover, the HTMT ratio, which represents IN to JRA, is 0.773. Moreover, further analysis reveals that the HTMT ratio between JI and JRA is recorded as 0.561, while the HTMT ratio between JRA and WFC is 0.699. For assessing the HTMT ratio, the values should be below the normative threshold of 0.85 as a basis. Table 5 shows that all access HRMT ratios are below the 0.85 criterion value, implying that the factors discriminate from each other well.

Structural Model Assessment

Hypotheses testing

Following the assessment of the structural model. The next step is evaluating the structural path to assess path coefficients and their statistical significance. According to (Hair et al., 2021; Streukens & Leroi-Werelds, 2016) 10000, bootstrapping for subsample was run using SmartPLS. We assessed the JI's positive impact on WFC. The result revealed that JI positively affects WFC (β =0.445, t=1.973, p=<0.0001); Hence, H1 was supported. We assessed the H2 JI, which is

positively impacting JRA. The result shows that JI is influenced directly by JRA (β=0.506, t=9.478, p=<0.001).

As a result, H2 was supported. Hypothesis results are presented in Table 6. We assessed that H3 JI is positively related to insomnia. Similarly, H3 evaluates JI's positive effects on insomnia (β=0.546, t=11.03, p<0.001). So, there is a positive relationship between JI and insomnia. As a result, H3 was supported.

Table 5. Discriminant validity-HTMT

	IN	JI	JRA	WFC
IN				
JI	0.617			
JRA	0.773	0.561		
WFC	0.677	0.774	0.699	

Table 6. Results of hypothesis testing

Hypothesis	β	(STDEV)	T statistics	P values
JI -> WF	0.445	0.059	7.489	0.000
JI -> IN	0.546	0.049	11.03	0.000
JI -> JRA	0.506	0.053	9.478	0.000

Note. Bootstrapping=10000, β =Beta coefficient, STDEV = Standard deviation, T=t-Statistics, P=probability (p)Value, Relationships are significant at p<0.001, IN: Insomnia, JI: Job Insecurity, JRA: Job-Related Anxiety, WFC: Work-Family Conflict

Mediation Analysis

Mediation analysis was performed to assess the mediating role of JRA in the relationship between JI and WFC. The results revealed an indirect effect of JI on WFC through JRA (β=0.165, t=4.242, p<0.001). The total impact of JI on WFC was significant (β=0.682, t=17.769, p<0.001); with the inclusion of the mediator, the effect of JI on WFC was still substantial (β=0.445, t=7.489, p<0.0001), this shows a complementary partial mediating role of JRA in the relationship between JI and WFC; therefore, H4 was supported.

Table 7. Mediation analysis

Total effect (JI →WFC)			Direct effect (JI →WFC)			Indirect effect (JI →WFC)			
β	t	p	β	t	p	Hypotheses	β	t	p
						JI→JRA→WFC	0.165	4.242	0.001
0.682	17.769	0.001	0.445	7.489	0.001	JI→IN→WFC	0.072	2.010	0.001

Note. Bootstrapping=10000, β =Beta coefficient, STDEV = Standard deviation, T=t-Statistics, P=probability (p)Value, Relationships are significant at p<0.00. Bold italic constructs represent the square root of AVE, IN: Insomnia, JI: Job Insecurity, JRA: Job-Related Anxiety, WFC: Work-Family Conflict

A mediation analysis was performed to assess the mediating role of insomnia in the relationship between JI and WFC. Results are shown in table 7. The results revealed an indirect effect of JI on WFC through insomnia (β=0.072, t=2.010, p<0.0001). The total impact of JI on WFC was significant (β=0.682, t=17.769, p<0.001); with the inclusion of the mediator, the effect of JI on WFC was still substantial (β=0.445, t=7.489, p<0.0001), this shows a complementary partial mediating role of insomnia in the relationship between JI and WFC; therefore, H5 supported.

Discussion

This study examined the relationship between JI JRA, insomnia, and WFC. The findings show the intricate relationship between these variables, offering valuable insights into the mechanisms by which JI influences WFC. Previous research has shown that JI employees tend to demonstrate various negative responses (Begum et al., 2022; De Witte et al., 2016; Richter & Naswall, 2019). There has been a growing emphasis on studying mediating variables to understand the underlying mechanisms better. The current study aimed to add to the existing body of knowledge by examining the role of JRA and insomnia as mediators. These factors have been explored as both an outcome of JI and as indicators of other outcomes related to JI, including overall and job-related well-being. The study's theoretical foundations are on a psychological contract basis. The existing literature (Probst et al., 2013; Quinlan & Bohle, 2009) has provided evidence for a relationship between JI and adverse outcomes such as reduced employee well-being and enhanced WFC. However, despite these findings, there is still a lack of comprehensive understanding of the specific mechanisms and contextual factors contributing to the relationship between JI and employees' mental and physical health. The findings of this study provide empirical evidence in support of our hypotheses. The results suggest that both insomnia and JRA play a mediating role in the relationship between JI and subsequent levels of WFC. Significantly, the present study found that the mediating effects remained evident, regardless of whether the dependent variable's initial levels were considered. Our study shows that JI leads to enhanced WFC. The analysis conducted in our research has revealed a positive correlation between the two variables under investigation. These findings align with previous studies that have explored the same relationship (Nemteanu & Dabija, 2023; Richter et al., 2015).

JI is a prominent source of stress for employees, influencing the workplace and their personal lives. One area that is particularly affected by JI is sleep quality (Yuan et al., 2015). The absence of adequate security measures presents a considerable threat not only to the well-being of individuals, as it impairs cognitive function and raises the likelihood of mood disorders, but also to the overall performance of work tasks, resulting in increased absenteeism and a higher incidence of workplace accidents (Zhang et al., 2021). JI has been found to impact employees' psychological well-being (Richter & Naswall, 2019). Specifically, it has been observed that the experience of JI can lead to increased stress levels among employees. This heightened stress, in turn, has been shown to interfere with employees' ability to initiate and maintain sleep, resulting in difficulties falling asleep.

Furthermore, the presence of insomnia, which is commonly associated with JI, may increase the adverse effects on employees' well-being by obstructing the development of self-regulatory resources. The lack of resources experienced by individuals in this context has been found to result in insufficient regulatory skills, leading to an increase in WFC (Zhang et al., 2021). It was found that employees reported experiencing symptoms related to depression and anxiety due to JI (Burgard et al., 2012). These findings have particular significance in the COVID-19

pandemic, given the substantial prevalence of JI experienced by numerous employees as a direct consequence of this global health crisis. According to Wilson et al. (2020), there is evidence to suggest that JI resulting from the COVID-19 pandemic has an indirect relationship with heightened anxiety symptoms. Financial concerns mediate this relationship.

Moreover, job security has a direct impact on depression, as the presence of uncertainty and intense fear can significantly affect an individual's psychological well-being. Exposure to highly stressful and traumatic events, such as major catastrophes or natural disasters, economic crises, or global health threats, can lead to the development of anxiety disorders (Basyouni & El Keshky, 2021; Z. Li et al., 2020). These events are characterized by a sense of challenging discomfort and confusion, which can contribute to an increased vulnerability to anxiety disorders. The results of this study are consistent with previous studies that have demonstrated a positive correlation between JI and anxiety (Ganson et al., 2021; Obrenovic et al., 2021).

Our study applied the COR theory to investigate how JI affects WFC. Our study suggests that JI can be a major source of stress, leading to higher levels of JRA and insomnia. These factors, in consequence, can contribute to an increase in WFC. Research has shown a relationship between JI and JRA (Wu et al., 2024), WFC and JRA (W. Zhang et al., 2023), and insomnia and WFC (Buxton et al., 2016). As far as we know, no study has examined how JI affects WFC by considering the role of JRA and insomnia as mediators. The findings of our research align with the COR theory.

The present study examines the impact of JI on JRA, insomnia, and WFC. The results of our study indicate that JI has a substantial effect on both JRA and insomnia. Consequently, JRA and insomnia have a role in connecting JI and WFC, suggesting that feelings of worry linked to work and inadequate sleep contribute to increased levels of conflict between work and home responsibilities. Moreover, JI has a direct impact on WFC, suggesting that the effects of JI go beyond psychological and sleep disorders and directly alter the balance between work and personal life. These findings emphasize the many mechanisms by which job instability impacts the well-being of employees and their personal and professional domains.

Theoretical contribution

This study enhances the current literature by offering a more expanded perspective on the impact of JI on WFC. This study examines the potential mediating effects of JRA and insomnia on this relationship. The study explores the link between resource depletion, specifically JI, and its detrimental impact on work and family life. Studying these correlations contributes to our appreciation of the adverse consequences of resource depletion. This is in a way that COR theory concentrates on the development, maintenance, and depletion of such resources. Construction workers face severe JI due to their project-based work and fears of layoffs (Chih et al., 2017). There is a chance that this phenomenon will lead to a depletion of resources due to employees' concentration on their uncertainty and working toward job security. This could result in their unintentionally overlooking their family responsibilities. The presented study emphasizes the requirement for further exploration to fill the gaps related to boundaries, influencing factors, and long-term consequences of the identified relationship.

Practical contribution

It is necessary to consider employees' insomnia problems since they can significantly impact the association between work insecurity and WFC. Leaders need to respect and fulfill the needs of their employees with the significance of sleep. Organizations must establish a "sleep-friendly" policy and promote a culture that values sufficient sleep (Jian & Lirong, 2018). Prioritizing implementing a flexible human resource management plan is crucial to prevent a lack of sleep resulting from conflicts between employees' work and personal lives. Moreover, the improvement of sleep education proves to be a necessity. There is a majority of the employees who practice unhealthy lifestyles and suffer from sleeping disorders. It is essential to establish healthy sleep habits to solve the problem of sleep issues (Zhang et al., 2021). In conclusion, this study explains the interconnection between JI, JRA, insomnia, and WFC. This study also investigates the mediating effects of JRA and insomnia on the JI-WFC relationship, contributing to theoretical understanding and practical solutions for improving employee well-being.

Not only do leaders have to take the role of managing employees whose insomnia condition is severe, but they must also provide them with support and intervention. In addition, these may encompass the combined use of emotional management strategy, psychological counseling, or application of anti-stress techniques. Leaders will be responsible for exploring any medical assistance to ensure employees return to a completely healthy condition and sleep. Government agencies should establish an appropriate, open, and transparent performance evaluation system to ensure that construction site workers are well-informed about epidemic prevention strategies and implementation. This system should connect civil servants' performance to rewards, promoting accountability and encouraging adherence to guidelines. It might encourage public employees to fulfill their jobs instead of deciding to give in to external stress. Considering JI's substantial influence on employees' mental well-being, it would be wise for employers to allocate resources toward stress control and durability training initiatives. Providing employees with effective coping strategies for dealing with stressful circumstances can help reduce the negative impact of JRA and insomnia, ultimately promoting a healthier work-life balance (L. Yuan et al., 2023).

Limitations and future research directions

The present study has certain limitations that should be considered for future studies. Initially, it is essential to note that the study was carried out in Pakistan, which implies that the country's cultural context may have influenced the outcomes of our research. JI may elicit a more negative response from individuals who hold collectivist cultural values in contrast to those who hold individualist cultural values (Probst & Lawler, 2006). It is recommended that future studies investigate the hypothesized relationships in additional countries to validate the findings further. Moreover, this study concentrates on specific health outcomes, mainly JRA, WFC, and insomnia. Nonetheless, the possible effects of workload and time pressure as potential factors linking JI and WFC can further be explored in future research (Karatepe, 2013; Liu et al., 2022). Future research may investigate the potential impact of individual differences, social support, and various types of exposure within the construction sector on the intricate relationship between JI, JRA, insomnia, and work-family dynamics. Future research may also investigate the moderating impact (e.g., work flexibility and personality traits) of a positive work environment in mitigating the adverse effects of JI on the outcome measures.

Conclusion

Our study highlights the mediating impact of JRA and insomnia on the relationship between JI and WFC. JRA and insomnia partially mediate the effect on JI and WFC. This study provides important findings regarding the intricate relationships among JI, JRA, insomnia, and WFC in the construction industry. JI was investigated with the help of the COR theory in a study that also considered work-family dynamics. The analysis of this study reveals the effect of JI on WFC. Our study confirmed that JRA and insomnia are the critical factors behind the relationship between JI and WFC. This evidence-based finding underlines the key point that recognizing JRA and insomnia as mediators is highly critical. The results indicate that resource depletion has a substantial impact. In particular, uncertainty as a consequence of JI leads to a depletion of employees' psychological resources and enhances anxiety, sleep problems, and, eventually, WFC.

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Disagreeing with Employees' Constructive Disagreement: On Giving (Non-)Specific Explanations for Rejecting Employees' Voiced Suggestions

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Abstract

When employees express constructive disagreement (i.e., engage in voice behavior) with managers, it provides valuable opportunities for organizational improvement. However, managers cannot implement all suggestions, and how they handle rejection can shape employees' willingness to speak up again. This study explores whether managers' explanation specificity—offering clear, detailed reasons for not endorsing employees' ideas—can foster a sense of voice safety, and in turn voice resilience—voice behavior about an issue following a prior instance of voice non-endorsement on a different voiced issue. Two experiments, one conducted with American participants and another with Chinese participants, show that when managers explain their rejections with specificity rather than with vague, non-specific remarks, employees feel safer and more likely to voice a new suggestion. Our findings highlight a practical means for managers to sustain the flow of constructive employee input, underscoring the importance of clear managerial communication within the voice process.

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Transparency & Openness

The data and syntax used to replicate the results reported in this study are openly available at the Open Science Framework (OSF):
https://osf.io/xs2dq/?view_only=bae2d91db08c41c19e83611626513a4e

Introduction

Employee voice is a form of constructive disagreement in which an employee expresses suggestions for changes in task, work, or organizational procedures to their superior with the purpose of improving performance (Burris et al., 2008; LePine & Van Dyne, 1998). Employee voice yields various benefits for organizations, such as improved information flow and decision making (Argote & Ingram, 2000; Knoll et al., 2016) and for employees as, for example, expressing voice may be an effective coping mechanism in a conflict situation (Chaudry et al., 2022). Given that voice behavior entails an expressed disagreement with tasks, plans, or procedures over which the voicing employee's manager has direct authority, employees may believe that expressing this disagreement means that they are criticizing their managers, and managers may not take it well (Morrison, 2023). Hence, it is not surprising that research has focused on when and why employees feel reluctant or encouraged to express this disagreement (Li et al., 2021; Pandey et al., 2021) and when and why managers are likely to respond positively when employees do express disagreement (Burris, 2012; Fast et al., 2014; Schreurs et al., 2020; Whiting et al., 2012). Indeed, for this expression of constructive disagreement to yield its beneficial impact, the voiced suggestion needs to be endorsed by someone with the power to enact it, which is often a manager (Detert & Burris, 2007; Morrison, 2011).

Yet, the reality is that managers, even those who value employee voice, from time to time, must turn down suggestions, especially those suggestions that are too radical, resource-intensive, and over which they have no authority (Burris et al., 2017; Deichmann & Ende, 2014). Voice rejections, while often necessary, may discourage employees from engaging in voice again when a new issue comes up in the future (see Knoll et al., 2016), which would be undesirable because for organizations to learn and develop, it is preferable that employees continue to voice their valid disagreements with the status quo when they identify an issue (Bowen & Blackmon, 2003). In this study, we conceptualize voice resilience as a situation in which an employee engages in voice behavior about an issue following a prior instance of voice non-endorsement on a different voiced issue.

Because voice rejections are prevalent (Hamstra et al., 2024; Satterstrom et al., 2021), knowing how to reject voice effectively–that is, to turn down employees' voice while not discouraging their future voice on other issues–would be useful for managers who seek to reap the benefits of employees' (continued) voice. Managers who can effectively turn down voice can foster a positive work environment, enhancing job satisfaction and employee trust (Morrison, 2011). Conversely, poor handling of these situations can undermine psychological safety, resulting in decreased idea sharing and increased turnover (Ng & Feldman, 2012).

To investigate how managers can effectively turn down voice while ensuring voice resilience, we draw from the organizational justice literature (Colquitt et al., 2005; Druckman & Wagner, 2016, 2017; Greenberg, 1990a). Employees who have their voice rejected are likely to perceived it as an unfair outcome. When employees put forth an idea with time and effort, they believe it is a good idea, and rejection is therefore an unfair outcome in light of their assessment

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that it is a good idea and their expectation that it is taken seriously. However, when managers provide an *explanation* for why they rejected the voiced suggestion, this explanation has the potential to restore the perception of overall fairness by showing employees whose voice was rejected that the manager used *procedural* fairness in coming to this decision. For this to happen, however, the explanation should indeed provide information regarding the specifics of how the decision to reject the voice came about (Bies & Moag, 1986; Colquitt, 2001; Druckman & Wagner, 2016; Scott et al., 2007; Shapiro et al., 1994). Accordingly, we suggest that providing detailed explanations can help establish a procedure that is perceived as transparent and fair, which in turn means that employees will find their manager to be reliable and trustworthy (Lind & Tyler, 1988). Voice behavior is risky (Morrison, 2023). Yet, when employees trust their manager, they feel safe to voice suggestions to them (Guzman & Fu, 2022; Hamstra et al., 2021), and they are more likely to continue doing so in the future (Kim et al., 2019). The perception of voice safety is the critical component in this process as it is in essence the voice context-specific outflow of a restoration of trust (the expectation that one will not be harmed) that would be expected if a specific explanation leads to an improvement in procedural justice. Accordingly, we propose that *specific* rather than general explanations for voice rejections will lead to higher perceptions of voice safety and in turn to voice resilience.

We thus aim to make several contributions. First, whereas considerable research has studied different conflict management styles applied by managers, such research tends to focus on the manager as a third party in inter-employee or intra-team conflict (e.g., Hogler et al., 2009). Scant research has focused on managers' conflict management regarding a disagreement they have with an employee (Dijkstra et al., 2014). The handful of studies that have investigated manager-employee conflicts (Bruk-Lee & Spector, 2006; Dijkstra et al., 2014; Frone, 2000) indicate that such conflict tends to have detrimental outcomes such as employee counterproductivity, gossiping about the boss, and employee turnover. Thus, our research contributes to the conflict management literature by examining the relative effectiveness of a novel way managers have to handle their employees when they express a constructive disagreement that managers do not endorse. We focus on the effectiveness of managers' response in terms of its relative impact on whether the employee feels that it is safe for them to continue to express disagreement (i.e., voice safety) and, consequently, whether employees are likely to express disagreements on other issues again in the future (i.e., voice resilience).

Second, our research has practical relevance as most voiced suggestions are turned down (Satterstrom et al., 2021), yet organizations benefit from employees who engage in employee voice on other issues, even after voice on a particular issue was not endorsed. As such, studying antecedents of voice resilience in terms of how managers may handle their responses to this disagreement can contribute to ensuring that the upward flow of ideas is not inhibited despite employees experiencing non-endorsement events. Third, we contribute to voice research. Whereas most research has studied employee voice as a one-time event (Klaas et al., 2012), we consider it as a process where experiences (i.e., non-endorsement) during previous voice episodes can impact how employees respond during future voice episodes (Knoll et al., 2016). Despite prior non-endorsement experiences, our results show how employees can remain resilient to give input about new issues in the future. Further, we draw attention to the role of message characteristics, such as explanation specificity, in influencing sustained voice behavior. We highlight how explanation specificity, a marker of fairness, instills perceptions of safety, which in turn promotes subsequent employee voice.

Theory and Hypotheses Development

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Explanation Specificity of Voice Non-Endorsement

Managers play a key role in deciding which suggestions they endorse and which not to support with organizational resources (Guzman & Espejo, 2019). Managers' response to employees' voiced suggestions also impacts employees' future attitudes and subsequent behavior (Detert & Burris, 2007). Although non-endorsement does not automatically speak to the quality of the suggestion or to the appreciation of the manager for the employee, it is probably not the employee's hoped-for outcome when speaking up with a dissenting view. Moreover, unfavorable manager responses have the potential to arouse negative emotions and frustration in employees, such as lowering self-esteem, and can even lead to conflict, aggression, and retaliatory behaviors (Baron, 1988; Chester & DeWall, 2017; Skarlicki et al., 2008).

When managers offer specific explanations when turning down voice, defined as the extent to which the explanation about the decision includes clearly defined and identifiable reasons (Shapiro et al., 1994), as opposed to explanations that include only imprecise or equivocal reasons, managers utilize a possibly effective way to buffer some of the adverse effects from the non-endorsement event. Specificity, along with clearness, reasonableness, and timeliness, constitutes one of the key characteristics that determine whether a message is interpreted as informationally fair (Bies & Moag, 1986; Greenberg, 1993; Shapiro et al., 1994). Offering specific explanations for unfavorable events, such as a non-endorsement experience, may not only ameliorate employees' negative reactions, but also could even result in positive reactions. This is because specific explanations promote employees' beliefs that their managers' actions were fair and the result of good judgment (Bies & Moag, 1986). Using fair procedures positively affects employees' reactions, even more so than outcome favorability (Druckman & Wagner, 2016; Lind & Tyler, 1988). People are often uncertain about how to evaluate the fairness of the outcomes they have received, and under conditions of uncertainty about outcome fairness, people rely strongly on procedural fairness perceptions (Van den Bos et al., 1998), which includes perceptions on whether managers provided adequate explanations for decision-making (Colquitt, 2001). Because employees typically lack complete information regarding the potential available resources, organizational tactics, and general strategy, it is difficult for them to judge whether voice non-endorsements are fair. However, when managers provide them with concrete information detailing why their idea cannot be implemented, in the form of a detailed explanation, employees are likely to use this as a heuristic to judge whether they are being treated fairly.

In support of the fair process effect, research has shown that offering specific explanations for unfavorable decisions is positively related to employees' perceptions of informational fairness (Richter et al., 2018), trust in leadership (Holtz & Harold, 2008), cooperation (Shaw et al., 2003), and job satisfaction (Loi et al., 2009). Unfortunately, managers sometimes do give explanations that are so vague that they alienate themselves from employees when adopting the role of the "bearer of bad news" (Folger & Skarlicki, 1998; Holtz & Harold, 2008). The absence of specific explanations for unfavorable events can be costly as it can lead to increased employee turnover intentions (Kim, 2009), unethical behavior (Greenberg, 1990b), lower favorability of managers' resource allocation decisions (Brockner et al., 1990), and reduced psychological health (Lang et al., 2011). We argue that specific explanations foster perceptions of voice safety, which in turn affects voice resilience.

Explanation Specificity, Voice Safety, and Voice Resilience

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Voice safety relates to employees' beliefs about whether it is safe to speak up in a particular context and believing that engaging in voice will not have negative consequences for the self or for one's relationships with others (Morrison, 2023). By offering specific information, managers meet the informational justice rule, which expects them to give adequate explanations for voice non-endorsement (Colquitt, 2001; Scott et al., 2007). Specific explanations can also increase employees' procedural fairness perceptions (Cole et al., 2010; Druckman & Wagner, 2017; Patient & Skarlicki, 2010), which send messages to employees that managers treat them with respect and appreciation, showing their support of their voiced ideas (Janssen & Gao, 2015). A manager who shies away and avoids involvement by giving vague explanations, violates the informational justice rule, from which employees would most likely conclude that it is not safe to voice (Scott et al., 2007). Research in the conflict management domain supports this reasoning. For example, research on conflict management styles suggests that collaborative conflict management styles lead to greater perceptions of fairness. The "problem-solving" style of conflict management involves giving relatively more information about one's priorities and reasons for one's position (Pruitt, 1983; Pruitt & Rubin, 1986). It signals a concern for the follower's need for information and has been found to predict a sense of interactional justice (Dijkstra et al., 2014). As another closely related example, supervisors' open communication during a conflict episode led to greater trust in the supervisor (Korsgaard et al., 2002). Thus, we propose,

H1. *Specific explanations (relative to non-specific explanations) for voice non-endorsements will lead to higher levels of perceived voice safety.*

When employees perceive higher levels of voice safety, they are more likely to voice again about new issues, that is, to display voice resilience. In general, the decision to express voice or to remain silent is undergirded by a cost-benefit analysis, a mental calculation that employees make based on a variety of factors (Detert & Burris, 2007). A cost of voice could be that employees imagine that their manager will feel criticized by the voiced suggestion and may feel threatened in their position/power (Fast et al., 2014; Isaakyan et al., 2021). Such thoughts could lead the employee to expect that the manager is likely to retaliate or lash out against the employee, give poor performance evaluations, or pass the employee over for promotions, and so forth (Milliken et al., 2003).

However, when an employee perceives higher levels of voice safety, it means that the employee believes the manager will *not* act in a negative or detrimental way toward the employee when they express something that could be considered as critical of the manager or challenging of the status quo (Morrison et al., 2011). Under high voice safety the employee perceives lower potential costs from speaking up to their manager. Consequently, the cost-benefit calculation will be relatively favorable, and will more likely prompt the employee to engage in voice. Indeed, previous research finds that perceived manager trustworthiness, which refers to the expectation that employees will not be harmed by their manager, is a clear antecedent of speaking up versus remaining silent (Hamstra et al., 2021). Similarly, in the conflict domain, supervisor "listening" behavior relates positively to future employee dissent (Kelly et al., 2023). When employees perceive their manager as trustworthy, they have positive expectations that their manager could act in honest ways. Therefore, employees are more likely to believe and accept manager's specific explanations for voice non-endorsement, leading employees to perceive voice behavior as safer. Hence,

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H2. *Indirectly via voice safety, specific explanations (compared with non-specific ones) result in higher levels of voice resilience.*

The Current Research

Research on voice resilience has been scarce (for some notable exceptions see: Hamstra et al., 2024; King et al., 2019). King and colleagues (2019) examined the role of specificity of explanations for voice non-endorsement in two studies. In addition to explanation specificity, they also examined the role of explanation sensitivity. King and colleagues' research concluded that providing specific explanation when rejecting voice did not influence employees' sense of voice safety or voice resilience.

However, King and colleagues' research displays an inconsistent patterns of results. In both studies, explanation sensitivity affected outcomes only when explanation specificity was also accounted for. Their Study 1 correlation table shows that voice intentions is correlated with explanation specificity, but not with explanation sensitivity. However, their structural model suggested an inverse pattern: explanation sensitivity, but not explanation specificity indirectly affected voice via voice safety. Adding further complexity to the interpretation of these results is the fact that explanation sensitivity and explanation specificity were highly correlated, suggesting that specificity may function as a suppressor variable in their model. Their Study 2 correlation table shows that voice resilience is also correlated with the explanation specificity condition, but not with the explanation sensitivity condition, and neither condition was significantly correlated with voice safety after participants had their voice turned down. However, their structural model shows that explanation sensitivity, but not explanation specificity, was indirectly related to voice via voice safety.

King and colleagues suggest that individuals' tendency to focus on relational considerations (i.e., explanation sensitivity) when evaluating managers' rejections may explain why they did not find support for the effect of explanation specificity. Their rationale, however, contradicts the results of Shapiro and colleagues (1994), who found that explanation specificity accounted for more variance in judgments of explanation adequacy than interpersonal sensitivity. Furthermore, the usefulness of the specificity of explanations is rooted in the fairness perspectives (Bies & Moag, 1986; Colquitt et al., 2005) and has received extensive research support (e.g., Cole et al., 2010).

Based on the preceding discussion, we believe that it is premature to conclude that explanation specificity does not matter in the voice process. As such, we seek to investigate the role of explanation specificity separately from explanation sensitivity. We do so in two experiments, with working adults from two different cultures. We selected USA and China because of their country-level differences in power distance. Sampling participants from these two countries will help us to determine whether our results could be generalized across cultures that differ in whether managers are expected to offer explanations after disagreeing with subordinates.

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Study 1: Method

Participants

We recruited working adults from the United States to participate in a vignette experiment, using Amazon Mechanical Turk (Mturk). Three attention check questions (e.g., "please choose 'strongly disagree' for this question") to detect careless responses were embedded for data quality. The final sample consisted of 176 respondents (a response rate of 83.8%, 34.09% female) after excluding those who failed the attention check and failed to follow the experimental instructions (giving advice unrelated to the experiment settings). The average age was 37.00 years ($SD = 12.10$); 66.48% had a bachelor diploma or higher; the average working experience was 10.93 years ($SD = 10.28$).

Design and Procedure

The study employed a between-subjects design. After reading an informed consent screen, participants were randomly assigned to one of two experimental conditions: specific versus non-specific explanation. The participants in our study were asked to imagine that they were an employee of a supermarket company and had been working in the customer service department for three years. Participants were given a description of a work-related problem and a solution proposed by their manager, Brandon. Next, participants were asked to imagine that they were not able to stop thinking about their manager's proposal, and after careful consideration, they had decided to inform their manager of their concerns, though aware that they are thereby questioning their manager's authority. Then participants were shown the specific suggestions that they had (allegedly) expressed to their manager. We designed this framing in accordance with the definition of voice as challenging behavior (LePine & Van Dyne, 1998).

On the next screen, participants saw an email sent by their manager with the explanation of why their suggestions could not be implemented. Here, participants were randomly assigned to receive a specific or a non-specific explanation, which was based on the manipulation used by King and colleagues (2019; see details in the Appendix). Then participants were asked to report their perceptions of voice safety. Subsequently, participants were shown another new but flawed proposal that was offered by the same manager, and they were asked if they would like to make a suggestion to their manager. If they choose yes, they were asked to write down their suggestions. Finally, participants responded to a few items to assess whether the explanation-specificity conditions were perceived as we had intended.

Measures

Unless noted otherwise, all items were rated using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

We measured voice safety using a three-item scale ($\alpha = 0.89$) from May and colleagues (2004). A sample item is "It feels safe for me to make suggestions to Brandon".

We coded voice resilience (i.e., engaging in voice after experiencing non-endorsement on a different issue) as a dichotomous variable (1 = those who made subsequent suggestions; 0 = those who did not make any subsequent suggestions). 129 out of 176 participants chose to make subsequent suggestions (73%).

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Regarding our manipulation check, explanation specificity was assessed using a four-item measure from Shapiro et al. (1994). A sample item is "Brandon gave specific reasons for not using my idea" ($\alpha = 0.61$).

Study 1: Results

Table 1 presents means, standard deviations, and correlations for Study 1.

Table 1. Descriptive statistics and correlations (N=176)

	M	*SD*	1	2	3	4
1. Gender	1.34	0.48	-			
2. Age	37.00	12.10	0.07	-		
3. Specificity condition	0.50	0.50	0.04	-0.12	-	
4. Voice safety	4.28	1.46	0.01	-0.06	0.49***	
5. Subsequent voice behavior	0.73	0.44	0.08	-0.13	0.48***	0.42***

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Manipulation check

We performed a one-way between-subjects analysis of variance (ANOVA) to examine the effect of specific versus non-specific on perceived explanation specificity, which showed a significant difference, $F(1, 174) = 35.49$, $p < .001$, $\eta^2 = .17$. Participants in the specific explanation condition perceived their manager's explanation to be more specific ($M = 4.44$, $SD = 1.05$) than participants in the non-specific explanation condition ($M = 3.52$, $SD = 0.99$).

Hypothesis Testing

We performed the same ANOVA as above to examine the effect of explanation specificity conditions on voice safety. We found a significant effect of explanation specificity on voice safety, $F(1, 174) = 54.83$, $p < .001$, $\eta^2 = .240$. Participants felt higher voice safety in the specific condition ($M = 4.98$, $SD = 1.23$) compared to the non-specific condition ($M = 3.56$, $SD = 1.32$), supporting Hypothesis H1.

We conducted an indirect effects analysis (Hayes, 2017) with 1,000 bootstrapped samples and 95% confidence intervals, using model 4 in the PROCESS macro for SPSS. An indirect effect is considered supported if zero falls outside the 95% confidence interval. First, perceived voice safety was significantly related to voice resilience in a model controlling for the explanation specificity factor, $B = 0.48$, $SE = 0.16$, $Z = 2.99$, $p = .003$. Second, the indirect effect of explanation specificity on voice resilience via voice safety was positive and the confidence interval did not include zero, $B = 0.68$, $SE_{boot} = 0.24$, $95\%CI_{boot} = [0.25; 1.19]$. These results support Hypothesis H2, which predicted that voice safety mediates the relationship between explanation specificity and post non-endorsement voice resilience. One may note that the observed statistical power of these effects was high. For the effect of specificity on safety it was 1.00, for the effect of specificity on voice resilience 1.00, and for the effect of safety on voice resilience controlling for specificity, 0.89.

Study 1: Discussion and Introduction to Study 2

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The results of Study 1 support the expectation that specific explanations of voice non-endorsement, relative to non-specific explanations, lead to higher levels of voice safety and, indirectly, to voice resilience (i.e., future voice behavior). Despite the importance of these findings Study 1 is no without limitations as Study 1 participants did not actually voice suggestions initially, but were asked to imagine having done so, which could limit realism of the experiment. We thus conducted another study that dealt with this limitation. Thus, in Study 2, participants voice a suggestion that does not get endorsed, and we then provide them with a subsequent opportunity to express voice.

Study 2: Method

Participants

We recruited working adults in China using Credamo's data mart, which is a crowdsourcing platform that operates in a manner similar to Mturk. Three attention check questions were embedded to ensure data quality (e.g., "please choose 'strongly disagree' for this question"). The final sample consisted of 275 respondents (a response rate of 85.9%, 35.64% female) after excluding those who failed the attention checks and failed to follow the experimental instructions (giving advice unrelated to the experiment settings). Average age was 28.79 years (SD = 4.95); 87.3% had an academic bachelor's degree or higher; the average working experience was 6.26 years (SD = 4.82).

Design and Procedure

In Study 2, we created a scenario to manipulate the rejection of voice of a marketing plan using a between-subjects design (explanation specificity: specific versus non-specific). After reading an informed consent screen, participants were randomly assigned to one of the two conditions. Identical to Study 1, the manipulation of explanation specificity was based on King et al. (2019).

Participants were asked to adopt the role of a consultant in a marketing company. They first read a brief introduction about this *Meiyu* marketing company, including the mission and specialization of the company. Then, participants proceeded to the next screen, which presented a marketing request from a client, and a market plan designed by their manager Wang for this client. Participants then had the opportunity to write down their voluntary suggestions to Wang to improve the marketing plan with the intention to benefit their company.

After writing down their suggestions, participants proceeded to the next page in which they received an email sent by their manager with the explanation of why their suggestions could not be implemented, which included the manipulation of explanation specificity. We suppressed the ''Next'' button on the page for 30 seconds to assure that participants read the explanation. Then we asked participants to report their perceptions of voice safety. Next, participants were shown a new market plan for another client designed by their manager Wang, and they were provided a second opportunity to make voluntary suggestions to their manager, which was where voice resilience (voice after rejection) was measured. Finally, participants responded to a few items to assess the efficacy of explanation-specificity manipulations.

Measures

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Following prior research (e.g., Morrison et al., 2011), we asked participants the extent to which they feel it is safe to voice again (voice safety), ranging from 1 (definitely not safe) to 7 (definitely safe), and then listing the four kinds of voice behavior chosen from LePine and Van Dyne's (1998) scale (α = 0.93). Sample voice behaviors included "Developing and making recommendations concerning issues that affect this company"; "Communicating your opinions about work issues to Wang even if your opinion is different from his/her opinions."

We coded voice resilience (i.e., engaging in voice after experiencing non-endorsement on a different issue) as a dichotomous variable (1 = those who made subsequent suggestions; 0 = those who didn't make any subsequent suggestions). 240 out of the total 275 participants (87%) chose to make subsequent suggestions.

Regarding our manipulation check, we used the same measure from in Study 1 (α = 0.84). Items were rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Study 2: Results

Table 2 presents means, standard deviations, and correlations for Study 2.

Table 2. Descriptive statistics and correlations (*N*=275)

	M	*SD*	1	2	3	4
1. Gender	1.36	0.48	-			
2. Age	28.79	4.96	0.04	-		
3. Specificity condition	0.48	0.50	0.06	0.01	-	
4. Voice safety	3.84	1.34	0.03	-0.11	0.36***	
5. Subsequent voice behavior	0.87	0.33	0.06	-0.07	0.09	0.46***

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Manipulation check

We performed a one-way between-subjects analysis of variance (ANOVA) to examine the effect of specific versus non-specific conditions on perceived explanation specificity, which showed a significant difference, $F(1, 273) = 428.91$, $p < .001$, $\eta^2 = .61$. Participants in the specific explanation condition perceived the explanation to be more specific (M = 4.94, SD = 0.91) than participants in the non-specific explanation condition (M = 2.80, SD = 0.81).

Hypothesis Testing

We performed the same ANOVA as above to examine the effect of explanation specificity conditions on voice safety. We found a significant effect of explanation specificity on voice safety, $F(1, 273) = 39.91$, $p < .001$, $\eta^2 = .13$. Participants felt higher voice safety in the specific condition (M = 4.34, SD = 1.41) compared with in the non-specific condition (M = 3.38, SD = 1.08). This result supports Hypothesis H1.

We used the same analysis as in Study 1. First, perceived voice safety was significantly related to voice resilience in a model controlling for the explanation specificity factor, $B = 1.29$, $SE = 0.23$, $Z = 5.64$, $p < .001$. Second, the indirect effect of explanation specificity on voice

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resilience via voice safety was positive and the confidence interval did not include zero, $B = 1.25$, $SE_{boot} = 0.34$, $95\% \ CI_{boot} = [0.71; 2.05]$. These results support Hypothesis H2, which predicted that voice safety mediates the relationship between explanation specificity and post non-endorsement voice resilience.

General Discussion

When employees express constructive disagreement towards their managers, managers often need to turn down their employees' suggestions. The main question we sought to answer in our research is how can managers handle this conflictual situation in a way that does not negatively affect an employee's willingness to express disagreement in the future? The current research sought to contribute to an emerging understanding of how managers can do so while ensuring voice safety, and in turn encouraging voice resilience. We proposed that the specificity of a manager's explanation for their voice non-endorsement positively impacts employee voice safety, which in turn fosters subsequent voice behavior on a different issue. Indeed, in both experiments conducted with samples from two different cultures, we found support for our main prediction: explanation specificity had a strong and consistent main effect on voice safety, which subsequently fostered voice resilience.

Theoretical Implications

This research makes several theoretical contributions. First, we contribute to the literature on conflict management and specifically managers' handling of a conflict between them and an employee. By voicing, the employee expresses disagreement. By rejecting the suggestion, the manager deals with the conflict by shutting it down. However, managers may turn down an employee's voiced suggestion in different ways. There is thus far not much research on how managers should handle these types of conflicts (Dijkstra et al., 2014). As the conflict management field has often investigated conflictive situations utilizing a justice and fairness perspective (e.g., Kleshinski et al., 2023; Montag-Smit et al., 2024), the literature pointed us in the direction that specific explanations are likely perceived as fairer, prompting higher perceptions of voice safety and in turn resilience. Thus, our results contribute to the conflict management literature by examining a specific, but common, managerial conflict situation, in which managers must react negatively to the expressed disagreement of an employee and by examining a relatively straight forward solution for dealing with this conflict. Our findings indicate that it is beneficial to provide specific information about why the suggestion could not be endorsed. Handling the conflict in this manner leads to higher levels of voice safety and subsequent (post rejection) employee voice.

Second, we contribute to the voice literature by considering voice as a process in which managers' previous response to an employee's suggestion can impact their subsequent voice behavior. Not all employees' suggestions can be carried out, so a common situation in the workplace is that managers reject suggestions from employees (Deichmann & Ende, 2014). Yet, the voice literature has largely studied voice and voice endorsement (or non-endorsement) as a one-time event (Klaas et al., 2012). Moreover, a preponderance of research on managerial responses to voiced suggestions seems to have exalted the benefits of endorsing voice (e.g., Schreurs et al., 2020). Consequently, we know very little about how managers' turning down employees' voiced input can impact employees and their subsequent voice behavior. Consistent with existing research (King et al., 2019), our study contributes to expanding the knowledge on

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this topic by showing that an unfavorable experience (i.e., voice turned down by one's manager) need not adversely affect employees' voice resilience when managers properly deal with this event. Moreover, we consistently find that the specificity of the explanation for non-endorsement is related to voice resilience via voice safety.

Third, our research presents fresh insights that the content of explanation (i.e., specificity) can affect voice resilience. Previous studies have indicated that managers offering employees explanations for their decisions, in general, may enhance employees' perceptions of procedural fairness of managers' decisions (Shapiro et al., 1994; Shaw et al., 2003; Skarlicki et al., 2008). We extend this line of research to the domain of employee voice. In contrast to situations in which managers explain their own decisions to employees in specific ways, explanations for voice non-endorsement differ because they involve a strong element of interpersonal treatment and a sort of disapproval, in the sense that they involve how managers *respond* to something an employee has suggested, rather than revolving around the decisions of managers *per se*. Finally, our research also extends voice resilience literature by investigating when employees will respond in a positive way despite non-endorsement.

Potential Limitations and Future Research Directions

A first potential limitation relates to the matter of generalizability and ecological validity. For both studies we used an experimental scenario approach to mimic the voice non-endorsement situation, so future research should test whether these results generalize to real work settings. For instance, a recall design could be adopted in which employees respond to questions about an incident of voice rejection that they experienced in the past. One issue with such a design might be that employees' responses to these questions would be likely influenced by variables such as organizational justice perceptions or LMX, and researchers would need to to control for such variables effectively. A less intrusive alternative would be through the study of digital communications between manager and employee, in which managers' voice non-endorsement messages could be coded for specificity.

Additionally, our conclusions do not generalize to situations in which employees speak up regarding the *same* issue because we focused on participants' voice resilience in terms of them speaking up again about a different issue. In fact, we speculate that specific explanations would have a negative (not positive) effect on voice 'repetitions' given that such explanations would provide employees with concrete feedback and arguments as to why the suggestion cannot be implemented. It is also possible that specific explanations would make employees more likely to voice regarding the same issue, but with a new and different suggestion, but our data cannot speak to this possibility. We do acknowledge that this is both an important and intriguing area for future research in this domain, and we encourage future studies on this topic.

Second, while the results are consistent across two culturally diverse samples, caution regarding generalization is warranted. Alongside the cultural background of the respondents, differences in the experimental paradigm and measurement instruments used should be noted. This makes it impossible to attribute variations in results to a specific factor or to make causal statements about the role of culture. Further research is needed to delve into why and when detailed explanations for voice non-endorsement are necessary in each culture.

Third, we concentrated solely on how voice specificity may influence voice resilience because we argued for a close connection between voice rejection, specific explanations, and procedural justice. The informational quality of specificity makes it, in our reasoning, particularly

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suitable for the promotion of voice resilience via voice safety perceptions. Nevertheless, we acknowledge that messages such as voice rejection may vary in many dimensions. For example, managers might use different 'types' of explanations focusing on considerate or alternatively critical ones. For a complete understanding of the effects that different explanation types may have, in different context, future research on this matter is certainly called for. One could speculate that more critical explanations that focus on the problems of the voiced suggestion could be needed and helpful in a situation where it is for instance less obvious that the suggestion cannot be implemented or situations in which there is usually a high degree of participative decision making.

Another suggestion for future research is to examine other mechanisms apart from voice safety, for example, trust in managers, employees' emotional reactions to managers, and face-threat of employees. Further, future research should consider contextual or individual moderators, such as perceived managerial openness, employees' causal attributions of rejection, and leadership styles. Another potential moderator is the type of voice. Employees may respond differently to non-acceptance by their supervisor depending on whether the emphasis of their voice message is critical (i.e., prohibitive voice) or constructive (i.e., promotive voice) (Liang et al., 2012). These are interesting and potentially fruitful options for future (cross-sectional) research on explanation-specificity in voice non-endorsement.

Practical Implications and Conclusion

Expressions of constructive disagreement are important for the organization and employees. Managers need to respond to those expressions in an effective way. While managers might *like* to endorse an employee's suggestion or to respond in a positive way to their concern, the reality is that managers often must tell employees "No" and reject their suggestion for change. Given that they would not wish to discourage future expressions of disagreement, saying "No" in an effective way is an important practical issue. The results of the current research clearly indicate that there is a benefit to providing specific explanations for why they must say "No", relative to giving non-specific reasons. When employees are given specific explanations (relative to non-specific ones), they subsequently feel greater safety to express their disagreement again in the future, and consequently, are more likely to actually express their constructive disagreement in the future. Accordingly, the advice based on this research is simple and straightforward: whenever possible, managers should provide specific explanations for why they must say no to an employee's voiced suggestion for change. Organizations can accomplish this in several ways. For instance, they could implement training programs for managers that focus on how to handle constructive dissent. These programs should focus on how managers should provide specific and concrete feedback to employees when they do not endorse their suggestions.

One important nuance of our research is that we investigated instances where managers actually turn down employee input. However, managers might also ignore employees' voiced suggestions (Satterstrom et al., 2021). Although instances where managers ignore employee voice are beyond the scope of our research, we do find that when managers turn down voice providing a specific reason is better than a vague reason. Thus, organizations may foster a "no idea left behind" policy wherein managers are encouraged to follow up on all of their employees' ideas. Accordingly, managers will be more likely to provide specific explanations when they need to turn down voice. As managers are encouraged to deal with all instances of employee voice, employees may see their organization as more transparent, which is becoming increasingly valuable in today's economy. At the same time, there are likely circumstances that affect whether explanations are

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expected by employees. In very hierarchical cultures, for example, superiors may not usually need to give employees explanations for their decisions and if this is a normal 'process' of decision making and resolving disagreements, then there may be no issue of procedural injustice in those cases. This occurs to us as if it would be a very extreme case. After all, employees still have their idea rejected, which may feel as an unfair outcome, in which case an explanation could still be helpful to encourage their future voice.

In conclusion, we examined managers' negative responses in the context of employees' voiced suggestions. Despite the inherent value of employee voice as a lever for organizational performance, managers inevitably face situations where certain suggestions must be rejected. Our findings elucidate the critical role of explanation specificity in such scenarios. Managers who provide specific reasons for non-endorsement not only uphold a sense of procedural fairness but fortify the feeling of voice safety, thereby sustaining employee voice resilience.

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Appendix – Explanation Specificity Manipulation

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Study 1

High specificity: Thank you for your suggestion. I regret to inform you that your ideas to change the technology cannot be implemented. As far as I understand, this cash register freeing-up problem is unique to just a few stores, so corporate office is not going to change the program operating the cash register as the program is used in all our stores. It is simply too expensive to even come up with a technology work-around. So, my solution appears to be best given the circumstances. Hope this is helpful.

Low specificity: Thank you for your suggestion. I regret to inform you that your ideas to change the technology cannot be implemented. Unfortunately, there are constraints in the organization. I also don't think your idea will work given that there are other issues involved and we need a solution right away. So, my solution appears to be best given the circumstances. Hope this is helpful.

Study 2

High specificity: Thank you for your suggestion. I regret to inform you that your ideas to improve the marketing plan for Yellow Bean Cafe cannot be implemented. I do not have sufficient time to make such changes. Each marketing project is assigned a deadline, and your ideas could not be carried out before that date. To properly execute the ideas suggested by you would require about 5 extra days in the timeline. So, my solution appears to be best given the circumstances. Hope this is helpful.

Low specificity: Thank you for your suggestion. I regret to inform you that your ideas to improve the marketing plan for Yellow Bean Cafe cannot be implemented. Unfortunately, there are constraints in the organization. I also don't think your ideas will work given that there are other issues involved and we need a solution right away. So, my solution appears to be best given the circumstances. Hope this is helpful.

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Can Conflict Videos Improve People's Conflict Management? An Experimental Study on Changes in Conflict-Related Attitudes and Behaviors

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Abstract

This article analyzes the effectiveness of video intervention in the management of interpersonal conflicts. In a randomized experimental study, we examined conflict-related beliefs, feelings, and behaviors. Longitudinal data were collected from an intervention group ($N = 1567$) and a control group ($N = 636$) over 15 weeks with five surveys conducted in Germany. Mixed models with repeated measures (MMRMs) revealed significant effects on conflict-related beliefs and behaviors in the intervention group. The results indicated that productive beliefs about conflict exhibited an earlier increase and a slightly larger effect size compared to productive behaviors. Additionally, negatively experienced feelings tended to decrease in the intervention group, although this change was not statistically significant. In contrast, the control group did not demonstrate any significant changes. These findings suggest that conflict videos are a promising low-threshold tool for enhancing individual conflict management.

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Acknowledgement

Introduction

Unresolved conflicts, resulting from various causes such as unfulfilled needs and differing value and belief systems (Johnson, 2002), can harm individual well-being, interpersonal relationships, and productivity at work (CPP Inc., 2008). However, when managed constructively, these conflicts can strengthen relationships and foster work effectiveness (Gordon & Chen, 2015; Ou et al., 2018). The key to mitigating the adverse effects and harnessing the positive aspects of conflict lies in the creation of a constructive and respectful conflict culture by strengthening individual conflict management abilities (Coleman, 2018).

Usually, conflict management abilities are developed through in-person training in educational or workplace settings or via mediation and conciliation services. While these approaches are both popular and effective (CPP Inc., 2008; Leon-Perez et al., 2015; Sharif et al., 2013; Turk, 2018), they are often accessible to a limited audience or are sought out only after a significant escalation of conflicts. To expand the reach of traditional approaches with a more

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inclusive and preventive method, we suggest the utilization of online videos, as such videos may serve as an effective tool for improving individual conflict management abilities.

Online videos can potentially reach a broad audience, and they have become a popular medium for communicating scientific information (Auxier & Anderson, 2021; Kohler & Dietrich, 2021). They have been demonstrated to be effective in promoting knowledge, altering attitudes, changing intentions, and developing skills across different fields (Finkler & León, 2019; Shoufan & Mohamed, 2022; Tuong et al., 2014). By presenting information in a vivid manner, videos enhance viewers' ability to understand and retain the content presented (Blondé & Girandola, 2016). This ability of videos to dynamically present information not only supports a more favorable evaluation by the audience but also often renders this medium more effective than static, text-based methods (Moskell & Turner, 2022; Walthouwer et al., 2015).

While videos are increasingly being integrated into many conflict training programs as demonstrations or for self-modeling exercises (ElGamal et al., 2023; Hochhauser et al., 2018), there is limited research on the exclusive use of videos for education on conflict resolution (Jaudas, 2020). This study seeks to bridge this gap by examining the effectiveness of such video content on conflict-related attitudes and behaviors, thereby potentially contributing to the improvement of individual conflict management abilities.

First, we offer an overview of the insights obtained from the existing literature on conflict resolution, focusing on the elements of productive conflict management. Drawing on these insights, we outline the content of our intervention and predict its anticipated effects, particularly focusing on changes in conflict-related beliefs, feelings, and behaviors. Ultimately, we assess the effectiveness of the intervention.

What Constitutes "Productive" Conflict Management?

Training programs on productive conflict management generally address several topics, presenting basic knowledge on conflict, covering its definition, types, causes, and consequences, as well as the potential positive aspects of conflict (ElGamal et al., 2023; Ibrahim et al., 2018). Additionally, many programs focus on the development of conflict-related skills such as emotion regulation, communication, and perspective-taking (Hochhauser et al., 2018; Leon-Perez et al., 2015; Sharif et al., 2013). The topics covered also include conflict-handling styles and strategies for integrative and collaborative conflict resolution, typically tailored to specific contexts, such as work environments (Hochhauser et al., 2018; Ibrahim et al., 2018; Leon-Perez et al., 2015).

However, rather than any specific techniques or methods for the defined contexts, we suggest that "conflict intelligence" (Coleman, 2018, p. 12) and "psychological maturity" (Chetkow-Yanoov, 1994, p. 69) can be helpful in effectively managing the highly complex dynamics of conflict. Such a mindset involves the ability to optimize and adapt strategies to render them suitable for various circumstances. In other words, no single method or strategy— for instance, prioritizing cooperation over competition—is universally superior (Coleman, 2018). Additionally, conflict avoidance is deemed dysfunctional (Tjosvold & Sun, 2002). Moreover, there is an emphasis on the recognition of the relativity of one's own viewpoints, an openness toward other norms and value systems, a willingness to change personal habits or beliefs, and a move away from viewing conflicts in black-and-white terms of right or wrong (Chetkow-Yanoov, 1994).

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Embracing these principles may allow for a nuanced and flexible approach to conflict, focusing on individual motives, needs, and emotions, steering clear of simplistic judgments.

Following these assumptions, an intervention aimed at broad conflict resolution education should focus on imparting a holistic understanding of conflicts, including a psychological perspective on their origins, dynamics, and methods of resolution, as well as on enhancing a productive conflict mindset.

A Psychological Understanding of Conflict Resolution

Mediation, as a professional method for conflict management, provides a comprehensive understanding of interpersonal conflict resolution, as it typically follows an ideal-typical process. This process ranges from an analysis of the conflict and achievement of mutual understanding to a reconsideration of one's own positions, ultimately leading to a joint search for a solution (Montada, 2007; Montada & Kals, 2013).

Analyzing the Conflict

Effective conflict management begins with a thorough analysis and understanding of a conflict and its underlying issues (Carnevale & Pruitt, 1992). Traditionally, conflicts are believed to originate from incompatible positions, goals, or action tendencies (Carnevale & Pruitt, 1992; Deutsch, 1973). Instead of bargaining over fixed positions, however, it is important to explore and reflect upon the "deep structure" of the conflict, which encompasses the underlying motives and needs that the parties in conflict rarely verbalize (Deutsch, 1973). Being aware of these needs enables the parties involved to specifically target them, thereby enabling the de-escalation of the conflict (Sasaki & Overall, 2023). Moreover, depending on the type of the conflict (task-related conflict or relationship-focused conflict), different strategies can be utilized to address either the problem or the emotions involved in order to prevent escalation (Pluut & Curseu, 2013). Therefore, to reach mutually acceptable and, consequently, sustainable solutions, it is important for the involved parties to recognize and understand the interests and needs of each other (Carnevale & Pruitt, 1992; Deutsch, 1973).

Establishing Mutual Understanding

Uncovering and explaining the underlying motives behind conflict-related behaviors helps the parties in conflict change their perspectives, establish mutual understanding, and recognize pluralistic motives of the other party beyond self-interest (Ayoko et al., 2002; Deutsch, 1973; Fisher & Ury, 1991). Gaining insights into the other party's norms, values, and motives as well as the external factors or barriers to acting differently may reduce attributed blame and increase the willingness to forgive (Deutsch, 1973; Takaku, 2001). Moreover, when there is understanding between the parties, it not only aids conflict resolution but also enhances relationship satisfaction (Gordon & Chen, 2015).

Reconsidering One's Own Position

After the clarification of positions and motives in a conflict, it is helpful to reevaluate one's own position and demands, especially when resolution appears unattainable (Carnevale & Pruitt,

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1992; Chetkow-Yanoov, 1994). According to justice psychology, conflicts often arise from perceived injustices associated with the violation of a (subjective) norm (Montada, 2007). By questioning the norms' universal and objective validity, multiple legitimate perspectives on the conflict-provoking behaviors may be recognized. Doing so may, in turn, de-escalate tensions and reduce outrage (Deutsch, 1973). Stepping away from assigning blame and exploring alternative explanations for the behaviors can enhance demonstrated understanding, prevent further escalation by reducing negative communication, and potentially lead to peaceful resolution (Chetkow-Yanoov, 1994; Montada, 2007; Sanford, 2006).

Finding Solutions

Once a mutual understanding has been achieved and emotional escalation has been controlled, the parties can jointly begin searching for solutions. Win-win solutions are deemed ideal, as they benefit both sides and extend beyond the limited scope of common solutions, such as compromises (Carnevale & Pruitt, 1992). By striving for collaboration rather than competition, win-win solutions encourage parties to explore underlying interests and engage in creative and innovative problem-solving (Basadur et al., 2000). Implementing such a solution can promote a more harmonious and productive relationship, ensuring that no party feels left out or defeated. Emphasizing shared goals and open communication as well as flexibility in dealing with different perspectives, win-win strategies seek to expand the available options, thereby creating creative outcomes that satisfy the needs and desires of all the parties involved (Carnevale & Pruitt, 1992; Fisher & Ury, 1991; Ou et al., 2018).

Derivations for Video Intervention

Building on this step-by-step process, our video intervention is structured around four key components (Montada & Kals, 2013) that have the ability to significantly enhance individual conflict management skills:

In the first video, we provide insights into conflict analysis to deepen the understanding of the various hidden underlying causes of conflicts. This part aims to raise awareness of the complex factors leading to conflict escalation and encourages critical thinking with regard to personal values and priorities in conflict.

Second, we revisit the assumption that conflicts arise from perceived violations of norms. To reduce potential outrage, viewers are encouraged to acknowledge their norms as subjective and to question the universal validity of these norms, aiming to achieve more empathy and mutual understanding among the parties in conflict.

The third video underscores the common tendency to attribute responsibilities in a one-sided manner during conflicts, often overlooking alternative explanations for the opposing party's actions. The objective is to encourage individuals to reconsider their positions and to adopt more balanced and "fair" perspectives while assessing conflicts.

Finally, we offer guidance on finding solutions, aiming to broaden the conflict resolution repertoire to include win-win strategies that benefit all the parties involved. This part focuses on broadening awareness of the diverse options available for conflict resolution.

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While a range of topics may be considered, including emotion regulation and negotiation strategies (Hochhauser et al., 2018; Sharif et al., 2013), economic constraints necessitated a selective approach to choosing our content in this study. We selected the four topics mentioned, as they exemplify the conceptualization of the origins and dynamics of social conflict in mediation (Montada & Kals, 2013) —a process that has been demonstrated to be effective in constructively managing conflicts (Leonov & Glavatskikh, 2017; Turk, 2018).

Based on these four steps, we produced four videos on interpersonal conflict. In this study, we examine their effectiveness in productive conflict management as well as how these effects develop over time.

Expected Changes in Conflict-Related Attitudes and Behaviors

Presenting new information on conflict management may change an individual's attitude toward conflict (Albarracin & Shavitt, 2018). In line with the tripartite model (Rosenberg & Hovland, 1960), which conceptualizes attitudes to consist of cognitive, affective, and behavioral dimensions, we expect our video intervention to lead to changes in conflict-related cognitions, affects, and behaviors.

H1. The video intervention increases productive beliefs about conflict.

The *cognitive component* of attitudes comprises perceptual responses and beliefs that are shaped by prior exposure to information or educational content (Breckler, 1984; Rosenberg & Hovland, 1960). For instance, previous research has examined beliefs about the psychological and practical implications of different conflict types (Johnson, 2002) as well as beliefs about the positive and negative utilities of conflict (Ou et al., 2018; Simon et al., 2008). This study aims at altering beliefs about how to productively deal with conflict. Considering that conflict training programs have already demonstrated the potential to enhance knowledge about conflict resolution (ElGamal et al., 2023; Ibrahim et al., 2018), our video-based approach intends to challenge existing dysfunctional beliefs—such as the idea that the opposing party is driven solely by self-interest or that only one's own perspective on the conflict is valid—and to foster empathy for others' perspectives, thereby enhancing productive beliefs about how to manage conflict.

H2. The video intervention decreases negatively experienced feelings toward conflict.

The *affective component* of attitudes entails both sympathetic nervous responses and verbal expressions of feelings shaped by previous experiences with the subject (Breckler, 1984; Rosenberg & Hovland, 1960). Whereas past research has, for instance, explored the association between current moods and conflict styles (Montes et al., 2012) and the regulation of specific emotions in conflict (Halperin & Tagar, 2017), our focus lies on the overall affectivity in conflict situations. We assume that the participants will integrate the theoretical knowledge gained from the intervention into their real-life experiences, thereby enhancing their confidence in their ability to effectively employ these strategies to attain positive outcomes, consequently reducing their negative affectivity toward conflict (Lazarus & Folkman, 1984). Additionally, by emphasizing the role of perspective-taking in lessening anger and outrage and by promoting mutually beneficial solutions, we expect the participants to regard conflicts more positively, further decreasing their negatively experienced feelings toward conflict.

H3. The video intervention increases productive conflict behaviors.

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The *behavioral component* encompasses verbal statements concerning behaviors as well as overt actions, which are reinforced through operant conditioning (Breckler, 1984; Rosenberg & Hovland, 1960). Cognitive and affective attitude components act as critical mediators linking knowledge acquisition to behavioral outcomes (Breckler, 1984). For instance, constructive and destructive beliefs about conflict can influence an individual's goals in conflict scenarios, determining whether they respond in an aggressive or compliant manner (Simon et al., 2008). Moreover, positive affectivity is associated with more cooperative conflict management styles (Montes et al., 2012). Furthermore, conflict training programs have already proven successful in modifying behaviors (ElGamal et al., 2023; Hochhauser et al., 2018). By nurturing productive beliefs and emotions related to conflict, providing specific tips for adjusting conflict behaviors according to situational demands and the needs of the conflict partner, encouraging reflection on past behaviors, and broadening the array of potential solutions, we expect participants to modify their conflict behaviors during the course of the intervention.

H4a. Productive beliefs about conflict significantly increase after the first point of measurement.

H4b. Negative feelings toward conflict significantly decrease at a later point of measurement, following the increase in productive beliefs.

H4c. Productive conflict behaviors significantly increase at a later point of measurement, following the increase in productive beliefs.

Cognitions can shift relatively quickly after new information is presented, whereas changes in affective attitudes and behaviors often depend on prior experiences (Breckler, 1984). In the context of conflict management, positive experiences may often stem from the individual's perception of their ability to effectively resolve conflicts—an aspect that is only introduced in the final video of the intervention. Therefore, the sequential unfolding of knowledge and skill acquisition, combined with the processual nature of transforming knowledge into enduring changes in attitudes and, eventually, behaviors (Bettinghaus, 1986), leads to the expectation that participants will display diverse patterns and rates of change in their beliefs, feelings, and behaviors as they progress through the intervention.

Method

Study Design

To address the limitations of (self-)selection bias in field experiments (Benedict et al., 2019) and to strengthen internal validity, we implemented a longitudinal randomized pre-post experimental design and used a panel sample. Thus, the sample includes people who would not naturally watch videos on social media. This inclusion helps present a clearer picture of the extent to which the videos can be effective independently of any selection effects. German participants were randomly assigned to one of two groups: intervention and control. The participants in the intervention group (IG) completed the same online survey on five points of measurement (T1–T5) and watched a total of four videos, one after each survey from T1 to T4. The participants in the control group (CG) completed the same online survey at the same five points of measurement. We conducted a pre-study ($N = 333$) to validate the scales and items. Figure 1 illustrates the study design and outlines the total sample sizes on each survey date.

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Figure 1

Study Design, Points of Measurement, and Sample Sizes
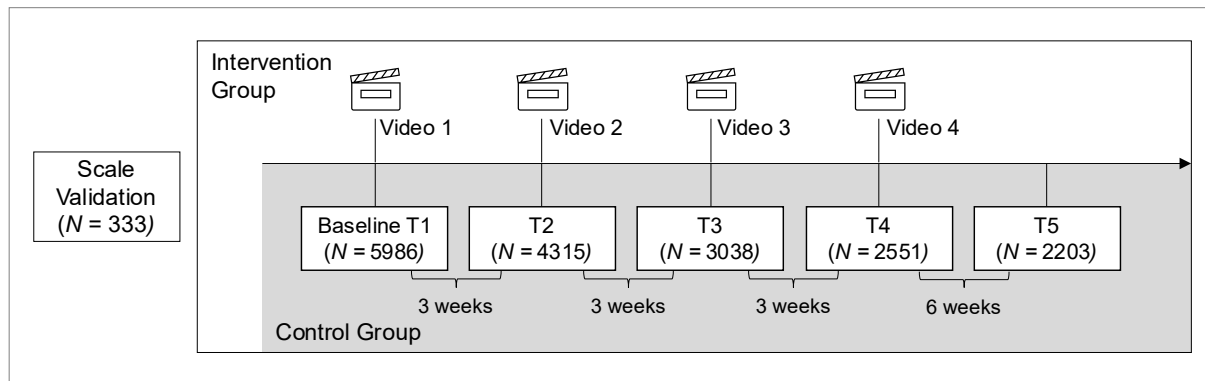
Procedure

The outcome variables were measured at baseline (T1) as well as three (T2), six (T3), nine (T4), and 15 weeks (T5) after baseline for follow-up. The chosen number and intervals between the measurements had several advantages: A higher number of measurements increases efficiency and enables the detection of nonlinear gradients (Timmons & Preacher, 2015). The participants responded before watching the videos, to ensure that the outcome variables were measured prior to video reception and, thus, three weeks (or six weeks at T5) after the previous video exposure. We expected these intervals of a few weeks between intervention and outcome measurement to allow sufficient time for the participants to apply the conflict strategies presented between video inputs (Dormann & Griffin, 2015). At the same time, the study design could not be too extensive, in order to avoid excessive panel mortality and measurement bias due to memory lapses (Ployhart & Vandenberg, 2010). Time was the within-subject variable (five levels), whereas group (two levels) was the between-subject variable.

Sample

We surveyed $N = 5986$ participants at baseline ($n = 4436$ in IG, $n = 1550$ in CG), aiming to represent the German population in terms of gender (IG: 51% female, CG: 49% female), age (limited to ages between 18 and 69; IG: $M = 45.37$, $SD = 14.18$; CG: $M = 44.57$, $SD = 14.60$), and educational level (IG: 28% low, 32% middle, and 41% high; CG: 28% low, 33% middle, and 40% high). Despite the efforts made, the drop-out rate was high (see Figure 1), which is typical for panel studies (Lynn, 2018). This high rate may be due to the brief one-week response window and the exclusion of non-responders from future surveys, besides the survey's length of 30 to 45 minutes relative to the compensation of around $3. Analyses were confined to only those participants who completed all five surveys ($N = 2203$, $n = 1567$ in IG, $n = 636$ in CG). Table 1 contains the socio-demographic details of the analyzed sample at baseline, showing that both analyzed samples are comparable in terms of their socio-demographic characteristics. While comparing the socio-demographic data of the total sample with the data of the analyzed sample at baseline, we noted slight tendencies of higher attrition rates among women, younger participants, and those with lower educational levels.

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Table 1

Socio-Demographic Data of the Analyzed Sample at Baseline (N = 2203)

	Intervention Group (*n* = 1567)	Control Group (*n* = 636)
Gender	45% female, 55% male	46% female, 54% male
Age	*AM* = 49.73, *SD* = 12.45 (18–69 years)	*AM* = 49.44, *SD* = 13.18 (18–69 years)
Education	26 % low, 25 % middle, 49 % high	21 % low, 34 % middle, 45 % high
Vocational status	51% full time, 18% part time, 21% retired, 10% other	50% full time, 18% part time, 22% retired, 10% other
Relationship status	39% single, 61% in a relationship	34% single, 66% in a relationship
Prior experience with professional conflict training	20% yes, 80% no	18% yes, 82% no

Video Intervention

The intervention consisted of four videos, each of which was in German and about 15 minutes long. Screenshots from the videos, as well as URLs, are available in the supplementary material.

Video Content

The content of the videos ranged from conflict analysis to conflict solution and covered the following topics: (1) the surface and deep structure of conflicts, (2) the norm violation and (3) the attribution of responsibility as preconditions for conflict and their de-escalating relativization, as well as (4) the generation of win-win solutions. The videos were produced in two stages. Initially, individuals from the general population were interviewed about their personal experiences with a specific conflict, with certain aspects being explored in detail based on the topic of the video (for interview details, see Grunenberg et al., 2023). For example, a middle-aged woman spoke about her daily disputes with her husband and reflected on the underlying motives and needs (Video 1). Subsequently, two male experts in conflict psychology (aged 28 and 25 years) commented on excerpts from the interviewee's statements, explaining the relevant theoretical concepts. Afterward, the discussion broadened from the interviewee's particular conflict to include inputs from a male mediation professional (aged 48 years), who presented topic-specific advice on how to deal with conflicts in a more constructive manner. Each video concluded by encouraging viewers to apply the discussed insights to their own conflict situations.

Video Design

The impact of educational videos is influenced by their design elements, with the "edutainment" format—a combination of educational content with entertaining storytelling

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(Taddicken & Reif, 2020)—proving to be effective (Finkler & León, 2019; Kohler & Dietrich, 2021). Such videos, characterized by their simplicity, narrative structure, and emotional engagement, have been demonstrated to foster greater knowledge gains compared to traditional factual-style videos (Boy et al., 2020; Hébert et al., 2020). By integrating aspects of entertainment, edutainment videos evoke emotions that enhance attention, learning, and memory processes (Dai & Wang, 2023; Tyng et al., 2017). Embracing these benefits, our videos adopt the edutainment approach, providing content in a modern and attractive style, using laymen's terms, and incorporating humor and entertaining storytelling.

Video Protagonists

Besides style and language, characteristics of the video's protagonists can further facilitate learning. Social learning theory (Bandura, 1969) suggests that individuals learn more effectively from the experiences of others when they can identify with and consider speakers in the video trustworthy (Boy et al., 2020). Having similar models and observers may be advantageous for positive affective processes during learning (Hoogerheide et al., 2016). Video modeling and observational learning have also been successfully used in negotiation and conflict management training (Hochhauser et al., 2018; Nadler et al., 2003). Therefore, our videos feature a diverse range of individuals, not limited to experts but including members of the general public of various ages and genders, to enable identification with the interviewees.

Measures

All items[1] were answered using a 6-point Likert scale of agreement. The Cronbach's alphas reported below represent the range of each alpha for the IG and CG across all five surveys.

Conflict-Related Outcomes

We relied on instruments that had already been used in a similar form (as cited) and modified items based on conflict psychology literature. *Beliefs About Conflict* were measured with six items ($.79 \leq \alpha \leq .86$; adapted from Jaudas, 2020). *Negatively Experienced Feelings Toward Conflict* were measured with three items ($.80 \leq \alpha \leq .86$; adapted from Weh & Enaux, 2008). *Productive Conflict Behaviors* were measured with six items ($.91 \leq \alpha \leq .96$; adapted from Jaudas, 2020). In T5, the items were *In the last six weeks…*. All items are listed in Table A-1 in the Appendix.

As item and scale analyses of the pre-study ($N = 333$) for scale validation revealed a high internal consistency ($.72 \leq \alpha \leq .90$) and good discriminatory power for each item ($.47 \leq r_{it} \leq .77$), no scale adjustment was necessary.

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[1] We collected further measures (for more information, see the preregistration). Due to space limitations and the specific objectives of the article, they are not reported in this article. The items for all variables are originally in German and have been translated for this article.

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Covariates

We calculated a *propensity score* using socio-demographic variables, prior experience with professional conflict training, and perceived frequency of conflicts at baseline (Austin, 2011). Additionally, we included *perceived frequency of conflicts* (one self-developed item, *In the last three/six weeks, I have experienced conflicts, such as disagreements, difficult conversations, or disputes in my daily life.*) and *social desirability* (six items, $.65 \leq \alpha \leq .73$; Kemper et al., 2012) as covariates with respective scores at any measurement. We measured social desirability due to its association with self-reported conflict experiences (Nauta & Kluwer, 2004). The propensity score and the respective outcome at baseline were treated as covariates in every outcome analysis. In contrast, depending on their correlation strength with the respective outcome ($r > .30$), social desirability was only included as a covariate for productive beliefs about conflict, and perceived frequency of conflicts was only included as a covariate for productive conflict behaviors.

Mixed Models in Data Analysis

In order to analyze video effectiveness, we used linear mixed models with repeated measures (MMRM) as they account for unbalanced designs with unequal sample sizes (West, 2009). Analyses were run with the MIXED procedure in IBM SPSS Statistics 28, following West (2009) and West et al. (2022). The fixed effects were group, time, group*time, and covariates. The random effects were the subjects. Restricted maximum likelihood (REML) was used as a parameter estimation method. The covariance structures for the MMRMs were determined by comparing Akaike's information criterion (AIC) and selecting the covariance structure that resulted in the smallest AIC (West et al., 2022). The covariance type was set as first-order autoregressive (AR1) for repeated measures and as variance components (VC) for random effects. The significance criterion was set at $\alpha = .017$ in accordance with the Bonferroni correction for multiple testing (three MMRMs, $.05/3 = .017$; Victor et al., 2010).

Results

Table 2 presents the means (*M*) and standard deviations (*SD*) for all outcome variables across each measurement for the IG and the CG. At baseline, the participants already possessed strong productive beliefs about conflict and reported productive conflict behavior as well as negatively experienced feelings toward conflict slightly above the scale's mean (3.5).

Table 3 details the effect sizes for changes between measurements for all outcomes. Comparisons between groups at baseline revealed no significant differences across any of the outcome variables ($p > .61$).

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Table 2

Mean (M) and Standard Deviation (SD) for Measurements and Groups

		T1 M (SD)	T2 M (SD)	T3 M (SD)	T4 M (SD)	T5 M (SD)
Productive Beliefs	IG	4.81 (0.71)	4.91 (0.71)	4.94 (0.72)	4.95 (0.73)	4.99 (0.72)
	CG	4.75 (0.76)	4.77 (0.73)	4.77 (0.72)	4.79 (0.74)	4.78 (0.74)
Negatively Experienced Feelings	IG	3.71 (1.18)	3.67 (1.17)	3.67 (1.20)	3.67 (1.21)	3.65 (1.23)
	CG	3.70 (1.16)	3.73 (1.15)	3.73 (1.16)	3.75 (1.19)	3.74 (1.21)
Productive Behaviors	IG	3.91 (1.15)	3.93 (1.16)	3.94 (1.21)	3.94 (1.27)	4.06 (1.22)
	CG	3.85 (1.16)	3.81 (1.22)	3.79 (1.27)	3.78 (1.25)	3.76 (1.33)

Note. IG = Intervention Group, CG = Control Group. 1 = *absolutely not true*, 6 = *absolutely true*.

Table 3

Effect Sizes for Outcomes and Groups From Measurement to Measurement

		T1	T2	T3	T4	T5	Group Differences
Productive Beliefs	T1	-	0.05	0.04	$0.08^{\dagger}$	0.05	0.03
	T2	0.20***	-	0.01	0.03	0.00	0.21***
	T3	0.23***	0.06	-	0.05	0.01	0.29***
	T4	0.24***	0.02	0.01	-	0.04	0.25***
	T5	0.30***	0.12***	0.08**	0.07**	-	0.38***
Negatively Experienced Feelings	T1	-	0.03	0.02	0.04	0.03	0.01
	T2	$0.05^{\dagger}$	-	0.00	0.02	0.01	0.09
	T3	0.05	0.00	-	0.02	0.01	0.09
	T4	0.04	0.01	0.01	-	0.01	0.10
	T5	$0.06^{\dagger}$	0.01	0.01	0.03	-	$0.12^{\dagger}$
Productive Behaviors	T1	-	0.03	0.03	0.02	0.04	0.01
	T2	0.04	-	0.01	0.00	0.01	0.08
	T3	0.06*	0.03	-	0.01	0.01	0.13^{*}
	T4	$0.06^{\dagger}$	0.02	0.01	-	0.02	$0.11^{\dagger}$
	T5	0.14***	0.11***	0.08**	0.09***	-	0.25***

Note. Effect sizes are indicated as Cohen's *d*. Values for the IG are presented below the diagonal; values for the CG are presented above the diagonal. $^{\dagger} p < .05$; $* p < .017$, $** p < .01$, $*** p < .001$.

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To test Hypotheses 1, 2, and 3, we examined overall changes in the outcomes from baseline (T1) to the follow-up, 15 weeks later (T5), by conducting both within- and between-group comparisons to assess interactions of time and group. Figure 2 displays the main results, including the effect sizes for significant changes.

Figure 2

Changes in Outcomes Across Groups From Baseline to Follow-Up With Effect Sizes
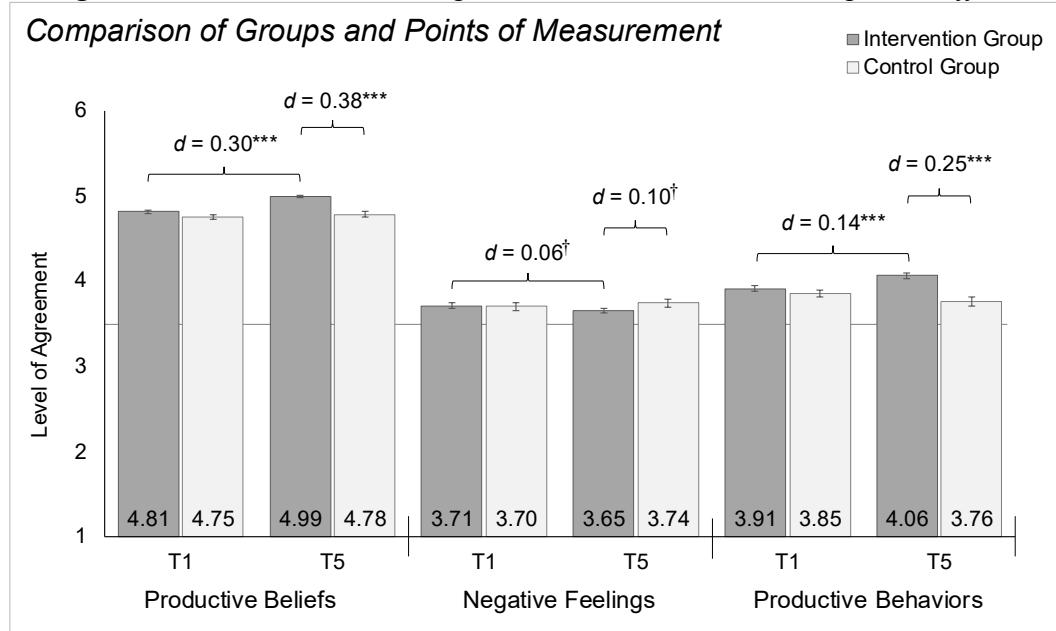
Note. Groups did not differ significantly at baseline (T1) for any variable. The CG showed no significant change. 1 = *absolutely not true*, 6 = *absolutely true*. Error bars indicate standard errors of the mean. [†] $.017 < p < .05$, *** $p < .001$.

To test Hypotheses 4a-c, we analyzed the specific changes in outcome variables from one measurement to the next. Figure 3 illustrates their development across all five measurements for both groups.

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Figure 3

Changes in Beliefs, Feelings and Behaviors Over Time for Both Groups
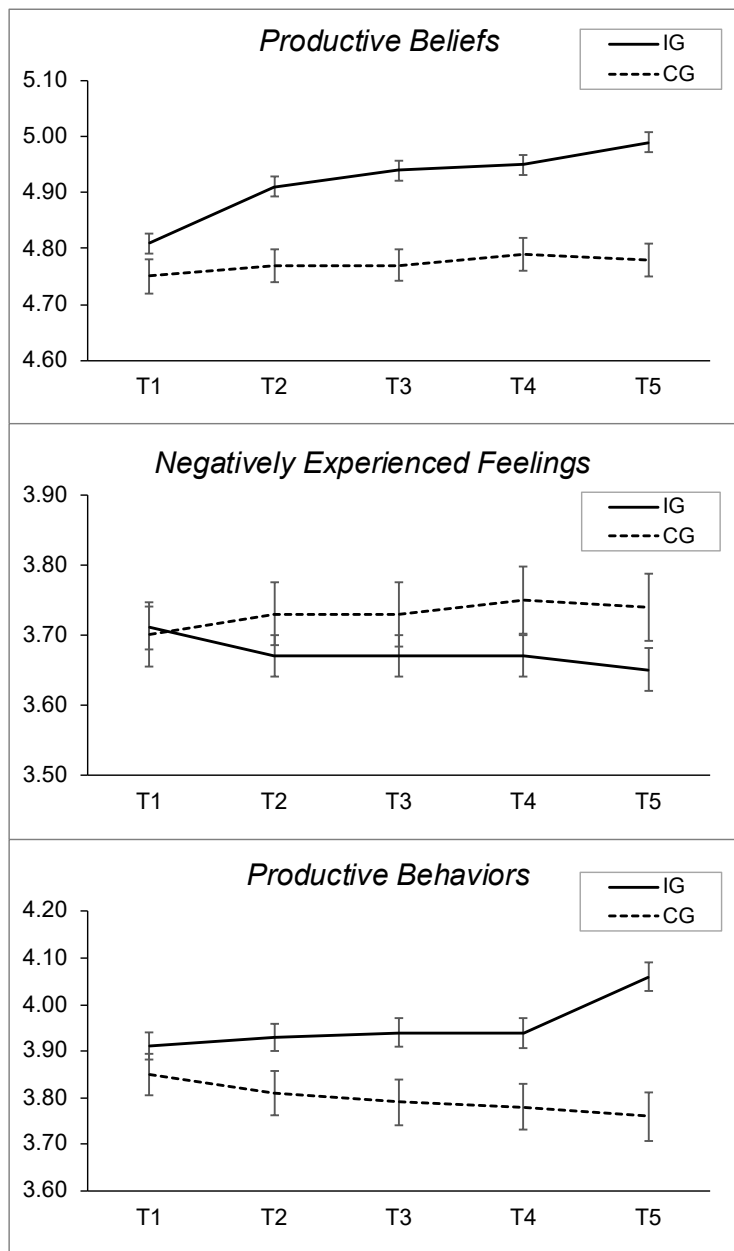
Note. Error bars indicate standard errors of the mean. T1–T5 indicate times of measurement. IG = intervention group, CG = control group.

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Productive Beliefs About Conflict

H1 stated that video intervention increases productive beliefs about conflict. The interaction group*time had a significant impact on *productive beliefs* ($F_{beliefs}$ = 7.806, df = 4/4630.97, $p < .001$). Significant main effects were observed for both group ($F_{beliefs}$ = 40.011, df = 1/2146.74, $p < .001$) and time ($F_{beliefs}$ = 16.109, df = 4/4632.83, $p < .001$). Effect sizes from baseline to T5 indicated a medium effect for the IG ($d_{IG(T1T5)}$ = 0.30, $p < .001$) but no significant effect for the CG ($p = .226$). Significant differences between the groups were evident at T5 (d_{T5} = 0.38, $p < .001$). Therefore, Hypothesis 1 is confirmed.

In the IG, the participants reported a significant increase in productive beliefs at T2, three weeks after watching the first video (d_{T1T2} = 0.20, $p < .001$). This change was followed by another significant rise from T2 to T5 (d_{T2T5} = 0.12, $p < .001$). The groups demonstrated a significant difference for the first time at T2 (d_{T2} = 0.21, $p < .001$). In the CG, there was a tendency for a change in productive beliefs from T1 to T4 (d_{T1T4} = 0.08, $p = .046$), but no other tendencies or significant changes were observed at any other time of measurement ($p > .19$).

Negatively Experienced Feelings Toward Conflict

H2 suggested that video intervention decreases negatively experienced feelings toward conflict. However, there was no significant interaction group*time for *negatively experienced feelings toward conflict* ($F_{affective}$ = 1.21, df = 4/4780.95, $p = .304$). Similarly, the main effect of time was not significant ($F_{affective}$ = 0.24, df = 4/4780.95, $p = .917$). Although the main effect of group showed a tendency, it was not statistically significant ($F_{affective}$ = 4.64, df = 1/2139.67, $p = .031$). Consequently, Hypothesis 2 is rejected.

For the IG, there was a tendency for negatively experienced feelings to decrease from T1 to T2 (d_{T1T2} = 0.05, $p = .042$) and from T1 to T5 (d_{T1T5} = 0.06, $p = .019$). Additionally, at T5, there was a tendency toward a group difference (d_{T5} = 0.10, $p = .026$), with the IG reporting lower levels of negatively experienced feelings.

Productive Conflict Behaviors

According to H3, video intervention increases productive conflict behaviors. *Productive conflict behaviors* showed a significant interaction group*time ($F_{behavior}$ = 3.86, df = 4/5003.13, $p = .004$). There was a significant main effect of group ($F_{behavior}$ = 11.042, df = 1/2146.96, $p < .001$). However, the main effect of time was not significant ($F_{behavior}$ = 1.440, df = 4/5011.71, $p = .218$). While the IG exhibited a small but significant overall effect from T1 to T5 ($d_{IG(T1T5)}$ = 0.14, $p < .001$), no significant change was found in the CG over the same period ($p = .343$). Therefore, Hypothesis 3 is confirmed.

Productive behaviors in the IG tended to increase T3 onward (d_{T1T3} = 0.06, $p = .01$, d_{T1T4} = 0.06, $p = .02$), reaching its highest level at T5 (d_{T1T5} = 0.14, $p < .001$). No significant changes were found in the CG ($p > .34$).

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H4a-c posited that the outcome variables change significantly at different points of measurement. When comparing the changes in each outcome over time in the IG, it was evident that beliefs registered an early increase from T1 to T2, while feelings remained largely unchanged, and behaviors became substantially more productive only at the final assessment at T5. Therefore, Hypotheses 4a and 4c are accepted, whereas Hypothesis 4b is rejected.

Discussion

This article raised the following question: Can videos on the subject of conflict improve people's productive conflict management? Our hypotheses are largely confirmed. Although the participants' productive beliefs and behaviors were already slightly above the scale mean at the beginning, the videos still improved productive beliefs about conflict and productive conflict behaviors in the IG. Negatively experienced feelings toward conflict showed no significant changes. In the detailed analysis, the outcomes showed different developments over the course of 15 weeks: In the IG, beliefs about conflict increased immediately after the first video, while productive conflict behaviors had later and smaller effects. In the CG, there were no significant changes. Therefore, overall, our videos were effective in conveying psychological conflict content and strengthening individuals' productive cognitive attitudes and behaviors.

In accordance with previous studies (e.g., Boy et al., 2020; Record et al., 2021), our results support the potential to change beliefs via edutainment videos. While the increase in productive beliefs about conflict was particularly high when confronted with information on conflict for the first time, there were smaller rates of change at T3 and T4. The observed nonlinear change pattern could be ascribed to the thematic similarity among Videos 2 and 3, suggesting that these subsequent videos may have primarily served to differentiate and consolidate the insights acquired from Video 1: After the first video created an awareness of the diverse motives and needs underlying individual conflict behaviors, Videos 2 and 3 focused on a similar aspect, namely creating an understanding of the other person's situation.

By acknowledging the relativity of one's perspective, participants may have become more receptive to alternative viewpoints (Chetkow-Yanoov, 1994). The resulting increase in empathy could have reduced attribution bias, as individuals considered explanations for the other's behaviors beyond mere self-interest (Klimecki, 2019). In turn, this decreased tendency to assign blame could have led to more favorable attitudes toward the other person, enhanced displays of understanding, and less negative communications (Klimecki, 2019; Sanford, 2006). Another significant gain in productive beliefs occurred after information on conflict resolution was presented in Video 4. The emphasis on win-win solutions could have reshaped previously noted incompatible motives and needs into chances for creating mutually beneficial outcomes. This shift in the perceived range of potential conflict solutions may have not only affected individual conflict goals but also encouraged creative problem-solving strategies (Carnevale & Probst, 1998; Simon et al., 2008). Additional research is necessary to confirm these assumptions regarding mediating mechanisms.

The effect sizes for attitude change are consistent with those found in previous studies, where attitude change resulting from interventions or messages was associated with a small effect size of $d = 0.22$ (for an overview, see Albarracin & Shavitt, 2018). While other intervention studies only implemented one pre-post test (e.g., Moskell & Turner, 2022; Mundorf et al., 2018), we were

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able to demonstrate a positive change in productive beliefs in the IG over a longer survey period, which underlines the stability of the findings and helps understand the development.

Negatively experienced feelings toward conflict did not change significantly, although there was a slightly decreasing trend in the IG. Some previous intervention studies found positive, negative, or even non-significant changes in affective attitudes toward the respective video content (e.g., Lu et al., 2018; Moskell & Turner, 2022; Soble et al., 2010).

There are several possible reasons our video content had no effect on the recipients' feelings toward conflict, which should be investigated in future research. First, the videos mostly included content concerning the cognitive aspects of conflict analysis and solutions. Second, how conflict is experienced emotionally depends on the subjective perception of conflict-related skills and available resources (Lazarus & Folkman, 1984). Although there was sufficient time to gain knowledge and to apply this knowledge in the first step, the survey period may not have been long enough for the participants to develop sufficient skills and resources that would have allowed them to experience themselves as self-sufficient and, thus, to evaluate conflict in a more positive manner. Additionally, an ambiguous attitude does not seem unusual, as conflict can be perceived as unpleasant but also functional at the same time. This idea undermines the literature on the cognitive-affective inconsistency (Norman, 1975). Finally, examining positively experienced feelings toward conflict may be useful, as emotions do not represent a continuum (Briesemeister et al., 2012).

A very limited number of studies have investigated changes in conflict *behaviors* after a video intervention (e.g., Jaudas, 2020; Hochhauser et al., 2018). Other studies that have investigated health-related behaviors using video interventions have reported either small or highly variable effect sizes (Yang, 2017). We also found rather weak effects on actual behavioral change that only became highly significantly apparent at T5. According to Bettinghaus (1986), behavioral changes take a longer period: Gradually modifying beliefs about productive conflict management may have initially enhanced behavioral intentions and perceptions of action control as well as self-efficacy, alongside a shift in the pursued conflict goals, before any productive behaviors were evident (Fishbein & Ajzen, 1975; Simon et al., 2008). The participants probably required time to become accustomed to adopting others' perspectives and to reflect on their own actions as well as the dynamics of a conflict. However, it was only after becoming aware of the other party's needs that they were able to adapt their behaviors accordingly (Pluut & Curseu, 2013; Sasaki & Overall, 2023). As conflict situations are not necessarily commonplace, the participants may not have been able to sufficiently apply the acquired knowledge during the 15 weeks of the intervention. Further, the presented insights accumulated to a greater amount with each measurement point. Thus, the increase in productive conflict behaviors may have primarily required a more comprehensive knowledge base ranging from an in-depth understanding of conflict (Video 1) and the relativization of norms and blame (Videos 2 and 3) to an expanded scope for solutions (Video 4).

Considered together, it is worth noting that merely four 15-minute videos were able to increase productive beliefs as well as change conflict behaviors significantly. In line with the principle of small steps, even a small effect can have a significant impact due to the wide reach of social media (Yang, 2017). Thus, we may have been able to achieve our overarching goal of improving productive conflict management skills in our target group.

Implications for Future Research

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Our study enriches both the theoretical and empirical landscapes by not only affirming the distinctiveness of the tripartite model's components (Rosenberg & Hovland, 1960) and substantiating the idea that affective attitudes cannot be easily changed through mere information (Breckler, 1984), but also by contextualizing the tripartite model within the context of conflict. In doing so, we present new constructs—beliefs about productive conflict behaviors, feelings toward conflict, and flexible conflict behaviors—and introduce validated scales for measuring these variables. Methodologically, our study is characterized by a large sample that is representative of the general German population in terms of age, gender, and educational level. The longitudinal design enabled the detection of process effects that were controlled for various covariates and analyzed using robust statistical methods.

Despite these strengths, some limitations must be highlighted. First, the observed effect sizes were rather small. Productive conflict management depends on many situational factors and requires a longer period of testing and reflection. In most cases, strongly internalized cognitive and behavioral patterns must be changed. In this respect, and in line with the principle of small steps (Yang, 2017), the effect sizes achieved were satisfactory. Second, our study is characterized by high drop-out rates in the first few surveys, for example, due to natural panel mortality across the duration of the study or a potential loss of interest in the videos (Lynn, 2018). Third, there are general concerns about the data quality of the panel samples. Considering the suggestions presented by the literature (e.g., Walter et al., 2019), we ensured data quality by utilizing attention checks and speeder checks, conducting data cleaning (e.g., due to illogical inconsistencies in socio-demographic data across different points of measurement; multiple participation in a survey controlled by ID), or screening for extreme response tendencies (e.g., answering every survey item with 1).

In addition to addressing these limitations, there are several avenues for further research. First, subsequent studies should explore the effects of different intervention mediums and contents. It includes contrasting the unique contributions of edutainment, vividness, and audiovisual elements in our video intervention with other video styles and formats, such as texts. Further, it would be beneficial to investigate whether the complexity and specificity of video content can be simplified without compromising efficacy by comparing varying contents and scopes. In particular, examining the effects of different contents, such as emotion regulation, communication, or perspective-taking, could be worthwhile (Hochhauser et al., 2018; Leon-Perez et al., 2015; Sharif et al., 2013), with an emphasis on content that may influence positively experienced feelings toward conflict.

Second, future research should assess the moderating factors that may impact the effectiveness of conflict-related video interventions, for instance, the attractiveness and credibility of the video and its speakers (Boy et al., 2020) as well as the recipients' interest in the subject matter (Kohler & Dietrich, 2021), growth mindset (Duchi et al., 2020), and cultural background (Oetzel et al., 2001). It is also vital to identify factors that may not only lessen but actually reverse the intended effects, such as the recipients' objections to the content (Hart & Nisbet, 2012).

Third, it is essential for future investigations to explore mediating mechanisms, including factors we already discussed, such as bias reduction (Sanford, 2006), empathy (Klimecki, 2019), personal goals (Simon et al., 2008), perceptions of conflict situations (Leonov & Glavatskikh, 2017), or self-efficacy beliefs (Fishbein & Ajzen, 1975).

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Finally, long-term effects should be examined in terms of interpersonal relationships, applicability to other contexts such as political debates or public issues (Johnson, 2002), and the potential impact of an altered conflict mindset on creativity and cognitive adaptability (Carnevale & Probst, 1998).

Practical Implications

Considering our findings, there are several potential practical applications of conflict videos for diverse fields in educational, societal, and scientific communication endeavors.

These videos may serve as a dynamic tool for conflict training across diverse environments such as schools, universities, online learning platforms, social initiatives, and workplaces. They facilitate targeted knowledge dissemination, acting as a basis for discussion, illustrating concepts vividly, and providing relatable case studies. This approach may be particularly beneficial for individuals who prefer visual or aural instructional methods (Drago & Wagner, 2004). To potentially enhance the impact of the videos, it is advisable to include interactive elements alongside them, in order to offer opportunities for participants to apply the new insights in a practical setting, in line with social learning theory (Bandura, 1969). Considering the demonstrated effectiveness of in-person training programs that offer opportunities for discussion and feedback (ElGamal et al., 2023; Leon-Perez et al., 2015), integrating interactive exchanges may amplify the learning experience. Furthermore, interactive components such as role play or feedback may more effectively address affective issues related to fears and anxieties by facilitating an experience of self-efficacy, potentially empowering individuals with the confidence to successfully handle similar conflict situations.

Furthermore, the videos have the potential to expand their impact on a societal scale by engaging audiences via social media platforms (Auxier & Anderson, 2021). With an edutainment design, the videos may address not only users' information-seeking interests but also their desire for entertainment (Khan, 2017). Importantly, through incidental exposure on these platforms, the videos can reach individuals who may not have actively sought out information on conflict. To spark and sustain these users' interest, an attractive video design becomes essential for reaching and engaging diverse audiences, thereby raising awareness and contributing to a societal culture of constructive conflict resolution and dialogue (Coleman, 2018).

In the context of science communication, our conflict videos demonstrate that it is possible to "demystify" scientific research, making it accessible, understandable, and relevant to the lay public through edutainment formats. This approach can serve to break down the barriers of the "ivory tower" by linking academic findings with everyday experiences.

Conclusion

The efficacy of the videos is especially remarkable considering that these changes occurred as a result of merely watching a few videos over a relatively brief period of time in terms of conflict experiences. It is unreasonable to expect that many participants will fundamentally rethink their beliefs and take alternative actions simply by watching videos. Nevertheless, if several people gradually change the way they think about and act in conflicts as a result of watching the videos, then it constitutes a substantial achievement. Additionally, feedback from participants has also underlined that the videos have prompted a process of profound reflection, which may potentially

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have a long-lasting and even a far-reaching impact on their social relationships and, in the longer-term perspective, on society as a whole.

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Appendix

Table A-1

Items for Beliefs, Feelings, and Behaviors

Productive Beliefs About Conflict (α = .79)

1. To resolve conflicts, it's important to view the issue from various angles.
2. I understand that attributing blame to only one party can prevent conflict resolution.
3. To resolve conflicts, it's important to empathize with the other person's perspective.
4. I am aware that people perceive different things as justified in a conflict.
5. To resolve conflicts, it's important to discuss what is perceived as fair.
6. I know that it's possible to find win-win solutions in conflict situations.

Negatively Experienced Feelings Toward Conflict (α = .82)

1. I always find conflicts to be extremely unpleasant.
2. To me, conflicts are inherently frightening.
3. In my view, conflicts are associated solely with negative feelings.

Productive Conflict Behaviors (α = .92)

Over the past three weeks, I have been able to…

1. … react more constructively in conflicts than before.
2. … respond differently depending on the specific conflict situation.
3. … tailor my conflict resolution strategies to the individual or group involved.
4. … resolve conflicts using strategies that I considered appropriate for each situation.
5. … reflect on how I could have acted better after a conflict situation.
6. … continually reassess my conflict management strategies.

Note. In the T5 survey, the items related to productive conflict behaviors were phrased as *Over the past six weeks….*

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Supplementary Material

Figure S-1

Screenshots from the Videos

Note. 1) The two hosts and psychology experts discuss theoretical assumptions. 2) An interviewee shares her experiences with conflicts involving her flatmates. 3) The hosts engage in a conversation with a mediation professional. 4) As the hosts summarize the content at the end of the video, explainer slides are displayed, featuring calls to action for viewers: *Question yourself! Why is this argument so important to me? Would I argue just as intensely with another person?*

The videos can be found on YouTube in German, with the option to automatically generate English subtitles:

- (1) Surface and deep structure: https://youtu.be/2dspFbX8LKI
- (2) Norm violation: https://youtu.be/-MzCf3zY50U
- (3) Attribution of blame: https://youtu.be/neKYhTroS7I
- (4) Win-win solutions: https://youtu.be/vqc_8qjJ_ZM

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