



## RESEARCH ARTICLE

## Adapting Social Supports through Communication Technologies as a Lifelong Learning for Older Adults

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### ABSTRACT

This qualitative study using thematic analysis, aimed to explore the role of communication technologies in providing social support and facilitating lifelong learning among older adults. Amidst the advancement and widespread use of communication technology, social support can be amplified through these technologies. Although older adults need the support of these technologies, they cannot rely on others because using them must be done with their own skills. They must pursue lifelong learning to adapt to all these related technologies and update their skills in line with recent technological developments. Thus, this article identifies the needs of older adults for social support through communication technologies. This study uses a qualitative method, and data were collected using Focus Group Discussions (FGD) and semi-structured interviews with 15 experts in related fields. Data are analyzed using Thematic Content Analyses (TCA) and grounded in the Technology Acceptance Theory (TAT) model. According to the study, communication technology can provide eight types of social support: four from social media and four from digital technologies. Support from social media can be gained from informational support, social interaction support, health care and emotional support, guidance support, and social media. While support from digital technologies can be gained from financial transaction support, health care and emotional support, health alert system support, virtual clinics, and online appointment systems. Combining both types of support can reduce the problem for older adults experiencing loneliness, depression, or suffering from physical or mental illnesses. The study provides insights into the factors that influence the use and effectiveness of communication technologies in providing social support and lifelong learning among older adults. The findings have theoretical and practical implications for interventions that improve social support and lifelong learning among older adults through communication technologies.

## INTRODUCTION

Older adults usually experience psychological issues such as an empty nest, financial difficulties, familial issues, and physical issues due to pain and weak limbs (Xu and Yang, 2023). These difficulties can be aided by social support from family (Suriawati et al., 2020), the community (Teng and Joo, 2017), organizations, and the government. It is not always material support, but studies have shown that social support for emotional stability and good feelings can alleviate health problems (Mahyuddin et al., 2018). Amidst the advancement and widespread use of communication technology, this support can be amplified through social media and digital technology. Studies show that older adults who use social media can get social support, feel less lonely, and have better psychological health (Castillo et al., 2022; Macdonald and Hülür, 2021). They need social support using new media to facilitate their needs and prevent or reduce the risk of depression, stress, anxiety, and other mental illnesses (Cotten et al., 2022; Fuss et al., 2019).

Previous research discovered some aspects of social support for older adults (Macdonald and Hülür, 2021), but only a few studies have demonstrated the need for this support through new media. Although older adults need all these supports, they cannot rely on others because using social media and digital technology must be done with their skills. They must pursue lifelong learning to adapt to all these related technologies and update their skills in line with recent technological developments. However, lifelong learning depends on their perception of the use of technology for their benefit (Narushima et al., 2018). According to the Technology Acceptance Theory (TAT), if people believe technology benefits them, their interest in it will grow. The study aims to identify forms of social support related to communication technologies that older adults need and how these supports can be adapted for lifelong learning.

## LITERATURE REVIEW

Communication technologies have become increasingly popular for social support as they allow people to connect with others regardless of their location and time constraints. Social support through

communication technologies refers to using various technologies, such as social media, text messaging, phone calls, and video chat, to provide emotional, informational, or tangible support to others (Chen et al., 2021). Adapting social support through communication technologies helps older adults combat feelings of isolation and loneliness, which can adversely affect their physical and mental health. By using these technologies to connect with friends, family, and other members of their communities, older adults can stay connected and engaged, which can help them maintain their quality of life (Narushima et al., 2018). There are two types of support, namely social media and digital technologies.

### **Social support through social media**

The use of social media is increasing among older adults. They can communicate with family without time constraints and save money on transportation costs to meet distant relatives. Social media can also be a platform to find contacts lost for a long time. Active communication in this medium can directly prevent older adults from experiencing the 'empty nest' syndrome, affecting their physical and mental health. According to studies, using social media can increase social support for older adults (Wu and Chiou, 2020) and help alleviate the 'empty nest' syndrome (Fu and Xie, 2021; Yu et al., 2021). Other studies also found that social media can reduce loneliness to strengthen existing relationships and form new ones (Szabo et al., 2019; Yu et al., 2021). According to Jayakody et al. (2022), lonely individuals prefer to use social media rather than engage in physical or face-to-face activities. Senior citizens who can communicate with children via WhatsApp or Facebook can alleviate boredom and loneliness. It can indirectly reduce loneliness and help avoid diseases like anxiety and extreme stress (Narushima et al., 2018).

According to Wu and Chiou (2020), older adults who do not use social media are more likely to suffer from depression because they lack friends with whom to communicate, particularly those who live far away from their children due to the demands of work, marriage, and study. This means that using social media can positively impact older adults' lives by providing positive effects and social support (Yu et al., 2021). However, misusing social media for

the wrong reasons can have negative consequences, such as leaking personal information, spreading false information, threats, etc. As a result, family support is essential for them to be proficient in using social media. Previous research has discovered that social support can be provided via social media platforms such as Facebook, Instagram, and others (Zhang et al., 2021). Informational support, social interaction support, health care, emotional support, guidance support, social media use, and intrapersonal communication support can be provided.

#### *Social Support Through Digital Technologies:*

Social support through digital technologies has transformed our life by making communication and transactions fast and instantaneous (Suriawati et al., 2020). Previously, technologies such as the telephone and transportation were invented, but the change in human life was less significant than that of recent technologies. It is based on electronic tools, systems, devices, and resources that generate, store, or process data that makes a move too fast (Taipale et al., 2021). It does not rely on the physical material but the information system, simplifying many manual processes electronically. Recently, a term called "Internet of Things" (IoT) connects everyday objects, such as kitchen and household appliances, to the Internet via embedded devices, making seamless communication possible between people, processes, and things. When the physical world meets the digital world, and they cooperate, there are a lot of changes in human life (Tyler et al., 2020). Indeed, digital technology is not limited to young people; all groups of human beings can benefit from it. Older adults should be included in taking advantage of technologies for socialization, safety, entertainment, and convenience (Wiwatkunupakarn et al., 2022). Some aspects of digital technologies can be social support for older adults to overcome empty nest syndrome and facilitate their lives.

Digital technologies, including computers, smartphones, and tablets, have become increasingly prevalent among older adults, providing new opportunities for social support (Wu and Chiou, 2020). Digital technologies can involve connecting with loved ones and friends through video conferencing or messaging apps. Digital technologies can also provide access to online support groups

and forums, where older adults can share their experiences and feelings with others who may be going through similar situations (Yu et al., 2018; Zhang et al., 2021). However, it's essential to recognize that not all older adults can access digital technologies or may feel comfortable using them. Some older adults may require additional support or training to use digital technologies effectively (Szabo et al., 2019).

#### **LIFELONG LEARNING FOR ADULTS**

The capacity to learn is a latent process that develops throughout life and is influenced by several variables, including aptitudes, experiences, cognitive abilities, memories, and perceptions. The purpose of continuing education is to improve people's quality of life and general well-being (McDonald, 2016; Mohd et al., 2020; Nygren et al., 2019; Pappas et al., 2019; Páscoa and Gil, 2012; Suriawati et al., 2020). For the elderly to benefit from this experience, it must be linked to continuing education, which is regarded as the most important tool in the processes of social inclusion, active participation, and personal growth, leading to an enhancement in these adults' quality of life. It takes into account the unique requirements of each person, taking into account their motives and desires, skills and learning styles, prior education, and personal characteristics, as well as the vast opportunities provided by the advancements in information and communication technologies (Ashaari et al., 2021; Castillo et al., 2022; Cotten et al., 2022; Dhanapal et al., 2015; Fuss et al., 2019; Hutto and Bell, 2014).

Older adults must use technology on their own rather than relying on others. Amid the rapid development of communication technologies, they must practice Lifelong Learning (LLL) to adapt to current changes and enrich their lives (De Wever et al., 2023). The rapid changes and advancement in new technologies require people to improve their knowledge and skills to cope and function better in everyday life in a complex society. LLL promotes less dependency on government-funded social services in older adults and enhances personal and community well-being (Merriam and Kee, 2014). According to research, the benefits of LLL are to foster well-being, improve socialization and interpersonal skills, and improve cognitive function in old age. There is a strong positive

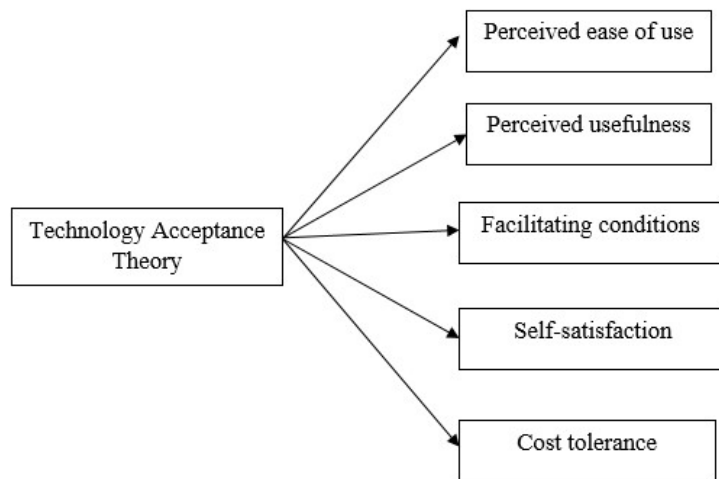
relationship between LLL and psychological well-being among older adults (Narushima et al., 2018). Most importantly, LLL helps older adults in their social life, e.g., making new friends, connecting with current friends, and being surrounded by the company of others (Nowland et al., 2018). In short, engaging in LLL through new technologies, such as social media, will provide meaningful and excellent social support for older adults living in the community.

Lifelong Learning (LLL) supports active participation in society and enhances the quality of life of older adults (Narushima et al., 2018). Studies are reporting an association between learning and health in older adults. In a review, Schoultz et al. (2020) identified four components that are associated with learning and health in older adults: (1) learning as quality of life; (2) learning as social networks; (3) learning as coping; and (4) learning to reduce risk. Experts argue that engaging in online networking platforms and social media is a form of lifelong learning (König et al., 2018). Social networking on the Internet, like using Facebook, encourages socialization, combats isolation, promotes lifelong learning, and finally supports health and active aging (Páscoa and Gil, 2012). Social bonding and bridging were identified in a survey among older adults as the

primary motivation for using Facebook. Thus, social media promotes lifelong learning, enhances social networking, improves social support, and combats isolation among older adults, including empty nest syndrome (Nowland et al., 2018; Nygren et al., 2019).

**TECHNOLOGY ACCEPTANCE THEORY (TAT)**

This study uses Technology Acceptance Theory (TAT) as the theoretical framework to investigate individuals’ acceptance of technology and their ability to adopt new technology based on behavioral science concepts in psychology and sociology and their effects on technology usage. The main point of TAT is that one can accept and use technology when satisfied with it and feels better (Ibrahim et al., 2016). TAT is an effective model for studying human perceptions of technological applications. It provides feedback on two aspects: usefulness and usability. At the same time, it has some drawbacks, one of which is that TAT does not provide feedback on some factors that may improve adoption, such as integration, flexibility, information completeness, and the latest information (Ibrahim et al., 2016; Venkatesh and Davis, 2000). TAT has five sections: perceived ease of use, perceived usefulness, facilitating conditions, self-satisfaction, and cost tolerance.



**Figure 1: Technology acceptance theory**

Based on Figure 1 above, five elements can motivate them to accept and use the technologies: perceived ease of use and usefulness, self-satisfaction, facilitating conditions, and cost tolerance. Below is a

discussion of each form of social support:

**Perceived ease of use**

With the advancement of technology and the proliferation of social media applications, one can use

them for various purposes, such as communication, information gathering, online shopping, etc. This technology allows any user to use it without the need for effort or high costs, such as having to meet in person if they want to meet, going to the bank to make a payment, going to a store to buy something, and so on. Undoubtedly, the evolving development of technology has enabled every user to provide and receive social support online (Momani, 2020).

#### **Perceived usefulness**

A person's quality of life can be improved by modern technology. For example, one can start an online business to make a living. There is no denying that social media can help older adults feel less lonely because they use technology to communicate with family and friends. Furthermore, older adults use technology to obtain health-related information (Momani, 2020). They can learn about their health in general indirectly through social media. This technology can help older adults avoid the empty nest syndrome. Indirectly, their life expectancy is longer because they are less likely to suffer from any disease, physical or mental (Momani, 2020).

#### **Facilitating conditions**

A person's use of technology is not self-taught. However, they require direction, support, and encouragement to use new technology. Older adults require more attention to learn how to use technology because they lack the necessary skills and were not born in the age of modern technology. However, some do not learn how to use technology from anyone. However, there are environmental factors that encourage them to use technology. Children who grow up in families where smartphones are frequently used, for example, will not be adept at using them immediately. Furthermore, older adults who do not know how to use a door phone will learn how to use a smartphone based on their observations of children and grandchildren who use new technology (Momani, 2020).

#### **Self-Satisfaction**

Technology has become an important part of everyone's life to make daily life easier. This technology is used for various reasons, including determining the extent to which products and services provide users self-satisfaction or achievement. For example, a person may use technology to pay summons, electricity, Internet, and other bills. When these payments are successful and accepted by service

providers, users will be satisfied with the services of today's technology that facilitate an individual's affairs without incurring the cost of going to premises such as police stations, banks, and post offices to make payments (Momani, 2020).

#### **Cost tolerance**

New technologies necessitate that a consumer be willing to pay a cost for a specific product or service based on their income and the value of the product's service. Most users' smartphones require bill payments against the data used to subscribe to the Internet. A person cannot connect to social media, make online purchases, or trade stocks without an Internet connection. Because of the impact of being unable to access information, one is dissatisfied with the service. As a result, cost is an important factor for someone who wants to use technology better (Momani, 2020).

### **METHODOLOGY**

The thematic content analysis (TCA) method was used in this study under a qualitative approach for measuring the importance of social support for older adults, specifically those experiencing loneliness, depression, or suffering from physical or mental illnesses. After gathering the data, different themes were developed based on the respondent's responses.

#### **Data collection**

For gathering and interpretation, the discussion method was used to develop the focus groups, and semi-structured interviews were conducted to get in-depth details. The total data collection timeline was 2 months (i.e., February 2022 to March 2022), and all the data was gathered using focus groups and semi-structured interviews. For the population selection, it was considered that only experts would be chosen to share the answers in discussions and interviews. Their expertise was relevant to the forms of social support available via new media, including social media and digital technologies. The respondents were chosen based on this context: what kind of experiences they have, academic qualifications, community leaders, activists, and government officials. The population was unknown, which is why the non-probability sampling technique was used; under that, the confidence sampling method was used for data collection. A list of study informants is provided in Table 1 below:

**Table 1: List of field experts**

Informant Code	Age	Position	Sex
1#.	71	Professor in communication technologies	Female
2#.	60	Academic Director at the private college	Female
3#.	68	The Advisor of Health Care Centre & ex CEO of Private Clinic Consortium	Male
4#.	52	Public Health Medical Expert	Female
5#.	58	The Chairman for private school	Male
6#.	61	Nazir of Mosque	Male
7#.	45	The Officer at Department of Social Welfare Malaysia	Female
8#.	35	President of NGO for cyber consumer	Male
9#.	67	Nazir of Mosque	Male
10#.	60	Assistant Officer at Department of Social Welfare Malaysia	Male
11#.	60	Social activist	Male
12#.	61	Nazir of Mosque	Male
13#.	62	Government Pensioner	Male
14#.	63	Kindergarten Group Manager	Male
15#.	62	Manager of Company Health Care	Male

The study's sample size for data collection was 15 respondents, using focus group discussion and semi-structured interview methods. Out of the 15 respondents, males were 11 and females were 4, and the age range was between 35 and 71. In the focus group discussion session, all 15 respondents participated, and for the individual interviews, only the chief researcher and research assistant conducted all the discussions. Each session's conversations and discussions were recorded and verbatim transcribed. Before the data collection, permission and consent were obtained from each participant, and it was also assured to them that the data would remain secret and be used just for this study purpose. Name and personal details will remain under the researcher's record and will not be available to any individual or the public.

The main theme and objective of the study were explained to all 15 respondents before the data collection and the permission process to avoid further issues. After that, the discussion was taken into place with an explanation of the forms of social support, and they were asked to personally assess the viability of each form and elaborate from their point of view. They can add more appropriate forms when they see them as relevant to older adults. The rest of the discussion and interviews were based on the participants' experiences as older adults and as experts in the field. The same questions were used for the focus group discussion and individual semi-structured interviews to get further elaboration on personal experiences and maintain some consistency. The instrument is based on previous studies on

social support for older adults using communication technologies. There are two types of social support: social support through social media and digital technology. As for social media, there are four themes of social support: informational support, social interaction support, health care and emotional support, guidance support, and social media. While for digital technology, there are four themes of social support: financial support, health alert system support, virtual clinics, and online appointment systems.

#### **Data trustworthiness**

According to Lincoln and Guba (1986), trustworthiness includes four main criteria: credibility, dependability, confirmability, and transferability. Several strategies were applied to enhance data trustworthiness, including individual interviews, focus group discussions, literature searches, and field notes. Choosing participants from various age ranges, educational backgrounds, working experiences, and expertise and offering various insights in several settings helped establish a robust database, obtain personal accounts, and enhance data transferability and credibility.

In addition, the researcher attained a deeper understanding of the subject due to professional involvement and familiarity with ethical matters in similar settings. The analysis consisted of primary interpretation codes from participants' perspectives, examples of supporting older adults to handle loneliness via social media platforms, and a selection of interview texts for each content to ensure dependability. Through a descriptive process,

the researcher evaluated the available data and established the possibility of data transferability. Raw data were reviewed by two experts in Islamic studies: one on older adults and one on information technology (Lincoln and Guba, 1986). Data were categorized for primary and secondary coding, and the expert recommendations helped make the necessary changes that satisfied the external review process to obtain conformability.

## RESULTS

Based on the Focus Group Discussion (FGD) findings, two sub-themes have been developed: social support through social media and social support through digital technology. This subtheme in the FGD refers to the main theme, which is communication technologies. The subtheme is then subdivided into four items.

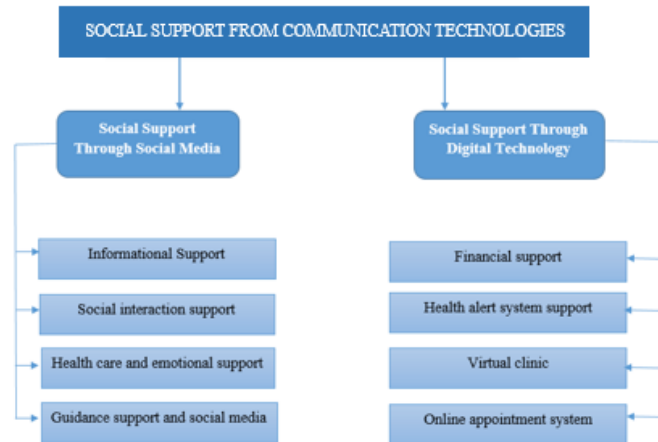


Figure 2: Main theme and sub-theme

The above figure describes the main theme, sub-themes, and elements of social support for older adults. This also shows four types of social support from social media: information support, social interaction support, health care support, and emotional support. As agreed by the expert, there are four types of social support from digital technology: financial support, health alert system support, virtual clinics, and online appointment systems. They also agree that the elements of social support can reduce the likelihood that older adults will experience empty nest syndrome and can further improve the quality of their lives.

### Data Analysis

Systematic and thematic content analysis was applied as data were concurrently collected and analyzed using Thematic Content Analyses. The process involves:

- Listen to the recorded interviews repeatedly, taking some notes and understanding the patterns
- Transcribe the verbatim (interviews) data into Ms Word 2010,

- Gather another source of data, for example, field notes and literature search
- Determine content areas via the objectives and scope of the study
- Gather and tabulate all the data (FGD, interview, notes, and literature search) to understand the contents
- Code the data systematically
- Merge/combine similar data into the same code
- Identify themes (main themes and sub-themes) of the coded data
- Discuss the finding with the group of experts from the related field of studies.

### Social support through social media

This study found that the support that can be gained from social media consists of four forms: informational support, social interaction support, health care and emotional support, guidance support, and social media use. Each type of social support from social media is explained below:

#### Information Support:

Information online is easy to carry, store, reproduce, display, and share. Older adults need this kind

of support to adopt the skill of media literacy for getting, using, and sharing information. According to informant #4, they are exposed to various information whose status is unknown, including disinformation and misinformation (Yu et al., 2021). They might need to be made aware of these differences because they grew up in an era when television and newspapers were the main media. Informant #9 added that they may fall victim to emotional manipulation by certain parties through propaganda methods such as "agenda setting" and "priming" that can blind older adults to the truth of an issue. Lack of information and support can lead them to paint the wrong picture about something and cause them to miss important details. Informant 9 agreed that they also require information related to personal health care because they are exposed to various types of diseases and mental health problems. This support manifests in how older adults create and disseminate informational content by writing and making videos (Newman et al., 2021). Support can also be provided by sharing relevant information with older adults or interacting with them through that information, which is another way to offer support. Information support refers to providing individuals or organizations with the necessary information and knowledge to make informed decisions or take appropriate actions. It can take various forms, including providing access to databases, documents, research findings, expert advice, and training programs (Mohd et al., 2020).

*Social interaction support:*

Social interaction is an important form of social support for older adults to prevent them from continuing to live in loneliness, which can have a negative impact on their physical and mental health. The individual's physical health may suffer if the social environment promotes or permits harmful habits like smoking, binge drinking, or overeating (Schoultz et al., 2020). A person's mental health may suffer if the social support they get promotes unhealthy coping mechanisms like avoiding or denying issues. This support is provided through interaction and communication through greetings, exchanging information, and sharing life stories and experiences with family, neighbors, and friends (Teng and Joo, 2017). Social interaction support can be particularly important for individuals who experience

social isolation or difficulty in social situations, such as those with autism spectrum disorder, social anxiety disorder, or other mental health conditions. It can also benefit those new to a community or experiencing major life transitions, such as retirement or relocation. Informant #6 explained that older adults can have social interaction with friends and neighbors to greet and express a point of view without regard to distance or time constraints. Support can be provided through social media like WhatsApp and Facebook, which provide the tools for online communication that allow older adults to interact with people at a distance, especially their family and friends (Taipale et al., 2021).

*Health care and emotional support:*

Healthcare refers to the medical care and treatment provided by healthcare professionals, such as doctors, nurses, and therapists, to prevent, diagnose, and treat illnesses and injuries (Rusli et al., 2022). Emotional support, on the other hand, refers to providing comfort, empathy, and understanding to help individuals cope with emotional distress, such as anxiety, depression, and grief. This support can come from friends, family members, support groups, or mental health professionals. Recent technologies allow older adults to quickly access and share health and emotional care information. They need this support because they are more susceptible to various diseases and mental health problems and cannot function independently. According to informant 11, rather than seeing a doctor, older adults sometimes require children's attention concerning their health, which can indirectly improve the quality of life. This support can be provided through notifications about appointments with the hospital and reminders about the time of treatment or taking tablets (Szabo et al., 2019). They are encouraged to get more information from social media about health care, but they should be advised to get information from reliable sources, like the Ministry of Health's website or government agencies because there is a lot of unreliable information on social media.

*Guidance support of social media use:*

Older adults are part of the baby boomer generation, and communication technologies are uncommon among them. Their children should assist and guide older adults to use social media properly, including



tips on finding information from reliable sources and not spreading false information (Abidin and Firdaus, 2016; Ashaari et al., 2021; Mohd et al., 2020). It's important to establish boundaries for social media use, both for yourself and those you support. This can include limiting the time spent on social media each day, setting specific times when social media use is allowed, and avoiding social media use during certain activities or situations (such as during meals or when spending time with friends and family). According to informant #3, they are happier if their grandchildren guide them in using devices and social media. Informant 1 admits that they are unfamiliar with the most recent social media advancements and, as a result, may be more vulnerable to manipulation and being taken advantage of by unscrupulous individuals. Informant #8 also agrees that older adults are the most likely to be manipulated and scammed. Thus, providing support for social media use and friendly applications for older adults can improve their social media abilities (Fu and Xie, 2021).

#### **Social support through digital technology**

This study found that the support gained from digital technologies consists of four forms: financial transaction support, healthcare system support, virtual clinics, and appointment systems. Each type of social support from social media is explained below:

##### *Financial transaction support:*

Financial transaction support refers to the assistance provided to individuals or organizations in managing their financial transactions. This can include various activities such as budgeting, record-keeping, financial analysis, and payment processing (Chang et al., 2022). One of the most important aspects of financial transaction support is budgeting. Creating a budget helps individuals and organizations track their income and expenses, plan for future expenses, and avoid overspending. Many countries, such as China and Malaysia, have slowly moved from money to cashless transactions. The digital revolution in finance is forecasted to transform all money transactions into cashless transactions and move toward a cashless society (Jayakody et al., 2022). For example, China is the pioneer in cashless transactions, propelled by Alibaba's Alipay and Tencent's WeChat Pay. Today, cashless transactions in China are well established, where the mode of payment is no longer by card

but by using an application on a smartphone linked to an account at a bank or on social media with a credit account. Malaysia also has cashless applications such as Touch'n'Go, eWallet, and QR Pay for easy payment without visiting a bank, which takes time. According to informant #8, "Because the licence for digital finance or digital banking has been issued, we are changing the phase. So, in the next year, we will see a significant change in the banking mechanism because fewer people will go to physical banks and the majority will switch to online banking". As the trend continues, older adults cannot be left behind in this transition because the world is moving towards personal finance and the digital economy shortly.

##### *Healthcare system support:*

Healthcare system support refers to the assistance provided to healthcare systems and professionals in delivering high-quality healthcare services. This support can come in many forms, including technology, education, policy development, and resource allocation. A critical area of healthcare system support is technology. Healthcare technology can improve the efficiency and effectiveness of healthcare services, from Electronic Health Records (EHRs) to telemedicine (Li and Luximon, 2020). Older adults are vulnerable to numerous ailments and require greater social assistance regarding health care and emotional support. The healthcare system is implemented in a specific way that older adults wear, such as a digital clock that alerts the system about their health. This support can also be provided through applications such as MySejahtera, which warns appropriate parties about the health of older adults. MySejahtera is a government-developed application that is adequate for monitoring the health of older adults. In an interview with the researcher, informant #3 explained that using a digital watch allows older adults to monitor their health, particularly their heart rate, with the recommendation to use an IOT smartwatch to monitor one's health. I've also used a smartwatch for heart rate; we now have it, and it's important for seniors, particularly the heart" (Informant #3).

Digital clocks may be used to monitor an individual's health, particularly the status of the heart. With the advancement of today's digital technology, the availability of MySejahtera is critical for obtaining

up-to-date information, especially when a person is afflicted with the COVID-19 virus. Hence, it is recommended that the general population, particularly older adults, continue to use the MySejahtera application.

*Virtual clinic:*

A virtual clinic provides aid by facilitating virtual consultations between older adults and doctors once the patient's health data is received via a specialized gadget or application (Macdonald and Hülür, 2021). This virtual clinic is designed to simplify life for older adults, particularly those who live far away from their children and lack the strength to go to a doctor. Next, it can also minimize clinic and hospital congestion while increasing customer access to primary healthcare services. A virtual clinic is a healthcare facility that provides medical services to patients through telecommunication technologies such as video conferencing, instant messaging, and phone calls. Virtual clinics are also known as telemedicine clinics or telehealth clinics. Virtual clinics offer several benefits, including increased access to healthcare services for patients who cannot travel to a physical clinic due to distance, disability, or other factors. They can also reduce patient wait times, as virtual appointments can often be scheduled more quickly than in-person appointments. Furthermore, it has the potential to minimize the frequency of physical visits to clinics and hospitals, particularly in Malaysia, when dealing with the COVID-19 epidemic. For example, older adults with non-communicable diseases such as diabetes and high blood pressure can request not to attend the clinic, where they can get consultations through the virtual clinic (Ma et al., 2015).

Informant #4 explains, "We have an online clinic. For those with non-communicable diseases, such as diabetes, there is follow-up at the health clinic, so

if they don't want to come, for example, they have to come every month. If it's inconvenient, they can apply for a virtual clinic. Which they will discuss virtually with the doctor, and if there is a change in treatment, they will come to the clinic". Virtual clinics created by affiliated parties can benefit anyone who works in clinics and hospitals. Among the advantages of having a virtual clinic are time, expense, transportation savings, and not having to wait in line for an extended period at the clinic.

*Online appointment system:*

This support is used to schedule a health check-up appointment with a hospital. Since the COVID-19 pandemic's outbreak, the MySejahtera application has been developed, with one of its functions being to allow COVID-19 patients to report their health status to selected health centers and enable COVID-19 patients to get an appointment date to attend the health center, among other things. Informant 4 claimed that a similar appointment system makes it easier for patients to identify specific dates online. He said, "We have MySejahtera, where he will be upgraded not only for COVID-19 but also for health screening, so that he can provide health input in MySejahtera. I want to emphasise that you should not delete your MySejahtera account because there is a lot of information, not just about COVID, that will be entered into MySejahtera" (Informant #4). Like other health-related applications, the system enables users and others, such as children or parents, to virtually acquire medical records and know precise dates to see a specialist. If the date changes, the user will get a simulated notification (Nowland et al., 2018). Thus, older adults must learn to utilize digital technology to improve their quality of life.

Based on the above result of the study, the explanation of social support from communication technologies can be summarised in Table 2 below.

**Table 2: Summary of social support from communication technologies**

No.	Forms of support	Item Details
1	Informational Support	This support is given by talking to older adults or sharing relevant information with them on social media. This support helps older adults create and disseminate informational content (for example, by writing and making videos). This support is provided by assisting older adults in displaying content relevant to their needs.

Cont.....

No.	Forms of support	Item Details
2	Social interaction support	This support is provided through interaction between older adults, such as saying hello, sharing information, talking about life experiences, and so on.
3	Health care and emotional support	Providing health-related information to older adults
4		Older adults use social media to learn about personal health care.
4	Guidance support and social media	This support is given by showing older people how to use social media in the right way, such as how to find information from trustworthy sources and not spread false information. Support this by making senior-friendly media applications available for their use. This support is given by showing older people how to use technology in a safe way so that they don't become victims of cyberattacks or cybercrimes.
1	Financial transaction support	This support is provided through the cashless payment system on a smartphone or app. This support is provided through platforms or machines in public locations for easy payment using a smartphone or e-banking.
2	Health care and emotional support	This support is provided by source notifying you to attend a doctor's appointment at a clinic or hospital, as well as reminding you when to take medicine at a specific time.
3	Health alert system support	This support is given to older people through tools made just for them, like smart watches that tell the system about their health. This support can be provided through applications such as MySejahtera that notifies relevant parties about the health of older adults.
4		This support is given through virtual visits with doctors after their health information has been gathered by a certain device or app.
5	Online appointment system	This system is used to schedule a health check-up appointment with a hospital.

## DISCUSSION

Older people must increase their media literacy to get social support through communication technology, especially by adopting "life-long learning" through informal learning. The rapid development of communication technology has given older people new opportunities to access social support and stay connected with their loved ones. However, to take advantage of these opportunities, older people must increase their media literacy, especially by adopting "life-long learning" through informal learning. By increasing their media literacy, older people can access social support and participate actively in social activities, share their experiences, and engage with their communities. For example, they can join

social media groups that cater to their interests, participate in online forums, or use video conferencing to communicate with family and friends who live far away.

According to the findings above, social media support is typically obtained by the individual, family members, or friends. However, they can skip a formal class session with a specific curriculum design; they can keep informed and update their skills to cope with the recent development of technologies. At the same time, they also must prepare their minds to learn new things as technology develops because they need to pay more attention to the intricacies of technology. Nevertheless, they cannot be placed in a category in terms of media literacy. Previous

research has shown that older people who are socially active, have a moderate income, and have a good education will have high social media penetration (Pappas et al., 2019; Rusli et al., 2022; Schoultz et al., 2020; Wiwatkunupakarn et al., 2022). It is much easier for them to get informational, social interaction, health care, and emotional support from social media, as they know an intelligent way to use social media as social support for their lives. As for those who are low-income and have a lower education level but are active on social media, they can generally use social media actively. They can fulfill the five requirements of TAM: perceived ease of use and usefulness, facilitating conditions, self-satisfaction, and cost tolerance. They have fewer difficulties using social media than in the past, but to gain social support, they still require assistance and guidance, especially from family, neighbors, the government, and NGOs.

However, some older adults with special needs, such as those who suffer from illness or mental problems and reach a certain age or are from low-income groups, may struggle to adapt to social media as a source of social support. This includes older adult women with fewer social contacts due to limitations in social interaction with outsiders. Generally, the family supports these older adults on social media. Here, informal life-long learning will take place under the guidance of family members, who will decide the type of support needed by providing facilities, encouragement, etc. Families are supposed to give them the courage and confidence to use social media. Generally, the support from social media is not worrying since it is widely used among older adults. The use of social media among older adults has been steadily increasing over the years. As a result, the support that older adults receive from social media is not worrying but rather an indication of the changing landscape of communication and social support. In the past, family members, friends, or community organizations often provided social support for older adults. While these traditional forms of social support are still valuable, social media provides additional avenues for older adults to connect with others and receive social support (Taipale et al., 2021; Yu et al., 2018). The challenge here is to link them via social media with others, but

there is little of a problem if they are socially active. Indeed, the challenge is to adapt digital technologies because some applications are too technical, and some procedures in the information system are complicated for them. Older adults need guidance, even for those who have media literacy, because some seniors lack the necessary skills and confidence to use new media. However, not all older adults can follow and update their skills. Some older adult learners face anxiety problems and lack confidence in learning digital technologies (Lee and Kim, 2019). Older adults should be encouraged to learn to use mobile phones. To add interest, an in-person training session (Chen et al., 2021) could be held outside the classroom, such as in a library, fitness center, or dining hall and cafe (Dauenhauer et al., 2018). Seniors must be prepared to pursue lifelong learning, especially if they are ill or have mental health issues. Generally, they need a flexible curriculum design, an informal learning setting with a personalized curriculum, and an in-person training session (Nygren et al., 2019). Pappas et al. (2019) found that older adult learners require a flexible curriculum design to complete lessons at their own pace. According to several studies, implementing individualized training for older adult learners can be a viable solution because it encourages them to learn using digital technologies (Lai 2020). Older adult learners enjoy learning by sharing their experiences and opinions (Chen et al., 2021; Dauenhauer et al., 2018). They prefer an experience-based learning approach in an active environment, such as an online learning platform, to share their life experiences, opinions, and expectations with different generations of learners (Pappas et al., 2019; Tyler et al., 2020).

#### **Limitations and future research**

Thematic Content Analysis (TCA) is a widely used method in qualitative research for analyzing textual data. It involves identifying recurring themes and patterns within a text to gain insights into the underlying meanings and interpretations. While TCA can be a useful method for measuring social support for older adults, there are limitations to its use and areas for future research. Using a qualitative approach and having a group discussion with experts and practitioners from different backgrounds permitted gathering information on an abstract topic such as loneliness. Study limitations were participants'

unwillingness to openly engage in a focus group discussion, which may have offered a different direction to the topic exploration. Researchers resorted to individual interviews to obtain further information via structured questionnaires to deeply understand their personal views. Future research could explore methods for increasing the validity and reliability of TCA, such as using multiple coders or triangulating with other data sources. Researchers could explore ways to ensure that the voices and perspectives of marginalized or underrepresented groups are captured in TCA, as these groups may have different experiences and interpretations of social support. Future research could compare TCA with other qualitative and quantitative methods for measuring social support to better understand the strengths and limitations of each method. With the increasing use of technology for communication and social support, future research could explore the use of TCA in analyzing digital text-based data, such as social media posts or online forums.

## **CONCLUSION**

In conclusion, adapting social supports through communication technologies as lifelong learning for older adults is crucial in today's digital age. Older adults are particularly vulnerable to physical and mental illnesses that can impair their quality of life. They need social support to aid them in gaining emotional stability and feelings because studies have shown that health problems can be helped with medical treatment and social support. There are four forms of support from social media: information support, social interaction support, health and emotional care support, guidance support, and the use of social media. There are four forms of support from digital technologies: financial transaction support, health alert system support, virtual clinic support, and online appointment support. The most challenging part is adapting this support for older adults in lifelong learning because not all are ready to pursue this learning, especially if they are ill or have mental health issues. According to TAT, lifelong learning is possible for older adults when they are ready to use communication technologies. They do require direction, support, and encouragement to use new technology. They need more attention to learn how to

use technology because they lack the necessary skills and were not born in the age of modern technology. By adopting lifelong learning through informal learning, older adults can develop their media literacy skills and keep up with the latest communication technologies. This can lead to improved social connections, increased access to information and resources, and enhanced independence and well-being. While there are potential risks associated with communication technology, such as online scams and cyberbullying, these risks can be mitigated through awareness and responsible use of technology. With proper education and support, older adults can continue to adapt to the changing landscape of communication and social support, enhancing their quality of life and contributing to their communities.

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