Social Media Use and Daily Well-Being: The Role of Quantity and Quality of Social Support

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Abstract

There have been mixed findings on whether social media use is positively or negatively related to well-being. Using the Midlife in the United States Refresher study (N = 782, age 25–75), multilevel structural equation modeling examined social support quantity (time giving and receiving) and quality of as mediators at both the within- (intraindividual) and between-person (interindividual) levels. Giving support significantly mediated at within- and between-person levels: more social media use was associated with more time giving support and worse well-being. Receiving support significantly mediated at the between-person level: more social media use was associated with more time receiving support and worse well-being. When examining social support quality as a mediator, findings showed that more social media use to contact family/friends was related to better social support quality and better well-being. Results added to our understanding of the relationship between social media use and well-being by considering the role of social support quantity/quality.

Introduction

Social media platforms allow people to interact with others, share, and exchange information quickly and efficiently via online networks (e.g., Facebook, Twitter). While younger adults have been major users of social media since it first emerged, there is a growing prevalence of social media use among adults 50 years and older. Compared to 2009 when only 21% of adults aged 50–64 and 5% of adults over the age 65 used any social media site, 69% of adults aged 50–64 and 40% of adults over the age 65 used at least one social media site in 2019 (Pew Research Center, 2021c). Moreover, most social media users report visiting social media platforms daily (Pew Research Center, 2021a). In fact, younger and older adults do not differ in daily Facebook usage (Yu et al., 2018). The growth of daily social media use for adults of all ages can have implications for the quantity and quality of social support and well-being in the aging population, but past studies have mainly focused on social media use for younger or older adults separately. The current study contributes to the literature by examining how social media use (time spent on social media and frequency of contacting family and friends) and well-being (affect, stress, loneliness) vary on a daily basis using a nationally representative sample of adults with a wide age range (25–75) from the Midlife in the United States (MIDUS) Refresher study and whether quantity (time spent giving and receiving support) and quality of

social support (perceived emotional support) mediate the relationship between daily social media use and well-being.

Social Media Use and Well-Being

Well-being is broadly defined as an individual's feeling of positive emotions and moods, positive functioning, and the absence of negative emotions (negative affect, stress, and loneliness – an emotional feeling of being lonely) (Lazarus, 2006; Perlman & Peplau, 1981; Ryff & Keyes, 1995; Steptoe et al., 2004). Different from younger adults who have been raised in the digital age, midlife and older adults have lived a large part of their lives without social media. Thus, they are referred to by the researchers as "digital immigrants", i.e., they have learned new technology as adults (Palfrey & Gasser, 2008). Older adults also have a smaller social network size compared to younger adults (Wrzus et al., 2012). Based on the socioemotional selectivity theory, as one approaches later life

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with a limited time perspective, there is increasing selectivity for emotional investment (Carstensen, 2021). This has implications for how younger and older adults use social media. Unlike younger adults who utilize social media for various purposes beyond connecting with new or existing social network members-entertainment, passing time, information sharing, self-expression, and self-documentation (Alhabash & Ma, 2017), older adults primarily use social media as a means for social interaction, specifically for intergenerational communication, observe family and friends' newsfeed, and interaction with their family and existing offline friends (Jung et al., 2017).

There are mixed findings for younger adults on whether social media use is positively or negatively related to well-being. Some studies have shown that younger adults who use more social media reported worse overall well-being (Faelens et al., 2021). Limiting time on social media can lead to better well-being for younger adults (Hunt et al., 2023). In contrast, some studies have revealed the benefits of social media use for younger adults' positive psychological well-being (Marengo et al., 2021).

For older adults, the relationship between social media use and well-being has generally been positive, with some studies showing null effects (Cotten et al., 2022; Newman et al., 2021). While cross-sectional studies have shown that more social media use for older adults has been associated with less loneliness (Rennoch et al., 2023) and better mental health (Fu & Xie, 2021), studies have also found no associations between social media use and loneliness or mental health (Aarts et al., 2015). Given the limitations of the past studies (e.g., cross-sectional nature), the relationship between social media use and well-being of older adults remains unclear (Cotten et al., 2022; Newman et al., 2021). Furthermore, past studies that utilized the Midlife in the United States (MIDUS) dataset found that more social media use was related to worse mood for all ages (Lin & Lachman, 2021a; Sharifian & Zahodne, 2020). However, these models tested the association through physical activity (Lin & Lachman, 2021a) or used mood as a mediator to predict memory failure (Sharifian & Zahodne, 2019), and did not examine well-being in the context of affect, stress, and loneliness. Since midlife adults have been overlooked in previous research, it's important to examine the relationship between social media use and well-being of this population.

The Role of Social Support

The interpersonal-connection-behaviors framework states that using social media to promote connections and interactions with others can be linked to positive well-being. This suggests that social support, or having a supportive network of people to connect and interact with, may play a key role in the impact of social media on well-being. Increased social media usage can lead to more perceived connections with others and greater social support, which in turn can increase one's well-being.

The cumulative benefits of interacting with others using social media can satisfy the human desires for acceptance, care, and belonging at any location and time, which can, in turn, have a positive impact on well-being (Clark et al., 2018).

There is empirical support for the interpersonal-connection-behaviors framework (Ahn & Shin, 2013; Al-Saggaf & Nielsen, 2014; Clark et al., 2018; Gonzales, 2014; Kietzmann et al., 2011; Kim & Lee, 2010). A cross-sectional study showed that social connectedness mediates the relationship between social media usage and subjective well-being, such that more social media use was associated with more social connectedness, which in turn leads to better subjective well-being (Ahn & Shin, 2013). Social media sites such as Facebook help users maintain both their strong and weak social ties (Kietzmann et al., 2011). Increased Facebook usage to interact with others has been associated with increased well-being (e.g., reduced loneliness) (Al-Saggaf & Nielsen, 2014), improved self-esteem (Gonzales, 2014), happiness, and better overall subjective well-being (Kim & Lee, 2010). However, these studies are cross-sectional and mainly focused on younger adults. Given the increasing social media use in midlife and older adults, the study aims to explore if social support links social media use and well-being for this population.

Social support typically involves simultaneously giving and receiving support. According to the social exchange theory and the law of reciprocity in social relationships, people seek reciprocity as they maintain a relationship to ensure that the gains in the relationship are proportionate for both parties (Burgess & Huston, 2013). Social media provides a space for virtual communities, which allows people to exchange social support. However, past social media research, including the past studies that used the MIDUS data, has focused on users' received support as the crucial part of social support (Khoo & Yang, 2020), while both giving support and receiving support are beneficial for health (Burgess & Huston, 2013). Therefore, it is important to incorporate both giving and receiving support.

People use social media for various reasons (e.g., watch videos, connect with others) (Alhabash & Ma, 2017) and the duration of social media use only captures the general social media use without specificity (Cotten et al., 2022). Moreover, the quantity of social support (time spent giving or receiving support) does not capture the quality of support (perceived emotional support), as good quality relationships are related to better well-being, whereas poor quality relationships can be detrimental to well-being (Frison & Eggermont, 2016). Thus, it is important to also examine the quality of social support as a potential mechanism linking social media use with family and friends and daily well-being.

Daily (Intraindividual) Variability

Daily assessments can provide insights into within-person variations and associations across multiple variables

(Joo et al., 2020). Past studies have revealed that the relationships between social media use, social support, and well-being are associated on a day-to-day basis (Joo et al., 2020). For example, an ecological study found that more daily Facebook use is related to more social engagement, and engaging with Facebook has immediate positive effects on mood (Bayer et al., 2018). Furthermore, more social support was associated with less daily stress for older adults (Ha & Song, 2013). A recent review also calls for a need for more longitudinal studies with daily assessments to better parse out these associations on a day-to-day level (Cotten et al., 2022). Thus, within-person variations should be considered in the relationships between social media use, quantity and quality of social support, and well-being.

Current Study

The current study addresses the following gaps in the literature: First, midlife and older adults are considered "digital immigrants", i.e., they have learned new technology as adults (Palfrey & Gasser, 2008). However, the majority of social media research has focused on younger adults and little is known about how social media use is related to social support and well-being among middle-aged and older adults. Second, past studies have mainly focused on received support, and it is important to also consider the role of giving support. Moreover, the current study expands the literature and examines whether quantity (time spent giving and receiving) and quality (perceived emotional support) of social support mediate the relationship between social media usage and well-being; Third, while there are daily variations in these constructs, past studies often examined relationships and mediation cross-sectionally (using a one-occasion survey). To our knowledge, no studies have directly examined whether social media use influences well-being through quantity (time spent giving or receiving) of support at both the between-(interindividual) and the within-person (intraindividual) levels. Moreover, besides examining the quantity of support, the current study also explores whether the quality of support (perceived emotional support) plays a role in the relationship between social media use and well-being.

The current study bridges the gaps in the literature by utilizing the MIDUS Refresher dataset with a nationally representative sample. The current study (1) explores the relationships between social media usage (duration)/ frequency of social media use to contact family and friends, quantity (time spent giving and receiving support) and quality (perceived emotional support) of social support, and well-being (levels of stress, affect, and loneliness) on between (comparing across persons) and within-person levels (how individuals can differ on a day-to-day basis); (2) tests quantity (time spent giving and receiving support) and quality of social support as mechanisms linking social media use and well-being using multilevel structural equation modeling (MSEM), which allowed mediation to be examined simultaneously at both the between and within-person levels.

Hypotheses. It was predicted that at both the between-person and within-person levels, more social media usage would be associated with more quantity (time spent giving and receiving support), and better well-being. More quantity of support was expected to mediate the relationship between social media use and well-being on between and within-person levels, such that more social media usage would show greater increases in the quantity of support, which in turn would be associated with better well-being. Moreover, the quality (perceived emotional support) of support was expected to mediate the relationship between social media use frequency and well-being when controlling for the quantity of social support.

Methods

Participants

The current study was determined by the University Institutional Review Board to be exempt because it was a secondary data analysis using deidentified data available in the public domain. Participants ($N = 782$, age ranged from 25–75) were from the MIDUS (Midlife in the United States) Refresher study conducted in the 2011 to 2014 period. The study sample consisted of 55% female, 84.3% White, 6.4% Black, 1.4% Native American, .9% Asian, and 6.6% other. Participants in the current study participated in both the main refresher survey study and the eight-day daily diary study. The data used for the current study can be accessed here: https://www.midus.wisc.edu/. The main MIDUS refresher study included a mailed questionnaire with demographic, psychosocial, and health measures. The daily diary study followed the same protocol as the MIDUS 2 National Survey of Daily Experiences (NSDE) (Brim et al., 2019). Participants completed an eight consecutive-day diary over the telephone which asked about their daily events and well-being such as social media usage, stressful events, affect, and social support. The covariates were taken from the main refresher dataset and the daily variables were from the daily diary dataset.

Daily Diary Measures

Social Media Use Duration. Each day, participants were asked for the time (hours and minutes) they spent on social media (e.g. Facebook, Twitter, MySpace). The frequency of social media usage was calculated by converting hours to minutes to get a total social media usage time for each study day. Possible scores could range from 0 to 1440. A higher score indicated more time (minutes) spent on social media.

Quantity of Social Support: Time Spent Giving and Receiving Social Support. Quantity of social support was measured by time spent giving and receiving emotional support. Time spent giving support was assessed as the total minutes of time participants spent in the last 24 hours "giving emotional

support to anyone, like listening to their problems, giving advice, or comforting them, but not counting work they might do as part of their job" (Cichy et al., 2014). Time spent receiving support was assessed by the total minutes of time participants spent in the last 24 hours "receiving emotional support from anyone, like listening to your problems, receiving advice, or comforting you, but not counting work they might do as part of their job," (Cichy et al., 2014).

Well-Being. Well-being was assessed across five domains: one positive (positive affect) and four negatives (stress exposure, stress reactivity, negative affect, and loneliness). A latent construct of well-being was created with these domains, where stress exposure, stress reactivity, negative affect, and loneliness were reverse-coded so that lower levels of these variables would indicate better well-being. A measurement model was used to examine the relationship between the latent variable and its measures.

Daily Stress. Daily Inventory of Stressful Events (DISE) was used to measure participants' daily stress exposure and reactivity (Almeida et al., 2002).

Stress Exposure. Stress exposure consisted of the following items with a "yes" or "no" response: "Did you have an argument or disagreement?", "did you avoid an argument?", "anything stressful happen at work or school?", "did anything stressful happen at home?", "did you experience discrimination (race, sex or age?)", "did anything stressful happen to close friends or relatives that turned out stressful for you?", "did anything else stressful happen to you?" (Almeida et al., 2002). A "Yes" response would yield a score of 1 and a "No" response would yield a score of 0. Exposure to stress was measured by summing the total number of exposures to stress for each study day. Daily stress exposure scores ranged from 0–7 with higher scores indicating high exposure to stress. Cronbach's alpha indicated acceptable reliability (α = .70), which were each averaged across 8 days. When creating the latent construct of well-being, stress exposure was reverse-coded so that lower levels of stress exposure would indicate better well-being.

Stress Reactivity. Stress reactivity was measured each day by the question, "how stressful was this for you?" for each of the stress exposure items participants responded "Yes". Only items participants had exposure to were counted for stress reactivity. Stress reactivity was determined by the severity of the response for each interpersonal stressor based on a Likert scale ranging from 0-"Not at all" to 3-"Very" (Almeida et al., 2002). Stress severity was measured by the average severity for all stress items for each study day. The possible daily stress reactivity score ranged from 0–3. Higher scores indicated higher reactivity to stress, while lower scores indicated lower reactivity to stress. When creating the latent construct of well-being, stress reactivity was reverse-coded so that lower levels of stress reactivity would indicate better well-being.

Affect. The Positive and Negative Affect Schedule (PANAS) was used to measure participants' daily positive and negative affect (Watson et al., 1988).

Positive Affect includes participants' daily responses to "How much of the time today did you feel in good spirit", "cheerful", "extremely happy", "calm and peaceful", "satisfied", "full of life", "close to others", "like you belong", "enthusiastic", "attentive", "proud", "active", and "confident"? Daily positive affect was measured by the average of all items to the following responses: "0 = none of the time", "1 = a little of the time", "2 = some of the time", "3 = most of the time", and "4 = all of the time" (Watson et al., 1988). Daily scores ranged from 0–4 with higher scores indicating higher positive affect. Cronbach's alpha indicated good reliability for positive affect (α = .96), each averaged across 8 days.

Negative affect consists of participants' daily responses to "nervous", "worthless", "so sad that nothing could cheer you up", "everything was an effort", "hopeless", "afraid", "jittery", "irritable", "ashamed", "upset", "angry", and "frustrated". Daily negative affect was measured by the average of all items to the following responses: "0 = none of the time", "1 = a little of the time", "2 = some of the time", "3 = most of the time", and "4 = all of the time" (Watson et al., 1988). Daily scores ranged from 0–4 with higher scores indicating higher negative affect. Cronbach's alpha indicated good reliability negative affect (α = .91), each averaged across 8 days. When creating the latent construct of well-being, negative affect was reverse coded so that lower levels of negative affect would indicate better well-being.

Loneliness. Loneliness was measured based on participants' daily rating of the following question: "How much of the time today did you feel lonely?" rated on responses from "0 = none of the time" to "4 = all of the time". Total daily scores ranged from 0 to 4 with a higher score indicating a higher level of loneliness. Cronbach's alpha indicated good reliability for loneliness (α = .89). When creating the latent construct of well-being, loneliness was reverse-coded so that lower levels of loneliness would indicate better well-being.

Main Refresher Survey Measures

Social Media Use Frequency. Social media use frequency was measured by two questions - how often participants have contact with family (any of their brothers, sisters, parents, or children who do not live with them) or friends using social media (including Facebook, Twitter, MySpace, Skype, text messages, chat rooms, etc.). Likert scale response ranged from 1 = several times a day to 8 = never or hardly ever. Responses for contact with family and friends were reverse coded (higher scores indicated more frequency) and averaged.

Quality of Social Support. Quality of social support was measured by perceived emotional support from 3 scales-family (not including spouse), friends, and spouse (if married). Items

in each scale include: "Do they care about you?", "how much do they understand the way you feel about things?", "can you rely on them for help if you have a serious problem?", and "can you open up to them if you need to talk about your worries". Responses ranged from 1 = a lot to 4 = not at all. All items were reverse coded (higher values indicated more support) and averaged for each scale. Then, 3 scales were averaged to form the quality of social support.

Covariates

Covariates were from the main MIDUS refresher dataset, which includes age, sex, education, and health because of their previously recognized relationships with the dependent variables (Anderson et al., 2006; Vera-Villarroel et al., 2012). Age was a continuous variable. Sex was dummy coded with 1 = "male" and 2 = "female". Education was measured by years of education (6–20). Health consisted of Self-Evaluated Physical Health (Single item asking: "In general, how would you rate your current physical health?" where 0 = "Worst" to 10 = "Best"), and the total number of chronic health conditions (e.g., asthma, stroke) participants have experienced or treated in the last twelve months. Possible scores for health conditions range from 0 to 27, with higher scores indicating worse health or more conditions.

Data Analyses

The research questions, hypotheses, methods, and analyses of the current study that involved quantity of social support were pre-registered prior to conducting the research on Open Science Framework. The analyses performed deviated from the pre-registration in two ways. First, physical activity was proposed to be included in the mediation model. Given the complexity of models with all variables, physical activity was examined as a mediator in a separate paper (Lin & Lachman, 2021a) and the current paper focuses only on social support as a mediator. Second, after we conducted the analyses with the quantity of support, we considered it as an important next step to examine the quality of social support which was not preregistered.

The intraclass coefficient (ICC) was first calculated for each daily variable to ensure there was sufficient variation at a within-person level to allow for within-person analyses. Then, Pearson Bivariate Correlation Coefficients were examined for all between-person level variables. Between-person level variables consist of each daily variable (social media usage, time spent giving or receiving support, and well-being) averaged across the eight days and all the covariates.

The latent variable for well-being was created with five observed variables for daily stress exposures, daily stress reactivity, daily positive affect, daily negative affect, and loneliness, where all the variables except positive affect were reverse coded so that lower levels of these variables would indicate better well-being. Model fit for well-being was first measured with a measurement model. Multilevel structural equation modeling (MSEM) was then tested in Mplus 8 testing giving and receiving social support as mediators in the same model (Figure 1(a)). MSEM could separate the variance of level 1 variables (day-level) into between and within components, revealing how the relationships between the variables differed at both levels. The analyses corresponded to the 1-(1,1)-1 design (Preacher et al., 2010), where the daily variables of social media usage (predictor), giving and receiving support (mediators), and well-being (outcome) were assessed at level 1, at a within-person level, while also simultaneously assessing the model at a between-person level at level 2. Covariates were added at level 2. Indirect effects were computed by the products of $a*b$ at both the within and between-level (a = coefficient estimate of the association between social media use and mediators (giving and receiving support); b = the coefficient estimate of the relationship between the mediators (giving and receiving support) and well-being).

When examining the relationship between social media use frequency, quality of social support, and daily well-being, a 2–2-1 MSEM was tested in Mplus 8 (Figure 1(b)). Social media use frequency and quality of social support were assessed at level 2, at a between-person level, and the latent variable well-being was assessed at level 1, the within-person level (Preacher et al., 2010). All covariates, along with the quantity (time spent giving and receiving support) of social support, were added at level 2.

Results

Social Media Use, Quantity of Social Support, and Well-Being

The ICC value for each daily variable showed sufficient within-person variance for multilevel analyses: social media use duration varied 61%, giving support varied 29%, receiving support varied 29%, stress exposure varied 21%, stress reactivity varied 27%, positive affect varied 76%, negative affect varied 54%, and loneliness varied 53% within-persons. Table 1 shows the means, standard deviations, and correlations of the between-person Level 2 variables.

The model fit statistics for the measurement model for the latent variable of well-being consists of: Comparative Fit Indices [CFI] = .99, Root Mean Square Error of Approximation [RMSEA] = .03, $SRMR_{within}$ = .02, and $SRMR_{between}$ = .07. The MSEM model fit statistics include: RMSEA = .05, $SRMR_{within}$ = .10, and $SRMR_{between}$ = .06. Standardized estimates, standard errors, and p-values for all direct and indirect effects are presented in Table 2. Standardized estimates and pathways at the within and between levels are depicted in Figure 1(a).

Social Media Use and Well-Being. The MSEM model results revealed a significant within-person Level 1 (β = -.05, p < .001) but not the between-person Level 2 (β = -.04, p = .10)
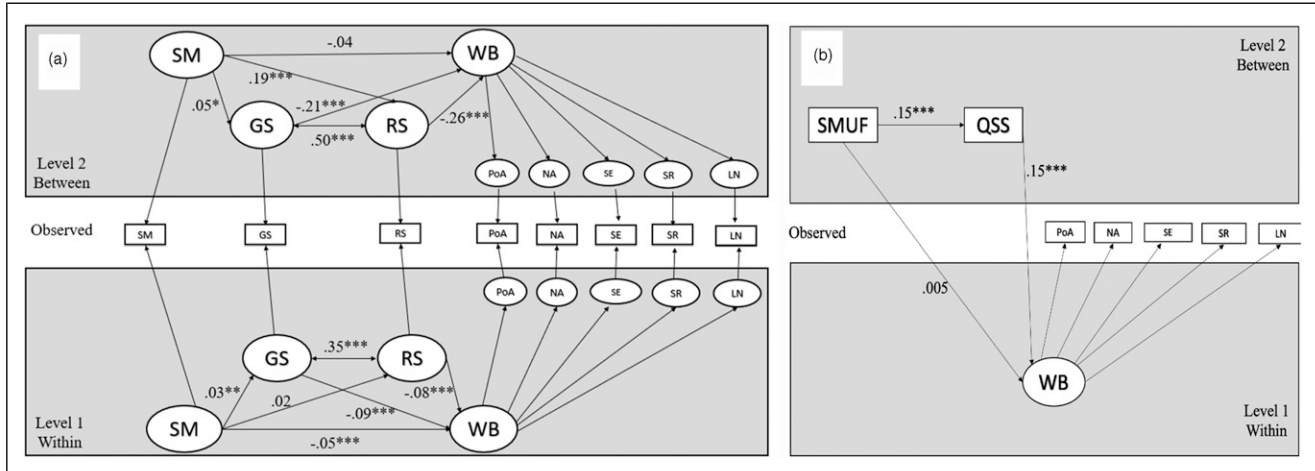
Figure 1. MSEM models. *Note.* Stress exposure, stress reactivity, negative affect and loneliness were reverse coded so that lower levels of these variables would indicate better well-being. Covariates include age, sex, education, health and number of chronic conditions (Figure 1(b) included quantity of (time spent giving and receiving) support). For simplicity, covariate pathways are not depicted. *p < .05, **p < .01, ***p < .001. (a): MSEM 1-(1,1)-1 model: The relationship between social media use and well-being with time spent giving and receiving support as mediators at between- and within-person levels. SM = social media use duration, measured by the observed variable SM (social media use duration), GS = time spent giving support, RS = time spent receiving support, and WB = well-being, representing the five domains measured (SE = stress exposure, SR = stress reactivity, PoA = positive affect, NA = negative affect, LN = loneliness). Standardized estimates are reported. (b): MSEM 2–2-1 model: The relationship between social media use frequency and daily well-being with quality of social support as a mediator. SMUF = social media use frequency, QSS = quality of social support. Standardized estimates are reported.

relationship between social media use and well-being. This indicated that days with more social media use were associated with worse well-being, which was in the opposite direction of the prediction (Table 2, Figure 1(a)).

Social Media Use and Quantity of Social Support. At the Level 2 between-person level, social media use was positively related to giving (β = .05, p = .03) and receiving (β = .19, p < .001) support, which indicated that people who use more social media reported giving and receiving more support. At the Level 1 within-person level, days with more social media use were associated with more time giving support (β = .03, p = .002), but no associations were found with receiving support (β = -.02, p = .14) (Table 2, Figure 1(a)).

Quantity of Social Support as a Mediator. Contrary to the prediction, at the between-person Level 2, more time giving (β = −.21, p < .001) and receiving support (β = −.26, p < .001) were associated with worse well-being, which was in the opposite direction of the prediction. Significant indirect effects for time spent giving (β = −.01, p = .03) and receiving (β = −.05, p < .001) support were found, such that compared to people who use less social media, people who use more social media reported more time spent giving and receiving support, which in turn led to worse well-being (Table 2, Figure 1(a)).

   Contrary to the predictions, at the within-person Level 1, days with more time spent giving (β = −.09, p < .001) and receiving (β = −.08, p < .001) support were associated with

worse well-being. There was a significant indirect effect of time spent giving (β = −.003, p = .002), but not receiving (β = −.002, p = .14) support (Table 2, Figure 1(a)), such that days with more social media use were associated with more time giving support and, in turn, worse well-being.

Social Media Use Frequency, Quality of Social Support, and Well-Being

The model fit for the 2–2-1 MSEM model (Table 3, Figure 1(b)) controlling for the quantity of social support includes: RMSEA = .05, SRMR$_{within}$ = .14, and SRMR$_{between}$ = .09. As predicted, social media use frequency was positively related to quality of social support (β = .03, p < .001), and quality of social support was positively related to daily well-being (β = .16, p = .001). Quality of social support mediated the associations between social media use frequency and daily well-being (β = .005, p = .01), such that more social media use frequency was related to better quality of social support, which in turn led to better daily well-being. The same results were found when the model was tested without controlling for the quantity of support.

Discussion

The goal of the current study was to examine the relationships between social media use duration and frequency of contact, quantity (time spent giving and receiving

Table 1. Means, Standard Deviations, and Intercorrelations Among Variables at the Between-Person Level (*n* = 782).

	M	SD	1	2	3	4	5	6	7	8	9	9	11	12	13	14
1. Age	47.91	12.67														
2. Sex (% female)	55%	-	.02													
3. Physical health	7.3	1.67	.04	−.03												
4. Chronic conditions	2.81	3.11	.13**	.13**	−.44**											
5. Education	15.05	2.48	−.10**	−.13**	.23**	−.20**										
6. Social media use duration	24.76	48.48	−.07*	.06	−.14**	.12**	−.03									
7. Social media frequency	4.67	2.26	−.16**	.20**	.04	−.03	.09**	.23**								
8. Time spent giving support	21.63	44.86	.02	.09*	−.08*	.15*	−.10**	.16**	.02							
9. Time spent receiving support	8.13	26.34	−.03	.07	−.16*	.18**	−.05	.20**	.04	.51**						
10. Quality of social support	3.38	.50	.01	.11**	.20**	−.12**	.06	−.05	.17**	−.03	−.01					
11. Stress exposure	.57	.47	−.16**	.04	−.09*	.17**	.08*	.04	.04	.19**	.16**	−.10**				
12. Stress reactivity	1.74	.61	−.06	.22**	−.19**	.17**	−.10**	.05	.04	.04	−.01	−.08*	.18**			
13. Positive affect	2.53	.75	.23**	.007	.31**	−.19**	−.03	−.05	.01	.03	.03	.30**	−.27**	−.24**		
14. Negative affect	.24	.29	−.12**	.06	−.32**	.34**	−.08*	.14**	−.02	.35**	.38**	−.17**	.44**	.29**	−.46**	
15. Loneliness	.17	.43	−.05	.03	−.26**	.22**	−.10**	.10**	−.03	.22**	.26**	−.19**	.18**	.13**	−.35**	.64**

Note. *Correlation is significant at .05 level (2-tailed), **Correlation is significant at .01 level (2-tailed). M = mean, SD = standard deviation, Day-level data were averaged over 8 days. Higher values indicate greater presence of the measures.

support) and quality (perceived emotional support) of social support, and well-being across adulthood using a nationally representative sample of adults from the MIDUS Refresher study. Results showed differential relations of quantity and quality of social support for social media use and well-being. For quantity of social support, more social media use was associated with more time giving and receiving support and worse well-being. For social support quality, findings revealed that more social media use to contact family and friends was related to better social support quality and better well-being.

The study contributes to the existing literature by including midlife adults, considering quantity (both giving and receiving support) and quality of social support, and examining how social media use is related to well-being through quantity and quality of support at both the interindividual and intra-individual levels. This approach differs from past studies that focused only on younger adults and received support.

Additionally, the current study is the first to explore daily variations in these constructs for all age groups.

Social Media Use and Well-Being

Results revealed that at the within-person level, days with longer duration of social media use were associated with worse well-being for adults of all ages. While this finding is consistent with some studies suggesting that more social media use is linked with worse well-being for younger adults (Faelens et al., 2021), including prior MIDUS studies (Lin & Lachman, 2021a; Sharifian & Zahodne, 2020), it is inconsistent with the literature that suggests more social media use is beneficial for older adults' well-being (Fu & Xie, 2021; Rennoch et al., 2023). Because participants reported their total time spent across all social media platforms, it could be that managing the social media sites and the mass exposure to content and information created multitasking and cognitive

Table 2. Standardized Coefficients and Indirect Effects for 1–(1,1)–1 MSEM Time Spent Giving and Receiving Support as Mediators.

	Estimate	Posterior SD	p-Value
Level 1: Within-person effects			
Well-being			
Stress exposure	.418	.013	<.001
Stress reactivity	.329	.021	<.001
Negative affect	.817	.013	<.001
Loneliness	.345	.014	<.001
Positive affect	.506	.013	<.001
Time spent giving Support→ well-being	−.094	.015	<.001
Social media Use→ well-being	−.045	.016	<.001
Social media Use→ time spent giving support	.034	.012	.002
Time spent receiving Support→ well-being	−.076	.016	<.001
Social media Use→ time spent receiving support	−.015	.014	.144
Time spent giving Support↔ time spent receiving support	.347	.012	<.001
Indirect effect of time spent giving support	−.003	<.001	.002
Indirect effect of time spent receiving support	−.002	<.001	.144
Residual variances			
Positive affect	.744	.014	<.001
Stress exposure	.826	.01	<.001
Stress reactivity	.892	.014	<.001
Negative affect	.333	.022	<.001
Loneliness	.881	.01	<.001
Time spent giving support	.878	.008	<.001
Time spent receiving support	1	<.001	<.001
Well-being	.978	.004	<.001
Level 2: Between-person effects			
Well-being			
Positive affect	.48	.023	<.001
Negative affect	.982	.008	<.001
Stress reactivity	.296	.035	<.001
Loneliness	.648	.023	<.001
Stress exposure	.453	.028	<.001
Time spent giving Support→ well-being	−.209	.039	<.001
Time spent receiving Support→ well-being	−.256	.041	<.001
Social media Use→ well-being	−.042	.034	0.1
Age→ well-being	.108	.03	<.001
Sex→ well-being	−.045	.03	.076
Education→ well-being	.012	.021	.264
Chronic Conditions→ well-being	−.019	.033	.316
Health→ well-being	.084	.031	.006
Social media Use→ time spent giving support	.05	.03	.03
Age→ time spent giving support	.029	.031	.156
Sex→ time spent giving support	.042	.031	0.1
Education→ time spent giving support	−.061	.033	.036
Chronic Conditions→ time spent giving support	−.009	.029	.36
Health→ time spent giving support	.004	.031	.454
Social media Use→ time spent receiving support	.192	.034	<.001
Age→ time spent receiving support	−.018	.033	.306
Sex→ time spent receiving support	.052	.037	.07
Education→ time spent receiving support	−.038	.034	.118
Chronic Conditions→ time spent receiving support	−.006	.035	.436
Health→ time spent receiving support	−.052	.035	.064
Time spent giving Support↔ time spent receiving support	.496	.025	<.001

Table 2. (continued)

	Estimate	Posterior SD	*p*-Value
Indirect effect of time spent giving support	−.01	<.001	.03
Indirect effect of time spent receiving support	−.05	<.001	<.001
Residual variances			
Positive affect	.77	.022	<.001
Negative affect	.036	.016	<.001
Stress reactivity	.912	.02	<.001
Loneliness	.58	.029	<.001
Stress exposure	.795	.026	<.001
Time spent giving support	.728	.025	<.001
Time spent receiving support	.95	.014	<.001
Well-being	.791	.026	<.001

Note. Standardized estimates are reported. Stress exposure, stress reactivity, negative affect, and loneliness were reverse coded so that lower levels of these variables would indicate better well-being.

Table 3. Unstandardized Coefficients and Indirect Effect for 2–2–1 MSEM With Quality of Social Support as a Mediator.

	Estimate	SE	*p*-Value
Well-being			
Positive affect	1		
Negative affect	.728	.137	<.001
Stress reactivity	.498	.054	<.001
Loneliness	.751	.156	<.001
Stress exposure	.573	.093	<.001
Quality of social Support→ well-being	.155	.048	.001
Social media use Frequency→ well-being	.002	.006	.784
Age→ well-being	.005	.001	<.001
Sex→ well-being	−.067	.029	.020
Education→ well-being	.010	.005	.059
Chronic Conditions→ well-being	.000	.001	.674
Health→ well-being	.008	.005	.081
Social media use Frequency→ quality of social support	.033	.009	.001
Time spent giving support ↔ quality of social support	.000	.000	.399
Time spent receiving support ↔ quality of social support	.000	.001	.952
Age→ quality of social support	.002	.001	.263
Sex→ quality of social support	.091	.036	.012
Education→ quality of social support	.010	.007	.161
Chronic Conditions→ quality of social support	−.004	.002	.034
Health→ quality of social support	.005	.004	.249
Indirect effect of quality of social support	.005	.002	.012
Residual variances			
Positive affect	.415	.038	<.001
Negative affect	.010	.005	.039
Stress reactivity	.331	.021	<.001
Loneliness	.102	.014	<.001
Stress exposure	.177	.025	<.001
Quality of social support	.236	.014	<.001
Well-being	.130	.032	<.001

Note. Unstandardized estimates are reported. Stress exposure, stress reactivity, negative affect, and loneliness were reverse coded so that lower levels of these variables would indicate better well-being.

load, which could be associated with negative affect of older adults (Sharifian & Zahodne, 2019, 2020).

The finding also adds to the literature on the impact of social media use on the well-being of midlife adults at the within-person level. Even though midlife adults are also known as "digital immigrants", in which they have learned new technology as adults (Palfrey & Gasser, 2008), however, previous literature on social media use and well-being tends to focus on either younger or older adults. Findings suggest that more social media use can be detrimental to midlife adults' well-being at an intraindividual level. Although this result was the opposite of our predictions, it aligns with the results from a longitudinal study of adults that revealed more Facebook use in the previous wave was associated with worse well-being in the subsequent wave (Shakya & Christakis, 2017). This suggests that just like adolescents and younger adults, midlife adults are also vulnerable to the negative impact social media use has on well-being. Growing research has also shown the increased prevalence of problematic social media use (addiction-like symptoms resulting from excessive overuse of social media) in adolescents and younger adults and its negative associations with health (e.g., depression, anxiety, stress) (Shannon et al., 2022). As the younger adults who use social media continue to age and progress to their midlife years, it is imperative for more studies to target the midlife population which tends to be overlooked in the social media use and well-being literature. While problematic social media use among midlife and older adults is currently scarcely examined, the current findings also raise the question of whether problematic social media use would be prevalent for the next generation of midlife and older adults.

The Role of Social Support

Social Media Use and Social Support. While previous work is largely cross-sectional and focuses on support received (Frison & Eggermont, 2016; Khoo & Yang, 2020), the current study extends the literature by demonstrating the intra-individual variability in social media use and support by examining the quantity and quality of support. There was a significant within-person relationship such that days with more social media use duration were associated with more time giving support, but no relationships were found for receiving support. However, using social media for the purpose of contacting family and friends was related to a better quality of social support, which was consistent with past MIDUS studies that examined social media use and perceived support (Khoo & Yang, 2020). This could be explained by variations in the purpose of social media usage, as studies have shown that midlife and older adults are more likely to seek in-person support and less likely to use social media sites like Facebook to express their discontentment and seek help from social ties (Hardy & Castonguay, 2018). Rather, midlife and older adults

use social media more frequently to connect, reconnect, and provide support to their social ties than to use social media to receive support (Jung et al., 2017). This has implications for intervention studies using social media to promote social support in midlife and older adults. Specifically, studies aiming to form support groups on social media can consider utilizing multimodal components that incorporate both in-person and online formats to facilitate balanced support given to and provided by midlife and older adults.

Social Support and Well-Being. Contrary to the predictions, more quantity of (time spent giving and receiving) support was associated with worse well-being at both within and between-person levels. Although previous work showed giving and receiving are beneficial over the long run (Inagaki & Orehek, 2017), the effects may be different when examined daily. On any given day, one may experience social strain (negative social interaction) while giving support that could be reflected immediately in their daily well-being (Joo et al., 2020). Another explanation could be the bidirectional effect of social support and well-being. Days with more received support are likely days when one has faced stressors and consequently sought support from others (Joo et al., 2020). Similarly, those who report receiving less support are more likely to have had fewer stressors and better well-being, thus less need to receive support from others (Ibarra-Rovillard & Kuiper, 2011).

In contrast to the quantity of social support, better quality of social support was related to better daily well-being. This showed that it is not about the quantity of support, but the quality of support that matters more for positive well-being. This has implications for social interventions to focus on improving the support quality, rather than the quantity of giving or receiving support (e.g., increasing frequency of support groups) to promote well-being. Ideally, interventions could offer training on ways to provide quality support to peers to maximize the social benefits.

Social Support as a Mediator. To our knowledge, the current study is the first to examine whether social media use duration and frequency of contact influence well-being through quantity and quality of support for adults of all ages at both the between- (interindividual) and within-person (intraindividual) levels. Results suggest that days with more social media use were associated with more time giving support, and in turn, worse well-being. This finding confirms the importance of calling for more research on daily social media use and well-being (Cotten et al., 2022) and further emphasizes the value of considering social media use duration, quantity of support, and well-being as constructs susceptible to changes and fluctuations on a daily level. Furthermore, the mediating effect of time giving support linking social media use duration and well-being also alludes to the importance of balancing giving and receiving support via social media platforms. This is consistent with social exchange theory and the law of

reciprocity in social relationships. Studies have shown that balanced support is associated with better well-being (M. E. J. Gleason et al., 2003), whereas those who give or receive more reported worse well-being (Chai et al., 2019; G. E. J. Gleason et al., 2008).

In contrast to the quantity of support, more use of social media to contact family and friends was related to a better quality of social support, which in turn led to better daily well-being. This finding contributes to the literature on the mixed relationship between social media use and well-being through social support and suggests that how people use social media (general use vs. specific use to seek support) could impact their well-being differently. Studies have shown that using social media passively without a specific purpose (consuming information without attempts to have a social connection with others) is related to worse well-being (Wang et al., 2018), while using social media actively to engage with others were related to reduced depressive symptoms (Escobar-Viera et al., 2018). While there are recent calls for "digital detox" or "timeout" for social media (Radtke et al., 2022), it is also essential for educational campaigns to focus on how people across different ages can best use social media to maximize its benefits and reduce its harms, rather than raising awareness about whether social media is solely good or bad for one's well-being.

On the other hand, our analyses specifically measured using social media with a specific purpose to contact family and friends (actively engage with others and connect with strong social ties), with results showing that actively using social media to contact family and friends is related to better well-being. This is consistent with the interpersonal-connection-behaviors framework and empirical studies that states more social media use can facilitate more support and in turn, better well-being (Ahn & Shin, 2013; Al-Saggaf & Nielsen, 2014; Clark et al., 2018; Gonzales, 2014; Kietzmann et al., 2011; Kim & Lee, 2010). These findings echo the literature that encourages people to actively use social media rather than using it passively.

Moreover, this suggests that quality support can occur through social media platforms for midlife and older adults. These could help to explain the mixed findings in the literature regarding whether social media use is positively or negatively linked with well-being. Specifically, the current study revealed that quantity and quality of social support served as mechanisms behind the positive and negative relationships between social media use duration/frequency of contact and daily well-being for adults of all ages. The differential results of quantity and quality of social support also call for more social media research to further investigate content-based predictors of social media (e.g., the purpose of using social media) rather than focusing solely on time spent on social media.

Limitations and Future Studies

Even though the current study utilized a daily diary design which minimizes the demands on memory, participant's self-reported time for durations of social media usage and support may not always be accurate due to retrospective recall, false memory, and respondent's subjective perceptions (tendency to over- and underreporting) (Scharkow, 2016). Nevertheless, the literature on time use and diary studies provides support for greater reliability compared to longer-term retrospective accounts. The current study assessed each variable at the end of each day, which can minimize memory biases because of the proximity in time of the recalled experience and frequency of usage (Bolger et al., 2003; Freedman et al., 2014). In comparison to longer-term retrospective recall (e.g., over a period of a month or year), objective events and subjective sentiments are less prone to recall biases when asked towards the end of the day or even the next day (Bolger et al., 2003; Freedman et al., 2014). Nonetheless, future studies can consider using a more objective measurement of time for social media by having participants with a smartphone utilize the "screen time" function, which informs the users of the exact hours and minutes they spend on each social networking app daily. This may be particularly helpful for studies targeting smartphone addictions or smartphone usage, given that Americans of all ages (37%) are accessing the Internet with their smartphones rather than using home broadband (Pew Research Center, 2021b).

The current study used the term "social media" to encompass many different platforms such as Facebook, Skype, Chat Groups, and WhatsApp. However, each of these social media platforms has different functions and usages. Many use Facebook to consume media content (e.g., news, watch videos) rather than to communicate with others (Frison & Eggermont, 2016). Moreover, some such as WhatsApp is known for messaging, whereas Skype is known for video chatting. Future research can specify more details about each platform based on function and usage and explore how social interactions with others using each function exclusively, such as video chat or messaging alone could affect social support and well-being. In addition, because past research has shown that one's well-being for stress and affect can differ based on the communication mode (in-person or messaging) (Lin & Lachman, 2021b; Lin & Lachman, 2023), it would be of interest to examine whether social support given and received in online versus offline contexts would have similar effects in mediating the relationship between different communication modes (in-person, voice-calling, messaging, video chat, and instant messaging) and well-being.

Another factor to consider is that the study data were collected between 2011 and 2014, and social media usage trends have changed since then. For example, newly emerged social media platforms such as TikTok have gained major popularity among adolescents and young adults, and more older adults 65 years or older are using social media sites (45% in 2021) compared to 2014 (27%) (Pew Research Center, 2021c). Moreover, the COVID-19 pandemic limited people's in-person interactions and may have changed how people use social media in terms of how they seek support and its relation

to people's psychological well-being (Saud et al., 2020, 2021). As a result, it is unclear how generalizable the current findings are to current circumstances, particularly the post-pandemic period. Nevertheless, findings of the current study provide a context for the future to examine changes as social media use grows.

While directionality can be examined with mediation models, experimental designs are needed to establish more definitive directionality and causality. Future studies can consider testing alternative models as it is possible that those with worse well-being may seek out more support from their network, and therefore spend more time on social media to reach out to their family members and friends. Although this is a daily study that captured the daily variations within individuals, it would still be of interest to examine social media usage in a longer longitudinal study and to update with the rapidly changing trend of social media usage in middle and older adults.

Conclusion

The current study contributes to the literature by including middle-aged and older adults using a nationally representative sample, incorporating both quantity and quality of social support, and examining how they influence the relationships between social media use duration and frequency and well-being at both the within- (intraindividual) and between-person (interindividual) levels. More social media use duration was associated with more time giving support and worse well-being at between and within-person levels. Receiving support significantly mediated at the between-person level: more social media use duration was associated with more time receiving support and worse well-being. However, more social media use to contact family and friends was related to better social support quality and better well-being. These findings revealed how people use social media (general use vs. specific use to seek support) could impact their well-being differently, which could help to explain the mixed findings in the literature regarding whether social media use is positively or negatively linked with well-being. This showed that it is less about the quantity of support, and more about the quality of support that matters for positive well-being. This has implications for social interventions to focus on improving the quality, rather than the quantity of giving or receiving support to promote well-being.

Author's Note

The research questions, hypotheses, methods, and analyses of the current study were pre-registered prior to conducting the research on Open Science Framework. Publicly available data from the Midlife in the United States (MIDUS) study were used for this research and can be accessed here: https://www.midus.wisc.edu/.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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