

## Original Research Article: Open Access

### Elderly and Technology: Stress Resulting from Adaptation to New Technology

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#### ABSTRACT

Information and Communication Technology (ICT) includes electronic devices that store, manipulate and retrieve information digitally. In this study, we have focused on ICT devices such as smartphones, iPads and laptops and their usage by old people. Research studies in the early 2000's have indicated that old people increasingly used technology for reasons such as information gathering, shopping, hobby interests and maintaining interpersonal connections. Though CT gained wide acceptance among the old people, a significant proportion of them resisted the adoption of technology. Factors influencing this resistance were found to be loss of autonomy, poor cognitive and motor abilities due to ageing, perception of competence and stereotypes about old age. With rapid evolution of technology over the years, it has become an inevitable part of our daily lives. Thus, the elderly has a more pressing need to adapt to the changing demands of CT. This study focuses on exploring the stress experienced by old people (55-70 years of age) in the process of adapting to new technology. A qualitative study was conducted with 8 participants (4 men and 4 women). The results and discussions have been elaborated upon in the research article.

**Keywords:** ICT, elderly, Stress, Adaptation to technology, Qualitative study

#### INTRODUCTION

Stress is a term that is largely used in day-to-day conversations to indicate and report the level of tiredness, discomfort and fatigue an individual is facing. According to American Psychological Association (APA) - "Stress is any uncomfortable emotional experience accompanied by predictable biochemical, physiological and behavioral changes". This definition indicates the emotional state and response of an individual to various changes that take place in response to excessive energy-consuming situation. For the purpose of this study, we have defined stress as emotional reactions to extensive, drastic changes, modifications or learning which include physical, psychological and social areas of discomfort.

Today, technology has become an integral aspect of one's life where each individual is required to know, understand and learn a technology device or another [4,5]. In light of this, the following study aims to understand how the elderly learn and adapt to recent technology. According to studies [6], technology is broadly of two types - Assistive Technology (AT) and Information and Communication Technology (ICT). This study focuses on understanding the stress faced by the elderly in learning to use an ICT device,

which are technology devices used to store and communicate information.

Several researchers have focused on understanding the underlying reasons of usage of technology by the elderly. Another study [7] found that the primary motive of technology use among the elderly was to make daily work more easy, quick and economically managed. Some other studies indicate that the elderly use communication technology in case of emergency, for security, to preserve friendships and to feel more free and independent [8-13]. Similarly, Cheek et al. in their study proposed that ICT may lessen feelings of isolation, improve overall sense of well-being and enable them to remain in their homes longer [6].

While studies have been conducted to understand the

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reasons for technology use by the elderly, fewer studies have been done to understand the potential factors that discourage their usage. A study conducted [14] identified that the various reasons elderly people do not use phones is because they do not feel its need; have physical and cognitive shortcomings and also find mobile phones complex. This is in line with other studies which have also identified reduced cognitive abilities and complications of mobile phones as main reasons for abstinence [15-17].

Research in the field of technology and the elderly has majorly focused on identifying the reasons old people use and do not use technology. However, the psychological, social and cultural aspects surrounding technology usage have not been studied. There is also a dearth of studies done on the Indian population with respect to technology. Therefore, this study aims at exploring the stress experienced by elderly men and women (belonging to age group 55-70 years) in the process of adaptation to ICT in Indian settings. It adopts a phenomenological approach to understanding the stressful experiences of the elderly while learning an ICT device.

## METHODS

**Sample:** The sample consisted of 8 elderly people - 4 males and 4 females, within the age bracket 55-70 years. They belong to upper middle socio-economic backgrounds and reside with their families. They have either retired or are working from home. They have been using some ICT device (mobile, laptop, tablet, or smartphone) for a minimum period of 6 months.

## PROCEDURE

Semi-structured interviews were conducted with each of the participant. The broad areas consisted of notions of the elderly about technology; early exposure to technology; time of first exposure to new-age technology; physical stress, psychological stress and social stress. The interviews were recorded, with the permission of the participants, and were later transcribed for analysis.

## RESULTS AND DISCUSSIONS

The questions framed for the interview were in line with the areas mentioned above. Themes that emerged under each area upon analysis have been discussed in the following section (**Table 1**).

**Table 1.** Illustration of codes and corresponding themes related to elderly and adaptation to ICT.

Codes	Themes
Great	
Important	
Necessary	
Easy	Notions about Technology
Fast	
Stripping off Human Spirit	
Indiscipline	
No exposure	
Radio exposure	
Very early exposure	Early Use of Mobile Phones
Exposure in 40's	
Exposure in 50's	
Smart phones	
iPads	Devices used

Latops	
Communication	
Entertainment	
Job requirements	Reasons for use
Daily news, booking autos and cabs	
Religious needs	
Not a necessity	
Forgetfulness	
Poor Interest	Reasons for non-use
Poor knowledge and training	
Complex design of device	
Trembling, blurry vision, tiredness	
Not an element of their generation	
Co-dependence	
Family support and love	Experience of Stress
Lack of knowledge does not hamper daily routine	
Persisting social inclusion	

### Notions about technology

The interviews indicate that majority of the elderly believe technology to be great, necessary and important. This is indicated in the transcripts where they reported that 'we would come to a standstill if not for technology' and that 'technology is great. It is very important for all developments to take place'. However, along with this welcoming and adaptive viewpoint, they also felt that technology is not easy. It is complicated and is also very controlling as 'it strips people off human spirit'. Some of the participants reported that technology is 'taking their freedom away' and 'moving them away from the life of a disciplined person'. Therefore, we see that the elderly is largely of the view that technology is good and advancements in it are necessary. However, an element of complication, lack of autonomy and discipline also grip them as they understand and perceive technology.

### Early use of mobiles, landlines and other communication devices

Considering the lack of innovations and limited availability of technology, most participants reported a lack of exposure to technology during their early days. However, a small proportion of participants reported usage of radios from the time of its introduction. Most of them also reported having a landline connection at their homes or making use of trunk calls. Participants from a relatively higher socio-economic background reported having their personal mobile sets right from the beginning. Other participants reported that the first time they used a mobile phone was when they were in their 40's or 50's.

### ICT devices used by the elderly

The participants of this study reported the use of smart phones and iPads at large, as compared to lesser usage of laptops and computers. This is important to note as the various benefits and difficulties arising from technology use is related to the type of technology device, they make use of - mobile phones were considered to be 'quick' and

'uncontrollable' while iPads were considered to be 'confusing'.

### **Reasons for use of ICT Devices**

This study found an underlying theme of necessity to be a primary motivator for acquisition as well as usage of technology in the elderly. This was indicated in instances where the participants of the study reported that 'technology is must' and 'If I had a phone, I would have seen ... so he bought for me'. Communication for the purpose of maintaining relationships and social networks was also found to be a prominent reason for use. A majority of participants reported using smartphones or iPads for the purpose of entertainment which included cinemas, reality TV shows and cookery shows. Some other reasons for use of ICT devices were related to jobs, booking autos and cabs, net banking and to view religious content online.

### **Reasons for non-use of ICT devices**

Despite the innumerable innovation's technology has brought with it, the elderly continues to face certain inhibitions when it comes to the learning of ICT devices. The findings of this study suggest that a majority of the elderly do not learn to use technology as they do not find the need to do so, with some stating that 'phone may not be necessary at all' and 'it is of no use to me'. Participants also reported lack of knowledge and training as one of the major reasons for not using a device or particular features of a device with some participants stating 'Because I hardly know about it' and 'I didn't know how to operate it' when asked about the difficulties faced by them. This lack of knowledge along with lack of familiarity with the device contributes to a sense of fear in the participants, thus hindering their usage of device. Even when they do attempt to learn, participants reported repeated trials and practice as being essential due to their senescent forgetfulness. Reduced physical abilities such as tiredness, blurred vision, hearing impairment and trembling of hands were also found to obstruct usage of ICT devices. The study also found a tendency of older people to externalize technology as they do not perceive it to be a part of their generation. Lack of urgency and complexity of the device is also a negative contributor to learning with participants stating that 'it would be easier if it was simpler' and 'if only calling was there it would have been better'.

### **Experience of stress**

In general, the participants reported moderate and temporary experiences of stress while learning ICT devices. The elderly reported that they 'didn't know what was happening in the phone as things would change with random touch' and 'when it didn't fall right, I would get irritated and shut down the iPad'. One possible reason for this could be the late exposure they had to technology. This provided them with very little time to gain knowledge and be trained in using new-age technology. However, they did not report experiencing acute or chronic stress in this process. This can

be due to the following reasons - reporting stressful experiences gave them a feeling of loss of authority and control, they held positive notions about technology or they did not perceive stress at all.

The participants of our study stated numerous times that 'we are old and satisfied' and that 'we do not need technology to monitor our activities'. These statements indicate their need to be in control of themselves and their environment. In such a situation, reporting a stressful experience will probably make them feel as being controlled by something else, thus losing authority.

It is also possible that the participants reported fewer stressful experiences due to the positive notions they held about technology. Since they believed technology to be useful and beneficial, it is likely that they rationalized their learning experience as something which was important and necessary. This allowed them to pursue learning of the ICT devices despite adversities and in turn experience lesser stress.

Lastly, the experiences of the elderly during the learning process can largely be associated with the Indian socio-cultural settings. The Indian society is collectivistic in nature. The participants reported having 'constant family support and care while they were teaching me the device' and 'they love me. They never gave up on me and helped me learn this device every time I forgot how to use it'. It is highly likely that this support provided them with a buffer from experiencing stress. This support and care was provided to them from their extended families as well. They reported that 'it did not hamper my relation with my grandchildren'. Limited technology use by the elderly did not hamper their daily routine as their family members would provide them with any technology-related assistance. Therefore, the cultural elements of collectivism and co-dependence seem to play a major role in the elderly feeling relaxed, stress-free and at peace with their level of knowledge concerning ICT devices.

### **FUTURE IMPLICATIONS**

This study has major implications in the field of understanding the elderly population in relation with the constant growth in the field of technology. With massive technologization, almost every activity is technology-dependent. Being gripped in such a society, it becomes inevitable for the elderly to learn the usage of these devices during their old age. This study helps us become aware of the kind of pressure we place on our elderly to adapt to objects they are not familiar with. In addition to this, various technology device companies can use this information to develop simpler ICT devices specifically meant for the easy use by the elderly. This study also highlights the importance of training that should be given to the elderly on ICT device. This training can be given at homes along with family care and support. Lastly, this study also reiterates the importance

of love and support derived from one's family and relations that buffer the elderly from experiencing stress and burnout at a very critical age of their life.

## LIMITATIONS AND RECOMMENDATIONS

It should be noted that the findings of the study have a few limitations. First, the study focused exclusively on older people living with their families. Future research could examine stress brought about by learning technology devices in elderly who live by themselves or in old age homes. Second, the sample consisted of individuals only from the urban upper middle-class population. The findings may differ in the case of individuals from rural or lower socioeconomic background. Since many participants reported that forgetfulness was another reason for difficulty in learning, it is important to focus on the possible limitations that impaired memory can bring into recalling of experiences of the elderly during the learning process. Finally, the study included only eight participants. Further research must be done on a larger population to obtain better clarity and understanding of the phenomenon. Throughout history, men and women are found to play different roles in the society and are also known to perceive and react differently to situations. Hence, keeping the varying gender roles and differences in mind future research could study adaptation to technology from an evolutionary perspective.

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