Intergenerational family online community and older adults' overall well-being

Tali Gazit
Department of Information Science, Bar-Ilan University, Ramat Gan, Israel
Sarit Nisim
The Poverty Research Unit, Social Science Faculty, Bar-Ilan University, Ramat Gan, Israel, and
Liat Ayalon
The School of Social Work, Bar-Ilan University, Ramat Gan, Israel

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Abstract

Purpose – This study aims to evaluate the potential contribution of a membership in an online family community to older adults' overall well-being.
Design/methodology/approach – A total of 427 respondents over the age of 64 participated in the study ($M = 74.55$, SD = 7.13), answering a survey. To test the contributing of belonging to family online communities (WhatsApp), three hierarchical regression analyses were conducted, with well-being, self-perceptions of aging and loneliness as outcome variables.
Findings – Findings show that belonging to an intergenerational family online community was associated with higher levels of well-being, less loneliness and better self-perceptions of aging, even once demographic characteristics and using social media were controlled for.
Social implications – This study demonstrates the important role that the family online community membership plays in older adults' lives. This has significant implications that may contribute to intergenerational emotional solidarity.
Originality/value – The authors suggest that technology is not *per se*, but the intergenerational opportunities that technology facilitates that make a difference.
Peer review – The peer review history for this article is available at: https://publons.com/publon/10.1108/OIR-06-2021-0332

Keywords Social media, Family online community, Older adults, Intergenerational, Well-being, Loneliness
Paper type Research paper

Introduction

Social media sites (SNS) have become an integral part of the everyday lives of many people who use them for socialization and information purposes (Gazit *et al.*, 2019; Jokish *et al.*, 2020). The social potential of SNS appears particularly significant for older adults (Harley *et al.*, 2018). This is because the use of social media has the potential of enhancing social connectedness, especially when the opportunity for face-to-face communication is deterred (Barbosa Neves *et al.*, 2019). The issue of the relationship between the use of social networking systems and overall well-being in older adults has received substantial attention. However, with the COVID-19 pandemic, there has been increased attention to overall well-being for all age groups, and particularly for older adults, as they are considered the most susceptible, at-risk segment of the population (Berg and Morely, 2020). Indeed, Ayalon *et al.* (2021) have shown that various media reports worldwide during the pandemic have portrayed older people as helpless, frail, and unable to contribute to society. Hence, this issue is significant personally, socially and on a public health and policy level.

Prior to the beginning of the COVID-19 pandemic, it was found that more than two-thirds of Baby Boomers, ages 55 to 73, and 40% of the Silent Generation (74–91) own

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smartphones, and the number of adults, ages 55–91, who use social media has increased substantially since 2012 (Vogels, 2019). Focusing on text messaging, almost a decade ago Harrison and Gilmore (2012) claimed that mobile text messages have modified interpersonal interactions, as more people use text-based communication, rather than face-to-face encounters in order to be up-to-date with their friends and family members. In the last few years, the WhatsApp application has come to play a central role as a socializing channel for older adults, both within the family and with peers (Fernandez-Ardevol and Rosales, 2017). This paper focuses on the intergenerational mobile communication within families, especially between the older adults and their families, in light of the second social level of the intergenerational solidarity model: the microsocial level. The microsocial level relates to small groups, most notably the family. In this level, generation refers to ranked descent within a lineage, like mothers and daughters, grandmothers and granddaughters, great-grandmothers, and so on (Bengtson and Oyama, 2010).

Much scholarly inquiry into older adults' overall well-being has focused on the benefits of offline family ties (Gubernskaya and Treas, 2016; Yuan *et al.*, 2016). Moreover, there is a wide body of research investigating the relationship between well-being factors and social media among adolescents and young adults (Dhir and Tsai, 2017) or among young women (Gazit and Amichai-Hamburger, 2020). There also is research on the relationship between online digital technology and older adults' well-being (Szabo *et al.*, 2019), but very little research has been carried out on online aspects of intergenerational communication among older adults. In addition, although WhatsApp is one of the most popular social media networks in the world (Statista, 2021), the research on WhatsApp family groups is still very limited (Aharony and Gazit, 2016). To address this gap, this research will be one of the first to explore the unique environment of family WhatsApp groups, from an Intergenerational Solidarity point of view as the underlying theory. The insights from this research may have an impact on older adults' quality of life, by showing the benefits of being members in family WhatsApp groups. Information gained by this study can also be used to guide both policy and practice concerning the use of digital technology to foster intergenerational ties and improve the well-being of older people. Hence, the research question is:

RQ1. what are the benefits of older adults from being members in intergenerational family WhatsApp groups?

The present study. The current study examines three potentially important variables for the overall quality of life of older adults, well-being, loneliness and self-perception of aging, in relation to membership in family WhatsApp groups, in which children, grandchildren and other family members are engaged. The three indicators were selected, as all have shown to be of high importance in the lives of older adults and highly relevant to their overall quality of life: There is research to show that intergenerational relations improve older adults' well-being (Katz, 2009; Peng *et al.*, 2018), reduce their loneliness (Takagi and Saito, 2015), and improve the self-perceptions of their own aging process (Jarrott and Savla, 2016). Moreover, all the indicators chosen were previously tested in online environments (Gazit and Amichai-Hamburger, 2020; Köttl, Cohn-Schwartz *et al.*, 2021; Levy *et al.*, 2014). Relying on three possible indicators provide us with a better indication of the effects of belonging to an intergenerational WhatsApp group on one's overall quality of life, as measured by well-being, loneliness and self-perceptions of aging in the present study (See Table 1).

Hence, we expected that membership in an intergenerational WhatApp group would be positively associated with well-being and self-perceptions of aging and negatively associated with loneliness in older adults.

Variable	Older adults	Online environment
Well-being	Naci and Ioannidis (2015) Ryff (2014)	Alfasi (2019) Dhir and Tsai (2017) Heo *et al.* (2015)
Loneliness	Fakoya *et al.* (2020) Larose *et al.* (2002) Shiovitz-Ezra and Ayalon (2010)	Cotten *et al.* (2013) Gazit and Amichai-Hamburger (2020) Nowland *et al.* (2018)
Self-perception of aging	Levy *et al.* (2002) Hausknecht *et al.* (2020)	Köttl *et al.* (2021) Mariano *et al.* (2021) Trentham *et al.* (2015)

Table 1.
Relevant articles concerning the research variables

Literature review

Intergenerational solidarity model. A potentially useful theoretical framework for exploring the importance of family online communities for older adults is the intergenerational solidarity model (Bengston and Mangan, 1988; Bengston and Roberts, 1991). According to this model, family solidarity between generations is a multi-dimensional construct, composed of six dimensions, including structural solidarity (geographic distance that constraints or enhances contact), affectual solidarity (emotional closeness and intimacy), consensual solidarity (agreement in opinions and values), functional solidarity (exchange of instrumental and financial assistance), and normative solidarity (strength of obligation towards other family members). These dimensions were later reduced to the dimensions of affinity, opportunity structure, and function (Silverstein and Bengtson, 1997). Intergenerational solidarity is considered one of the sustainable development goals as it concerns the welfare of both young and old members of society. Intergenerational solidarity is broadly defined as the cohesion between members of different generations. Solidarity can be measured along different dimensions, including contact frequency or level of agreement concerning political issues or life values. Given that digital solidarity is conceived as a new dimension of associational solidarity (the type and frequency of contact between the generations), Peng *et al.* (2018) suggest that the same set of factors will play a role in digital solidarity as in traditional dimensions of associational solidarity. Using the intergenerational solidarity concept, a recent study examined how relations of older adults with younger generations of their families influenced their uses of information and communication technology. The researchers found that the influence happened either by building up social interactions and increasing communication inside and outside the family or by contributing to social and emotional isolation, even when family generations were physically close (Azevedo and Ponte, 2020). Others have shown that younger family members actually can hold back and impair the ability of older people to use digital technology (Köttl *et al.*, 2021b). Hence, clearly the role of intergenerational associations in the acquisition and use of the digital media should be further examined. In the present study, we argue that structural solidarity, which is characterized by a shared WhatsApp family group, can also be a proxy for affectual solidarity and as such be associated with older adults' well-being.

WhatsApp application. As of 2021, WhatsApp is the most popular global mobile messenger app worldwide with approximately 1.6 billion monthly active users, outranking Facebook Messenger and WeChat. Following Facebook and YouTube, it is the third most popular social network worldwide (Statista, 2021) and is the most popular application in Israel (Gazit *et al.*, 2019; Israeli Internet Report, 2020, p. 6). Several studies that focus on WhatsApp use were carried out in the past years. Gazit *et al.* (2019), who compared between four social network sites, found that WhatsApp is adopted more by women and people with internal locus of control. Bouhnik *et al.* (2014) interviewed teachers who used the application

in order to communicate with their pupils. The teachers mentioned the technical advantages of WhatsApp, such as simple operation, low cost, availability, and immediacy. Another study that focused on the social capital that students gain from WhatsApp use, showed that well-being variables explain the social capital students gain while using WhatsApp (Aharony, 2015). A further study found that individuals who use WhatsApp turn to it for maintaining contact with family and friends, information and entertainment (Sultan, 2014).

WhatsApp has revolutionized the way people communicate and interact. It is not only cheaper than the traditional short message service (SMS) communication but it also brings a new form of mobile communication: the group chats (Resende *et al.*, 2019). Seufert *et al.* (2015) explored 234 WhatsApp group chats and found that they are used mainly for communication with selected members who know each other. Koçak and Vergiveren (2019) asked 633 Turkish individuals about their WhatsApp groups and found that WhatsApp groups are used both for professional and personal life and it is accepted as an essential communication way one cannot resist. Gazit and Aharony (2018), who investigated the factors contributing to engagement in WhatsApp groups, found that the group's subject play an important role in the group engagement, which was significantly higher among family groups and groups of friends than among groups related to studies and work.

The appropriation of WhatsApp turned it into a normalized element of everyday communication among all ages. Older adults use social media often as a way to connect to younger family members (Matassi *et al.*, 2019). Studies found that the older the users are, the less likely they are to engage in WhatsApp conversations (Gazit *et al.*, 2019; Gazit and Aharony, 2018), but being a member of a virtual group with an intergenerational representations, like a family group, may trigger this notion. Indeed, encouragement by family and friends was found as a strong predictor for Internet use among older adults (Friemel, 2016). In addition, social media can serve as an equalizer and provide a space for senior citizens to engage with younger generations in a way that the geographical segregation of generations does not afford (Trentham *et al.*, 2015).

There is very limited research in the field of WhatsApp groups in general and family WhatsApp groups in particular. A research that examined the importance of family WhatsApp groups among young adults found a positive relationship between the group's importance and offline social and family support (Aharony and Gazit, 2016). This is of major significance, given the important role the family plays in the lives of older adults, worldwide (Guo *et al.*, 2018; Herrera *et al.*, 2016; Rajan *et al.*, 2017).

Well-being. Well-being or wellness represents a subjective experience, which encompasses physical, mental and social aspects (Naci and Ioannidis, 2015). The importance of psychological well-being in reducing risk for disease and promoting length of life is already a common knowledge (Ryff, 2014). As the social media plays an increasingly significant role in people's lives, it also has a growing impact on their well-being (Alfasi, 2019; Bar-Ilan *et al.*, 2020). Cotten *et al.* (2012) found that going online more frequently among older adults made it easier for them to reach people, stay in touch and meet new people. It also helped the respondents feel more connected to friends and family. Using social media to augment contact with family, friends and people with whom there is a common interest may well enhance the social lives of users (Amichai-Hamburger and Hayat, 2013). Indeed, it was found that the intensity use of WhatsApp groups mediated between group subject and participation level. When the group subject was family or friends, compared to work, studies or games, the group intensity was higher, leading to higher participation level (Gazit and Aharony, 2018). Focusing on older adults, higher levels of Internet use were significant predictors of higher levels of social support, better life satisfaction and psychological well-being among older adults (Heo *et al.*, 2015). In addition, higher usage of social media can raise feelings of control and self-efficacy among older adults (Leist, 2013). In a study about Facebook usage, the older adults who used Facebook scored higher on assessments of social satisfaction and confidence with technology than did non-users (Bell *et al.*, 2013).

Being members in family WhatsApp groups means that not only are the older adults more engaged with social media, but they also have the potential to stay in touch with their family with no boundaries of geography or time. Hence, our first hypothesis is:

H1. Older adults who are members of a family WhatsApp group will have higher well-being scores than the ones who are not.

Loneliness. Loneliness refers to the experience of social isolation and to the feeling of deprivation in relation to others (Larose *et al.*, 2002). Loneliness is a subjective construct, which represents the dissatisfying perception of inadequate social relations compared to one's ideal social ties (Perlman and Peplau, 1981). In addition, loneliness is distinguished from social isolation as it represents one's cognitive appraisal of the situation (de Jong Gierveld *et al.*, 2006). Loneliness can be a risk factor for depression, mental illness, and even mortality (Shiovitz-Ezra and Ayalon, 2010). Both loneliness and depressive symptomatology can act in a synergistic effect to diminish well-being in middle-aged and older adults (Cacioppo *et al.*, 2006), and they are growing public health concerns in our aging society (Fakoya *et al.*, 2020). Loneliness is negatively associated with family support (Gazit and Amichai-Hamburger, 2020), but even within families–where supportive ties tend to be stronger than outside–intergenerational solidarity regarding digital access and use cannot be taken for granted (Azevedo and Ponte, 2020). Hence, using the internet may reduce loneliness by targeting objective social isolation in this population (Nowland *et al.*, 2018). Social media can be particularly helpful in reducing loneliness in older adults' populations, especially if they are aware of how they use it (Cotten *et al.*, 2012, 2013; Leist, 2013; Nowland *et al.*, 2018), and if they use it to communicate with others rather than for information or entertainment (Erickson and Johnson, 2011). There is also evidence for a long-term effect in alleviating depressive symptoms and loneliness. For example, Tsai and Tsai (2011) conducted an experiment in nursing homes for older adults, in which the experimental group received videoconference interactions with their family members in addition to usual family visits for three months, and the comparison group received regular family visits only. Those who participated in the videoconference program had significantly lower depressive symptoms and loneliness a year after it was over.

As WhatsApp groups' dynamics are a written version of group videoconferences or even of the "real world" meetings (Aharony, 2015), we believe that participating in a family WhatsApp group may have a similar effect. Hence, our second hypothesis is:

H2. Older adults who are members of a family WhatsApp group will have lower loneliness scores than the ones who are not.

Self-perceptions of aging. Self-perceptions of aging represent the individuals' interpretation of their own aging process (Levy *et al.*, 2002). Older adults' internalized age stereotypes may contribute to the formation of their self-perceptions of aging, which, in turn, can have physiological outcomes. The research on self-perceptions of aging seems to suggest that the way older adults perceive their aging can have correlations to health and well-being (Hausknecht *et al.*, 2020). A study found that older individuals with more positive self-perceptions of aging, measured up to 23 years earlier, lived 7.5 years longer than those with less positive self-perceptions of aging (Levy *et al.*, 2002). Social environments and social comparison processes are influential in shaping adults' awareness and understanding of their own aging (Diehl *et al.*, 2015). For example, it was found that members in online groups used group identification as a stigma-coping strategy and developed a sense of community to cope with stigma (Yeshua-Katz, 2018). Similarly, social network sites may have the potential to cope with ageism and to break down barriers between generations. Limitations related to mobility, inaccessible public transportation, and age-unfriendly physical public spaces can be overcome through the use of social media technologies. In addition, social media can provide a venue for senior

citizens to challenge ageism and influence public discourses (Trentham *et al.*, 2015). However, it was found that in Facebook groups that concentrated on older adults and were created by younger users, the groups' descriptions focused on negative age stereotypes (Levy *et al.*, 2014).

Unlike Facebook groups, when relating to family WhatsApp groups, where all the members know each other (Seufert *et al.*, 2015) and care about each other, the age stereotypes may decrease. In a recent study it was found that the quality of the relationship to one's parents has an important role in shaping adults' views on aging and experience of their own aging (Jung and Jopp, 2019). Aharony and Gazit (2016) found a positive correlation between social and family support and the importance of the WhatsApp family group to the members of the group. Finally, researchers recently found that more positive self-perceptions of aging were associated with more frequent computer use behavior (Mariano *et al.*, 2021). In addition, greater everyday information and communication technologies engagement predicted more positive self-perception of aging related to personal competence three years later (Köttl *et al.*, 2021a). Hence, we suggest that there may be a positive contribution of the family WhatsApp group membership on self-perceptions of aging among the older adults in the group, and our third hypothesis is:

H3. Older adults who are members of a family WhatsApp group will have higher scores in self-perceptions of aging than the ones who are not.

Method

Participants

Of the 450 participants who completed the survey, 427 reported their age and were older than 64, which is usually categorized as the bottom limit of older adulthood (Avidor *et al.*, 2017). A total of 150 (35%) were men and 277 (65%) were women. In addition, 207 of the respondents (48.5%) were married and 220 (51.5%) were not married (single, divorced or widowed). They rated their financial status as "enough to get by" (median = 2, range: 1–4). The participants' average age was 74.55 years (SD = 7.13).

Data collection

This study was part of a larger research project that evaluated loneliness among community dwelling older adults in an Israeli city and was approved by the ethical board of the University (#121903). Data were gathered through a convenience sampling method between January and February 2020 in an Israeli city in adult day care centers and in the community, relying on municipal lists of potential participants over the age of 64. Older adults from the municipal list were asked to take part in the survey, of which 427 gave valid answers. Data collection was conducted by research volunteers through telephone interviews, with each interview lasting between 20 and 30 min. In addition to Hebrew, interviews were conducted in Russian and in Amharic. The translation into these languages stemmed from the fact that the particular city had large concentrations of Russian and Amharic speaking older adults. The latter interviews were conducted face to face due to logistics challenges. All participants gave a verbal informed consent after receiving detailed information about the study, which the ethics committee formally approved.

Measures

The survey constituted of five sections: (1) questions about WhatsApp groups; (1) well-being questionnaire; (3) loneliness questionnaire; (4) self-perception of aging questionnaire and (5) demographic questions (See Appendix 1). The next paragraphs elaborate on each section:

Independent variable: Participants were asked whether they belong to the family WhatsApp group (0 = no, 1 = yes) and how many WhatsApp groups they belong to.

Outcome variables

Well-being (Heun *et al.*, 2001): The World Health Organization 5-well-being index is a 5-item self-report measure of well-being (e.g. "I have felt cheerful and in good spirits"). The Cronbach's alpha in the present study was $\alpha = 0.92$. The mean score was calculated with a higher score indicating better well-being.

Loneliness: This is a short version of the UCLA loneliness scale, revised by Hughes *et al.* (2004). The revised scale contains three statements (e.g. "How often do you feel isolated from others?") rated on a 5-point Likert scale (1 = hardly ever to 5 = often). The Cronbach's alpha was $\alpha = 0.92$. A mean score was calculated so that a higher score indicates higher levels of loneliness.

Self-perceptions of aging: were assessed using eight items (e.g. "Things keep getting worse as I get older" and "So far, I am satisfied with the way I am aging.") derived from the Philadelphia Morale Scale (Lawton, 1975) and the Berlin Aging Study (http://www.base-berlin.mpg.de/en). Four of the items were reverse scored. Items were rated on a 6-point Likert scale (1 = strongest disagreement; 6 = strongest agreement). After reverse coding relevant items, the Cronbach's alpha was $\alpha = 0.79$. A higher mean score indicated better self-perceptions of aging.

Covariates: contained four questions concerning (1) age, (2) gender, (3) marital status, (4) financial status ranging from 1 ("can't make ends meet") to 4 ("excellent").

Results

Descriptive results of the sample are shown in Table 2. Of the participants, 58% have a WhatsApp application, but only 42.6% are members of family WhatsApp groups. The average of WhatsApp groups that participants are members of is 3.82 ($SD = 3.94$), and only 44% of the respondents have a computer.

In order to examine the difference between being or not being a member of a family WhatsApp group on well-being, loneliness and self-perceptions of aging, a one-way ANOVA was conducted. There was a significant difference in well-being, $F = 20.95$, $p < 0.001$, $\eta^2 = 0.05$; older adults who were members of family WhatsApp groups had higher well-being scores ($M = 4.67$, $SD = 1.41$) than the ones who were not members ($M = 4.02$, $SD = 1.53$). In addition, there was a significant difference in loneliness, $F = 9.31$, $p < 0.001$, $\eta^2 = 0.02$; older adults who were members of family WhatsApp groups felt less lonely ($M = 2.97$, $SD = 1.21$) than the ones who were not members ($M = 3.34$, $SD = 1.33$). Finally, there was a significant difference in self-perception of aging, $F = 24.91$, $p < 0.001$, $\eta^2 = 0.05$; older adults who were members of family WhatsApp groups had a better self-perception of aging ($M = 3.99$, $SD = 1.22$) than the ones who were not members ($M = 3.41$, $SD = 1.23$). Figure 1 shows the differences along the three variables.

In order to test the contributing of belonging to family WhatsApp groups, three hierarchical regression analyses were conducted, with well-being, self-perceptions of aging and loneliness as outcome variables. This enables researchers to find the cumulative percentages of the explained variance of the dependent variables, as well as to find moderators (Gelman and Hill, 2006; Tabachnick and Fidell, 2007). In the first step, belonging to the family WhatsApp group and the number of WhatsApp groups were entered into the model. This step explained 10% of the variance of well-being, 9% of the variance of self-perception of aging and 3% of the variance of loneliness, but only the coefficient of being a member in family WhatsApp group was significant ($p < 0.001$), while the number of

Table 2.
Sample characteristics of the study

Variable	Mean\%	SD	Range
Well-being	4.29	1.52	1–6
Loneliness	2.18	1.30	1–5
Self-perception of aging	3.64	1.26	1–6
Having WhatsApp	58.00%	0.49	
Number of WhatsApp groups	3.82	3.94	0–20
WhatsApp family membership	42.60%	0.50	
Age	74.55	7.13	64–97
Women	65.00%	0.48	
Married	48.50%	0.50	
Financial status	2.00	0.89	1–4
Having a computer	44.00%	0.50	

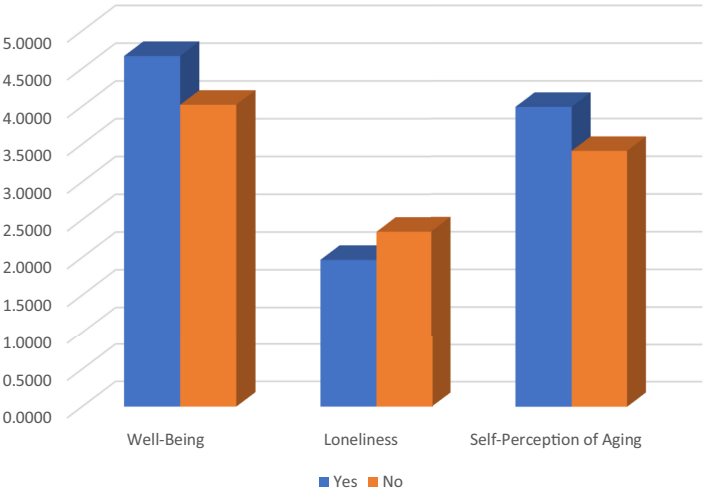

Figure 1.
Differences in well-being, loneliness and self-perception of aging between older adults who were members in family WhatsApp groups (n = 182) and ones who were not (n = 245)

WhatsApp groups was not ($p > 0.05$). In the second step, demographic variables: age, gender and family status (married/not married) were entered into the model in order to control for the effects of known variables on older people's well-being (Bennett, 2005). In the third step, socio-economic factors: financial status and having a computer (yes/no) were entered into the model. These variables also were entered due to their relationship with well-being variables as well as with technological literacy in past research (Yoon *et al.*, 2020). Tables 3–5 present the standardized and unstandardized coefficients of the hierarchical regressions of the outcome variables.

Tables 3–5 present the different models, showing the contribution of each step of the hierarchical regression to the explained variances of the dependent variables. Table 3 shows that the regressions model explained 20% of the variance in the well-being indicator, with 10% of the variance explained by membership in the WhatsApp family group. Table 4 shows that the regressions model explained 13% of the variance in the loneliness indicator, with 3% of the variance explained by membership in the WhatsApp family group, Table 5 shows that the regressions model explained 17% of the variance in the self-perception of aging indicator, with 9% of the variance explained by membership in the family WhatsApp group.

Predictors	Model 1			Model 2			Model 3		
	B	SE *B*	*β*	*B*	SE *B*	*β*	*B*	SE *B*	*β*
Family group membership	0.88	0.22	0.26***	0.74	0.22	0.21***	0.74	0.21	0.21***
WhatApp groups #	0.04	0.02	0.11	0.02	0.02	0.06	0.01	0.02	0.02
Age				−0.03	0.02	−0.13*	−0.03	−0.03	−0.12*
Gender				0.49	0.19	0.16**	0.48	0.18	0.16**
Marital status				0.32	0.20	0.12*	0.17	0.20	0.06
Financial status							0.39	0.10	0.24***
Computer							0.03	0.19	0.01
R^2	0.10			0.15			0.20		
Adjusted R^2	0.09			0.14			0.18		
F for change in R^2	12.80***			5.66***			7.76***		

Note(s): Family group membership: 0 = no, 1 = yes; gender: 1 = female, 2 = male; marital status: 0 = not married, 1 = married, computer: 0 = does not have, 1 = have; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 3.
Hierarchical regression coefficients of the explained variance of well-being ($n = 427$)

Predictors	Model 1			Model 2			Model 3		
	B	SE *B*	*β*	*B*	SE *B*	*β*	*B*	SE *B*	*β*
Family group membership	−0.47	0.20	−0.16**	−0.32	0.20	−0.10	−0.32	0.19	−0.11
WhatApp groups #	0.01	0.02	0.02	0.00	0.02	0.01	0.00	0.02	0.05
Age				0.01	0.01	−0.02	−0.01	0.01	−0.05
Gender				−0.40	0.17	−0.14*	0.36	0.17	0.13*
Marital status				−0.51	0.18	−0.19**	0.40	0.18	0.15*
Financial status							−0.28	0.09	−0.19**
Computer							0.05	0.17	0.02
R^2	0.03			0.09			0.13		
Adjusted R^2	0.02			0.07			0.10		
F for change in R^2	3.43*			5.85***			4.70**		

Note(s): Family group membership: 0 = no, 1 = yes; gender: 1 = female, 2 = male; marital status: 0 = not married, 1 = married, computer: 0 = does not have, 1 = have; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 4.
Hierarchical regression coefficients of the explained variance of loneliness ($n = 427$)

Discussion

In the last few years, the WhatsApp application has gained a central role as a socializing channel for older adults, both within the family and with peers (Fernandez-Ardevol and Rosales, 2017). The present study demonstrates the important role that the family WhatsApp group membership plays in the lives of older adults.

All three hypotheses in this study were confirmed: in accordance with H1, older adults who were members of a family WhatsApp group experienced higher well-being than the ones who were not. These findings are supported by earlier research that found positive relationships between engaging in social media and well-being among older adults (Bell *et al.*, 2013; Heo *et al.*, 2015; Leist, 2013) and a research that found an association between intergenerational family ties and well-being (Azevedo and Ponte, 2020).

In accordance with H2, older adults who were members of a family WhatsApp group had lower loneliness scores than the ones who were not. Past research has already showed that

Table 5. Hierarchical regression coefficients of the explained variance of self-perceptions of aging (n = 427)

Predictors	Model 1			Model 2			Model 3		
	B	SE *B*	*β*	*B*	SE *B*	*β*	*B*	SE *B*	*β*
Family group membership	0.64	0.19	0.22***	0.54	0.18	0.19**	0.54	0.18	0.19**
WhatApp groups #	0.04	0.02	0.14*	0.03	0.02	0.10	0.02	0.02	0.07
Age				−0.02	0.01	−0.12*	−0.02	0.01	−0.12*
Gender				0.51	0.16	0.20***	0.51	0.16	0.20***
Marital status				0.15	0.16	0.06	0.07	0.17	0.03
Financial status							0.23	0.09	0.17**
Computer							0.02	0.16	0.01
R^2	0.09			0.15			0.17		
Adjusted R^2	0.08			0.13			0.15		
F for change in R^2	11.97***			5.69***			3.55*		

Note(s): Family group membership: 0 = no, 1 = yes; Gender: 1 = female, 2 = male; Marital status: 0 = not married, 1 = married, Computer: 0 = does not have, 1 = have; *p < 0.05, **p < 0.01, ***p < 0.001

the social media can be particularly helpful in reducing loneliness in older adults' populations (Cotten *et al.*, 2012, 2013; Leist, 2013; Nowland *et al.*, 2018), but this is the first time that belonging to a family WhatsApp group is proven as helpful by its own. Given the growing popularity of this media source, it is important to ensure the active use of WhatsApp by people of all ages in order to bridge between the generations.

Finally, H3 concerning higher self-perception of aging among older adults who were members of a family WhatsApp group than the ones who were not, was confirmed. These findings are supported by previous research showing that more positive self-perceptions of aging were associated with more frequent computer use behavior (Mariano *et al.*, 2021) and greater engagement in everyday information and communication technologies (Köttl *et al.*, 2021a). As the digital media captures an increasing role in our lives, it is not a coincidence that we found an association between self-perceptions of aging and WhatsApp group membership. This association likely can go both ways, as was shown in past research which examined self-perceptions of aging against the use of every day digital technology (Köttl *et al.*, 2021a).

The hierarchical regressions show that belonging to family WhatsApp groups, but not the number of overall WhatsApp groups one belongs to was significantly correlated with better well-being, lower levels of loneliness and better self-perceptions of aging. This finding suggests that it is not the technology *per se*, but the intergenerational opportunities that it facilitates that make a difference. Specifically, being connected to children, grandchildren, and siblings is an important aspect in older adults' overall well-being (Lai *et al.*, 2019). The importance of intergenerational relations in the lives of older adults has been found in past research conducted in Israel, which is a highly familistic society (Katz, 2009). The present study's theoretical implication is that in today's world, the opportunity to stay connected to the younger generations often is facilitated via technological means, which can be reflected in the family WhatsApp groups.

Conclusion and limitations

Past research on older adults' family relations has largely queried about face to face meetings and phone conversations as means to foster intergenerational solidarity (Gubernskaya and Treas, 2016; Yuan *et al.*, 2016). The present study adds by pointing to a new modality that has

not received enough research attention, thus far. Our findings suggest that in today's era, the WhatsApp has become an important source of communication for older adults, as about half of our sample reported using WhatsApp and a little more than 40% of the sample participated in family WhatsApp groups.

The findings of this research add to a large body of research that has stressed the important role of intergenerational relations in the lives of older adults (Peng *et al.*, 2018; Swartz, 2009). Although whether or not one shares a family WhatsApp group may be considered a proxy of structural intergenerational solidarity, in this paper, we argue that this has substantial ramifications that potentially may allude to intergenerational affective solidarity. The practical implication of this notion is the necessity of younger family members to guide the older ones to connect to the family WhatsApp groups and be an equal member in those intergenerational groups. Further research will benefit from exploring the different dimensions of intergenerational solidarity in relation to the family WhatsApp groups.

Despite its strengths, the present study has several limitations that should be acknowledged. First, this is a cross-sectional non-representative sample. Hence, we cannot infer causality and the generalizability of the findings are questionable. In addition, future research will benefit from assessing other forms of intergenerational family relations in order to assess WhatsApp family membership versus other modes of communication. Moreover, the variables in this research explained a relative low percentage of the variance of the quality-of-life indicators, especially with regard to loneliness as an outcome variable. Hence, further research should delve deeper into additional factors that could explain well-being, loneliness and self-perception of age among older adults. Nonetheless, the significant results found for all three outcome variables suggest that membership in family WhatsApp groups possibly have beneficial effects that should be further explored. In today's society, communication over digital technology has become an essential aspect of our lives. Older adults appear to be benefiting, not necessarily from using the technology itself, but from the opportunities it provides with regard to intergenerational family contact. Additionally, the effects of the crisis induced by COVID-19 on everyone cannot be overlooked. At times like this, when the required social distancing can lead to stress, anxiety and depression (Bao *et al.*, 2020), every online activity is of paramount importance, particularly a family online activity for the older adults.

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Further reading

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Appendix 1
The survey

How many WhatsApp groups do you belong to? ___

Are you a member in a family WhatsApp group? No/Yes.

Well-being (Heun *et al.*, 2001)

Please circle a number on each of the following statements to indicate how often you feel each of them has applied to you in the last few weeks (1 = at no time; 5 = All of the time):

I have felt cheerful and in good spirits;

I have felt calm and relaxed;

I have felt active and vigorous;

I woke up feeling fresh and rested and

My daily life has been filled with things that interested me.

Loneliness (Hughes *et al.*, 2004)

The frequency of feeling lonely from 1- hardly ever to 5- often:

How often do you feel left out?

How often do you feel isolated from others?

How often do you feel that you lack companionship?

Self-perceptions of aging (Lawton, 1975)

The following statements are about how people feel about their age and the things that happen when people grow old. Please indicate how much you agree or disagree with each of the following statements (1 = strongest disagreement; 6 = strongest agreement):

Things keep getting worse as I get older;

I have the same energy level as I had last year;

As I get older, I feel more useless;

I am as happy now as I was when I was younger;

As I get older, things get better than I thought they would be;

In the meantime, I'm happy with the way I'm getting older;

As I get older, so I have to stop doing things I love and

Aging has brought with it a lot of things I do not like.

Covariates

What is your age? _____

What is your gender? Male / Female

What is your marital status? Single / Married / Widow / Divorced / In a relationship

What is your financial status?

can't make ends meet excellent

1 2 3 4

About the authors

Dr Tali Gazit is Senior Faculty Member in the Department of Information Science, Bar-Ilan University, Israel. She holds a PhD in Internet Psychology from Bar-Ilan University. Her research interests are engagement and lurking in online discussions, social media groups and communities, well-being and Internet and virtual leaders. Tali Gazit is the corresponding author and can be contacted at: tal.gazit@biu.ac.il

Dr. Sarit Nisim is Research Fellow at the Poverty Research Unit, Social Science Faculty, Bar-Ilan University. Israel. Nisim's research focuses on poverty and labor market, poverty in old age, corporate social responsibility, precarious work. Her articles published on *Journal of Business Ethics, Business and Society and Human Organization*.

Prof. Liat Ayalon is Researcher in the School of Social Work, Bar Ilan University, Israel. She coordinates an international EU-funded PhD program on the topic of ageism (EuroAgeism.eu). She is also the Israeli PI of the EU-funded MascAge program to study aging masculinities in literature and cinema. For the past four years, Professorr Ayalon has led an international research network on the topic of ageism, funded through COST (Cooperation in Science and Technology; COST IS1402, notoageism.com).