



The Role of Technologies and Innovation in Promoting Physical Activity

- Dr. Stavronika Panagiotopoulou, M.D. Psychiatrist -

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People of third age and barriers to physical activity¹

- Attitudes toward physical activity
- Motivation
- Support
- Perceptions of competence and body image
- Fun
- Influence of friends, family, and physical education teachers
- Environmental physical activity opportunities
- **Technical issues:** gender and age differences



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1. Liu, Y., Zhang, H. & Xu, R. BMC Psychol 11, 298 (2023). <https://doi.org/10.1186/s40359-023-01348-3>

2. <https://www.styku.com/blog/how-does-technology-affect-the-promotion-of-physical-fitness-programs>

Physical activity and technology: examples of devices

- **Pedometers:** count and monitor the number of steps taken during ambulatory activities such as walking, jogging, and running. Can be carried in a pocket or a bag held close to the body
- **Accelerometers:** record body acceleration minute to minute, providing detailed information about the frequency, duration, intensity, and patterns of movement
- **Heart rate monitors:** used primarily to assess exercise intensity for individuals with cardiac conditions and highly trained competitive athletes. Can also estimate the exercise energy expenditure
- **Smart fabric and sensor technology:** monitoring systems which can remotely record/monitor physiological responses. These systems are fully integrated within clothing



Physical activity and technology: examples of applications

- **Interactive video (AR/VR) games:** such as Dance Dance Revolution (DDR), Wii Sports, Wii Fit, Sony Play Station, Xavix, and EyeToy games
- **Fitness trackers:** e.g., Fitbit, Garmin, Xiaomi, Misfit, Apple watch. They can monitor daily steps, heart rate, sports activities and sleep statistics. The data from these trackers can be packed up on the user's online account so that they can monitor their personal goals and share them with their health care provider
- **Smartphone applications:** allow users to track jogging/biking routes, workout data and comprehensive workout history, distance and time, control music, and share performance levels through social media applications



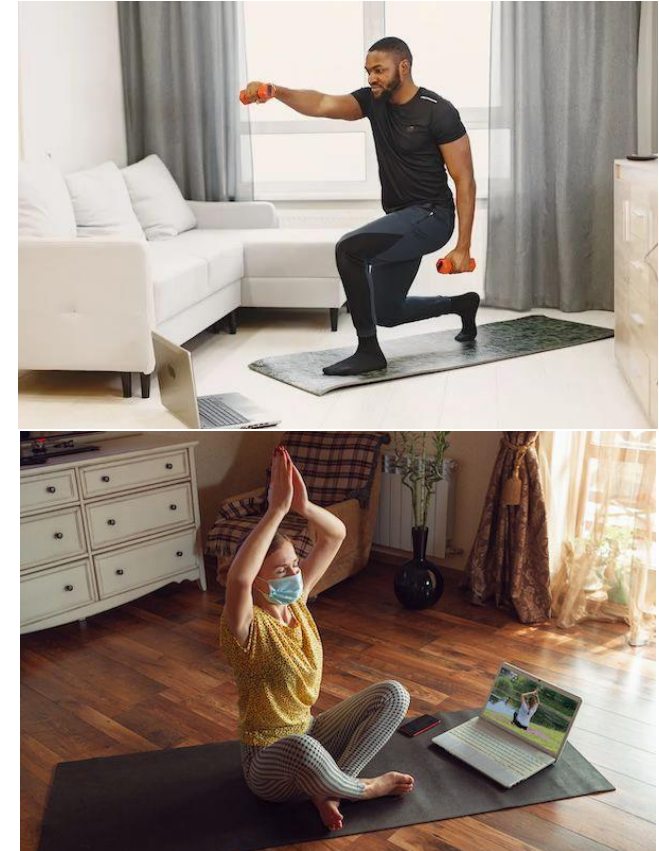
People of third age and technology: challenges

- Older adults might feel overwhelmed when using technology due to lack of technological equipment during a large part of their lives
- Anxiety might be caused to people of the third age when trying to implement technology in other practices like physical activity
- Many applications and devices are mainly addressed to younger generations and include complex interfaces and overwhelming amounts of choices
- The implementation of technology during physical activity can therefore lead to decreased motivation instead of proving to be beneficial for older adults



People of third age and technology: benefits

- Technology can be a great addition to everyday life and even physical activity
- During the pandemic situation, the necessity and benefits of technical support have become obvious and allowed for many conveniences and benefits for people of the third age regarding their commitment to an active lifestyle



Positive outcomes when implementing technology into people of third age

- **Join online communities**, e.g., other members of fitness classes, friends to be active with together, and groups that share similar hobbies
- **Social interaction**, a way of staying connected to family and friends which can help with overall mental health and motivation
- **Access to online information**, e.g., websites/platforms that offer online workouts, information on exercises or nearby events, etc.
- **Access to online portals** from healthcare providers, nursing homes, or medical professionals, e.g., for updates or results on physical assessments, etc.



Positive outcomes when implementing technology into people of third age

Technological devices like smartwatches or tablets offer:

- **Medical alerts:** keeping track of a person's heart rate and general physical state while being physically active
- **Reminders and routines:** can help with routines and keeping up with daily tasks, ranging from housework tasks to taking a walk or meeting with friends for exercising, and also maintain their level of independence
- **Increased motivation:** motivational feedback like rewarding messages after long phases of activity. In addition, they may feel like a new and exciting addition to the person's life, helping them with staying motivated



People of third age and technology: requirements and attitudes

- **Simple designs:** designed for their unique needs and capabilities. This should include a simple design and user-friendly usage
- **Easy language:** easy and understandable language, e.g., easy instructions or big lettering
- **Functionality:** include functions that are useful for older adults. Too many useless functions can easily be overwhelming



How to implement technology during physical activity

1. **Know their attitude toward technology:** Make sure the person is open to implementing technology during physical activity to avoid anxiety or feeling overwhelmed
2. **Decide on what will be used:** Together with the person of the third age, decide on what technological devices should be used: phones/tablets/computers, apps, smartwatches, fitness trackers, TVs, etc.
3. **Choose the right technology:** Make sure the devices/app etc. are designed with respect to their unique needs and capabilities, e.g., offer an easy and understandable structure, are user-friendly, use big letters, etc.
4. **Support learning:** Help the person understand what they are using, e.g., how to use an app by themselves, what functions it has, or what benefits it can have for the person
5. **Time and patience:** Understand that it takes time for some people to adjust to technology and that not every technical device will work for everybody. Patience is key!





Thank you for your attention!

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