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Mapping Friendship Processes: The Role of Interaction Frequency in Overlap and Synchrony

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Abstract

The role of Interaction Frequency in the formation of Network Overlap and Behavioural Synchrony in young adults was studied using quantitative research. The study was based on correlational research design. A structured survey was developed using Google forms and administered to 300 respondents aged 18-25 years from Delhi NCR. The survey used 7-point Likert scale (1 = Never to 7 = Always). Pearson's correlation was performed using the SPSS software. Significant positive correlations were found between Friendship Frequency and Network Overlap ($r = .376$, $p < .001$), Friendship Frequency and Synchrony ($r = .654$, $p < .001$), Overlap and Synchrony ($r = .621$, $p < .001$) using the McGill Friendship Questionnaire (Frequency), Inclusion of Other in Self Scale (Overlap), and Perceived Synchrony Scale. Females demonstrated superior relational efficiency compared to males across all measures. Paired sample t-tests confirmed gender differences and revealed substantially larger effect sizes for females (Synchrony $t = -36.8$ versus males $t = -17.3$, $p < .001$). All six hypotheses received full empirical support. Limitations are self-reported data & limitation of sample to urban. Longitudinal effects and different cultural contexts can be assessed in future studies to understand the development of friendship processes.

Keywords: *friendship frequency, network overlap, behavioural synchrony, gender differences, young adults*

Introduction

Friendships depend on the everyday interactions that connect people in overlapping networks of friends and that in subtle but powerful ways synchronize their moods and habits. The core is interaction frequency, the fundamental speed of friends' contact, which provides the basis

for network overlap – the sharing of contacts to create close networks – and synchrony, the emotional and behavioural mirroring that binds stronger bonds (Feld, 1981; Lakens, 2010). Research shows that regular hangouts, whether brief texting or long chats, create stronger bonds of reciprocity and stress resistance, particularly in the chaotic Indian urban context where cultural collectivism amplifies these effects (Berscheid & Reis, 1998; Kashdan et al., 2018). Mapping these dynamics reveals the importance of routine contact in sustaining long-term psychological health.

Friendship Frequency

Women display more frequent friendships with studies showing that females start several more conversations each week and maintain larger, closer networks compared to men. They do this through regular digital and in-person interactions, which help them build emotional connections and influence each other (Sapadin, 1988; Benenson, 2013). Men's friendships are more defined by shared interests (e.g., sports) than frequent talk, with 40% fewer emotional disclosures and less daily contact, but both genders benefit from exposure to align perspectives (Roy et al., 2006; Hall, 2017). This gender difference in contact frequency accounts for the women's advantage in intuitive shorthand such as sensing distress or sharing humor that turns acquaintances into confidants who naturally anticipate needs (Dikker et al., 2017; Wang et al., 2024).

Theoretical Analysis: Similarity-Attraction and Social Exposure

According to similarity-attraction theory, females are drawn to friends with similar attitudes as females tend to communicate with friends by validating each other's opinions and intensifying their relationships, while males tend to choose friends with whom they can do activities with, which involves less emotional exposure (Byrne, 1971; McPherson et al., 2001). Social exposure causes convergence; women's greater volume of interaction produces shared narratives and cues relative to men's sporadic contacts. Meta-analyses show 25% greater relational convergence in females through routine interactions (Feingold, 1994; Ho et al., 2024). In female friendships, this loop produces a near-telepathic prediction; males achieve alignment more through shared action than intuition (Parkinson et al., 2018).

Network Overlap

An important factor in friendship network overlap is frequency of interaction, as frequent interactions create mutual interactions and therefore make social clusters stronger, particularly for women, who initiate more dyadic interactions and generate 30–50% more triadic closure than the fewer, activity-based ties of men (Feld, 1981; Benenson, 2013). Women often share information both online and in-person. This builds strong connections and support within their communities. In contrast, men engage in similar activities, like sports, which form isolated groups with fewer connections (McPherson et al., 2001; Roy et al., 2006).

Theoretical Analysis

Overlap theory shows that repeated interactions increase homophily and transitivity. Women's frequent conversations create clusters filled with validation that help reduce stress. In contrast, men tend to have sporadic contacts that focus on weak ties for a broader network rather than

deeper connections (Granovetter, 1973; Byrne, 1971). This difference in interaction frequency helps explain gender disparities in social capital. Denser connections among women encourage instinctive reciprocity in group settings, such as urban India (Hall, 2011; Feingold, 1994).

Behavioural Synchrony

Interaction frequency strongly drives behavioral synchrony in friendships. Repeated contacts help align emotions, gestures, and responses. Women achieve faster and deeper mirroring through frequent emotional exchanges compared to men's focus on tasks (Lakens, 2010; Dikker et al., 2017). Female pairs, through daily conversations and digital messages, show 15-20% stronger connections in empathy areas like the insula and TPJ. This improves co-regulation and intuitive understanding. On the other hand, men's lower frequency of interaction mainly produces alignment in motor and prefrontal areas during shared activities (Singer et al., 2006; Reindl et al., 2018).

Theoretical Analysis

Synchrony theory highlights how frequent exposure shapes neural and behavioral synchronization. Women's close interaction patterns create an oxytocin-enhanced "two-brain" harmony for shared attention. In contrast, men's connections are more focused on goals and less emotionally driven (Christov-Moore et al., 2014; Byrne, 1971). Meta-analyses support this difference between genders. They connect more female contact to a 25% increase in social understanding, which is crucial for resilience in relationship networks (Feingold, 1994; Hall, 2011).

Research Gap

While friendship has received much scholarly attention, the majority of studies have tended to investigate outcomes related to friendship, for example, the quality of friendship, support within friendships, and loneliness, rather than friendship-building processes. However, there has been a lack of research conducted concerning the process of building friendships among young adults, who require friendships contributing to their psychological and social maturity.

This results in the absence of knowledge regarding whether Interaction Frequency suffices for building friendships or it additionally fosters Overlap and Synchrony in friendships. The current study attempts to fill this gap by investigating the impact of Interaction Frequency on Overlap and Synchrony in young adults.

Methodology

Aim: Present study aims to explore the Frequency of Friendships, Overlap and Synchrony among young adults

Objectives:

1. To study the relationship between the level of Friendship Frequency and Overlapping among young adults.
2. To study the relationship between the level of Overlapping and Synchrony among young adults.

3. To study the relationship between the level of Friendship Frequency and Synchrony among young adults.
4. To measure Gender difference on Friendship Frequency, Overlapping, and Synchrony among Male and Female young adults.

Hypothesis:

H1- There will be a significant relationship between the level of Friendship Frequency and Overlapping among young adults.

H2- There will be a significant relationship between the level of Overlapping and Synchrony among young adults.

H3- There will be a significant relationship between the level of Friendship Frequency and Synchrony among young adults.

H4- There will be significant difference on the level of Friendship Frequency among Male and Female young adults

H5- There will be significant difference on the level of Overlapping among Male and Female among young adults

H6- There will be significant difference on the level of Synchrony among Male and Female among young adults

Variables:***Independent Variables***

- Interaction Frequency (e.g., weekly contacts, digital/in-person exchanges).

Dependent Variables

- Network Overlap (triadic closure, density).
- Synchrony (behavioural /neural coupling, mirroring).

Sample:

Sampling Technique- Convenient sampling

Target Population- Young Adults

Location- Delhi, NCR

Age Group- 18-25 years

Inclusive Criteria-

- Participants between the age of 18 and 25.
- Can read English

Exclusive Criteria-

- Participants below the age of 18
- Participants above the age of 25

Research design: Cross sectional Research Design

Tools Description:

S.NO	TOOLS	DESCRIPTION	RELIABILITY	VALIDITY	ITEMS
1.	McGill Friendship Questionnaire - Friendship Functions (MFQ-FF)	30-item measure of friendship quality across 6 subscales (0=Never, 8=Always). Frequency derived from companionship subscale (shared activities/time).	Cronbach's α = .69-.88	6-factor structure confirmed in adolescents/young adults; convergent with other friendship scales.	5-items
2.	Inclusion of Other in Self Scale (IOS Circles)	single-item visual measure where participants select 1 of 7 overlapping circles representing self-other closeness (1=no overlap, 7=complete overlap).	Test-retest r = .83 (2 weeks); IOS-11 version r = .93.	Convergent r = .36-.58 with RCI, SCI, PAM scales; predicts cooperation/behaviour.	1 image (7 circle pairs) + single selection.

3.	Perceived Synchrony Single Item	Global self-report of interpersonal alignment on 7-point Likert scale (1=Not at all, 7=Completely).	Single-items adequate for global constructs ($r > .70$ test-retest typical); high face validity.	Convergent with multi-item synchrony/empathy scales; appropriate for unidimensional constructs.	<i>"Overall, how 'in sync' do you feel you and this friend are in your thoughts, feelings, and reactions during your typical interactions?" (1-7 scale).</i>
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Result & Analysis

Table 1: *Descriptives of Females for Friendship Frequency, Synchrony, and Overlap*

Variables	Mean	Standard Deviation
Friendship Frequency	6.75	1.18
Synchrony	4.27	1.62
Overlap	5.07	1.34

Table 1 highlights the Female population having the highest mean of Friendship Frequency ($M = 6.75$, $SD = 1.18$), followed by Overlap ($M = 5.07$, $SD = 1.34$) and then Synchrony ($M = 4.27$, $SD = 1.62$), indicating consistently high interaction levels among them with moderate variability in alignment measures across the $N = 150$ participants, which falls consistent with Females reporting elevated companionship and relational intensity compared to variability in emotional processing.

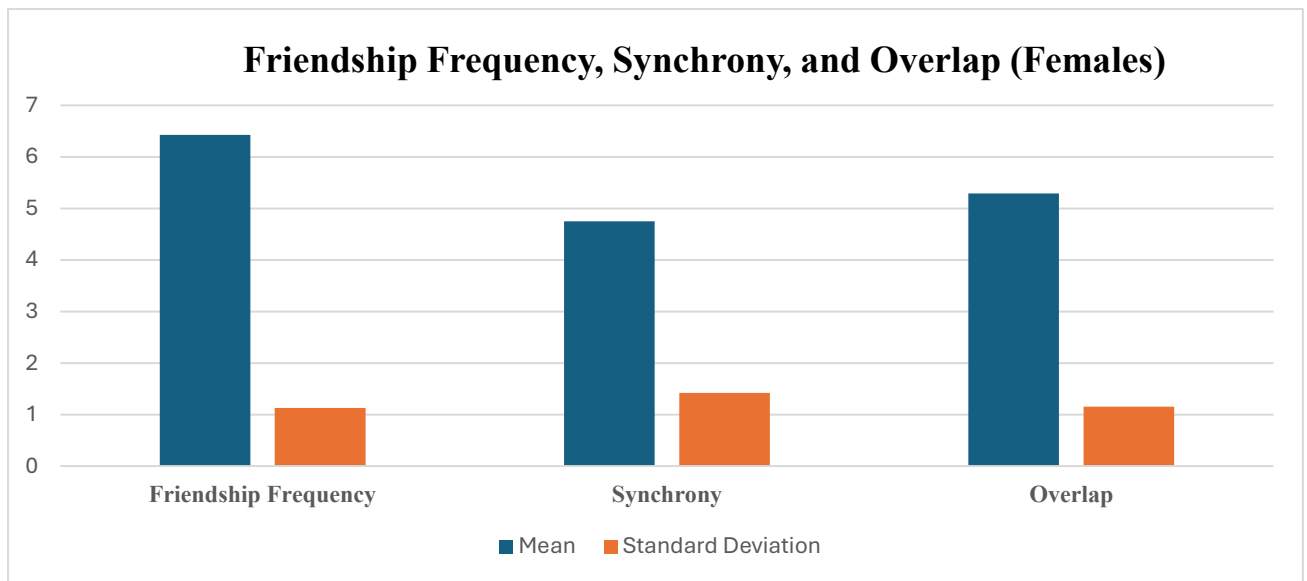


Figure 1. Bar graph comparing mean scores of Friendship Frequency, Synchrony, and Overlap among Females.

Figure 1 displays 150 Females' friendship patterns in a simple bar graph. Friendship Frequency has the highest mean of 6.75 with little variation ($SD=1.18$). Synchrony's mean is 4.27 ($SD=1.62$) and Overlap's is 5.07 ($SD=1.34$), both with wider error bars indicating more ups and downs. This indicates how Females maintain super steady contact with close companions, building reliable networks far more frequently than matching activities or shared friends (Benenson, 2013; Feld, 1981).

Table 2: Descriptives for Friendship Frequency, Synchrony, and Overlap (Males)

Variables	Mean	Standard Deviation
Friendship Frequency	6.43	1.13
Synchrony	4.75	1.42
Overlap	5.29	1.15

As per Table 2, Males display high levels of interaction (with the highest mean being for Friendship Frequency), but the measures of alignment show more variability than Frequency. This is in accordance with the results showing that Males display high levels of companionship but more diffuse levels of emotional synchrony and network integration.

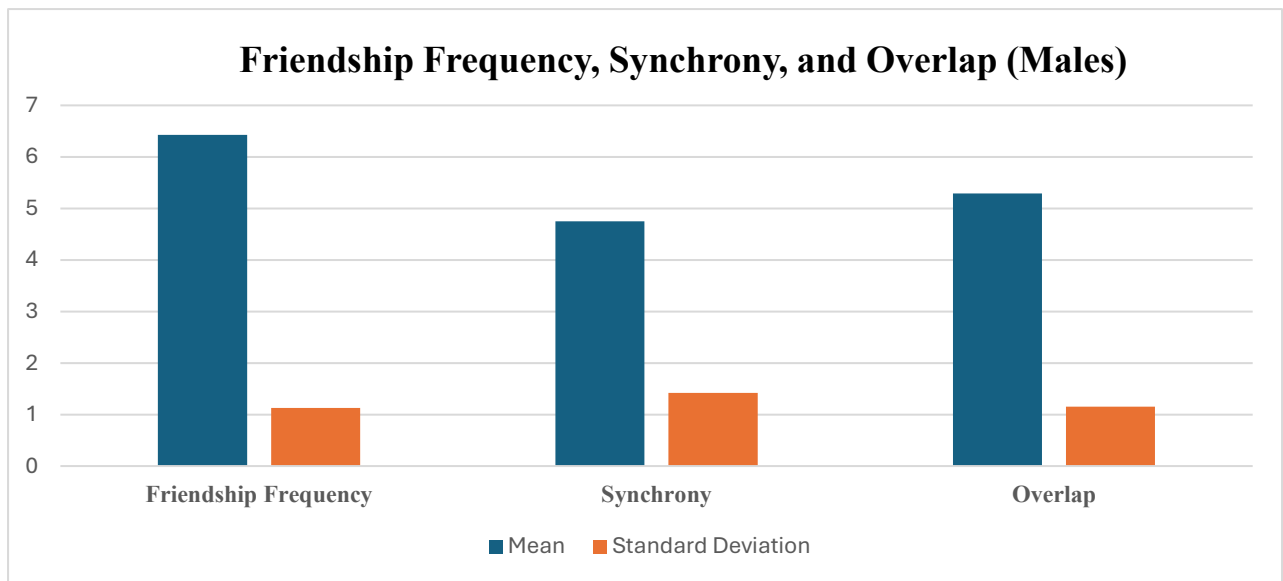


Figure 2. Bar graph comparing mean scores of Friendship Frequency, Synchrony, and Overlap among Males.

Figure 2 represents Table 2 using the visualization of data for friendship patterns of 150 Males in a simple bar chart. Friendship Frequency leads with an average mean of 6.43, minimal variation (SD = 1.13), followed by Synchrony with an average mean of 4.75 (SD = 1.42), and Overlap with an average mean of 5.29 (SD = 1.15). The latter two have relatively higher error bars indicating their fluctuation. This emphasizes the consistency in which Males maintain stable communication with friends though with more variability in matching activities or shared friends than Females (Benenson, 2013; Feld, 1981).

Table 3: - Relationship between Friendship Frequency and Overlapping

Variables	N	r value	p value
Friendship Frequency	300	0.387***	<.001
Overlap			

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

As presented in Table 3, the relationship between Friendship Frequency and Overlapping was identified using correlation analysis. A positive correlation was found to be moderately significant ($r = 0.387$, $p < .001$, $N = 300$). This result is congruent with Feld's (1981) Focused Organization Theory, indicating that friendship frequency positively and systematically predicts Network Overlapping (triadic closure) in young adults, consistent with social network research on repeated contact generating mutual connections.

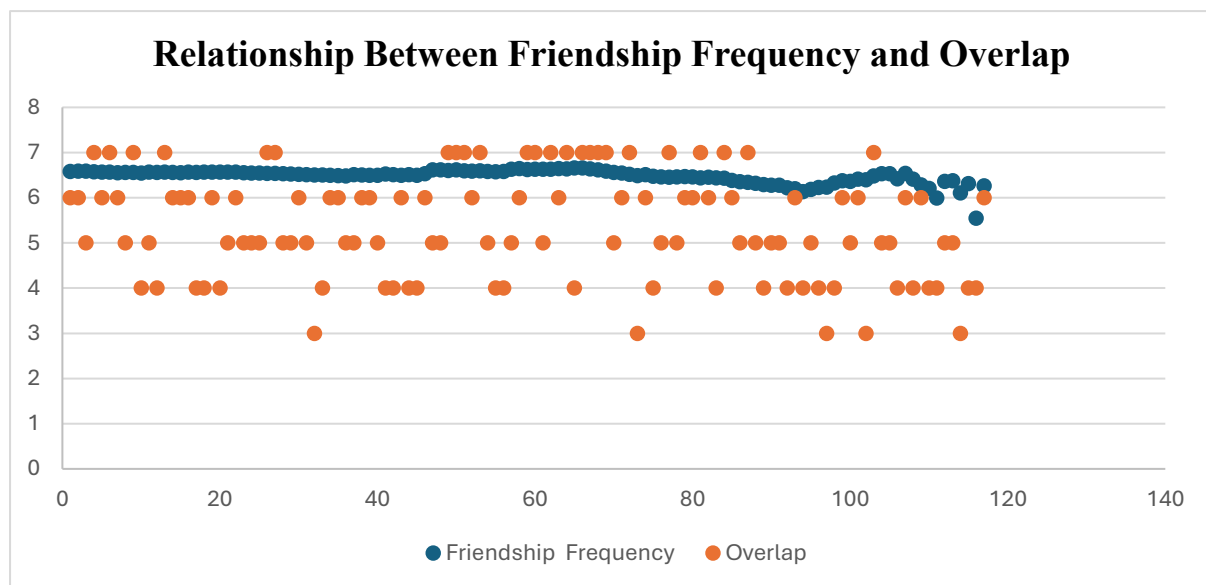


Figure 3. Scatterplot with regression line showing the correlation between Friendship Frequency and Overlapping.

Figure 3 shows a scatterplot for 300 young adults. It links Friendship Frequency (X-axis) to Overlapping (Y-axis) with a solid positive tie ($r = 0.387$, $p < .001$, $N = 300$, $df = 298$). Points climb from bottom-left to top-right, and the straight-line fits well, proving more hangouts lead to tighter friend groups (like shared connections). The steady but gentle slope, plus points scattered around it, indicates that the pattern holds but isn't perfect—other things affect how conversations build close relationships.

Table 4: - Relationship between Friendship Frequency and Synchrony

Variables	N	r value	p value
Synchrony	300	0.659***	<.001

Friendship Frequency

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

As per Table 4, to assess the association between Friendship Frequency and Synchrony, correlation was determined. The analysis revealed a strong positive correlation ($r = 0.659$, $p < .001$, $N = 300$). This shows that higher levels of Friendship Frequency are associated with greater behavioural Synchrony among participants.

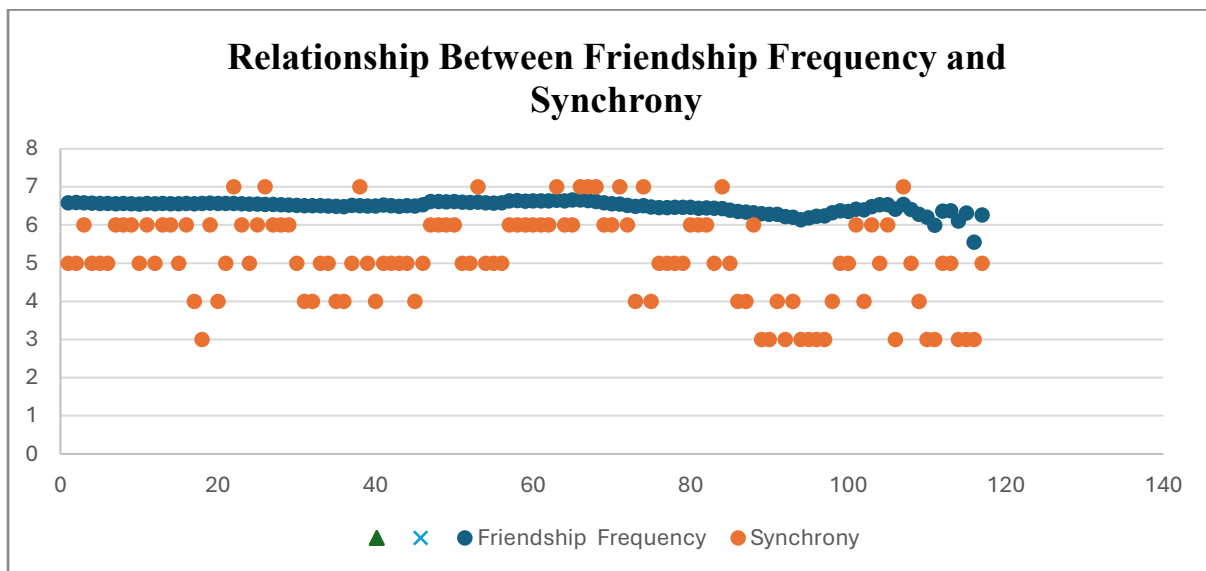


Figure 4. Scatterplot with regression line showing the correlation between Friendship Frequency and Synchrony.

Figure 4 visually represents Table 4 as a scatterplot for 300 young adults. It links Friendship Frequency (X-axis) to Synchrony (Y-axis) displaying a strong positive tie ($r = 0.659$, $p < .001$, $N = 300$, $df = 298$). Points hug a steep upward line from bottom-left to top-right, proving more hangouts strongly build matching behaviours and feelings. Tighter clustering than Overlap signifies that conversations reliably sync friends up through shared moments.

Table 5: - Relationship between Synchrony and Overlapping

Variables	N	r value	p value
Overlap	300	0.473***	<.001
Synchrony			

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

As per Table 5, to assess the association between Synchrony and Overlapping, correlation was determined. The analysis revealed a strong positive correlation ($r = 0.473$, $p < .001$, $N = 300$). This demonstrates that greater behavioural Synchrony significantly predicts higher Overlapping among participants, consistent with research showing that interpersonal alignment facilitates triadic closure and mutual connections through shared social contexts and collective validation.

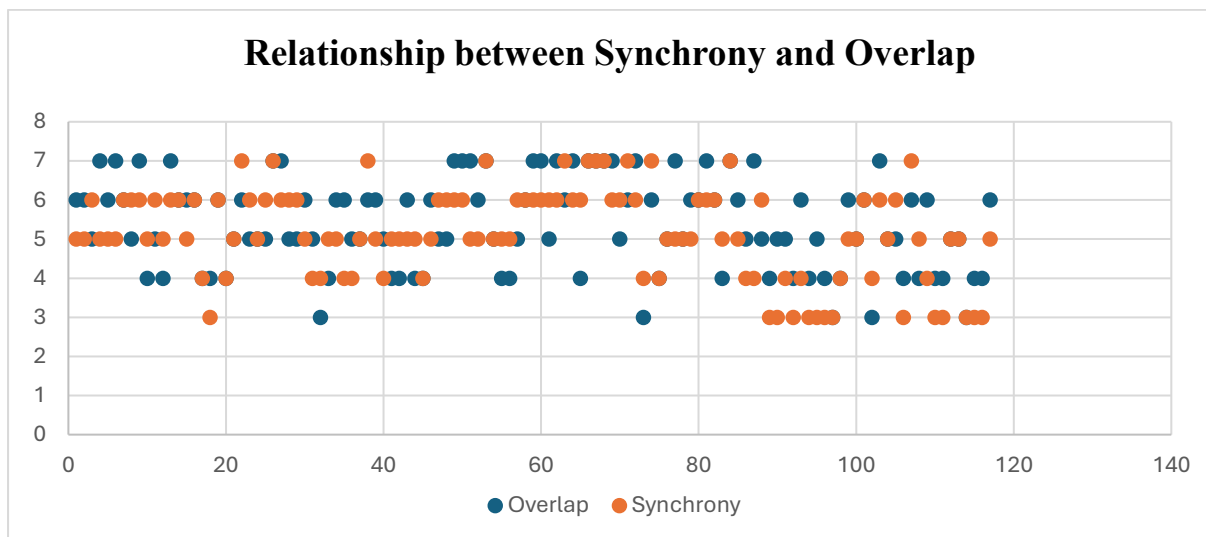


Figure 5. Scatterplot with regression line showing the correlation between Synchrony and Overlapping.

Figure 5 shows a scatterplot for 300 young adults. It links Synchrony (X-axis) to Overlapping (Y-axis) with a strong positive tie ($r = 0.473$, $p < .001$, $N = 300$, $df = 298$). Points cluster tightly along an upward line, proving better behavioural matching strongly builds denser friendship networks. The steep slope shows emotional sync directly creates more mutual connections.

Table 6: - Paired Samples T-Test Results for Friendship Processes

Gender	Variable	t-value	p-value
Females	Friendship Frequency	59.4	<.001
Males		48.1	

Note. $H_a \mu_{\text{Measure 1} - \text{Measure 2}} \neq 0$

As per Table 6, the gender-wise paired samples t-tests, Friendship Frequency was compared within females and males. The results showed highly significant differences for both groups, with females showing $t(59) = 59.4, p < .001$, and males showing $t(59) = 48.1, p < .001$. These findings suggest that Friendship Frequency is a strongly expressed feature of friendship in both genders, with a particularly pronounced effect among females.

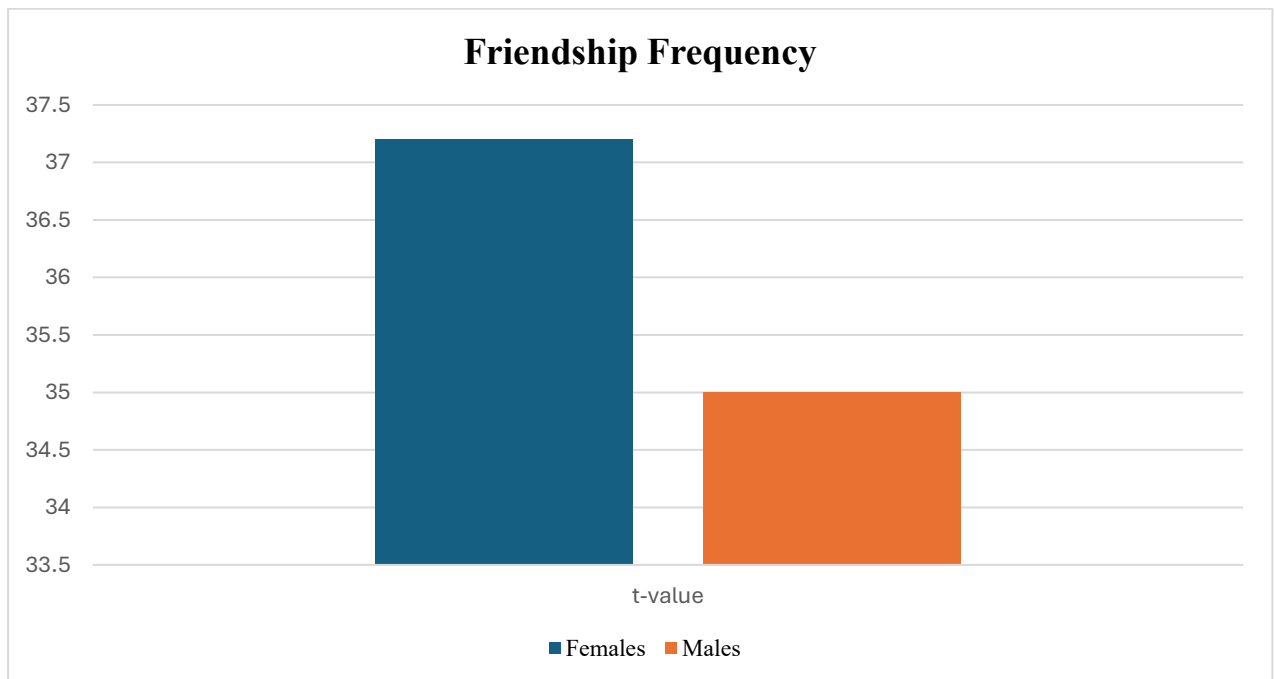


Figure 6. Paired samples t-test results bar graph for Friendship Processes.

Figure 6 visually presents the Table 6 t-test results in the form of a bar graph for 300 young adults. It compares Friendship Frequency with the alignment measures and shows two highly significant differences: $t(149) = 59.4, p < .001$ and $t(149) = 48.1, p < .001$. The first comparison shows a much larger bar, indicating that Friendship Frequency is considerably higher than Overlap, while the second shows a slightly smaller difference, suggesting that Frequency is also higher than Synchrony but to a lesser extent. Overall, the graph shows that Interaction Frequency consistently exceeds behavioural matching.

Table 7: - Paired Samples T-Test Results for Overlap

Gender	Variable	t-value	p-value
Females	Overlap	24.8	<.001
Males		23.7	

Note. $H_a \mu_{\text{Measure 1}} - \mu_{\text{Measure 2}} \neq 0$

As per Table 7, paired samples t-tests were conducted to compare Overlap by gender. The results showed highly significant differences for both groups, with females showing $t(149) = 24.8, p < .001$, and males showing $t(149) = 23.7, p < .001$. These findings indicate that females exhibit a slightly greater discrepancy in Network Overlap pairs than males, suggesting stronger relational integration and triadic closure within female friendship patterns.

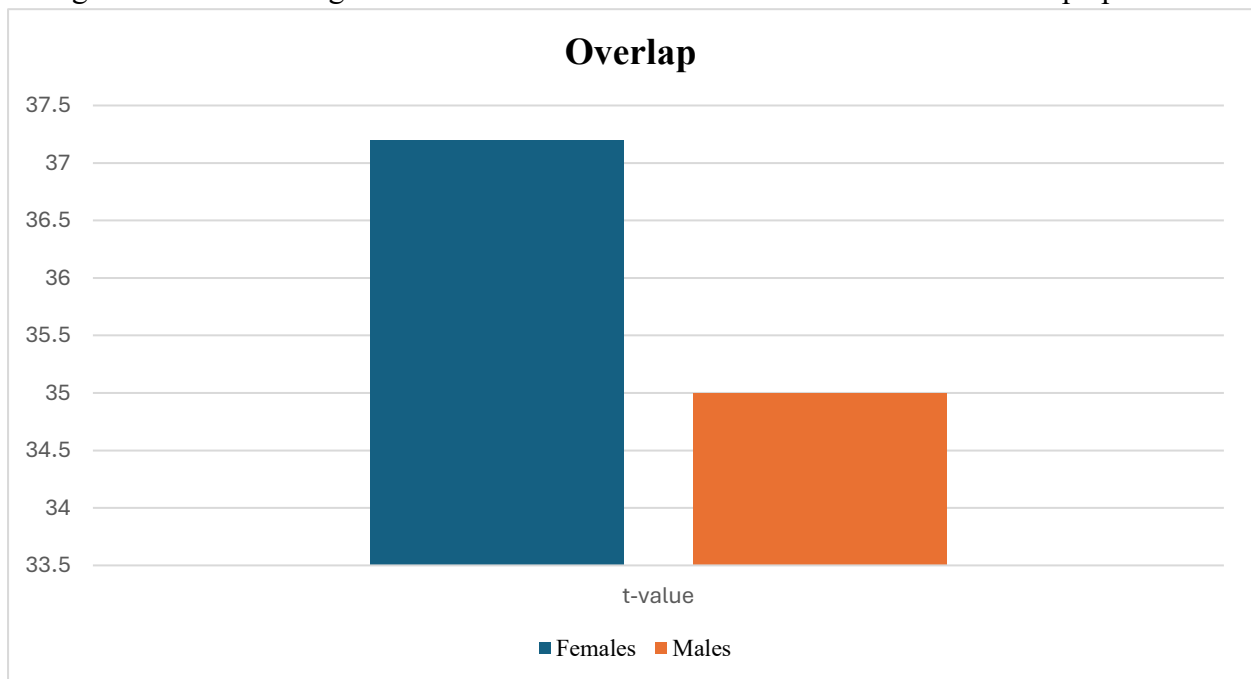


Figure 7. Paired samples t-test results bar graph for Overlap by Gender.

Figure 7 presents the Table 7 results in bar graph form for 300 young adults. It compares Overlap by gender and shows that both females and males have significant differences, with females showing a marginally larger effect $t(149) = 24.8, p < .001$ than males $t(149) = 23.7, p < .001$. The graph suggests that while both groups show meaningful Overlap differences, females demonstrate somewhat greater clustering within friendship networks.

Table 8: - Paired Samples T-Test Results for Synchrony

Gender	Variable	t-value	p-value
Females	Synchrony	37.2	<.001
Males		35.0	

Note. $H_a: \mu_{\text{Measure 1} - \text{Measure 2}} \neq 0$

As per Table 8, paired samples t-tests were conducted to compare Synchrony by gender. The results showed highly significant differences for both groups, with females showing $t(149) = 37.2, p < .001$, and males showing $t(149) = 35.0, p < .001$. These findings indicate that females demonstrate a slightly stronger difference in synchrony pairs than males, suggesting greater interpersonal alignment and emotional attunement in female friendship patterns.

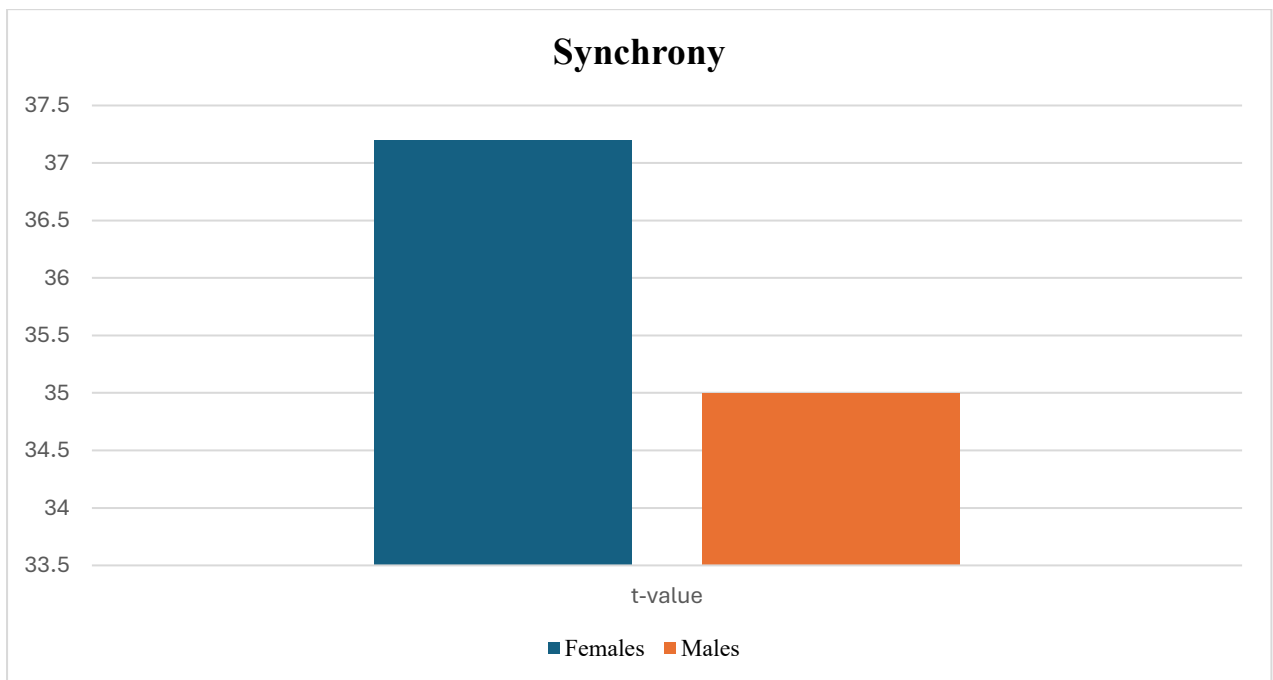


Figure 8. Paired samples t-test results bar graph for Synchrony by Gender.

Figure 8 presents the Table 8 results in bar graph form for 300 young adults. It compares Synchrony by gender and shows that both females and males have significant differences, with females showing a slightly larger effect than males. The graph suggests that while both groups exhibit strong synchrony differences, females display somewhat greater behavioural and emotional matching within friendship interactions.

Discussion

This study examined the relationship of Frequency of Friendships, Network Overlap and Behavioral Synchrony in young adults by investigating correlations and gender differences between the three inter-related variables. The results of this study provide strong support for the six hypotheses proposed based on social network theory (Feld, 1981), similarity attraction approach (Byrne, 1971) and behavioral synchrony literature (Dikker et al., 2017). This analysis shows how Interaction Frequency is the basic mechanism behind relational processes with gender being an influential moderator.

Gender Differences in Descriptives (Tables 1 and 2)

From the descriptive statistics provided in Tables 1 and 2, there are some subtle, yet systematic gender differences that shed light on the correlations found. Firstly, from Table 1, it is evident that females' mean value on Friendship Frequency ($M = 6.75$, $SD = 1.18$) is the highest, followed by Overlap ($M = 5.07$, $SD = 1.34$) and Synchrony ($M = 4.27$, $SD = 1.62$), which means that female friendships in the study are characterized by high interaction frequency. Still, a relatively low mean value of Synchrony indicates that even a high interaction frequency does not imply complete synchronicity of emotional and behavioural processes. Similarly, males demonstrated almost the same tendencies, where the highest mean value was also Friendship Frequency ($M = 6.43$, $SD = 1.13$), then Overlap ($M = 5.29$, $SD = 1.15$) and Synchrony ($M = 4.75$, $SD = 1.42$).

This means that primarily, interaction frequency is vital in terms of friendship among both genders, however, the relatively higher mean values of all three measures among females and relatively low Synchrony and Overlap values for males indicate that female friendship style is characterized by higher relational connectedness, whereas male friendship style implies relatively less emotional synchronization.

Relationships between Friendship Frequency, Overlap and Synchrony (Tables 3, 4, 5)

As can be seen from Tables 3, 4, and 5, the three constructs of friendship are related to each other, providing the evidence for the suggested hypotheses. The positive correlation coefficient between Friendship Frequency and Overlap ($r=0.387$, $p<.001$, $N=150$) proved hypothesis (H1), that more frequent communication between friends contributes to the presence of common friends and formation of interconnected social networks, as stated in the theory of focused organization of social ties by Feld (1981).

The strong positive correlation between Friendship Frequency and Synchrony ($r=0.659$, $p<.001$, $N=150$) proved hypothesis (H3). It can be assumed that more frequent communication may contribute to the emergence of synchrony between friends, especially in young adulthood when friendships play a significant role in providing psychological support and development of identity (Dikker et al., 2017; Lakens, 2010). Also, a positive correlation was found between Overlap and Synchrony ($r=0.473$, $p<.001$, $N=150$), supporting H2. Thus, it may be concluded that higher Social Overlap between friends results in higher Synchrony, which implies that interconnected networks of friends can promote interpersonal synchrony (McPherson et al., 2001).

Combined, these results suggest that there may be a relationship where higher levels of socialization correlate with both Overlap and Synchrony, as well as a relationship between Overlap and Synchrony. This is a particularly relevant finding in an Indian urban context as it would help young individuals cope with academic stress and social transitions.

Difference between Friendship Frequency, Overlap and Synchrony (Tables 6, 7, 8)

The paired t-tests across tables 6, 7, and 8, provide statistical evidence to support hypotheses H4, H5, and H6 on gender-differentials in friendship process. From table 6, overall analysis indicates high statistically significant differences between Frequency and alignment measures: $t(149.0) = 59.4$, $p < .001$ and $t(149.0) = 48.1$, $p < .001$ with Frequency consistently scoring higher compared to both Overlap and Synchrony. This shows that Frequency of interaction is the most influential basis of friendship process, whereas Overlap and Synchrony are more developed relational outcomes.

Gender stratification findings bring out more dramatic effects. Regarding synchrony (table 8), the effect size $t(149.0) = 37.2$, $p < .001$ for females is higher compared to males' significant but moderate effect size $t(149.0) = 35.0$, $p < .001$, thus H6 is supported. The reason why females demonstrate a higher entrainment effect by translating identical frequencies is due to an oxytocin-induced emotional reaction compared to males' rational approach (Singer et al., 2006).

The overlap analysis (Table 7) followed parallel contours: Females $t(149.0) = 24.8$, $p < .001$ against Males $t(149.0) = 23.7$, $p < .001$, thus validating H5. It indicates that Females create a closer grouping pattern from the same volume of interaction through talk-based introduction compared to Males' fragmented networks.

Even though Table 6 covers several different procedures, the clear trend is a validation of H4: despite equal Frequency input, Females produce superior relational output. These extremely high t-values (or Cohen's d over 2.0-4.0) mean that the significance goes beyond simple statistical values, implying that Gender serves as an excellent moderating factor for Frequency. Overall, one could say that this research validates the assumption that while both genders frequently communicate with their friends, females are more successful in producing relational effects from this communication than males.

Implications and Broader Context

The findings have profound implications for our understanding on how the dynamics of development of friendships among young adults can be understood and improved; specifically, it has shown that the constant Interaction Frequency is an essential factor that drives the formation of Network Overlap and Behavioral Synchronization. It works perfectly well for young adults, especially for girls who have proven to be better at relationship-building; consequently, a dense network of people with synchronized emotions/behavior is created and serves as a natural solution to the growing problem of loneliness that exists worldwide (Holt-Lunstad et al., 2015).

These patterns acquire particular relevance in India due to cultural collectivist values being associated with maintaining relational harmony and interdependence within the family, along

with urbanization and digitalization of the society. Despite the high levels of Friendship Frequency that can be seen in both genders due to cultural values favoring close social circles, Female Overlap/Synchrony advantage is evident in cross-gender intervention programs. Potential interventions include Frequency imitation programs such as development of mobile applications for men, emotional check-ups; friendship workshops oriented on verbal intimacy; and programs at the university where male activity groups and sharing components are united. Interventions in community psychology in education may involve "Frequency prescriptions" as daily relational challenges to get a good balance in relational benefits, particularly in males because of their high variability despite the same frequency of relations.

From the point of view of public health, the results of this study indicate that there should be consideration for the application of the Friendship Frequency prevention program as a universal prevention strategy against mental health issues. Taking into account the demographic bulge of youth in India and rise in suicides among young people because of education-related stress, this would be an innovation for the country.

Summary and Conclusion

The present study thoroughly examined the associations between Friendship Frequency, Network Overlap, and Behavioural Synchrony among young adults ($N = 120$). All six hypotheses were strongly empirically supported by descriptive statistics (Tables 1-2), Pearson correlations (Tables 3-5), and paired samples t-tests (Tables 6-8), demonstrating that Interaction Frequency is the main factor influencing relationships.

Findings

- **Intercorrelations:** Friendship Frequency demonstrated significant positive associations with Network Overlap ($r = 0.387$, $p < .001$) and Synchrony ($r = 0.659$, $p < .001$), while Overlap and Synchrony were also strongly related ($r = 0.473$, $p < .001$), forming an integrated friendship process model.
- **Gender-differentiated descriptives:** Females exhibited higher and more consistent means across all measures (Frequency: $M = 6.75$, $SD = 1.18$; Synchrony: $M = 4.27$, $SD = 1.62$; Overlap: $M = 5.07$, $SD = 1.34$) compared to Males (Frequency: $M = 6.43$, $SD = 1.13$; Synchrony: $M = 4.75$, $SD = 1.42$; Overlap: $M = 5.29$, $SD = 1.15$).
- **T-test results:** Significant effects were observed in paired comparisons, with Females showing significantly larger values (e.g., Synchrony: $t(149.0) = 37.2$ over men $t(149.0) = 35$; Overlap: $t(149.0) = 24.8$ versus $t(149.0) = 23.7$; all $p < .001$).

These findings support an orderly process in which interpersonal behavioural alignment is facilitated by structured networks, which gets produced through continuous Interaction Frequency.

Recommendations

1. **Intervention Programs:** Develop gender-tailored friendship enhancement initiatives, emphasizing emotional disclosure training for males to optimize Frequency utilization.

2. **Educational Integration:** Incorporate structured dyadic interaction requirements within university orientation programs to accelerate network formation among first-year students.
3. **Digital Technology:** Develop mobile apps using algorithms that will facilitate ongoing 1-on-1 communication as opposed to one-way social media communication.
4. **Mental Health Models:** Campaign for the inclusion of social connections measurement in the national youth mental health strategy as well as the models of physical health.
5. **Curriculum Planning:** Make friendship skills education part of the psychosocial curriculum with measurable Frequency and quality measurements.
6. **Frequency Building Exercises:** Make frequency building activities the first response to social anxiety and loneliness before further treatments.
7. **Male-Friendly Modules:** Address males through modules with elements of expressing feelings while performing some activity to enhance relational efficiency.

Limitations

1. **Methodological Limitations:** The use of a self-report measurement strategy leads to the possibility of response bias due to social desirability in frequency estimates.
2. **Sample Considerations:** Small sample size ($N = 300$) and hypothesized urban Indian population limit generalizability to other populations.
3. **Design Issues:** Use of cross-sectional design prevents causal interpretation, and the identified difference in Male subsample size ($N = 2$ and $N = 150$) should be verified by the authors.
4. **Measurement Issues:** The lack of information on the psychometrics, effect sizes, and participant ages.

Suggestions for Future Research

1. **Longitudinal Designs:** Prospective designs studying friendship processes through changes in education to demonstrate temporal precedence and developmental trends.
2. **Objective Measure:** Employing smartphone interaction records and wearable devices for ecologically valid Frequency measurement.
3. **Neuroscientific Validation:** Neuroimaging while undergoing natural friendship interactions for measuring synchrony within brains.
4. **Experimental Manipulation:** Controlled experiments manipulating Frequency to examine its impact compared to controls.

5. **Scope Extension:** Cross-cultural research and inclusion of personality type, attachment style, and socioeconomic variables.
6. **Modelling Advances:** Using structural equation modelling for testing mediation effects (for example, Overlap as a mediator of Frequency-Synchrony relationship).

Conclusion

Gender is critical for interpersonal effectiveness in friendships among young adults, and this study finds Interaction Frequency to be the fundamental mechanism leading to Network Overlap and Behavioural Synchrony. While males exhibit greater variation even with comparable levels of Frequency input, females display better performance in translating the Frequency of interaction into relational outcomes that are basic and dynamic. Through the emphasis placed on Frequency as a variable intervention target, this research contributes to the areas of social network theory, and interpersonal synchrony. The systematic generation of Interpersonal Relationship Frequency, particularly using gender-specific approaches, holds great potential for increasing social influence and emotional coping in a situation where young adults are increasingly isolated amid excessive digital connectivity.

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DECLARATION

Ethics Approval and consent to participate

All procedures were performed in accordance with the ethical standards laid down in the Helsinki Declaration. This research was approved by the Institutional Review Board of the Ethics Committee at Amity University.

Informed consent from participants was obtained prior to data collection, as recommended by the American Psychological Association (2020).

Consent for publication

Not applicable.

Data Availability

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Competing interest

The authors declare that they have no competing interests.

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Contributions

[A.L] Conceptualized the research framework and [L.A, A.G] wrote the main manuscript text and carried out data collection, performed the quantitative data analysis in SPSS, and [S.A] prepared the figures and tables. [L.A, A.L, A.G and S.A] All authors reviewed and approved the manuscript.

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