



Technology Makes the Heart Grow Fonder?: A Test of Media Multiplexity Theory for Family Closeness



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Abstract

Media multiplexity theory assumes that spending time face-to-face (FtF) is equitable to multimodality for relationship quality. The goal of this study is to examine the impact of online and offline interactions for the quality of family relationships. Data comes from undergraduate students ($N = 154$).

- Results reveal that spending time FtF is better for the quality of relationships for parent one (close parent).
- Although FtF wasn't significantly different for grandparent and sibling relationships, participants felt closer to siblings when they texted.
- Correlational analyses revealed that individuals who scored high in collectivism reported that spending time FtF was associated with higher relationship closeness and love, particularly with close parents, but not other family members.
- These results provided some evidence for the importance of spending quality time with family members, particularly for those who identify as collectivistic.

Introduction

- This study advances the understanding about collectivism and family closeness to examine how collectivism moderates the relationship between online and offline communication on relationship closeness across multiple family relationships.
- Media Multiplexity Theory (MMT) views spending time FtF to be another connection within a dyad, comparable to technological connections. For instance, Ledbetter (2015) stated that "both the face-to-face and online medium-specific constructs positively [predict the] strength of mutual influence" (p. 363) when discussing MMT that was related to hypothesis 1: Spending time FtF will be more closely associated with relationship closeness than interactions via multimodality.
- Accordingly, it is likely that collectivism influences how individuals use technology in their family relationships. Based on this information, we believe that collectivism moderates the relationship between multimodality, FtF time together, and relationship quality that answers hypothesis 2: Collectivism moderates the relationship between multimodality, spending time FtF, and relationship closeness.

Methods

Measures

- Family Closeness.** Participants reported their closeness with up to six family members: two parents/guardians, two grandparents (adoptive or biological), a sibling (if applicable), and an aunt or uncle (if applicable). Participants answered two questions to indicate closeness per communication method: "How would you rate your closeness with (family member) through (type of communication)?" and "How would you rate your love for (family member) through (type of communication)?" Responses for each question ranged from 1 (very poor) to 7 (very good).
- Multimodality and FtF Behaviors.** Participants answered two questions regarding six different types of communication: texting, virtual/phone calls, direct messaging on social media, indirect communication on social media, viewing information on social media, and spending time FtF. These questions included, "How frequently and how long do you [communication method] this (family member)?" Responses ranged from 0 (never) to 8 (daily).
- Collectivism.** This scale was measured using the 8-item collectivism subscale by Triandis and Gelfand (1998). Responses ranged from 1 (never or definitely no) to 9 (always or definitely yes) and this scale demonstrated adequate internal consistency (Cronbach's $\alpha = .82$).

Procedures

- Professors teaching undergraduate human development and family sciences courses at a large university were invited to share an online survey that could be used for extra credit with their students, who had to be at least 18 years old. The online survey took approximately 30 minutes to complete.

Participants

- 154 students participated in the study. The average age of the participants was 21.93 ($SD = 5.13$) and 88.8% of the sample was female. Additionally, 39.5% of the participants identified as non-Hispanic White, followed by 28.9% Black/African American, 2.6% Asian-American, 0.7% Native American and 9.2% were others. Cultural self-identity of the participants included 40.4% individualists, 21.9% collectivists and 33.8% who did not declare their identity.

Data Analysis

- To address whether spending time FtF would be more strongly associated with relationship closeness and love than interacting through technology and media, paired sample t-tests were conducted.
- Correlational analyses were conducted using all MMT and relationship closeness and love.
- Collectivism moderated the relationship between communication approach and relationship quality; regression analyses was conducted (Aiken and West 1991).

References

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Results:

- The mean of FtF closeness for parent one was significantly higher compared to all measures of multimodality.
- The mean of FtF love for parent one (close parent) was also statistically higher than all types of multimodality, except voice calling.
- However, we did not receive confirmation of our hypothesis with parent two (second close), as only one significant difference was found; the mean for texting was significantly lower than the mean for FtF for relationship closeness.
- No other means were significantly different for spending time FtF. There was also little support for our hypothesis with grandparents. For grandparent one, no means were significantly different from spending time FtF for closeness or love. Interestingly, for grandparent two, spending time on social media was rated as significantly higher for relationship closeness than spending time FtF.
- There was partial support for sibling love and closeness as texting was rated as significantly lower than spending time FtF, but there were no other differences for the other multimodalities.

Results

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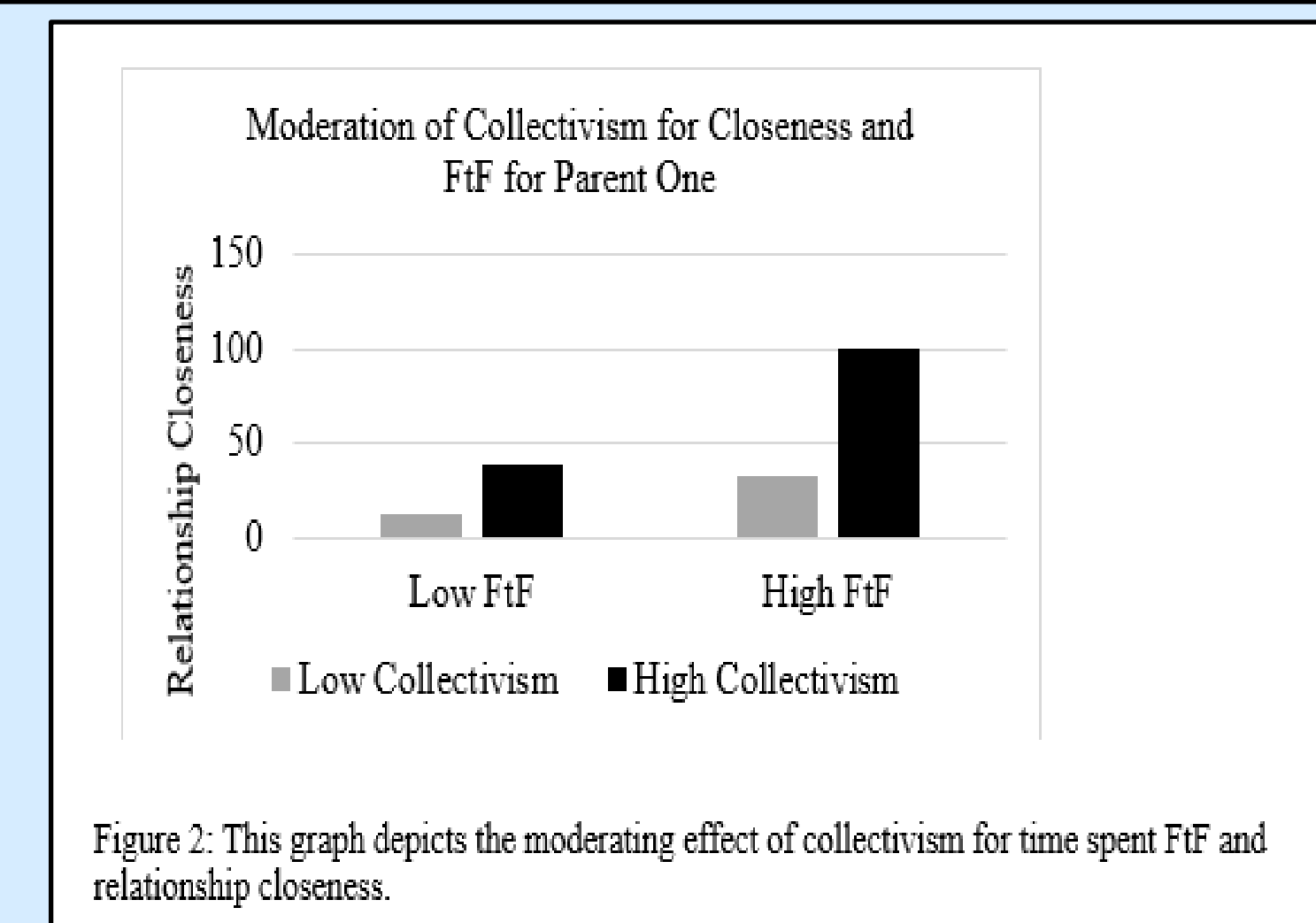
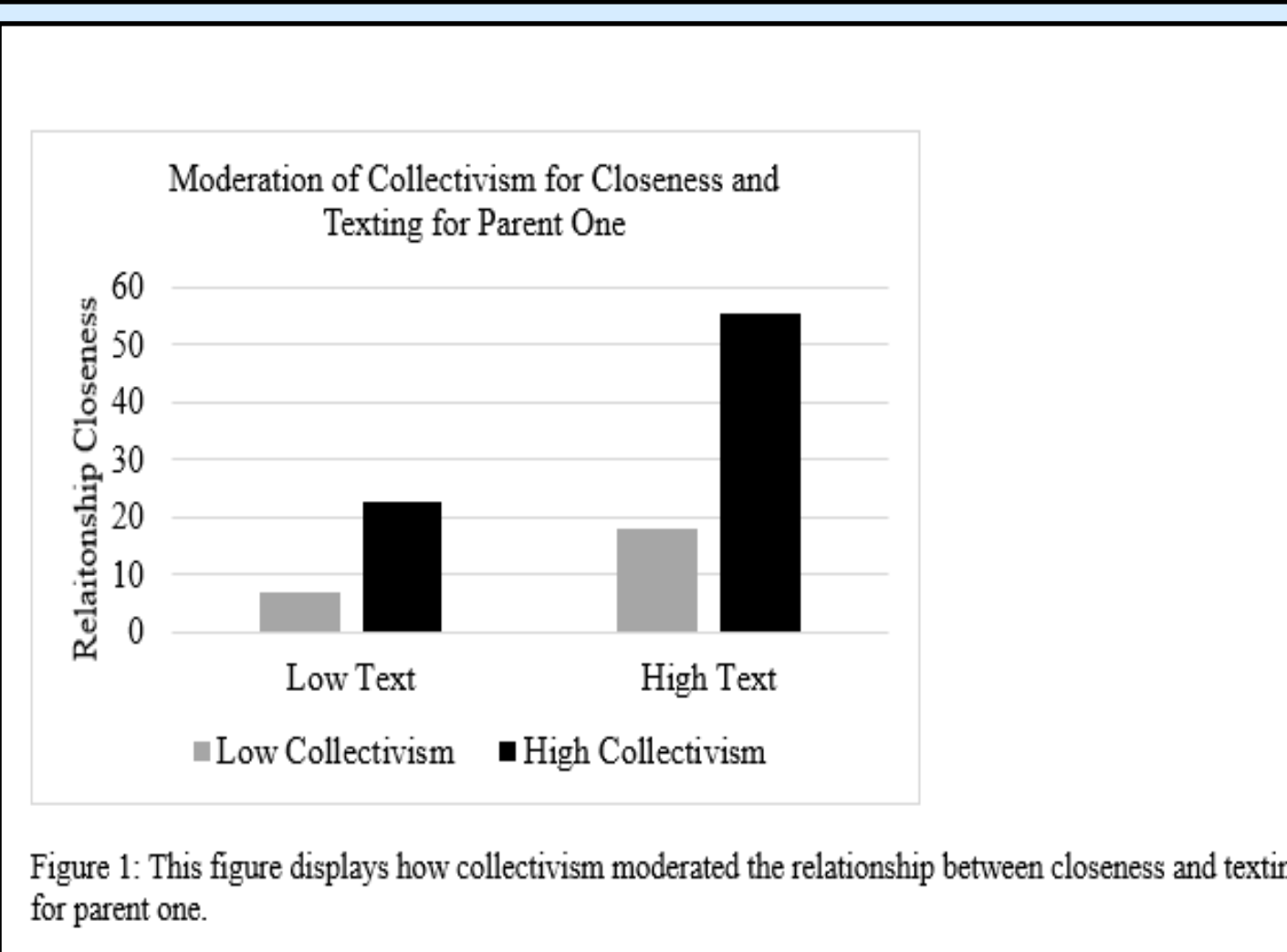
- The examined correlations across each of our dependent variables as well as collectivism and individualism found that collectivism was positively associated with closeness and love from texting ($r = .31; p < .01; r = .44; p < .01$), voice calling ($r = .40; p < .01; r = .38; p < .01$), and spending time FtF ($r = .40; p < .01; r = .39; p < .01$) with parent one.
- Collectivism was also positively associated with love and closeness from texting and video calls with parent two ($r = .24; p < .05; r = .24; p < .05; r = .21; p < .05; r = .25; p < .05$, respectively).
- For both parent one and parent two, love from texting and spending time FtF was positively associated with individualism ($r = .17; p < .05; r = .17; p < .05; r = .31; p < .01; r = .44; p < .01$, respectively). Love from texting was negatively associated with individualism ($r = -.19; p < .05$), and love from spending time FtF was positively associated with collectivism ($r = .19; p < .05$) with grandparent one.
- Closeness from spending time FtF with participant's sibling was positively associated with collectivism ($r = .22; p < .05$), but individualism was not associated with any of the dependent variables. Last, individualism and collectivism were not associated with any of the dependent variables.

Table 1: Paired Samples T-tests ($N = 154$)

Parent 1 ($n = 149$)	Mean	SD	t
Closeness via texting	5.32	1.81	-7.65***
Closeness via voicecall	6.03	1.66	-3.20**
Closeness via direct social media	5.57	2.55	-3.85***
Closeness via indirect social media	5.69	2.42	-3.33***
Closeness via social media viewing	5.62	2.30	-3.72***
Closeness via face-to-face	6.43	1.24	---
Love via texting	5.84	1.58	-5.09***
Love via voicecall	6.25	1.62	-1.60
Love via direct social media	5.66	2.53	-3.52***
Love via indirect social media	5.72	2.43	-3.21**
Love via social media viewing	5.80	2.18	-3.06**
Love via face-to-face	6.43	1.24	---

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

Note: Face-to-face variables is the reference group.



Results:

- Based on these analysis, those who texted more often reported higher closeness with their parent(s), and family closeness was high even if individuals identified as high in collectivism. Similarly, having high levels of collectivism was associated with more family closeness, but this was especially true for those who spent more FtF time with parent one.

Table 2: Moderation analyses of collectivism for multimodality, FtF and family closeness.

	Parent 1		Parent 2	
	Closeness	Love	Closeness	Love
Model 1				
Texting	.93(.34)***	1.00(.28)***	.96(.39)	.98(.37)*
Collectivism	.77(.35)***	1.02(.29)***	.63(.36)**	.63(.34)**
Texting x Collectivism	.91(.05)*	1.09(.04)***	-.99(.06)	-.97(.05)
Model 2				
Voicecalling	-.18(.26)	-.06(.26)	-.87(.34)	-.85(.34)
Collectivism	2.32(.40)	.40(.23)*	-.23(.28)	-.23(.28)
Voicecalling x Collectivism	.04(.04)	-.05(.04)	.87(.05)	.87(.05)
Model 3				
Direct messaging	-.12(.37)	-.44(.41)	-.36(.23)	-.20(.24)
Collectivism	.12(.22)	.09(.22)	-.50(.35)	-.48(.36)*
Direct messaging x Collectivism	.01(.05)	.36(.06)	.09(.07)	-.07(.07)
Model 4				
Indirect messaging	.01(.32)	-.10(.32)	-.44(.39)	-.37(.38)
Collectivism	.13(.22)	.13(.22)	-.12(.23)	-.12(.23)
Indirect messaging x Collectivism	-.12(.05)	-.02(.05)	.34(.06)	.32(.05)
Model 5				
Viewing	-1.1(.31)*	-.97(.30)*	-.34(.45)	-.22(.45)
Collectivism	-.11(.22)	-.06(.21)	-.06(.22)	-.08(.22)
Viewing x Collectivism	.97(.04)*	.75(.04)	.13(.07)	.06(.06)
Model 6				
Face-to-face	1.65(.25)***	1.60(.23)***	.67(.34)	.60(.32)
Collectivism	1.14(.21)***	1.12(.20)***	.31(.27)	.32(.25)
Face-to-face x Collectivism	1.69(.04)***	1.65(.04)***	.32(.05)	-.28(.05)

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

Results:

- Collectivism moderated the relationship between texting and spending time FtF and relationship quality with parent one, where those high in collectivism displayed higher closeness with texting and FtF compared to those who were lower in collectivism, particularly when the use of texting and time spent FtF was high. However, no other significant moderating effect was found across other family relationships.

Discussion

- Based on study results, spending time FtF was linked with higher quality parental relationships compared to multimodality for young adults. Yet, connecting with grandparents, siblings, aunts, and uncles through multimodalities was also correlated with high levels of closeness. The benefits of spending time FtF appear to be important for relationships with family members that they are already close to, such as one's parent(s), and this is particularly true if someone identifies as collectivistic. These findings challenge some of the main tenets of MMT with parental relationships but provide support for increasing closeness with other family relationships.
- Individuals appear to have stronger relationships with their parents when they engage in offline behaviors compared to online behaviors. This finding contradicts MMT, which presumes that FtF time is equivalent to time spent communicating virtually.
- Several studies illustrate how FtF communication is important for relationship maintenance (Jamieson et al. 2020; Sproull et al. 1986). Consistent with previous studies, spending time FtF provides more opportunity to develop and maintain interdependence through mutual self-disclosure.
- The finding of the study is important for those who already view family as their central focus, meaning that they have a collectivistic cultural orientation. Individuals who support their family over themselves appear to prefer FtF interactions with their parents over and beyond online behaviors (besides texting). This finding adds to the results of Barakji et al. (2018), who found that increased communication, particularly via multimodality, brings families who are high in collectivism closer together.
- The current study found that online behaviors were related to relationship closeness and love, but FtF contributed to higher levels of relationship quality.
- Despite the strong support for FtF and relationship closeness with a parent, less support was found for the importance of FtF with other family relationships. Results demonstrated that multimodality predicted closeness similar to time spent FtF with grandparents, siblings, aunts, and uncles.
- Results from this study provide some empirical evidence for optimizing family closeness. First, if we want a closer family relationship with our closest parent, we should maximize our FtF connection. Due to the significant association between spending time FtF and family closeness, establishing a FtF connection with a close parent can reduce family conflict. Generally, the central premise of MMT may hold true for close relationships, but not for our closest relationships, assuming that the parental relationship is particularly close.

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