

Television, radio, and telephone: Tools for reducing loneliness among older adults in Nigeria

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Background Technology may play a vital role in the overall quality of life of older adults, specifically in reducing loneliness. However, there is limited evidence on the experience of older adults in using certain technology in reducing loneliness especially in developing nations. We explored the experiences of older adults in Nigeria that use technological devices (radio, television, and telephone) to reduce loneliness. **Method** This phenomenological study was conducted using qualitative methods. Face-to-face interviews were conducted with 15 older adults aged between 60 and 88 years. Data was analysed using thematic analysis, adopting an interpretive approach. **Results** Two major interconnected themes of benefits and barriers of using technology in reducing loneliness among older adults emerged. While the benefits of using technology includes facilitation of interaction, increasing the quality and quantity of social networks, feeling of anticipation and preferred face-to-face interaction; non-age friendly television and radio programs and usage struggles emerged as barriers of using technology in reducing loneliness among older adults in Nigeria. Older adults recommended for television and radio programs to incorporate older adults' specific channels or programs. Although telephones seem outdated, older adults expressed mixed feelings on the use of mobile phones as a tool for reducing loneliness. **Conclusion** While there is a considerable potential use of radio, television and phones in reducing loneliness among older adults in Nigeria, there are specific suggestions for radio and television stations to enhance programs that are adaptable with older adults. Mobile phone industries should develop smart phones that are age friendly and can adequately serve the older adult population.

Keywords: aging, loneliness, media, technology, Sub-Saharan Africa

INTRODUCTION

Prior to 1990, older adults in Nigeria had a lot of people to interact with (Ojembe and Kalu, 2018). This is because the traditional Nigerian societies encourage a communal living where older adults live with their family members engaging in constant interaction and communication (Oladeji, 2011). This allows older adults to have extended quality relationships with their family members, and this ensures rare reports of loneliness. The situation has however changed, blamed on changing living arrangement due to the factors including emigration, industrialization, and job mobility (Ojembe and Kalu, 2018). Children relocate to bigger cities seeking for greener pastures leaving their old parents to live alone. While living alone might not be the only reason that makes older adults lonely, their previous extended quality relationships with their family members is eroded away, thereby increasing reports of loneliness

among older adults in Nigeria. In some instances, older adults still experience loneliness while living under the same roof with their children/grandchildren. This is because children/grandchildren are often engaged with social media. This builds on the interactionist perspective of loneliness which explains that loneliness occurs as a result of lack of an attachment figure and social interaction (Bowlby, 1982). Importantly, the quality and quantity of the social interaction accounts for the subjective value older adults place on the role of social interaction in reducing loneliness.

The definition of loneliness is one that is surrounded with conceptual and theoretical disagreement among researchers. While some scholars have described loneliness as feeling lonely (Fokkema & Knipscheer, 2007), others perceive it as being alone, either as living alone or time spent alone (Victor, Scambler, Bond, & Bowling,

2000). Despite the differences in conceptualizing loneliness, the indicators/dimensions of loneliness have been consistent. These dimensions are related to the quality and quantity of social networks and perceived lack of social and community support (Cornwell & Waite, 2009). Across the literature, loneliness has been associated with several social, behavioral and biological health indicators including smoking (Shankar, McMunn & Banks, 2011), anxiety (Hawkey et al., 2010), depression (Barg et al., 2006), poor cognition (Luanaigh & Lawlor, 2008). Furthermore, these indicators impact on older peoples' quality of life (Momtaz et al., 2006; DiNapoli, et al., 2014; Tomaka, et al., 2006).

Effort to alleviate the negative effect of loneliness among older adults has resulted in various strategies including face-to-face and technology-based interventions (Robyn, 2003). Examples of face-to-face based interventions include educational based social activity intervention (Cattan, et al., 2005) and one-to-one and group work intervention (Stewart, et al., 2001); whereas the examples of technology-based interventions are the use of computer and internet-based interventions (Chen & Schulz, 2016) and robotic based interventions (McCreadie, 2010; Banks, et al., 2008). Among these two classifications, face-to-face based interventions have been explored extensively, while technology-based interventions are mostly researched by gerontechnological researchers in developed nations. However, there is no consensus on the effect of using technological devices to reduce loneliness. Pedell and colleagues (2010) describe scholars with different opinions on loneliness as either sceptics or enthusiasts. The sceptics believe that there are factors that could hinder the use of technology as a tool to reducing loneliness. Subsequently, they perceive technology as not the most appropriate tool to address this social problem. Conversely, while the enthusiasts do not believe that technology can replace human contact, they do feel that it can be used as a tool for reducing loneliness among older adults.

In exploring the factors that could hinder the use of technology as an intervention for reducing loneliness, Charness and Czaja (2005) suggest that, the rapid evolution of technology presents a major challenge to older adults. Age-related changes in short term memory, vision and dexterity have been identified as contributory factors to the poor use of technology by older adults as a way of reducing loneliness (McCreadie, 2010). The economic level of the older adults, especially in the developing nations where most of the older adults are not on any retirement benefits, also makes it difficult for older adults to purchase this technology for use (Ojembe and Kalu, 2018;

Jones, et al., 2008). Furthermore, there are no opportunities for older adults to receive training and education on how these technologies might be used to reduce loneliness (Charness and Czaja, 2005). Additionally, older adults are often not considered during the development and testing of some of these technologies, hence most of the technologies are not age-friendly, which therefore discourages its uptake by older adults (Obono & Madu, 2010; McCreadie, 2010; Hutto, et al., 2015; Kaspar, 2004; Selwyn, 2004). Specifically, in Nigeria, there are several factors that would hinder older adults from using technology. These include the lack of constant electricity to power phones, watch television and listen to radio stations. While it is presumed that the use of these technologies could help reduce loneliness among older adults, the barriers for its use in Nigeria was further explored in this study.

While there are plethora of studies that have explored the use of television, radio, and telephone to reduce loneliness among older adults in developed countries, the search of the literature revealed only one evidence of similar projects in Africa (Nzabona et al. 2016). This study reported that absence of television, pension benefits, and prevalence of limb joint ill-health predicted loneliness among older adults in Uganda. While there seems to be a close socio-cultural similarity between Uganda and Nigeria, our rationale for conducting this study in Nigeria was to explore in detail the experiences of older adults using television, radio and telephone in reducing loneliness. Therefore, our study adopted the Combined Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) (C-TAM-TPB) (Taylor, 1995) to explore the experiences of older adults in using devices such as radio, television and telephone to reduce loneliness in the Nigerian context. The C-TAM-TPB Model incorporates the technology acceptance model (Venkatesh, 2000) and the theory of planned behaviour (Ajzen, 1991). In this C-TAM-TPB, it is presumed that the older adult will perceive the usefulness of telephone, radio and television. Subsequently, this perception will inform their attitude towards using these devices in reducing loneliness.

METHOD

Study design and context

Before the commencement of the study, we obtained ethical approval from the University of Southampton Ethics Committee and Nigerian National Health Ethics Research. Qualitative research methods are most appropriate in the exploration and in-depth understanding of the social phenomenon under study from the perspective of the participants (Silverman, 2006; Ritchie, & Ormston, 2014; Bryman, 2008). In this study,

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we adopted the social constructivism paradigm and used a phenomenological approach as a traditional qualitative design. Adopting the definition of technology by the American Association of Retired Persons (AARP) in their 2008 report, technology is conceptualised as any device that allows older adults to maintain social connections, gather information, be safe at home, as well as promote their personal health and wellbeing (AARP, 2008). This definition is appropriate because it has some theoretical dimension such as social connections and the concepts of attachment figure, since the device could be a source of communication with friends and relatives. For the purpose of this study, the devices were limited to television, transistor radio and telephone. These devices were specifically selected for our study for two reasons. First, they are the most widely and easily used devices among the older adults in Nigeria (Omotayo, 2015). Second, the television, radio and telephone interactivity, a dialog that occurs between a human being or a program, is similar (Heeter, 2000). Older adults in this study that use these devices are retired civil servants who have at one time in their life used one or more of these devices.

Sampling and recruitment

We adopted a purposive sampling technique in the selection of participants for this study. We approached the participants in their places of worship and through the pension offices. As pre-

scribed by Patton (2002) and Kumekpro (2002), we selected participants using criteria-based characteristics. The criteria were that a participant: (1) Must be 60 years old and above; (2) Must have used or currently using a radio, television, and telephone; (3) Should have a 'good' cognitive state; and (4) Must be able to communicate in English and Nigerian Pidgin English. Pidgin English is an unofficial means of communication among diverse ethnic groups in Nigeria; and mostly used among people who do not otherwise speak the same local dialect of the community they are residing (Balogun, 2003). The first author had a conversation with the participants and gained confirmation of the state of their cognitive ability from the family members, before proceeding with the interview. Fifteen participants (9 female and 6 male) (Table 1) living in Port Harcourt Metropolis, Southern Nigeria were selected for interview.

Data collection

Participants who indicated interest and self-identified as one that has experienced loneliness or is experiencing loneliness, and met the above criteria were approached and asked to participate in the study. The first author made the interview guide available to participants one week before the actual interview. This was necessary for participants to reflect and provide a more in-depth discussion on the subject matter (Meho, 2006). Even though, we sent the interview

Table 1. Distribution of participants by selected socio-demographic characteristics

P	Age/Gender	Marital status	Living arrangement	Educational qualification	Technology used
A	69/M	Married	Lives alone	Formal education	Television, telephone
B	60/F	Married	Lives with a child	Formal education	Radio, television
C	84/F	Widow	Lives with a Carer	Formal education	Television, radio
D	84/M	Married	Lives with wife	Formal education	Telephone, radio and television
E	62/M	Widower	Lives with a child	Formal education	Television, telephone
F	88/M	Widower	Lives with son	No formal education	Telephone, radio
G	60/M	Married	Lives alone	Formal education	Telephone, Television
H	72/F	Widow	Lives alone	No formal education	Telephone, television
I	75/F	Widow	Lives with son	Formal education	Television
J	70/F	Widow	Lives alone	Formal education	Telephone
K	80/F	Widow	Lives with daughter	No formal education	Radio, television
L	65/F	Married	Lives with Husband	Formal education	Television, telephone
M	72/F	Married	Lives with Husband	Formal education	Television, telephone
N	60/M	Married	Lives with wife	Formal education	Telephone, television and radio
O	63/F	Widow	Lives with children	No formal education	Telephone

P= participants, F=Female, M=male

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Table 2. Interview guide

Primary questions	Examples of probes
Can you tell me a bit about yourself?	Probe about information regarding age, sex, marital status, educational level, employment status, living arrangement, relationship with those you are living with.
Can you describe loneliness in your own terms	Can you provide me with examples of when you are lonely? When do you feel lonely (i.e. time and events)?
Can you describe things that you do when you are lonely?	If the participants did not mention using any of radio, television or telephone. (<i>stop interview and thank the participants for participating</i>). If the participants mentioned any of radio, television and telephone. (Probe about each of the technology use)
Can you describe how you have used (radio, television or telephone) to reduce loneliness?	Give me examples when you have used radio to reduce loneliness. Can you describe how you feel when you use (radio, television or telephone) in reducing loneliness? (For someone that mentioned more than 1)- Can you describe if any of experience in these technologies you are different from each other.
So, what encourages you most to use these technologies?	Can you provide examples?
Can you describe the challenges you encounter when using these technologies?	How do you navigate through these challenges?
Can you think of other challenges that you think older adults can face in using the radio, television and telephone in reducing loneliness?	Can you think of a friend that have told you any of these challenges? Can you describe what he told you?
Generally, can you think of what can be done to encourage older adults in using radio, television or telephone in reducing loneliness.	

guide earlier to the participants, we avoided leading questions by initially asking questions about how participants reduce loneliness. Any participants that did not mention any of the selected three (television, radio, and telephone) device were not interviewed till the end (Table 2). Among 19 participants that indicated interest to participate only 15 mentioned the selected three devices, therefore, we explored in detail their experiences in using these technologies in reducing loneliness. Prior to the interviews, the first author – who conducted all the interviews – explained the research objective and purpose and sought and obtained informed consent from all participants before proceeding with the interview. The majority of the interviews took place in the participants' homes, except for one that took place in the participant's church at her request. Participants were interviewed face-to-face using an open-ended semi-structured interview guide (Table 2). The interviews were audio recorded and lasted between 45-60 minutes. We maintained an audit trail and took notes (memoing) during the interviews. All interviews were conducted in English except for two, which were conducted in

Nigerian Pidgin English. A pilot interview session was conducted to determine the approximate time of interviews, and reflect on the wording of the questions, and on how to handle sensitive areas. The data from the pilot interview was not included in the analysis.

Data analysis

All interview transcripts were analysed using inductive thematic analysis (Braun & Clarke, 2006). The interview transcripts were transcribed verbatim using Microsoft Word, re-read, hand coded as part of the analytical process and uploaded on NVivo™ 10, a computerized qualitative data management software program designed to assist with the analyses of textual data and assist in the groupings of identified themes. The two transcripts conducted in Pidgin were separately transcribed by both authors in Pidgin and translated into English. We compared the translation from both authors and any differences were resolved (Fenna, et al., 2010). The two authors independently and inductively generated initial codes, and later the codes were merged into categories and overarching themes were generated

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from the categories. At each stage of the analysis, the two authors met and discussed the initial codes and categories to ensure the dependability of the study (Braun & Clarke, 2006; McHugh, et al., 2012). Any disagreement in codes between the two authors were resolved. In our reporting of results, excerpts from the interviews were selected to illustrate themes. For dependability, the researchers used triangulation, respondent validation, clear detailing of methods of data collection and analysis, reflexivity and attention to negative cases (Malterud, 2001).

RESULTS

Table 1 shows the socio-demographic characteristics of the participants. While there are subtle differences on the experiences gained by older adults in Nigeria in using either of these devices- television, radio, and telephone- in reducing loneliness, there are two major and six sub interconnected themes that emerged. The two major themes are benefits and barriers experienced in using technology to reduce loneliness among older adults in Nigeria. While facilitation of interaction; increasing the quality and quantity of social networks; feeling of anticipation; and preferred face-to-face interaction were described as benefits experiences, non-age friendly television and radio programs and usage struggles were described as barrier experiences for using technology in reducing loneliness in Nigeria (Figure 1).

Theme 1: Benefits experience

This theme explains the benefits that our participants believed they gained in using technology to reduce loneliness. The four sub-themes that emerged relating to benefits include: facilitation of interaction, increasing the quality and quantity of social networks, feeling of anticipation, and preferred face-to-face interaction.

ty of social networks, feeling of anticipation, and preferred face-to-face interaction.

Facilitation of interaction

Irrespective of sex, age, and educational status, all the participants noted that with telephone, they are able to interact with their family, friends, and relatives, despite the distance, as most of the participants have family members that live far away. Interaction in this study is defined as the exchange of information and conversation among people. These interactions make it difficult for them to feel lonely. It was also revealed that participants interact with others outside the family network on issues arising from media programs (television and radio). During this interaction, they have the opportunity to laugh and forget their worries.

"Most times, I move around to interact with people on current affairs in the country and especially football." (Participant G, 62 years old)

In addition, participants stated that listening to the radio or watching the television informed them with current events, and this enables them to participate in conversations with individuals. This is particularly important to them because, they were able to engage in conversation with their grandchildren on the current events they must have listened to on the radio or seen on television channel. Based on this, they can stay long on the phone with their relatives, as stated by one of the participants;

"I...I understand what my grandchildren like to talk about, so I always listen to related issues and then that will give me the opportunity to raise up such topics when I call them on phone.... because I always engaged them during our phone calls, they even call me on their own sometimes"

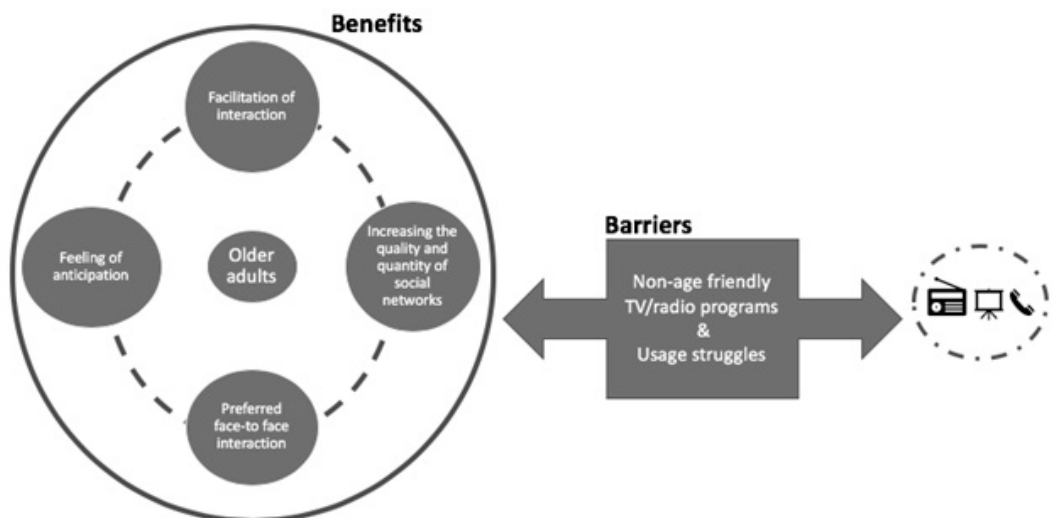


Figure 1. The interconnected themes of benefits and barriers of using technology in reducing loneliness among older adults in Nigeria (TV=television).

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just to seek my opinions on events.” (Participant N, 60 years old)

Increasing the quality and quantity of social networks

There is a large agreement among participants on the contributory effect of using telephone, television and radio to reduce loneliness. Participants who used telephones indicated that with the device, they are able to maintain contact with their children, friends and relatives. They noted that with telephone, they can easily reach and speak with their friends and family members whom they have not spoken to in a long while. The excerpt below illustrates the points raised above;

“.....and with telephone now, I can easily call my children, friend and relatives.” (Participant O, 63 years old)

“I use my telephone to maintain my relationship with my social networks.” (Participant E, 62 years old)

Most participants believed that the constant communication with family members and their friends through telephone enriches the quality of their social networks. Participants further explained that aside the quality of the relationship they had with their family, communicating with the family member through telephones has provided the opportunity to understanding the problems their family members are going through, as stated below:

“This telephone is so nice, calling and receiving calls from my daughters and sons has made our relationship stronger, and it has allowed me to understand some of the things they are going through. This is even getting better now that the internet bundles [megabytes for internet access] are cheaper now.” (Participant J, 70 years old)

Participants that use television and transistor radio, noted that listening to programs on radio and watching programs while interacting with others was an opportunity to expand their social networks. Participants watched and listen to programs around politics, sports, and traditional matters. Such traditional matters in turn give them the satisfaction that the traditional culture is being preserved and pass onto the next generation. This level of satisfaction participant G stated that supersedes any form of loneliness. Participants believed that while watching some of these programs help expand their network, it was interesting that they are able to communicate with all age groups. Participant A noted that after most football games on weekends, he always hangs out with his neighbours to discuss the games. This opportunity makes it difficult for him to feel lonely. He describes it as a:

“...Wonderful time that has become like a weekend ritual.” (Participants A, 69 years old)

Feeling of anticipation

This theme emerged from participants that use the telephone, television and radio. Some of the participants, especially those with mobility disability, noted that receiving calls from their family members gives them something to look forward to. Others noted that they have some favourite television and radio programs. These programs occupy their minds, make them laugh and feel less lonely.

“...I also like to listen to radio because sometimes, they make me laugh... Telephone is good ooo. When you are feeling lonely and you feel like talking to someone, you can call them on telephone and chat with them. Telephone keeps me close to my friends and family.” (Participant D, 84 years old)

“So, my people can stay in the United Kingdom and know what am doing right now. When I remember talking with them, am excited.” (Participant A, 69 years old)

“Sometimes I may be angry, or sickness may be there.....At that moment when I am watching TV, if I am Angry, the anger goes, and sickness reduces. Depression, anxiety, all these things go away when I watch television... except when they show those ones that they shoot and kill.” (Participant J, 72 years old)

Preferred face-to-face interaction

Although our participants expressed satisfaction with using technology to reduce loneliness, they noted that the use of technological devices such as television, radio and telephone to reduce loneliness, cannot replace the quality of face-to-face human interactions.

“...every day you keep using these technologies like the telephone, especially when you are not living with your family like me. It gets to a point when it becomes very monotonous. It is the same thing you are doing. These things are inanimate. They don't talk no matter how we try to deceive ourselves. So, it's not the same thing as chatting face-to-face with your family members or a close friend.” (Participant A, 69 years old)

On further probing, participants believed that quality face-to-face contact with their friends and relatives provides not only a certain type of interaction, it also appeals to their human nature, which is often fulfilling. They further expressed that the human interaction facilitates their ability to reserve some memories and thought that could serve them when left alone for a long time as stated below:

“I still wish that I can see my sons and daughters that live abroad face to face at least four times in a year. The little time I spent with them, is more rewarding than their everyday phone calls...The memories of the time spent with them are often the topic of our discussions on the phone.” (Participant J, 70 years old)

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“..... even when they are not around, the memories of their [sons and daughters last visit are often what I discussed when my friends' visits.” (Participant H, 72 years old)

Theme 2: Barriers experience

This theme explains the reasons participants believed to have hindered them from maximally using technology to reduce loneliness. There are two subthemes including non-age friendly television and radio programs and usage struggles.

Non-age-friendly television and radio programs

Most of the participants expressed displeasure about using television in reducing loneliness. This displeasure was not necessarily because television cannot help reducing loneliness but because they could not watch television because the type of programs that are shown. The majority of participants noted that the media does not consider older adults when scheduling television and radio programs, which on their part, often leads to apathy for technology use. For instance, participant E noted that some television channels show cartoon (children programme) during midday when he is at home alone. While some stations show violent scenes, other stations show sexual scenes, of which the older adults said were considered illicit to be shown on a national television in the 70's and 80's.

“A lot of service providers also need to go the extra mile in incorporating the older people into their service rendering. Like the phone manufacturers and television channels.” (Participant G, 60 years old)

“...if I don't like the programme, I change the channel it immediately. Like all these children programs like cartoon and football. They make me feel tired and I don't like them.” (Participant C, 84 years old)

“In those days, we used to see wrestling as a sports and entertainment, even dancing. We enjoy traditional wrestling in this our community. When I see such programme on television, it reminds me of my youth...but it is so bad that they rarely do such programs on the television channels these days.” (Participant D, 84 years old)

Usage struggles

The themes that emerged under this theme are lack of training, lack of interest and complexity of the devices. One participant complained that his inability to use technology effectively is because no-one is available to teach him how to use the device.

“My daughter bought me a new television 2 months ago because the old one spoilt and she promised to send someone to come and teach me how to operate it because my wife here can't operate it either. But she still hasn't sent the person and that's why I have not started using it.” (Participant D, 84 years old)

“Now, even if they are doing something on television, I don't even care to know. I don't know. Maybe because am getting older.” (Participant I, 75 years old)

In addition, most of the participants expressed displeasure with the complex nature of some of the devices which makes it difficult for them to operate. According to Participant A, devices that are targeted at older adults should be, “a simplified technology not complex one”. (Participant A, 69 years old). Participants are of the opinion that the devices should be modified to suit their needs. “I don't think that the character and the nature of technology we have now take into consideration the need and the state of the older people. That's why the older people are struggling to make use of them, understand them and to know what to do.” (Participant A, 69 years old)

“...when you look at the structure of the modern television, they are fairly ok, but it took me time to learn how to operate it. If you talk about some phones, the big ones, they are even more complex for some people.” (Participant L, 65 years old)

Participants believed that with proper trainings, older adults would increase their use of technology. For instance, participant J feels that:

“Some of these things require effort to be put through which is not possible for older people to get now and that's why they make minimal use of it. Not that they cannot appreciate it if they are properly put through on how to use it, but no such effort is available here. At least the government can help provide them with some training on using these things.” (Participant J, 72 years old)

DISCUSSION

In this study, we were interested in exploring how older adults in Nigeria use technological devices such as radio, telephone and television to reduce loneliness. We believe that their experience will inform the best practice concepts of utilising some of these technologies in reducing loneliness among older adults Nigeria. Our participants identified benefit and barriers of using technology.

Participants mentioned that with the use of technological devices such as television, telephone, and radio, they are able to interact with others, which helps them widen their social networks, and something to look forward to. All these, according to them, helps them to feel less lonely. This finding resonates with existing evidence on the important role that sufficient social and family network plays in reducing loneliness among older adults (Bowlby, 1982; Victor et al., 2000). Interestingly, the anticipation of talking with a loved one on telephone, watching a favourite programme on television or listening to a favourite programme on the radio brings hope and reduces loneliness.

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While all the participants believed that telephones are useful in reducing loneliness, they also expressed concern on the type of television programs available. This finding agrees with the concepts of 'positive/like' and 'negative/dislike attitude' explained by Mitzner et al (2010). In their study, technology use and attitude are affected by how satisfied the older adults feel when using the technology. Interestingly, although participants believe technology can help reduce loneliness, they were not motivated to watch television due to the violent and sexual scenes that dominate most television stations. This could be attributed to a lack of consideration of the needs and preferences of older adults on the part of the media. Our interpretation is consistent with Obono and Madu (2010); in particular, the authors found that of all 17 programs that were distributed by television stations in Nigeria, none was targeted at older adults. Therefore, we believe that for television to effectively help reduce loneliness among older adults in Nigeria, it is important that television stations start dedicating some programs to older adults. Additionally, it seems plausible that interest in a television programme by one individual may be negatively related to loneliness in another individual (Chory-Assad & Yanen, 2005). But in our study, it was shown that TV programs that are high in negativity and not well-suited to meet the viewing needs of older adults (especially during the daytime when they are usually the only ones left at home) can increase loneliness in our participants. Interestingly, this finding agrees with the study of Nguyen et al (2008), which found that television programs that are high in negativity can lead to depression in older adults.

Furthermore, our findings resonate with empirical evidence that the use of telephones empowers older adults to reach out to their social network even when they have mobility problems, thereby reducing loneliness (Melenhorst, Rogers & Bouwhuis, 2006). This shows that telephones help older adults to maintain connections with family and friends in spite of their mobility disabilities. Another example of reflective evidence from our study was the perception of the older adults about technology. They believe that even though technology should be commended, it cannot replace face-to-face meaningful human interaction. This indicates that despite having a constant over-the-phone interaction with their family which helps them feel less lonely, older adults still prefer traditional face-to-face interaction with their family members, friends and relatives. This may be related to their feeling that talking via telephone can be monotonous and does not offer specific human connections/interactions such as smiles, and mannerisms experienced in face-to-face interaction. It is also

important for families to not assume that technology can replace the impact of their physical presence in the lives of their older adults.

Participants identified several factors that could hinder the use of technological devices by older adults in Nigeria. Discussing from the perspective of the 'Technology Acceptance Model' (TAM) (Venkatesh and Davis, 2000), our findings also revealed that the feeling of satisfaction or dissatisfaction with the use of technological devices among older adults is dependent on how useful and easy they perceive the device to be. For instance, most participants prefer to use "simple" phones as opposed to smartphones, because they find "simple" phones easy to operate. Their definition of a "simple" phone is one that is only capable of voice texting, playing music and text messaging. Older adults believe that they are capable of operating these "simple" phones, because it instils a sense of independence in them (Fokkema & Knipscheer, 2007). As has been shown in previous studies (Taylor & Todd, 1995; Mitzner, et al., 2010), when older adults find a device so simple, it becomes easy for them to use. The complexity in using the smartphones by the older adults have aggravated their lack of interest in using technology to reduce loneliness. Although it has been suggested that irrespective of the complexity of smartphones, training of older adults in any specific technology may increase their interest in using such technology (Charness and Czaja, 2005).

POLICY RECOMMENDATION

There is a greater need for the media to recognise the preferences of older adults when creating their programme scheduling and distribution. Just as there are children's channels on television, it would be beneficial for the media to launch a separate channel and air programs aimed at older adults. Specific to the Nigerian context, our findings revealed that often, older adults stay home alone in the afternoon. Therefore, it is suggested that television/radio stations should target airing the programs that could appeal to older adults during this period. While this is a suggestion, it would be beneficial for future studies to explore the specific periods of the day when older adults feel lonelier. We also suggest that the 'proposed' television/radio programs should be initiated and if possible, led by older adults who have retired from radio/television stations. This will not only stimulate age friendly programs but encourage retirees to be volunteers in such programs.

In order to increase the use of technological devices, we advocate that governments in collaboration with telephone companies should establish information, communication and technology centres for older adults. For instance, big

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phone companies should establish a programme (workshop) that will teach older adults to use smartphones at no additional cost. In addition, older adults should be involved during the development of phone devices, as it is possible that their involvement could provide valuable insight on the specific modifications that would encourage them to use the phones.

STRENGTH AND LIMITATION OF THE STUDY

Even though this study is the only study that has explored older adult's experiences with the use of technology to reduce loneliness in the west African region, there are associated limitations to this study. First, the population of study were older adults with a formal education some of whom had also spent quite some time in the western world. Therefore, it is possible that the experience and the perception of this group of older adults might not be applicable to less educated older adults in Nigeria.

The strength of this study was on our ability to ensure that the elements of rigour for qualitative research was achieved. First, we made sure that the participants we interviewed had the experience of the phenomena under study (loneliness and technology use). It is important to note that, older adults with education and formal jobs are gradually becoming a larger proportion of the ageing population in the city this study was conducted. Second, we conducted an expert review of the interview guide development with experienced qualitative researchers. We conducted a pilot interview, upon which the experts provided feedback on the probing questions. Third, we ensured that the credibility of the study was maintained by involving two coders at all stages of the data analysis. Specifically, we pro-

vided a detailed account of the coding, theme development and interpretation process. Fourth, we triangulated our data using our reflexive notes during interviews to guide the interpretation of the findings. Fifth, we conducted member checking to ensure that we captured the participants' true experience with technology use as a tool for reducing loneliness. Our member checking process was done in two stages: during and after the interview. Member checking during the interview has been suggested to be a better approach of allowing the participants to reflect on their thoughts and provide different perspective to the interview process (Myers, 2000; Caelli, 2001). Lastly, we kept a reflective note to ensure that we identified our subjectively 'I' throughout the study (Bradbury-Jones, 2007).

CONCLUSION

This study explored the experiences of older people in using technology to reduce loneliness. Older adults believed telephone, television, and radio were instrumental in facilitating interaction with their friends and relatives, increasing the quality and quantity of their social networks and giving them hope (feeling of anticipation). Participants, however, noted that while these technologies helped them in reducing loneliness, it should not replace face-to-face interactions. Furthermore, several factors including lack of 'age-friendly' television/radio programs, lack of interest, lack of training and complexity of the telephone were identified as the barriers to use technology in reducing loneliness among older adults. Involving older adults at the radio/television and phone companies are suggested strategies in combating the above barrier, and subsequently should encourage the use of technology in reducing loneliness among older adults.

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