

The Variation of Prosocial Behavior to Intervene with the Variation of Cultural Norms, Gender, and Situational Factors among University Students

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Abstract:

This mixed-methods study explores the variations in types of intervention behaviors in social support (bystander) actions demonstrated by male and female university students witnessing a socially provocative situation on campus at the British University in Egypt. The research examines the influence of cultural norms in Egyptian society, gender (male/female), and environmental contextual factors on helping behavior, focusing specifically on two settings: a campus cafeteria and a library. The researchers employed two equivalent experimental scenarios, one in the cafeteria and one in the library featuring male and female victims subjected to verbal and physical assaults in the presence of bystanders who were unaware they were part of an experiment. The bystanders' reactions were observed, followed by in-depth individual interviews aimed at capturing qualitative data regarding helping behaviors.

For qualitative analyses, the researchers utilized two artificial intelligence applications:

1. **Natural Language Understanding (NLU)** to analyze the emotions expressed in each interview response, quantifying the intensity of different emotional reactions.
2. **Large Language Models (LLMs)** to explore complex relationships between words, sentences, and underlying meanings within the bystanders' responses. This holistic analysis enabled the identification of emotional states, intentions, and motivations underlying the various types of helping behaviors. The combination of these tools yielded

highly accurate insights, highlighting key behavioral indicators and the latent reasons behind intervention or lack thereof, supplemented by researchers' interpretations within theoretical and empirical frameworks.

Quantitative analysis was conducted using the Chi-square test (χ^2). Key findings revealed gender-based differences in intervention behaviors, both positive and negative, in response to the staged aggression. The level of engagement was significantly influenced by the gender of the bystander, supporting the qualitative findings. Results also showed a marked **gender bias**, with higher intervention rates when the victim was female aligning with culturally rooted ideals of male chivalry. Conversely, bystanders were less likely to intervene when the victim was male, potentially reflecting societal assumptions about male resilience and a presumed lack of need for assistance.

Further analyses revealed nuanced emotional interactions, where both empathy and fear played significant roles in determining whether a bystander would intervene or withdraw. Cultural norms surrounding family honor and reliance on institutions also shaped bystander behavior. The researchers conclude that understanding the emotional, contextual, and cultural dynamics of helping behavior can inform the design of culturally responsive intervention programs that challenge traditional gender roles and promote collective responsibility. The study calls for additional research into the influence of gender and cultural norms on prosocial behavior in educational and community settings.

Keywords: Social support behavior, active bystander training, environmental and cultural contextuality, implicit gender bias, cultural stereotypes, AI applications in qualitative analysis.

Introduction:

Gender biases in healthcare context have been extensively researched. However, only few studies emphasized the role of culturally-specific bystander behavior and importance of active-bystander training for medical professionals. Both healthcare pertinent gender biases and bystander behavior involve witnessing where individuals observe a situation, which might require help or intervention. The bystander effect, a well-established phenomenon in social psychology, describes the tendency for individuals to be less likely to offer help in an emergency situation when other people are present (Latané & Darley, 1968; Fischer et al., 2011). This inaction is often attributed to factors such as diffusion of responsibility, where the presence of others lessens the perceived individual responsibility to act, and pluralistic ignorance, where individuals look to others for cues on how to react, leading to collective inaction if no one intervenes (Garcia et al., 2017). While these foundational theories provide a framework for understanding bystander behavior, they do not fully account for the complex interplay of emotions, cultural norms, and gender roles that can influence intervention decisions.

This study investigates the dynamics of bystander intervention within the specific cultural context of Egypt, a society marked by strong collectivist tendencies and traditional gender roles (Okasha et al., 2012). We examine how these cultural factors, along with situational variables and gender, influence individuals' responses to staged conflicts involving both male and female victims. By employing a mixed-methods approach, combining quantitative observations with qualitative insights from interviews, we aim to provide a nuanced understanding of the factors that promote or inhibit helping behavior in this setting.

Literature Review

Background

Gender Bias in Healthcare

Gender bias and implicit stereotypes are shown to promote gender-related disparities in health professionals' attitudes to patients. Studies show that gender biases and discrimination are multi-level in the healthcare environment, affecting the patient provider interaction health outcomes (Govender & Penn-Kekana, 2008; Risberg, Johansson, & Hamberg, 2009).

Thus, healthcare providers often attribute physical symptoms to women's emotionality, which affects the rate of prescription of symptomatic drugs (Ruiz-Cantero et al., 2020). An unconscious gender bias in the treatment of abdominal pain is reported where women with abdominal pain were less likely to receive analgesia, compared to men and waited longer for pain medication than men

(Chen et al., 2008). Findings also suggest that a female medical professional and male patient interaction improves the diagnosis and drug prescription accuracy (Si et al., 2023).

Attitudes to patients based on their gender are driven by implicit biases where cultural stereotypes – though not consciously endorsed – lead to unintended biases in decision-making, shaping a health provider's behavior and resulting in disparities in medical treatment (Chapman, Kaatz, & Carnes, 2013). Despite a strong presumption that medical professionals are governed by objective science, their practice patterns are influenced by their own demographic characteristics, including gender (Berger, 2008).

Active Bystander Training for Medical Professionals

Various research suggests that training healthcare professionals in recognizing implicit biases and exercising prosocial behavior is an effective model for mitigating gender biases in their practice. In particular, the importance of active bystander intervention training for medical students (York et al. 2021) and medical professionals (Relyea et al., 2020) is emphasized. Evidence shows that Bystander Intervention Training (BiT) in clinical settings promote prosocial behavior in discriminative or emergency situations (Thompson et al., 2020; Tyson et al., 2025).

Active bystander intervention (ABI) training is viewed as a tool and strategy to challenge discrimination and harassment, promoting a philosophy that all members of the healthcare community have a role to play in tackling healthcare inequalities (Aitken et al. 2023).

It is also pointed out that it is a moral duty of healthcare professionals to practice "upstanding" in response to gender-bias driven clinical practices, which should be a part of medical professional ethics and institutional training (Brüggemann et al., 2019; Mello & Jagsi, 2020)

Bystander Behavior

The bystander effect, a well-established phenomenon in social psychology, describes the diminished likelihood of individuals offering help in emergencies when others are present (Latané & Darley, 1968). This phenomenon is often explained by diffusion of responsibility, where the presence of others lessens the perceived individual responsibility to act, and pluralistic ignorance, where individuals look to others for cues on how to react, leading to collective inaction if no one intervenes (Latané & Darley, 1968). While these foundational theories provide a framework for understanding bystander behavior, they do not fully account for the complex interplay of emotions, cultural norms, and gender roles that can influence intervention decisions.

Theories of Emotions and Bystander Intervention

Emotions play a crucial role in shaping bystander responses. Empathy, the ability to understand and share the feelings of another, has been consistently linked to prosocial behavior (Davis, 1994; Eisenberg & Lennon, 1983). When bystanders empathize with a victim, they are more likely to experience personal distress and are motivated to alleviate the victim's suffering through intervention (Baldner et al., 2020; Persson & Kajonius, 2016). The empathy-altruism hypothesis further posits that empathic concern can evoke altruistic motivation, leading to helping behavior aimed at increasing the welfare of the person in need (Batson et al., 1981). However, other emotions, such as fear or anxiety about potential negative consequences, can inhibit helping behavior (Yang et al., 2017).

Furthermore, cultural values and norms significantly impact emotional experiences and expressions, shaping how individuals perceive and respond to emergency situations. Research has consistently demonstrated that cultural factors play a pivotal role in bystander intervention (Levine & Crowther, 2008; Luria et al., 2014). In collectivist cultures like Egypt, where social harmony and group cohesion are highly valued, individuals may be more hesitant to intervene in conflicts perceived as private or family matters, prioritizing in-group loyalty and avoiding potential disruption of social relationships (Okasha et al., 2012). This cultural context can also shape the emotional experiences and expressions of bystanders, influencing their appraisal of the situation and their willingness to help.

Additionally, traditional gender roles can influence emotional responses and intervention strategies. Research suggests that men may be more likely to intervene in situations where they perceive a woman to be in need of protection, aligning with societal expectations of chivalry and male protectiveness (Eagly & Crowley, 1986; Xiao et al., 2021). However, recent research suggests that these gendered patterns may be evolving, with women also demonstrating a willingness to intervene in certain situations, challenging traditional norms (Killianski, 2003).

Integrating Cultural and Gender Perspectives

This study aims to bridge the gap in the literature by examining the bystander effect within the specific cultural context of Egypt. By integrating theories of emotions with a culturally sensitive lens and considering the dual-process model of emotion and prosocial behavior (Xiao et al., 2021), we seek to provide a more comprehensive understanding of the complex dynamics that underline bystander decision-making in this setting. This approach aligns with recent research emphasizing the importance of considering cultural and contextual factors in understanding prosocial behavior (Carpenter & Marshall, 2022; Chekroun & Brauer, 2018). We anticipate that the interplay of these factors significantly shapes individuals' decisions to help or not help in emergency situations, potentially revealing distinct patterns that can contribute to the development of effective active-bystander training programs, particularly for medical professionals.

To explore these complex interactions further, we have formulated the following research questions and hypotheses.

Research Questions:

1. What are the most prevalent emotions elicited among viewers by the staged conflict situation presented in the experiment?
2. Does the emotional state of viewers, triggered by the staged conflict situation, influence their responses and the type of helping behavior offered?
3. Are there significant differences between genders in the rates of participation (positive/negative)?
4. How do viewers' responses align with societal expectations?

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5. How do situational factors (e.g., severity, public vs. private setting) interact with culture and gender in shaping viewer behavior?
6. How do cultural values, norms, and social expectations in Egypt influence viewers' responses to staged conflicts?

Research Hypotheses:

1. The types of prevalent emotions elicited by the staged conflict situation will vary depending on the contextual scenario (library vs. food court) and the culturally gendered role of the victim (female vs. male), given the influence of societal expectations and stereotypes in shaping emotional responses and perceptions of threat or need.
2. The types of prevalent emotions elicited by the staged conflict situation presented in the experiment will vary depending on the type of viewers (male/female).
3. The emotional state of the viewers, triggered by the staged conflict situation, will influence their responses and the type of helping behavior offered (direct support: direct physical intervention to separate the parties, direct verbal intervention to calm the aggressor, direct verbal intervention to reassure the victim / indirect support: seeking external help and informing officials, or delayed intervention after the situation has ended.)
4. There will be differences between males and females in the rates of participation (positive, negative) towards the staged conflict situations presented in the experiment.
5. The viewers' response in providing supportive behavior will vary depending on gender bias with the victim (support: males for males, males for females, females for females, females for males), and the stereotypical image of the victim (male image / female image) in terms of strength, weakness, ability to resolve the situation, and deserving of support.
6. Situational factors (assessment of the seriousness of the situation in light of its spatial environment: dangerous / not dangerous) will influence the provision of social support behavior from viewers.
7. Cultural, moral, and societal expectations in Egypt influence viewers' willingness to provide support in response to the staged conflict presented in the experiment.

By testing these hypotheses, this study will contribute to a more accurate understanding of the bystander effect across cultures to inform culturally sensitive interventions in healthcare settings. In particular, inform active bystander training programs to address gender biases and promote empathy in medical professionals.

Methodology

Research Design

Mixed Methods Approach: This design combines quantitative and qualitative data to gain a deeper understanding of the complexities of bystander behavior.

Within-Subjects Element: The study will incorporate a partial within-subjects component. Participants will witness one of two scenarios (male victim or female victim), attempting to control for situational variables and minimize their effects.

Implementation Location:

- **The British University in Egypt (BUE):** Conducting the experiments on campus provides a realistic social environment with a diverse group of potential bystanders.
- **Two Locations:** Two distinct locations (e.g., library area and food court area) were chosen to explore the potential situational influences on helping behavior.

Participants:

Smaller Sample Size: Due to the focused nature of the study, a small sample size is appropriate. The target number of participants reached a total of 105 observers for the experiment: 28 positive, 77 negative.

University Students: Participants were recruited from the student body, ensuring a balance between male and female students to reflect the university community.

Sample Description and Tools:

Given the experimental and qualitative nature of this study, no standardized psychometric tools were used. Instead, data collection was based on direct observational protocols and semi-structured interviews. The research focused on situational reactions and behavioral patterns rather than individual traits. Therefore, variables such as age, academic

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background, or socioeconomic status were not treated as analytical factors, as they were not hypothesized to influence the study outcomes. The participant pool consisted of 105 university students enrolled at the British University in Egypt. Gender distribution was balanced for comparative purposes, with individuals randomly assigned to observe one of two scenarios. The qualitative depth of the analysis centered on emotional and cognitive responses elicited by the conflict scenarios, which were examined through AI-assisted text analysis, not via self-report instruments.

Procedures:

Here is a link to a documentary movie of the experiment:

https://drive.google.com/file/d/1qfFG5M1lew0bhVX4qYXDRCJ1y6tgD4Yc/view?usp=drive_link

https://drive.google.com/file/d/1oHQv-U3rg2T3sDL9dD0G_Po3i-tw0u7o/view?usp=sharing

1. **Ethical Considerations:** The researchers obtained full ethical approval from the university's ethics committee. Then, developed comprehensive informed consent procedures that clearly explain the study's nature and ensure participant confidentiality.
2. **Staged Conflicts:**
 - The researchers developed two realistic conflict scenarios where either a male or female student actor experiences verbal and mild non-violent aggression from an actor of the opposite gender.
 - Choreograph and rehearse the scenarios to ensure consistency and safety.
 - Randomly assigned participants to witness either the male victim scenario or the female victim scenario first. A counterbalancing design ensured half the participants experience each order.

3. Data Collection:

Discreet Observation: Placed researchers as unobtrusive observers to record the number of bystanders, intervention behaviors (verbal, physical, indirect), and the gender of active bystanders.

Checklists: Utilized checklists to track bystander characteristics and the types of helping behaviors exhibited.

Follow-up Interviews: Conducted brief semi-structured interviews with a subset of bystanders immediately after the scenario. Focus questions on their decision-making process, perception of the situation, and factors influencing their intervention or non-intervention.

1. **Debriefing:** Thoroughly debriefed all participants after the study, explaining its purpose, and the staged nature of the scenarios, and providing resources for support if needed.
2. **Results of the study**

First: Visual Representations of Each Experimental Scenario:

Figure 1. Visual representation of the distribution of bystanders in the library area scenario

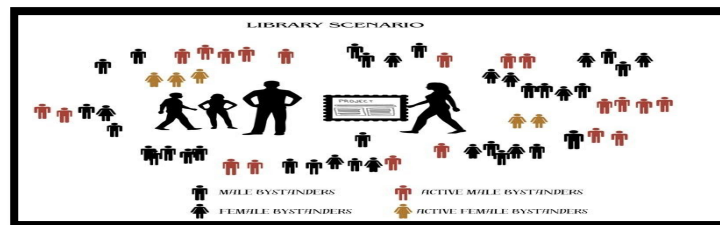
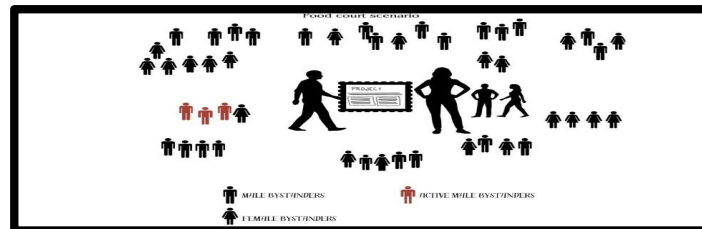


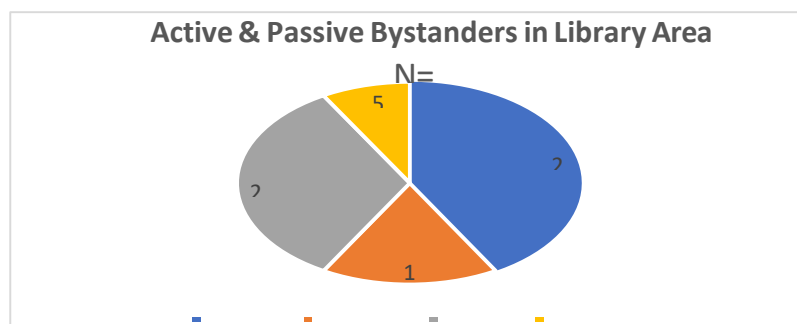
Figure 2. Visual representation of the distribution of bystanders in the food court area scenario



Demographic data of the participants and clarification of the rates of positive and negative participation in each of the two situations as shown in the following figures.

Figure 3 shows the gender distribution of active/passive bystanders illustrating the higher male intervention in the library scenario.

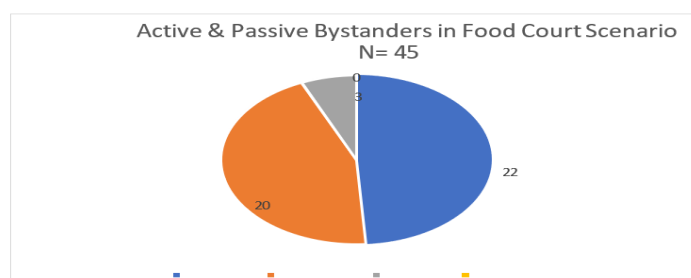
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Note. There were 60 witnesses, with males outnumbering females among both active and passive bystanders. Many males were active bystanders (N=20), compared to a smaller number of females (N=5).

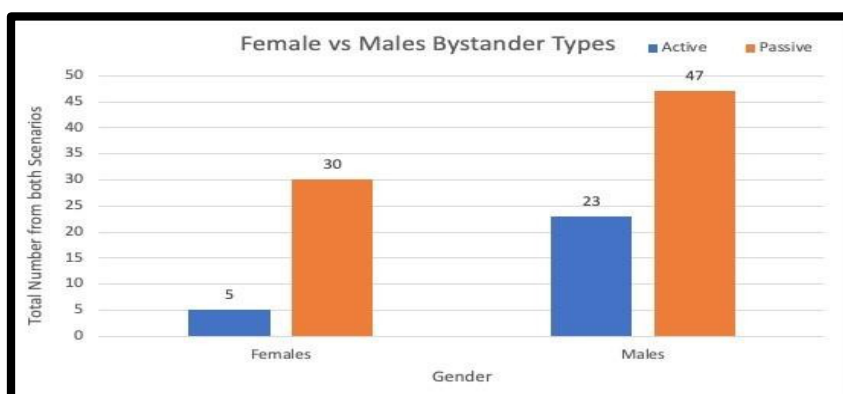
Figure 4 illustrates the gender distribution of active/passive bystanders in the food court scenario.

Note. There were 45 witnesses, with a gender distribution among



passive bystanders that was overall balanced, with slightly more males (22 vs 20). Few active bystanders intervened (N=3).

Figure 5 highlights the overall higher number of passive male bystanders and the low number of active female bystanders across



both scenarios

Note. Overall, the total number of passive male bystanders was the largest (N=47), while the total number of active female bystanders was the lowest (N=5). There were more active males (N=23) than active females (N=5) in total, and more passive male bystanders (N=47) than females (N=30). Nevertheless, the difference between active male and female bystanders was much greater than that between passive male and female bystanders.

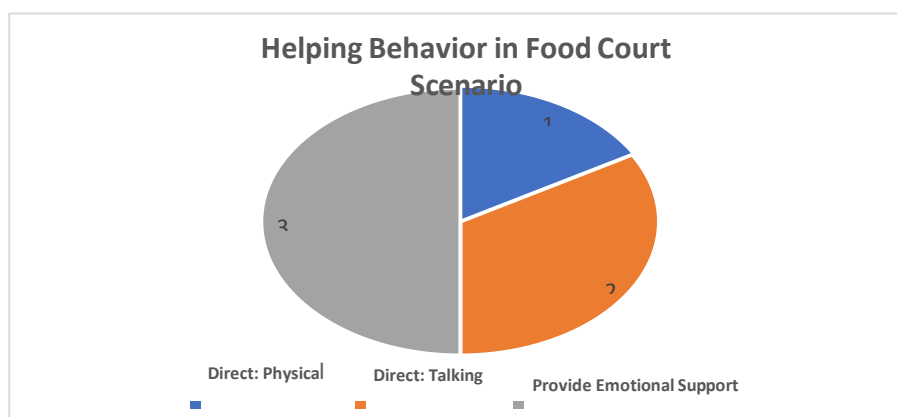
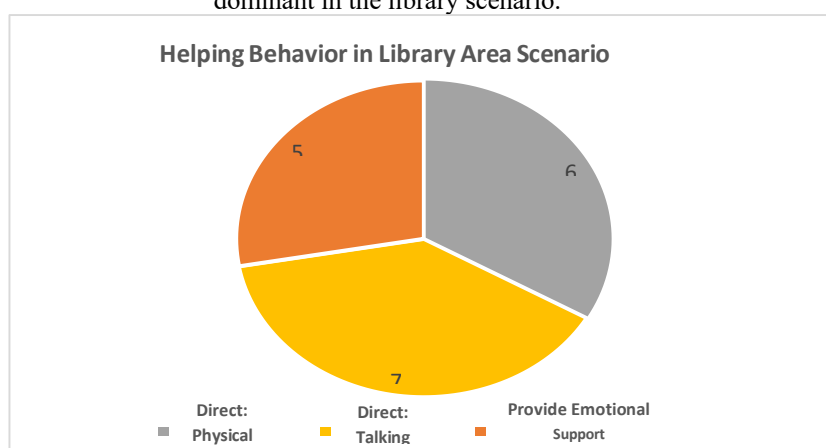


Figure 6 shows the specific helping behaviors, with emotional support common in the food court.

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Note. The most common helping behavior was emotional support (comforting the male actor), followed by direct physical intervention (taking the male actor away from the female actor to stop the situation). Another direct helping behavior observed was collecting the project and giving it to the male actor.

Figure 7 shows the specific helping behaviors, with verbal intervention dominant in the library scenario.



Note. The most common helping behavior was verbal direct intervention (talking to the male actor and calming him down). Emotional support was observed, specifically through female bystanders who expressed empathy and tried to comfort the female actor. Another helping behavior observed was physical direct intervention (physically intervening to separate the male actor from the female actor to stop the conflict). The remaining 7 bystanders just gathered around the male actor, where some seemed angry and some seemed unsure of what happened (possibly gathering around due to conformity), however, none of them directly intervened.

Quantitative and Qualitative Testing of the Study Hypotheses

To test the study hypotheses, the researchers conducted qualitative and quantitative analyses. The researchers conducted qualitative analyses of the interviews with the participants using two artificial intelligence programs:

1. **NLU - Natural language understanding program** for analyzing textual emotions using natural language understanding. This program aims to analyze the emotions in each answer in each interview from the viewers to determine the degree of different emotions in the participants' responses. The analysis produced a set of emotions with an accompanying score for each emotion to determine its severity.
2. **LLMs - Large Language Models** for analyzing textual emotions based on large language models. This program aims to understand the complex relationships between words, sentences, and the underlying meanings behind texts through a comprehensive view of the texts. This allows for the analysis of emotions, recognition of intentions and motivations behind social behaviors, and extraction of relevant information with high accuracy. The analysis resulted in a detailed textual response highlighting the key behavioral indicators and the underlying reasons behind the provision or non-provision of support behavior by the participants.

"The researchers present the results of these qualitative analyses from the two programs used, followed by the results of the qualitative analyses according to the order of the study's hypotheses, as follows :

Illustrative Examples of AI Analysis of Participant Responses

To demonstrate how the AI tools enriched the qualitative analysis of bystander behavior, the following examples showcase two contrasting cases: one participant who actively intervened and another who chose not to intervene. These cases illustrate how **Natural Language Understanding (NLU)** and **Large Language Models (LLMs)** revealed both emotional tone and deep-seated cognitive justifications underlying participants' responses.

Example 1: Active Intervention Driven by Kinship-Based Empathy

"What if this were my sister? I had to act."
(Male participant – Library scenario – Female victim)

- **NLU Output:**
 - **Dominant Emotion:** Empathy (Intensity: 0.84)
 - Secondary emotions: Sadness (0.63), Moral Concern (0.58), Fear (0.46)

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- Analysis: Lexical tone patterns indicated strong emotional involvement and a readiness to protect.
- **LLM Output:**
 - **Semantic Interpretation:** The phrase invoked **kinship-based empathy**, activating a **moral responsibility schema**.
 - Recognized social script: Masculine protector role in collectivist cultures.
 - Conclusion: Intervention was motivated not just by immediate empathy but by internalized cultural and familial obligations.
 - Cultural Layer: The participant projected a personal moral code rooted in gendered family honor norms (e.g., "my sister").

Example 2: Non-Intervention Due to Diffusion of Responsibility and Social Norms

*"It looked like just a couple arguing — I didn't think I should interfere."
(Male participant – Food court scenario – Male victim)*

- **NLU Output:**
 - **Dominant Emotion:** Fear (Intensity: 0.77)
 - Secondary emotions: Uncertainty, Low Empathy (0.29), Disengagement
 - Analysis: Emotional distancing and fear of social missteps dominated the response.
- **LLM Output:**
 - **Semantic Interpretation:** Detected **pluralistic ignorance** and **diffusion of responsibility**, where the presence of others reduced the perceived need to act.
 - Detected assumption: The male victim was expected to manage the situation alone.
 - Gender Norm Influence: Helping a man in public may violate masculine autonomy norms.
 - Cultural Layer: Statement reflects embedded beliefs about gendered conflict boundaries and public decorum.

These examples highlight how combining emotional profiling (NLU) with semantic-motivational analysis (LLMs) allowed for a nuanced understanding of the **emotional triggers** and **cultural narratives** behind intervention and non-intervention decisions. This dual-analysis

approach enriched traditional qualitative coding by revealing deeper **motivational reasoning** and **value-based conflict** among participants. Qualitative results of testing the first hypothesis that the types of prevalent emotions elicited by the staged conflict situation will vary depending on the contextual scenario (library vs. food court) and the culturally gendered role of the victim (female vs. male), given the influence of societal expectations and stereotypes in shaping emotional responses and perceptions of threat or need are shown in Table 1 and Table 2 below.

Table 1. Results of the NLU (Natural Language Understanding) Program for Qualitative Analysis of Individual Participant Interviews

Participant's phrase indicating the type of support	Scenario location and type of intervention	Textual emotion analysis	Textual sentiment analysis
"I told the man in a firm voice that he needed to calm down"	Interview (1), Male participant, Library scenario, Female victim, Direct verbal intervention	Fear is the dominant emotion, followed by sadness and surprise. Anticipation, anger, and disgust had the same level of presence in the interviewee's expressions.	Empathy and perspective- taking: Strong ability to empathize and take perspectives, likely motivating their intervention. Sense of responsibility: Felt a personal responsibility to intervene, indicating a strong internal moral compass and belief in the importance of social justice. Strong moral compass: Expressed clear disapproval of the aggressor's behavior, emphasizing the importance of respect and dignity for all individuals.
"What if this was my sister? I couldn't just stand idly by and let someone assault her," and "Yes, I have a protective instinct, no one messes with my family."	Interview (2), Male participant, Library scenario, Female victim, Direct physical intervention	Sadness is the dominant emotion, followed by surprise. Fear, anger, and anticipation had a nearly equal level of presence in the interviewee's expressions.	Empathy and perspective- taking: The decision to intervene was heavily influenced by their ability to empathize with the victim. By imagining the situation with a relative, they activated a strong emotional response. Moral outrage: Expressed clear moral disapproval of the aggressor's behavior, suggesting a strong sense of justice and fairness. Overcoming fear: Briefly considered the potential risks of intervening but ultimately

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			decided to act, demonstrating courage and a willingness to take a stand. Protective instincts: Described a "protective instinct" that motivated their intervention. This highlights the role of emotional responses in overcoming barriers to helping.
"To some extent, yes, it was difficult to reconcile my anger with the way I was raised," and "I couldn't take it anymore, it was fundamentally wrong, and someone had to stop it."	Interview (3), Male participant, Library scenario, Female victim, Direct physical intervention, but delayed due to conflict with societal culture of respecting others' privacy.	Sadness is the dominant emotion, followed by fear and surprise, then anger. Anticipation and disgust showed similar levels in the interviewee's expressions.	Cultural conflict: The clash between ingrained cultural values of respecting women and the observed violation of these norms created a complex emotional response. Moral outrage: The participant ultimately acted based on a strong sense of moral outrage. This indicates that deeply held personal values can overcome cultural pressures under certain circumstances. Self-reflection: Showed a sign of self-awareness and empathy. This points to the capacity for critical self-evaluation.
"Just because a woman needs support doesn't mean we can't be divided," and "That's why I don't trust men," and "We women are the ones who get bullied, not the other way around."	Interview (4), Female participant, Library scenario, Female victim, Direct verbal intervention due to gender solidarity with the victim and unconditional support.	Fear and sadness are the dominant emotions, followed by anger and confidence.	Black-and-white thinking: The perspective is characterized by a strong division between victim and aggressor, with little room for considering alternative possibilities. From the participant's viewpoint, the girl is a victim, and the male is a bully and aggressor, reflecting the societal view of belittling women. Black-and-white thinking reinforces negative stereotypes about gender and social roles. Emotional intensity: Shared in resolving the situation with the victim and provided full support to the assaulted girl, regardless of any circumstances or reasons that led to the situation. Focus on solidarity: Highlights the importance of women supporting each other, emphasizing a sense of collective identity and empowerment. Strong gender bias: Strong bias towards assuming the male is the aggressor and the female is the victim, regardless of specific details. This reflects prevailing societal stereotypes.

"The university has all these rules about not directly getting into conflicts with other students."	Interview (6), Male participant, Library scenario, Female victim, Indirect intervention, reporting to officials to resolve the situation.	Fear is the dominant emotion, followed by anger. Anticipation and sadness have a similar presence but are much lower in the interviewee's expressions.	Conflict between personal values and institutional norms: Feeling moral discomfort about the situation and ultimately choosing to prioritize following university rules over direct intervention. This highlights the complex interplay between personal values and institutional pressures. Diffusion of responsibility to institutional entities: The belief that "there are people whose job it is to deal with these situations" reflects a form of diffusion of responsibility, but in this case, onto institutional actors rather than other bystanders. Fear of consequences: Concern about getting into trouble indicates an underlying fear of negative consequences for intervening.
"Yes, if the girl had been physically harmed or something like that." (In response to the question: "Could you intervene if things escalated?")	Interview (7), Male participant, Food court area scenario, Male victim, Intervention conditional on the situation escalating and any harm coming to the girl.	Fear is the dominant emotion, followed by sadness and surprise. Anticipation and anger have the same level of presence in the interviewee's expressions.	Empathy and discomfort: Expressed empathy for the male involved, indicating recognition of his plight. This suggests a potential conflict between the desire to help and hesitation to intervene. Gender stereotypes: Gender stereotypes influenced the participant's perception of the situation. The idea that "the man can handle himself" reflects societal expectations about male resilience. Diffusion of responsibility: The initial inclination to view the situation as "none of my business" and a "dispute between a couple" reflects diffusion of responsibility. However, their subsequent consideration of potential intervention suggests a possible shift in perspective. Ambiguity and uncertainty: Hesitation to intervene stemmed from uncertainty about the nature of the situation and the potential consequences of their involvement.
"Maybe I would have intervened to break	Interview (8), Male participant, Food court	Confidence, fear, and surprise are the dominant	Diffusion of responsibility: The participant mentioned that the

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things up." (In response to the question: "Could you intervene if the situation escalated or became physical?")	area scenario, Male victim, Intervention conditional on the situation escalating and any harm coming to the girl.	emotions. Anger has a much lower presence in the interviewee's expressions.	situation seemed like "none of my business" and a "dispute between a couple." This reflects diffusion of responsibility, a key element in the bystander effect. When multiple bystanders are present, the sense of personal responsibility to intervene decreases. Ambiguity and misinterpretation: Described the situation as "awkward" but not dangerous. This ambiguity can lead to bystanders not responding or misinterpreting the severity of the situation. The bystander effect highlights the difficulty of discerning genuine distress during a heated argument. Gender stereotypes: The interviewer's question about the man appearing "weak" and the participant's response ("He looked fine. He could have walked away") point to the influence of gender stereotypes. The bystander effect can be exacerbated by social norms regarding masculinity, making intervention seem less acceptable for men experiencing aggression. Conditional helping: The participant expressed willingness to intervene only if "the situation escalated or became physical." This highlights a common pattern in the bystander effect. Bystanders are more likely to intervene in cases of clear violence but may hesitate during verbal altercations.
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* The forms of supportive behavior provided in situations of induced conflict presented in the current study are consistent with the forms of supportive behavior in situations of social bullying and the participants' assessment of the seriousness of the situation, as presented in the study by (Yang et al., 2017).

Table 2. Summary of Qualitative Analysis Results from LLMs for Textual Sentiment Analysis Based on Large Language

Scenario Area and Intervention Manifestations	Prevailing Emotions Order	Textual Sentiment Analysis Behind Providing Social Support Behavior (Positive/Negative)
<p>Library Area (Female Victim) (Highest Intervention) Overall, all responses shared that intervention came as a natural reaction and took two main forms: 1- Direct physical intervention to separate the male and female actors to stop the conflict and protect the female victim. 2- Dominance of direct verbal intervention in the form of calming the male aggressor and keeping him away from the girl.</p> <p>3- Indirect intervention: Informing university officials.</p>	<p>Empathy is the most common primary emotion among participants in most interviews, followed by fear of the situation escalating or the male's aggression increasing, then sadness and anger, and finally surprising that such an incident occurred on campus</p>	<p>High level of empathy: Empathy is the prevailing emotion in most interviews in the library area where the victim is female. Participants put themselves in the shoes of the assaulted girl and felt her suffering, which prompted them to intervene to protect her. Fear: The forms of fear among participants varied, including fear of retaliation, fear of consequences, fear of bias, fear of the situation escalating and getting out of control, and self-reflection on the consequences of their actions on themselves and others. This had conflicting effects on participants' reactions, leading some to hesitate or delay intervention, while others were prompted to quickly provide social support in a decisive verbal and physical manner. Sadness, disgust, and anger were equally present as reasons for participation or non- participation. Sadness and disgust from witnessing such behavior among colleagues within the university prompted them to condemn the situation and intervene verbally, as sadness sometimes causes stillness in motor performance. On the other hand, anger dominated some other participants, prompting them to quickly intervene physically to support the girl, reflecting the behavioral manifestations associated with anger. Cultural and social factors: Societal culture and institutional norms significantly influence social support behaviors. Some were driven not to intervene out of respect for university rules and the belief that there are officials to handle such situations. In addition to prioritizing family cohesion and resolving conflicts internally rather than externally, one participant said, "Honestly, it seemed like a private family matter, and I didn't want to interfere." Value conflict: Some participants</p>

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		experienced an internal conflict between their personal values and prevailing social norms and expectations, causing them to hesitate in providing support or making some act in response to social norms. Sense of responsibility: On the other hand, a sense of social responsibility motivated many participants to provide social support. Gender stereotypes: The stereotype of the girl as a weak being in need of support to protect her led to the immediate provision of social support to protect the girl.
Food court Area (Male Victim) (Lowest Intervention) It came in two forms: - Physical intervention to separate the two parties. - Indirect intervention in the form of willingness to intervene if the situation escalated, or in the form of emotional support for the male victim by collecting the project and giving it to him.	Fear is the prevailing emotion in all interviews, followed by sadness and confidence, then a little anger and anticipation.	Fear: It is the dominant emotion in the situation due to misinterpretation and competitiveness among males. This led many participants not to intervene or hesitate to provide support, fearing misinterpretation by the victim, appearing in a position of weakness needing support, or getting into conflict with him as a result of intervention. Gender stereotypes: The social role and stereotype of the male made some males hesitate to provide support to another male for fear of misunderstanding. Ambiguity: Surprise at the situation and its unfamiliarity, as a female assaulting a male is not a socially common behavior, which led many onlookers not to intervene. Diffusion of responsibility: Diffusion of responsibility was clearly evident in all interviews, with everyone thinking there were many onlookers and anyone else could intervene, leading most not to intervene. Ultimately, only one person supported the male, and it came after the situation ended to provide emotional support and calm him down to alleviate his distress.

For further illustration of the prevailing emotions and testing the first hypothesis, the figures below present the results of quantitative and qualitative data analyses using AI program (NLU).

Figure 8. Prevailing emotions among participants from the NLU (Natural Language Understanding) program for qualitative analysis of individual participant interviews

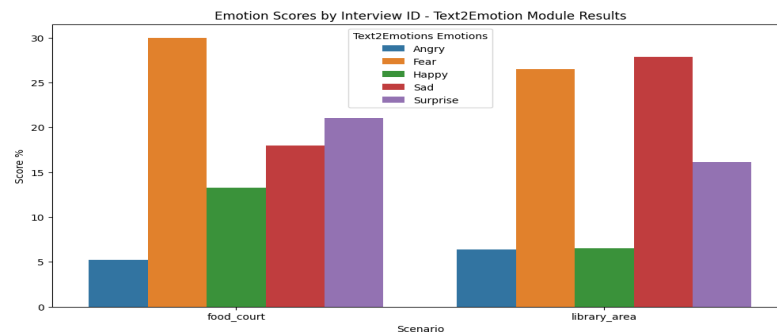


Figure 8 shows that the diversity of emotions in the food court scenario is greater than in the library scenario. In the library and assault on the female scenario, the dominant emotion was fear for the girl, followed by sadness from witnessing such an event. Meanwhile, in the food court scenario, the prevailing emotion was fear due to the viewers' concern about misinterpreting their intervention, along with surprise due to the unfamiliarity of the situation.

The classification of emotions in the NLU (Natural Language Understanding) model is considered one of the most accurate and least flexible classifications. It belongs to the categorical models of emotions, which typically classify emotions into six basic categories: anger, disgust, fear, joy, sadness, and surprise. However, some researchers have confirmed that these models address the relationships between external events and our internal reactions that evoke specific emotions and social behaviors. They don't occur spontaneously but result from complex processes involving three main factors:

1. The event triggering the emotional response: The external event that evokes an emotional reaction.
2. Personal characteristics: This includes an individual's beliefs, values, and goals, which influence how they evaluate events.
3. Social context: This encompasses the social and

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cultural environment that shapes an individual's understanding of events and expectations.

Certain emotions might be added or removed depending on the nature of the situation that triggers them. One such model is the Basic Emotions Theory (Ekman, 1992). These theoretical foundations for analysis are clearly shown in Table 1, where the connection between the analysis of participants' verbal descriptions of their emotions associated with the situation (event) and the resulting supportive behaviors is linked to the social environment of the presented scenario and societal cultural expectations.

Figure 9. Analysis according to the more detailed (LLMs) program of emotions causing the provision of supportive behavior or not

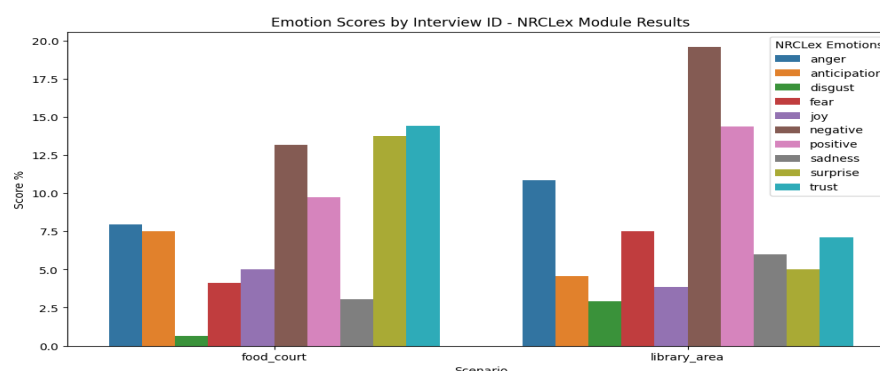


Figure 9 shows that the most significant emotions that differed notably in prevalence between the two scenarios were anticipation and trust. In the library scenario, anticipation was prevalent among participants, anticipating the situation escalating out of control and further harm or physical injury to the girl. On the other hand, in the food court scenario, the prevailing emotion was trust. Viewers trusted in the man's strength and ability to manage the situation and protect himself from harm. Even if he didn't defend himself, it wouldn't be seen as weakness but rather a desire to avoid escalating the situation, considering the woman's perceived weakness and inability to inflict verbal or physical harm on the man.

The classification of emotions in the LLMs model is considered less precise but more flexible. It belongs to the dimensional models, where emotions are classified according to continuous dimensions, including

positive and negative emotional valence. This aligns with the Valence and Arousal Model, the Circumplex Model, and Plutchik's Wheel of Emotion.

The proportions of emotional states (positive or negative) are shown in Figure 9. Additionally, the program highlighted an increase in the emotion of anticipation along with fear, which can be considered a sub-emotion associated with the presence of fear and surprise, as anticipation involves expecting something unexpected or an escalation of the situation. This was explicitly stated by participants in their personal interviews following the conflict scenario (PS & Mahalakshmi, 2017).

Therefore, the researchers used two different artificial intelligence programs to analyze the verbal texts of the participants' interviews in the current study, achieving an integrated and comprehensive view of the qualitative analyses and supporting the quantitative results later. Qualitative results of testing the second hypothesis that the types of prevailing emotions elicited by the fabricated conflict situation presented in the experiment differ according to the type of viewers (males/females) are summarized in Table 3.

Table 3. Summary of qualitative analysis of results by participant gender in both scenarios using the (LLMs) program

Participant Gender	Textual Emotion Analysis	Textual Sentiment Analysis
Male	Fear and sadness were the dominant emotions in all interviews in this scenario, followed by surprise. Anger and trust had a much lower presence in the responses of male participants.	Diffusion of responsibility, moral anger, gender stereotypes, empathy, and ambiguity were the most prominent sentiments for all male participants. Self-reflection, protective instincts, perspective-taking, overcoming fear, misinterpretation, institutional norms, fear of consequences, discomfort, diffusion of responsibility to institutional bodies, conflict between personal values, cultural conflict, conditional help, and uncertainty each appeared once in all interviews with all male participants.
Female	Sadness and fear were the dominant emotions in all interviews in this scenario, followed by surprise. Anger and anticipation had a slightly lower presence across the responses of female participants.	Empathy had two appearances as the most prominent sentiment among all female participants, followed by anger, black-and-white thinking, a strong moral compass, strong gender solidarity, a sense of responsibility, post-intervention support, perspective-taking, "immediate intervention, fear of retaliation, focus on solidarity, emotional intensity, and cultural influences each had one appearance across all female participants.

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Figure 10 and Figure 11 show further details of the prevailing emotions analysis using NLU, based on the participant's gender (male/female).

Figure 10. Distribution of the most frequent emotions according to the NLU (Natural Language Understanding) program, causing the provision of supportive behavior or not, among both male and female participants

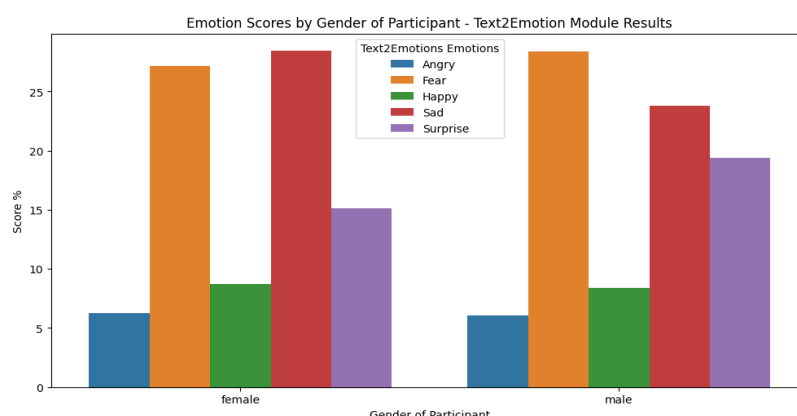
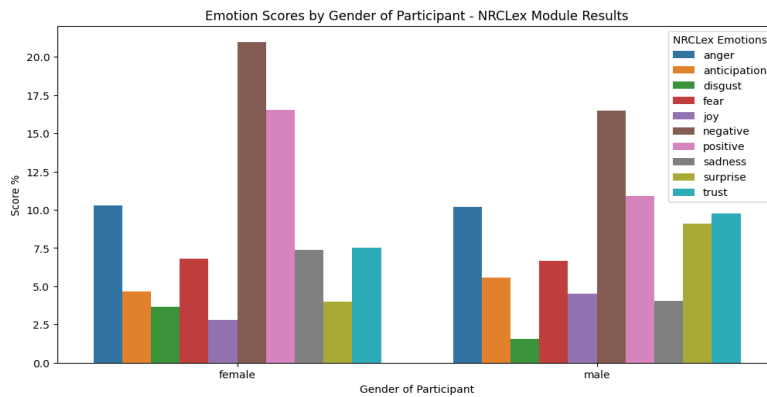


Figure 10, in a more general way, shows the diversity in the prevalence of emotions among participants based on their gender (male/female). It's clear that sadness and fear dominated all participants regardless of gender, with a notable difference in proportions. Fear was higher than sadness among males, while sadness was higher than fear among females. This can be attributed to the nature of personality traits in males and females. The emotional impact on females tends to be more inclined toward sadness or apprehension about potential danger. On the other hand, the realistic perspective of males and their caution regarding the development of the situation or escalation of conflict between the two parties resulted in fear being higher than sadness among males.

Figure 11 presents a more detailed view of the ranking of prevailing emotions in both scenarios according to the type of participants.

Figure 11. Analysis according to the (LLMs) program of the most frequent emotions causing the provision of supportive behavior or not, among both male and female participants

Figure10 and Figure 11 illustrate that the most important prevailing emotions among participants, based on gender, were as follows in both scenarios (food court or library):



- Males: Sadness and fear were dominant, followed by surprise, then anger and trust.
- Females: Sadness and fear were also dominant, followed by surprise, then anger and anticipation.

The higher appearance of anticipation in the ranking of emotions among females indicates their fear and lack of confidence in their ability to intervene or that they possess enough strength to resolve the situation. On the other hand, the higher presence of trust among male emotions stems from their confidence in their strength and ability to intervene and stop the situation if it requires further intervention or physical support. Additionally, trust in the scenario where the victim was male arose from the participants' confidence in the man's strength and ability to solve his problems.

Results of testing the third hypothesis, which states: "The emotional state of viewers, elicited by the fabricated conflict situation, affects viewers' reactions and the type of social support behavior they provide (direct support: direct physical intervention to separate the parties, direct verbal intervention to calm the attacker, direct verbal intervention to reassure the victim / indirect support: seeking external help and reporting to officials, or delayed intervention after the situation ends)". The results of the hypothesis are presented in Table 2, showing the type of prevailing emotion and

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the type of support behavior provided. Different arrangements and proportions of different emotions were presented according to the type of scenario (library/food court). The prevailing emotions in the library scenario, where the victim was a girl, were empathy with the girl and fear for her, resulting in various forms of supportive behavior, including:

- Direct physical intervention to separate the parties
- Direct verbal intervention to calm the attacker
- Direct verbal intervention to reassure the victim
- Indirect intervention by reporting to officials

In the food court scenario, where the victim was male, the ranking of emotions was as follows:

1. Fear of the situation escalating
2. Trust, linked to the stereotypical image of the male who can easily resolve the situation and won't be harmed by her

The supportive behavior was at its lowest, taking two forms:

- Physical intervention to separate the parties
- Indirect intervention in the form of emotional support for the male victim, such as collecting the bill and giving it to him or expressing willingness to intervene if the situation escalates to protect the girl, not the man.

Results of testing the fourth hypothesis, which states: "There are differences between males and females in the rates of participation (positive, negative) towards the fabricated conflict situations presented in the experiment." To test this hypothesis, the researchers used the Chi-Square test, and its results are shown in the following tables:

Table 4. Case Processing Summary

Cases	Valid	Missing	Total
N	Percent	N	Percent
Participation * Gender	105	100.0%	0

Table (4) shows the number of cases, which is 105 participants, and the absence of missing values, along with their respective percentages. The percentage of cases is 100%, and the percentage of missing values is 0%.

Table 5. Participation * Gender Crosstabulation

Gender	Total	Female	Male
Participation			
Active	Count	5	23
	Expected Count	9.3	18.7
Passive	Count	30	47
	Expected Count	25.7	51.3
Total	Count	35	70
	Expected Count	35.0	70.0

Table (5) displays the cross-tabulation between participation and gender. The cells contain both the count and expected count for each value. For the gender variable, there are 35 females and 70 males with expected counts of 9.3 and 18.7, respectively. For participation, there are 28 active and 77 passive participants with expected counts of 28 and 77, respectively. The total number of participants in the experiment was 105.

Table 6. Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	4.115 ^a	1	.042		
Continuity Correction ^b	3.220	1	.073		
Likelihood Ratio	4.431	1	.035		
Fisher's Exact Test				.060	.033
Linear-by-Linear Association	4.076	1	.043		
N of Valid Cases	105				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.33.

b. Computed only for a 2x2 table

From Table (6), it is clear that no cell has an expected value less than 5, and the lowest expected value is 9.33. The chi-square value (χ^2) is 4.115, which is statistically significant at the 0.05 level with 1 degree of freedom. This indicates that the two variables (gender and participation)

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are not independent. We reject the null hypothesis and accept the alternative hypothesis, which states that there are differences between males and females in the rates of participation (positive and negative) towards the conflict situations presented in the experiment. The degree of participation depends on the participant's gender (male or female). This is supported by the results of the qualitative analysis and how the social upbringing of girls affects their avoidance of conflict situations, leading to lower participation than males in the two scenarios of the experiment.

The differences between males and females are further illustrated in Figure 12.

Figure 12. Number of participations (positive/negative) in light of the participant's gender (male/female)

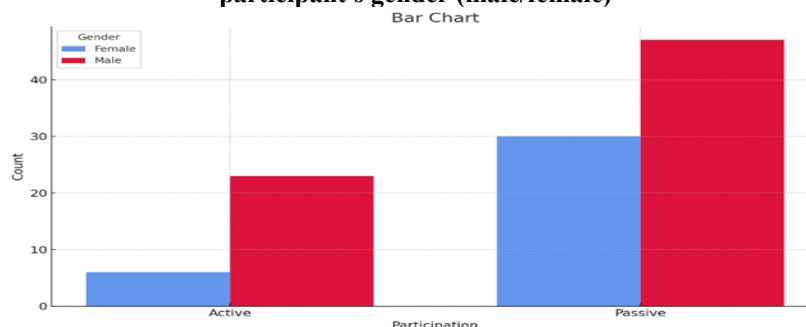


Figure 7 shows that the participation rates were (5% for females, 23% for males), while the rates of passive non-participation were (30% for females, 37% for males), which illustrates the significant differences in numbers between males and females in terms of participation or lack thereof.

Results of testing the fifth hypothesis, which states: "The reaction of viewers in providing supportive behavior varies depending on gender bias with the victim (support: males to males, males to females, females to females, females to males), and the stereotypical image of the victim (male image/female image) in terms of strength, weakness, ability to resolve the situation, and deserving of support."

The results of answering this hypothesis are evident from the qualitative analyses presented by the natural language understanding program for artificial intelligence. The results of all interviews with participants, as well as the quantitative results and intervention rates,

showed that the provision of helping behavior in the case of a female victim was high, regardless of the participant's gender (male or female). On the other hand, intervention rates in the case of a male victim were low, regardless of the participant's gender as well.

Results of testing the sixth hypothesis, which states: "Situational factors (assessment of the danger of the situation in light of its spatial environment: dangerous/not dangerous) affect the provision of social support behavior from bystanders."

It is clear from the previous tables of qualitative analyses, numbers (1) and (2), that assessing the situation in the library environment as dangerous, in the case of a female victim and her inability to protect herself, had the greatest impact on providing various forms of social support (higher intervention). However, when assessing the situation in the food court, which was generally considered less dangerous and that the boy was able to protect himself, forms of support were limited to emotional support for the male victim, trying to calm him down, physically intervening to separate the two parties, and being prepared to intervene in case the situation escalated to help the female. This indicates the continuity of providing support to the female, which may be due to the influence of the stereotypical image of both (male/female) in Egyptian society.

The only direct form of intervention observed in favor of the male was that one of the participants collected the project and gave it to the male victim. Some participants justified their non-intervention due to the quick end of the situation.

The influence of situational factors appeared in the lack of response and non- intervention of many participants, which may be due to their misinterpretation of the inaction of others as a sign that intervention was inappropriate. This indicates pluralistic ignorance, which is a key element in the classic bystander effect (Latané and Darley, 1968; Plage, 2019).

Results of testing the seventh hypothesis, which states: "Cultural, moral factors, and societal expectations in Egypt affect the provision of supportive behavior from bystanders towards the fabricated conflict situation presented in the experiment."

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This situation was represented by the qualitative analyses using the two artificial intelligence programs in Tables (1) and (2), and the observations of the researchers during the experiment and their qualitative analysis of cultural, moral factors, and societal expectations in Egyptian society in light of previous studies related to the reasons for providing community support in Egyptian society, such as the studies of (Hofstede 1980; Eagly and Crowley, 1986; Plage, 2019; Liu et al., 2022). The influence of cultural factors was evident in the statement of one of the participants: "Frankly, it seemed like a private family matter, and I didn't want to interfere." This result is consistent with research conducted on collectivist cultures such as Egypt, where family cohesion and resolving internal conflicts are often prioritized over external intervention (Rugh, 1984, Akacha et al., 2012).

Also, societal expectations influenced the participants' responses to intervene, as it was clear in the statements of some participants in the library scenario that what prompted them to intervene was clearly linked to cultural values, indicating that "What if the victim was his sister?" (Akacha et al., 2012). This confirms the importance of considering cultural expectations when understanding bystander behavior (Bond and Smith, 1996).

It is also evident from the qualitative analyses in tables (1) and (2) how cultural norms, gender expectations, and the urgency of the situation intersect to shape the behavior of passersby (Fischer et al., 2011).

Overall, six interviews were conducted in the library area scenario, while only two interviews were conducted in the food court scenario, with all interviewees being male. Several recurring patterns emerged in these interviews:

In the food court scenario: The interviewees perceived the male actor as weak and unsure of how to act. Despite viewing the situation as unacceptable and feeling "bad" for the man, the majority did not intervene. This can be attributed to the dominance of negative emotions towards the situation, such as anger and fear. Almost all interviewees mentioned that they would have intervened if the situation had escalated or lasted longer, by separating the actors and calming the male actor down, but without taking any action against the female actress. Most interviewees also had negative perceptions of the actress, with one describing her as "crazy." All interviewees confirmed that they would intervene immediately if the scenario were to be repeated.

The lack of intervention by most bystanders in the food court area can be explained by the negative emotions they felt towards the girl, coupled with a low level of social support. This finding aligns with the study by Xiao et al. (2021), which found that anger towards a situation, combined with low levels of empathy, is associated with decreased levels of social support. It also aligns with the study by Yang et al. (2017), which showed that social support behavior depends on contextual and ideological factors related to intervention standards in conflict situations within work, school, or university settings, and is linked to the fear of getting involved in administrative problems or misinterpretations of intervention motives in competitive professional or academic environments.

In the library area scenario: All six interviewees perceived the male actor's actions as unacceptable and intervened regardless of potential risks to themselves. The common theme in this scenario was that intervention was seen as a "natural reaction." This can be explained by increased empathy towards the girl, where empathy shifted from understanding the perspective to adopting the perspective and putting themselves in the girl's shoes, leading to the highest levels of support. Male interviewees also put their sisters in the girl's position, which also demonstrated higher levels of support (Baldner et al., 2020; Yang et al., 2017).

Discussion of Results:

These results support the idea that girls' support for a female victim of aggression stems from their willingness to provide support regardless of the situation's cause, as the girl is in a situation of assault and needs help. This aligns with a study highlighting feminist collective identity, where girls would evaluate the male aggressor as more unjust than men would (Oh & Hazler, 2019).

In the food court scenario, several noteworthy findings emerged. For instance, one interviewee highlighted that the male actor "looked bad in front of people" and felt that the male actor "was trying to find a way out of the situation, so he intervened to help." Another interviewee mentioned that if he had intervened, he would have "supported the side that people were supporting," indicating a tendency towards conformity. In an interview with a passerby, he said

he only intervened because he considered the scenario provocative and "wanted to stop the situation," despite not knowing the full story. When asked what he would do if the situation were reversed, he said, "The story would be completely different," but a girl yelling at a man is still unacceptable. Considering the situation as "private" or that it "ended quickly" were common reasons for non-intervention among the interviewees. Additionally, the university cleaner was very close to the scenario and seemed curious but did not intervene.

In the library area scenario, one noteworthy finding was that an interviewee said he intervened because "if his sister were in the same situation, he would want someone to act that way," indicating a sense of responsibility. Another interviewee said that intervention was the "natural reaction" in this situation, and if the situation were reversed, he "wouldn't do anything to the girl and would only try to get the man away." If the situation were to repeat, he would "hit the man."

The observed differential impact of sadness and anger on helping behavior aligns with the **dual-process model** proposed by Xiao et al. (2021). Sadness, in this context, may have triggered an automatic **empathetic response** through the associative pathway, fostering prosocial behavior. Conversely, anger might have engaged the deliberative pathway, leading to a more self-focused orientation and lower intervention rates. This highlights the complex interplay between emotions and cognitive processes in shaping bystander decisions.

Conclusion:

The main themes highlighted by the interviews in the food court scenario are:

The perception of the male actor as appearing weak and unable to defend himself, even though he could protect himself and stop the situation if he wanted to.

The situation did not seem dangerous, and they were ready to intervene if it escalated.

Expression of aggressive tendencies towards the female actress in some cases, while others saw the need to protect her if the situation escalated and she needed it.

Justifying non-intervention by the fact that the situation ended quickly.

Non-intervention can also be explained by a lack of empathy towards the male actor, in addition to a lack of means to provide social support (Baldner et al., 2020).

In the library area scenario, the main themes highlighted include: The perception of the male actor's actions as unacceptable Intervention driven by a sense of responsibility or as a natural reaction Aggressive tendency towards the male actor.

Qualitative Findings and Intervention Rates

Qualitative analysis reveals how participants' perceptions and cultural influences shaped their intervention decisions in the library and food court scenarios:

Library Scenario (High Intervention): Bystanders expressed a sense of responsibility and considered intervention a "natural reaction" (Blagg, 2019). This likely contributed to the high intervention rates observed. Additionally, the female actress was often perceived as helpless, further motivating intervention, especially among male participants who felt a duty to protect (Eagly & Crowley, 1986). This aligns with cultural expectations of men protecting women (Rugh, 1984) and with the finding that bystanders are more sympathetic of female victims than male victims in certain cultural contexts (Agazue, 2021).

Absence of emotional conflict among bystanders: Two positive emotions towards the victim (the girl) dominated - empathy and sadness about her experience. While there were some negative emotions towards the situation, like anger and surprise at such an incident happening on campus, the imbalance between positive and negative emotions meant bystanders who offered support did not experience emotional conflict. They initiated supportive behavior, considering it natural (Yang et al., 2017). The high support behavior in the library scenario can also be explained by positive emotions towards the self and some participants' desire to appear helpful and gain positive social recognition, as providing support aligned with positive societal expectations. In this case, the goal of support is self-directed rather than other-directed (Baldner et al., 2020).

Empathy was the most common primary emotion among participants in most interviews, followed by fear of the situation escalating or the male's aggression increasing, then sadness and anger, and finally surprise that such an incident occurred on campus.

Food Court (Lower Intervention): In contrast, the situation was perceived as "private" or quickly resolved, leading to hesitation among

bystanders (Latane & Darley, 1968). This suggests cultural norms about not intervening in family disputes (Akasha et al., 2012). While participants viewed the male actor as weak, it didn't trigger the same protective response as with the female victim (Rodman & Glick, 2001).

Gender Bias: Qualitative and quantitative data together reveal gender biases. More bystanders intervened to help the female victim, offering emotional support and attempting to calm the aggressor (Davis, 1994; Eisenberg & Lennon, 1983). This highlights how traditional gender roles influence bystanders' assessments and intervention strategy choices (Eagly & Crowley, 1986).

Cultural Influence: One interviewee's decision to intervene in the library scenario was explicitly linked to cultural values, stating that he would want the same support if the victim were his sister (Akasha et al., 2012). This emphasizes the importance of considering cultural expectations when understanding bystander behavior (Bond & Smith, 1996).

Discussion:

This study provides a nuanced exploration of the bystander effect within the Egyptian cultural context, revealing the complex interplay of situational factors, gender roles, collective values, and emotions. Our findings echo previous research, confirming the influence of diffusion of responsibility and pluralistic ignorance on bystander decision-making (Blagg, 2019; Latané & Darley, 1968). However, we extend these frameworks by demonstrating how these concepts manifest distinctly within a collectivist, patriarchal society.

The higher intervention rates observed when the victim was female align with expectations of chivalry, underscoring the perceived role of men as protectors (Eagly & Crowley, 1986). This resonates with Egyptian cultural norms that emphasize men's responsibility to safeguard women (Rugh, 1984). In contrast, the lower intervention rates when the victim was male may reflect societal assumptions of male invulnerability, a finding supported by gender stereotype research (Rodman & Glick, 2001).

Interestingly, female participants, while primarily expressing empathy for female victims, also demonstrated a willingness to intervene when the victim was male. This suggests a potential shift or resistance to traditional gender roles, particularly in response to perceived injustice

(Killianski, 2003), warranting further investigation into the evolving gender expectations within Egypt.

Collectivism emerged as a complex factor influencing bystander behavior. While it may have reduced diffusion of responsibility compared to individualistic cultures (Liu et al., 2022), the emphasis on family cohesion and internal conflict resolution could explain the hesitation to intervene in situations perceived as "private" family matters. This duality of collectivism underscores the need for culturally informed bystander intervention programs.

The study also confirms the impact of situation's severity on bystander behavior (Fischer et al., 2011). When conflicts were perceived as high-risk, cultural norms and gender expectations seemed to yield to a greater sense of urgency and individual responsibility to act.

The observed differential impact of sadness and anger on helping behavior can be interpreted through the lens of the dual-process model (Xiao et al., 2021). Sadness, potentially triggering an automatic empathic response via the associative pathway, fostered prosocial behavior. In contrast, anger, possibly engaging in the deliberative pathway, led to a self-focused orientation and hindered helping intentions. This highlights the complex interplay between emotions and cognitive processes in shaping bystander decisions. The varying intervention rates across scenarios further underscore the relevance of the person-context interaction theory (Magnusson & Stattin, 1998), suggesting that the expression of empathy and subsequent helping behavior are contingent upon both individual dispositions and the specific situational context.

Cultural Frameworks Explaining Gender-Based Differences in Bystander Intervention

The observed gender-based differences in bystander intervention can be better understood through a hierarchical application of cultural and social psychological frameworks. At the foundational level, **traditional gender role expectations** in Egyptian society portray males as protectors and assertive figures, while females are often socialized to be passive, non-confrontational, and risk-averse (Eagly & Crowley, 1986; Rugh, 1984). These cultural narratives were evident in the higher rate of male

interventions, particularly when the victim was female, aligning with chivalric norms that associate masculinity with guardianship.

At a secondary level, **collectivist cultural values** prominent in Egyptian society (Hofstede, 1980; Okasha et al., 2012) emphasize group harmony and deference to social hierarchy. For many female participants, this translated into a reluctance to intervene, especially in public or ambiguous situations, where intervention might be interpreted as disruptive or inappropriate. In contrast, males felt a stronger obligation to uphold social norms and intervene publicly, especially when the incident involved a female perceived as vulnerable.

At a tertiary level, **contextual and situational cues**, such as the location (library vs. food court), perceived seriousness of the conflict, and the gender of the aggressor—interacted with these cultural scripts to shape behavior. For example, in the library scenario where the victim was a female and the aggressor male, participants perceived the situation as more dangerous and culturally inappropriate, leading to higher intervention rates. Conversely, in the food court scenario with a male victim, societal assumptions about male resilience and the abnormality of a woman confronting a man reduced the perceived urgency of the situation, contributing to lower intervention.

These layered dynamics underscore how **gender, culture, and context** jointly influence the moral and emotional calculus of intervention. They reveal that helping behavior is not solely driven by internal dispositions but is also deeply embedded in socially constructed expectations of what is appropriate for men and women in specific cultural settings.

Implications and Future Directions

The findings of this study underscore the critical need for culturally sensitive bystander intervention programs and policies in Egypt. By addressing the specific cultural and gender dynamics revealed in this research, such interventions can be tailored to effectively promote prosocial behavior and reduce violence.

- **Challenging Gender Stereotypes:** The observed gender bias in bystander intervention highlights the need to challenge traditional gender roles and expectations. Educational campaigns and workshops could focus on promoting a broader understanding of positive social behavior that transcends gender stereotypes, encouraging both men and women to intervene regardless of the victim's gender.

- **Leveraging Collective Values:** The influence of collectivism on bystander behavior suggests that intervention programs could leverage existing collective values to foster a shared sense of responsibility for community well-being. Emphasizing the interconnectedness of individuals within the community and the importance of mutual support could encourage bystanders to overcome hesitation and take action in emergency situations.
- **Addressing Emotional Barriers:** The study's findings on the role of emotions in bystander decision-making highlight the need to address emotional barriers to intervention. Programs could incorporate strategies to help individuals manage fear, anxiety, and concerns about social repercussions, empowering them to act decisively even in challenging situations.
- **Navigating Cultural Norms:** The hesitation to intervene in conflicts perceived as private matters underscores the importance of navigating cultural norms around family privacy and conflict resolution. Bystander intervention programs could include discussions on how to balance respect for privacy with the responsibility to protect individuals from harm, offering guidance on appropriate ways to intervene in sensitive situations.
- **Empowering Bystanders:** Bystander intervention programs should focus on empowering individuals to recognize and respond to emergency situations effectively. This could involve training in conflict de-escalation techniques, providing information on how to safely intervene, and encouraging bystanders to seek help from the authorities when necessary.
- **Policy Integration:** The insights from this research could inform the development of policies that promote bystander intervention and create a supportive environment for those who choose to act. This could include policies that protect bystanders from legal repercussions, encourage reporting of incidents, and recognize individuals who demonstrate prosocial behavior.
- **Implement Gender-Sensitive Bystander Training Programs:** Develop training that challenges gender-based intervention norms, promoting equal support for all victims regardless of gender. Use role-reversal scenarios to reduce implicit biases in

training exercises.

- **Integrate Cultural Competence into Prosocial Behavior Education:** Embed discussions about how cultural values intersect with moral responsibility in psychology and ethics curricula. Use case-based learning to help students navigate the tension between collectivist norms and individual action.
- **Leverage Empathy as a Central Skill in University Programming:** Include empathy development modules in general education courses. Activities could include perspective-taking exercises, storytelling workshops, and reflective journaling on observed campus incidents.
- **Utilize AI and Data in Conflict Response Education:** AI-supported reflective tools in psychology or behavioral science labs, enabling students to analyze intervention decisions and emotional triggers in simulated settings.
- **Design Scenario-Based Learning in Academic Modules:** Incorporate dramatized conflict situations into social psychology, counseling, and education modules. Use these for assessment, reflection, and group discussion.
- **Address Stereotypes Around Male Vulnerability:** Facilitate open dialogues and male-led discussions on emotional expression and vulnerability to break toxic masculinity norms and promote inclusive support behavior.

By implementing culturally sensitive bystander intervention programs and policies that address the specific dynamics revealed in this study, we can create a safer and more supportive community in Egypt, where individuals feel empowered to intervene and prevent violence.

Beyond its implications for social psychology, this research underscores the potential impact of bystander intervention on mental and physical health. By fostering a culture of intervention, we can contribute to:

- **Reduced Victimization and Trauma:** Active bystander intervention can directly prevent or mitigate harm, reducing the incidence of trauma-related mental health issues.
- **Increased Sense of Security and Belonging:** Communities where individuals feel empowered to intervene create a greater sense of security and belonging, promoting mental well-being.
- **Stress Reduction:** Empowering bystanders to act can help

reduce the negative psychological impact of witnessing violence or conflict.

- **Enhanced Social Cohesion:** Bystander intervention strengthens social bonds and fosters a sense of collective responsibility, contributing to a more supportive social environment linked to improved mental and physical health.
- **Increased Awareness of Implicit Gender Biases in Healthcare Settings:** These study findings contribute to informing culturally sensitive efforts in active-bystander training of medical students and professionals to promote their prosocial behavior.

Limitations and Strengths

While this study offers valuable insights, it's important to acknowledge its limitations. The use of staged scenarios within a university setting may limit the generalizability of findings to real-world emergencies and broader demographic groups. Future research should investigate bystander behavior in natural settings and explore diverse community contexts within Egypt. Additionally, the reliance on self-reported emotions might introduce some limitations due to social desirability bias or the difficulty of accurately articulating complex emotional experiences.

Despite these limitations, the study's mixed-methods design, combining quantitative data with rich qualitative insights, offers a robust approach. The focus on Egypt as an understudied cultural context expands our understanding of global variations in bystander behavior.

In conclusion, this study reveals the intricate dynamics of culture, gender, situational context, and emotions in shaping bystander responses. It contributes to the growing body of research on the bystander effect and paves the way for developing targeted interventions to promote positive social behavior and enhance community well-being in diverse cultural settings and in healthcare settings in particular.

Ethical Approval and Consent to Participate:

"This study was conducted in accordance with the ethical guidelines of the British University in Egypt. Ethical approval was obtained from the university Ethics Committee. Given the nature of the experiment, which was conducted on campus, the study design and procedures were

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also reviewed and supervised by the Legal Department at the British University in Egypt to ensure compliance with relevant Egyptian laws. All participants were fully informed about the study's purpose and procedures. Following the experiment, all participants signed consent forms agreeing to the use of their reaction analysis data for research purposes and acknowledging their right to decline participation or withdraw their data at any time."

Consent for Publication:

"Participants provided informed consent for the publication of anonymized data. As this study focuses on aggregate data analysis and does not include any identifiable participant information, individual identities remain protected."

Funding:

"This research received no external funding."

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**تباين أنواع التدخل في سلوك المساندة الاجتماعية باختلاف المعايير الثقافية والنوع
والعوامل الموقفية بين طلاب الجامعة**

الملخص:

تتناول هذه الدراسة متعددة الأساليب التباين في أنواع التدخل في سلوك المساندة الاجتماعية من قبل الطلاب والطالبات المتفرجين لموقف اجتماعي يستثير سلوك المساندة داخل الحرم الجامعي المتمثل في الجامعة البريطانية بمصر، وذلك في ضوء فحص تأثير المعايير الثقافية بالمجتمع المصري، ومتغير النوع (ذكور، إناث)، والعوامل السياقية البيئية على سلوك المساندة (بيئة المطعم وبيئة المكتبة). حيث استخدم الباحثون موقفين تجريبيين متماثلين في بيئة المطعم وبيئة المكتبة وتقديم مواقف تمثيلية متماثلة تتضمن ضحايا من الذكور والإناث داخل الحرم الجامعي يتعرضون للاعتداءات لفظية والبدنية أمام مجموعة من المتفرجين الذين لا يعلمون بالتجربة، وتمت ملاحظة ردود أفعالهم مع عمل مقابلات فردية نوعية مع المتفرجين بعد نهاية الموقف ورصد سلوكيات المساندة لعمل التحليلات الكيفية. واستخدم الباحثون لعمل التحليلات الكيفية برنامجين من برامج الذكاء الاصطناعي: تطبيق فهم اللغة الطبيعية (NLU) لتحليل المشاعر في كل إجابة من كل مقابلة من المتفرجين وتحديد درجة المشاعر المختلفة في ردود المتفرجين، وتطبيق نماذج اللغة الكبيرة (LLMs) لفهم العلاقات المعقدة بين الكلمات والجمل والمعاني الكامنة وراء إجابات المتفرجين من خلال نظرة شاملة للنصوص مما أتاح للباحثين تحليل المشاعر والتعرف على النوايا والدوافع وراء أنواع التدخل في سلوكيات المساندة الاجتماعية، واستخلاص المعلومات ذات الصلة بدقة عالية ونتج عن استخدام البرنامجين تحليلات مفصلة لاستجابات المتفرجين النصية تسلط الضوء على المؤشرات السلوكية الرئيسية والأسباب الكامنة وراء تقديم أو عدم تقديم سلوك المساندة من قبل المتفرجين إضافة للتفسيرات البشرية من الباحثين الحاليين في ضوء التصورات النظرية والملاحظات التجريبية للبحث، كما استخدم الباحثون لتحليل البيانات كمياً مربع كاي (χ^2) . وكشفت أهم النتائج الكمية عن وجود اختلافات بين الذكور والإناث في معدلات المشاركة بأنواعها (الإيجابية والسلبية) تجاه مواقف الاعتداء المقدمة في التجربة وأن درجة المشاركة اعتمدت على جنس المشارك (ذكر أو أنثى) مما دعم نتائج التحليلات الكيفية النوعية. كما كشفت النتائج عن وجود تحيز كبير قائم على

النوع، حيث كانت معدلات التدخل أعلى عندما كانت الضحية أنثى، وهو ما يتماشى مع التوقعات الثقافية المرتبطة بالشهامة. في المقابل، كان الحضور أقل ميلاً للتدخل عندما كان الضحية ذكراً، مما قد يعكس افتراضات متأصلة في المجتمع المصري حول صلاية الذكور وعدم حاجتهم للمساندة، إضافة لما كشفته تحليلات النتائج من تفاعلات مركبة بين المشاعر المختلفة، حيث لعب كل من التعاطف والخوف دوراً في دفع المتفرج إلى التدخل أو التراجع، وكذلك وجود تأثيرات للأعراف الثقافية المرتبطة بخصوصية الأسرة والاعتماد على المؤسسات في تشكيل سلوك المتفرجين. وأخيراً أكد الباحثون على أنه من خلال فهم ديناميات سلوك المساندة (الاجتماعية والانفعالية والسياقية البيئية والثقافية) يمكن تصميم برامج تدخل سياقية ثقافياً تتحدى الأدوار التقليدية المرتبطة بالنوع وتعزز مبدأ المسؤولية المشتركة ودعوة الباحثين لاجراء مزيد من الأبحاث حول تأثير العوامل الثقافية والنوع (ذكور، إناث) على السلوك الإيجابي تجاه مساندة الآخرين في البيئات التعليمية والمجتمعية المتنوعة.

الكلمات المفتاحية: سلوك المساندة الاجتماعية، تدريب المتفرج النشط، السياقات البيئية والثقافية، التحيز الضمني المرتبط بالنوع، الصور النمطية الثقافية، تطبيقات الذكاء الاصطناعي للتحليلات الكيفية.