

# Research & Case study on benefits of touchscreen use and the elderly

Dementia is a chronic, debilitating disease that causes loss of brain functions, targeting the old age population.

It majorly affects memory, problem-solving skills and doing daily life activities. People with dementia also suffer behavioural problems and get frustrated, aggressive and restless, which is bothersome to other residents, staff and family members (Joddrell & Astell, 2016).

Antipsychotic drugs have shown moderate effects in calming dementia caused behavioural and psychological symptoms, but their potential adverse effects outweigh benefits (Tampi et al., 2016).

Maguire et al. (2013) found that dementia patients in nursing care are more on the prescribed antipsychotic drugs than those living in a community.

## Statistics:

At least 1 in 8 people aged over 80 have dementia. Besides, the most common disorder that causes dementia is Alzheimer's disease (Alzheimer's Society, 2019). As per recent statistics, there are nearly 900 thousand dementia patients in the UK, which are expected to rise to 1.6 million over the next 20 years.

Thus, this research article aims to discuss how touch screen devices (touch screen activity tables/tablets) can be advantageous for the elderly with dementia and how these devices would help make their lives easy, enjoyable and less dependable on medications.

The use of touchscreen activity table digital devices has become more popular worldwide. The big enough screen size, swift touch and latest applications have made these devices more engaging and user friendly.

Digital science and technology are now more focused on making these devices helpful in improving wellbeing. The use of touchscreen devices in dementia care is not uncommon, and it has been even more grown in recent years.

The research claimed that touchscreen devices would be ideal for old age people as they are more intuitive, requiring less hand and eye coordination than using a desktop with a mouse and cursor (Wandke et al., 2012).

Additionally, studies found no potential side effects of using digital devices by dementia people. Instead, they discovered a significant improvement in their cognitive functions and depressive symptoms (Barbosa Neves et al., 2017; Lin et al., 2020).

Hung et al.(2020) analysed the dementia patient's behaviours using touchscreen tablets and revealed three positive impacts i.e, increased social interaction/participation, less disrupted behaviour and improved quality of life. The study further encouraged the use of touchscreen digital devices in the care home and hospitals for dementia patients, considering it a non-pharmacological intervention to cure and prevent responsive behaviour in future.

## **Benefits of touch screen use by elderly**

### Navigation & wayfinding:

Spatial disorientation is one of the early symptoms in dementia patients, which is difficulty finding ways to even familiar places. Consequently, caregivers impose restrictions on their outdoor activities due to the risk of injuries (such as falling due to disorientation) hence, dementia patients get restricted, alone and socially isolated (Kwan et al., 2018)

The latest touchscreen digital devices usually have built-in GPS and route-finding apps. With the help of these devices, dementia people can safely walk, drive and take part in social and leisure activities outside their homes. Additionally, caregivers can also locate their live location via tracker through GPS.

### **Connect & Socialise with their loved ones:**

Socialising or being socially connected to loved ones is pertinent for wellbeing and maintaining cognitive functions (Astell et al., 2019).

Unfortunately, the elderly at care homes feel lonely and miss their social interaction with their loved ones.

Garland et al. (2007) revealed that videotaped messages by loved ones calm aggression and relieve depression in the residents.

Perhaps, the latest touch screen activity tables/tablets offer dozens of applications (such as WhatsApp, skype, facetime), helping residents to do audio or video calls with their loved ones and feel connected even miles apart. Communicating and connecting with loved ones via touchscreen devices exhibit more engagement, provoke positive emotions, calm agitation and cause less reliance on the psychotropic drug in dementia patients (Van der Ploeg et al., 2015; Garland et al., 2007).

Similarly, people with dementia can use social media (Facebook, Instagram) on their touch screen activity tables/tablets, enabling them to see and engage with the online socialising activities of their loved ones. Perhaps, they would not feel left out and feel more connected and updated about their loved ones, relieving their depression and loneliness.

### **Play games:**

Elderly with dementia can enjoy indoor, digital games on their touchscreen devices, helping them kill boredom, remain active and improve cognitive performance with brain training.

Tablet games such as candy crush, spot the difference and puzzles, in short, all games that involve engaging hands, would help improve dexterity whilst training their brains. (10 ways to use touch screen technology to engage dementia patients, 2021)

Interestingly, digital devices also come with applications that offer virtual programmes. These activities can be helpful for those who are bedridden or find it hard to get out-they can now take part in regular exercising such as virtual cycling on touch screen activity tables, which can be an alternate source of activity and enjoyment to them (Astell et al., 2019).

### **Reminding favours:**

Due to potential memory loss, people with dementia often forget to take their medications on time or sometimes take the wrong dosage, leading to frequent hospital admissions. The reminder apps on touch screen activity tables/tablets can remind them about their medicines, helping them adhere to their treatment regimens effectively.

Similarly, these apps can also remind them of special dates or events such as their marriage anniversary or their son's birthday.

### **Revive memories:**

While dementia results in short- & long-term memory loss, the elderly often struggle to remember past events and memories, provoking aggressive and disruptive behaviours.

Perhaps, memorable pictures and videos can trigger reminiscence, helping to calm their aggressive and depressed behaviours.

Thus, caregivers can store or make a photo book on their digital devices, which they can go through any time and revive their sweet memories.

Music can also similarly trigger memories. People with dementia can play their favourite music, which they used to play in their youth. The latest applications have now simulated features that allow the elderly to play their favourite instrument, helping them to remain engaged and relaxed.

However, a question would be, does the elderly forget to use their touch devices with time? The answer is NO. If the elderly with dementia learn to use touchscreen phones/ tablets, they will retain this skill (Acosta, 2021). However, it is imperative to note that people with mild dementia can use these digital devices and not those with severe, progressive dementia.

### Other Uses:

Digital devices can also monitor and analyse the elderly behaviours, favourite activities, disease progression, which in turn help optimise treatment and prevent unnecessary hospital stays (Astell et al., 2019).

Serra-Añó et al. (2019), for instance, used sensors embedded in android devices to analyse postural control and gait in dementia patients. It found both attributes worse in dementia people as compared to the control group.

Moreover, digital devices emit electromagnetic waves, which can provoke preventive or healing effects in dementia.

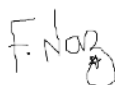
It is believed that the magnetic field via smartphones could be an effective, non-invasive and non-pharmacologic (drug-free) way to prevent and reverse dementia disorders (Hendrick, 6 C.E.).

### **Conclusion:**

Dementia is more a terminal illness that affects brain functions, causing loss of cognitive abilities, impaired memory and disturbing behaviours. Elderly with dementia, living in a nursing home, often feel lonely, bored and socially isolated, which worsen their condition, more reliance on drugs and frequent hospital stays. Touchscreen devices are known to be intuitive, user friendly and proven to be beneficial if used by elderly with dementia.

They can use touchscreen devices to speak to their loved ones, play games, safely navigate outdoors, view old memorable photos/videos, listen to their favourite music, remind themselves about medicine and special dates.

Research studies are optimistic about the positive effects of touchscreen devices on the elderly and consider them a potential non-drug intervention to reverse and prevent dementia in future.



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