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IMPACT OF AI GADGETS ON HUMAN BEINGS

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ABSTRACT

The proliferation of Artificial Intelligence (AI) gadgets, particularly smartwatches, has revolutionized healthcare, especially in developing countries like Bangladesh. These devices enable individuals to monitor their health at home, which is crucial for older adults and those with limited access to healthcare services. This study investigates the level of trust and preference among older adults in Bangladesh towards AI-powered smartwatches, examining how factors such as user-friendliness and quality influence their perceptions. The research aims to understand how these aspects contribute to satisfaction with AI health devices and identify the key factors that enhance their benefits while minimizing their drawbacks. By exploring the responsible use of AI gadgets, including notification management and balancing screen time with physical activity, this study sheds light on the significant impact of these devices on individual health and well-being. The findings of this research will inform the development of AI-powered healthcare solutions that cater to the needs of older adults in Bangladesh and beyond.

**Keywords: Artificial Intelligence (AI), Health Monitoring, Regulatory Frameworks,
Security Vulnerabilities, Technology Dependency**

INTRODUCTION

The integration of Artificial Intelligence (AI) into wearable technology, particularly smartwatches, is revolutionizing healthcare accessibility and personalization, especially in developing nations like Bangladesh where healthcare infrastructure can be challenging. AI-powered smartwatches offer the potential for remote health monitoring, empowering individuals, particularly older adults, to proactively manage their well-being from the comfort of their homes. This has spurred research into user trust and preference for these devices, examining the influence of factors like user-friendliness and perceived quality on overall satisfaction. However, the proliferation of affordable AI gadgets raises crucial concerns about potential health risks, including electromagnetic radiation, eye strain, and cognitive overload, necessitating careful consideration of responsible usage, including managing notifications and balancing screen time with physical activity, to maximize benefits and mitigate drawbacks. Simultaneously, other technological advancements, such as virtual reality (VR) offering immersive simulated environments and AI-integrated smart sunglasses providing enhanced safety and health tracking, are expanding the landscape of personalized technology and its impact on individual health and well-being.

History:

As AI technology continues to advance, we can expect to see even more sophisticated and intelligent devices in the future. AI smartwatches offer personalized health monitoring, crucial in places like Bangladesh with limited healthcare. This study explores user trust and satisfaction, especially among the elderly [6]. Conversely, cheap AI gadgets raise health concerns, potentially causing physical, psychological, behavioral issues due to their affordability. VR creates immersive 3D environments. Smart sunglasses blend AI and AR, enhancing daily life. They aid the visually impaired with navigation and offer women voice activated safety alerts. These devices boost convenience, safety, and independence through real-time obstacle detection and GPS tracking.

1. SMARTWATCH:

Introduction:

AI, especially in smartwatches, is changing healthcare, particularly in places like Bangladesh. AI can make things super personalized, like picking out clothes online or spotting health problems. Since healthcare can be tough to get, especially for older folks and in developing countries, smartwatches let people check their health at home. This research examines the level of trust and preference people have for these smartwatches, as well as how factors such as

user friendliness and quality influence these feelings, particularly among older adults in Bangladesh. The goal is to understand how these aspects contribute to satisfaction with AI health devices. Using these gadgets responsibly, which involves managing notification settings and finding a balance between screen time and physical activity, is crucial for enhancing the benefits while reducing the drawbacks. The effects on individual health are significant [1, 2].

Positive Impacts:

- ❖ Health Monitoring:
- ❖ Smartwatches enable users to track vital signs like heart rate, blood oxygen levels, and sleep patterns. For detection of health issue.
- ❖ They encourage physical activity by tracking steps, distance, and calories burned, promoting a healthier lifestyle.
- ❖ They can also assist in managing chronic conditions by providing data that can be shared with healthcare providers.
- ❖ Increased Awareness:
- ❖ Smartwatches provide instant notifications, keeping users informed and connected.
- ❖ They can enhance situational awareness, especially in emergencies, by providing quick access to information and communication tools.
- ❖ Enhanced Productivity:

- ❖ Smartwatches can streamline daily tasks by providing quick access to calendars, reminders, and communication tools.

Negative Impacts:

- ❖ Potential Health Concerns:
- ❖ Some concerns exist regarding long-term exposure to electromagnetic radiation emitted by smartwatches.
- ❖ Skin irritation can occur from prolonged wear, especially with certain band materials.
- ❖ There are also concerns about the accuracy of the health data that is collected.
- ❖ Psychological Effects: Lead to anxiety and stress.
- ❖ Over-reliance on technology can contribute to distraction and decreased focus.
- ❖ They can also contribute to technology dependency.
- ❖ Sedentary Behavior:
- ❖ Although smart watches often try to encourage movement, paradoxically, because of the ability to do so many things from the wrist, it can also increase sedentary behavior.
- ❖ Privacy Concerns:
- ❖ Smartwatches collect personal data, raising concerns about privacy and security. The smartwatch usage among Dhaka's elderly (40+), using a 5-point Likert scale to measure AI-enabled experiences, product/service quality, trust, convenience,

satisfaction, and ease of use. 486 participants from three parks were interviewed, ensuring safety and data accuracy. Contribution---The trust and user experience, driven by ease of use and

convenience, boost satisfaction with AI smartwatches. It's vital for developing countries, but limited by its focus on older Dhaka males, suggesting future research needs broader sampling.



Figure 1: AI Smartwatches

2. AI CHEAP

Introduction:

The rapid proliferation of artificial intelligence (AI)-powered gadgets has led to an increasing presence of affordable and low-cost devices in the market. While these gadgets offer accessibility and convenience, they also pose significant risks to human health. This review paper explores the impact of cheap AI gadgets on the human body, focusing on potential physical, psychological, and behavioral effects [14]. Key concerns include electromagnetic radiation exposure, eye strain, cognitive overload, and security vulnerabilities. The findings emphasize the need for quality control, regulatory frameworks, and consumer awareness to mitigate the adverse effects of low-cost AI devices [15].

IMPACT OF AI CHEAP GADGETS AFFECTED TO HUMAN BODY AND THEIR ACTIONS:

Physical Health Risks

- ❖ Electromagnetic Radiation (EMR) Exposure
 - Poorly manufactured AI devices (cheap smartwatches, wireless earbuds, etc.) may emit excessive EMR.
 - Long-term exposure may cause headaches, sleep disturbances, or possible neurological effects [16].
- ❖ Overheating & Battery Issues
 - Cheap AI-powered devices (smartphones, smartwatches, VR headsets) may use low-quality batteries, leading to overheating or even explosions.
 - Can cause burns, skin irritation, or more severe injuries [22].

❖ Eye Strain & Vision Problems

➤ Cheap AI-based screens (VR headsets, smart glasses) may lack blue light protection or flicker excessively.

➤ Can lead to digital eye strain, headaches, and sleep disturbances [22].

❖ Hearing Damage

➤ Poorly designed AI earphones may lack proper volume control, causing potential hearing loss over time [17].

Psychological and Behavioral Effects

❖ Mental Fatigue & Overstimulation

➤ Low-cost AI chatbots, voice assistants, and entertainment devices can overstimulate users, leading to attention problems and mental exhaustion [18].

❖ Anxiety & Addiction

➤ Cheap AI-powered social media and gaming devices use addictive algorithms

without proper ethical considerations, leading to screen addiction.

➤ AI-generated fake news, deepfakes, or misleading content can cause stress and anxiety [21].

❖ Reduced Cognitive Abilities

➤ Overreliance on low-quality AI assistants may weaken memory, problem-solving skills, and critical thinking.

❖ Privacy & Security Risks .

➤ Cheap AI gadgets often have poor security, leading to data breaches, unauthorized surveillance, and hacking risks [19].

3. Reduced Physical Activity

➤ AI-driven automation in cheap gadgets (like smart home devices) may promote a sedentary lifestyle.

➤ Overuse of AI tools for basic tasks reduces physical engagement, leading to obesity and health issues [20].

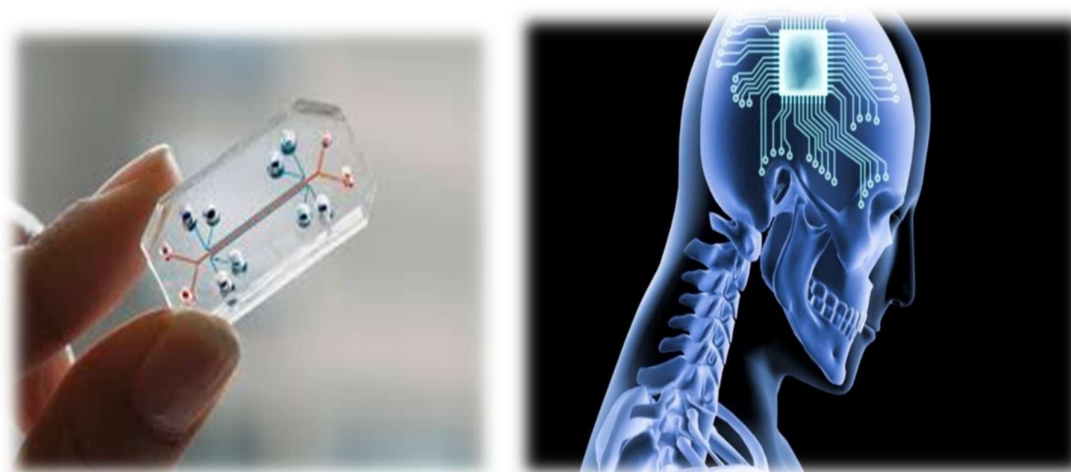


Figure 2: AI Cheap In Human Body

3. AIRBUDS:

Introduction:

The World Health Organization defines hearing loss as the inability to hear sounds at or below 25 decibels in both ears, with levels ranging from mild to profound. Due to the widespread use of personal listening devices, approximately 1.1 billion young people are at risk of hearing loss, with 245 million units sold globally in 2012. Prolonged use of these devices at high volumes can lead to hearing problems like distortion and tinnitus, particularly among adolescents and young adults. Noise-induced hearing loss is becoming a major public health concern, with social and economic consequences, including stigma, low self-esteem, job challenges, and higher healthcare costs [23, 24].

Positive impacts :

- ❖ Portability: Earbuds are small and lightweight, so you can easily carry them around.
- ❖ Noise cancellation: Some earbuds can block out background noise.
- ❖ Comfort: Many earbuds come with different ear tips so you can find a comfortable fit.
- ❖ Sound quality: Advanced audio technologies can deliver high-quality sound.
- ❖ Focus: Music can help you block out distractions and focus on your tasks.

❖ Mood: Music can improve your mood and reduce stress.

❖ Motivation: Listening to upbeat music can make exercise more enjoyable.

❖ Learning: Listening to music can improve your memory and cognitive function.

Negative impact:

❖ Using earphones for prolonged periods or at high volumes can harm your ears and overall health. Some common issues include:

❖ Noise-Induced Hearing Loss

❖ Tinnitus

❖ Ear Infections

❖ Earphone Fatigue.

❖ The Risk of Poor Posture and Neck Strain.

Limitations:

Research shows a significant link between earphone usage and ear health, with a p-value of 0.003. Factors like usage duration, volume, and surrounding noise can lead to ear disorders, with over three years of earphone use increasing the risk of hearing loss. Earphones can reach sound levels of 110 dB, and exposure to such levels for over an hour daily can cause damage. To prevent harm, both volume and usage duration should be limited. While a tuning fork test was used, an audiometric test would offer more accurate results, highlighting the need for further research with advanced methods [25].



Figure 3: Airbuds

4.VR Virtual Reality:

Virtual reality, commonly referred to as VR, is a digitally created three-dimensional (3D) environment that allows individuals to navigate and engage with a simulated setting in a manner that closely resembles real life, as experienced through the users' senses. The environment is developed using computer hardware and software, although users might also be required to wear equipment like goggles, headsets, or bodysuits to engage with the environment [30].

The greater the extent to which users can engage with a VR environment and shut out their real-world surroundings, the more they can set aside their disbelief and perceive it as authentic, no matter how imaginative it

may be Virtual Reality (VR) offers a wide range of applications, from entertainment and gaming to education, healthcare, and even social interaction, allowing users to experience immersive and interactive environments [31].

➤ Here's a breakdown of VR's diverse uses:

- Immersive Gaming: VR enhances gaming experiences by allowing players to feel like they are truly in the game world.
- VR Movies & Experiences: VR enables users to watch movies or experience events in a new, immersive way.
- Social VR: Platforms like VR Chat and Rec Room allow users to socialize and interact in virtual environments.
- Education & Training

- Virtual Field Trips: VR can transport students to different locations and historical periods for educational purposes.
- Simulation and Training: VR simulations can provide practical training for various professions, such as surgery, engineering, and firefighting.
- Enhanced Learning: VR can make learning more engaging and interactive, leading to better retention and understanding.
- Healthcare
 - Mental Health Treatment: VR can be used to treat anxiety, phobias, and other mental health conditions by exposing patients to controlled virtual environments.
 - Physical Rehabilitation: VR can help patients regain lost mobility and function through immersive exercises and simulations.
 - Pain Management: VR can distract patients from pain by immersing them in virtual environments.
 - Medical Training: VR simulations allow medical professionals to practice procedures and learn new techniques in a safe and controlled environment.
- Other Applications
 - Tourism: VR can allow potential tourists to virtually visit destinations and attractions before their trip.
 - Architecture & Design: VR helps architects and designers visualize and present their projects in a realistic way.

Virtual reality (VR) can have both positive and negative effects on human health, including potential physical issues like eye strain and motion sickness, as well as psychological effects like anxiety and addiction. However, VR can also be used to improve mental health, manage pain, and enhance rehabilitation [34].

Potential Negative Effects:

Physical Issues:

Cybersickness: VR can induce motion sickness-like symptoms, including nausea, dizziness, and disorientation.

Eye Strain and Fatigue: Prolonged VR use can lead to eye strain, headaches, and blurred vision.

Myopia: Some studies suggest that prolonged VR use might contribute to the development of nearsightedness (myopia).

Muscle Fatigue: VR activities, especially those involving movement, can lead to muscle fatigue in the neck, shoulders, and other areas.

Psychological Effects:

Anxiety and Stress: Intense or prolonged VR experiences can trigger anxiety or exacerbate pre-existing mental health conditions.

Addiction: The immersive nature of VR can lead to addiction, with users spending excessive time in virtual environments, potentially impacting real-life relationships and activities.

Delusions and Confusion: Difficulty distinguishing between virtual and real experiences can lead to confusion and difficulty adjusting to reality.

Potential Positive Effects:

Mental Health:

Stress and Anxiety Reduction: VR can be used to create immersive relaxation experiences and reduce anxiety in certain situations.

Pain Management: VR can help patients manage pain by providing distractions and reducing the perception of pain.

Rehabilitation: VR can be used to improve cognitive and motor functions in rehabilitation programs.

Cognitive Coping: VR-based therapy can help individuals develop cognitive coping skills for conditions like PTSD and depression.

Other Applications: Education and Training: VR can provide immersive and interactive learning experiences.

Healthcare: VR can be used for patient education, surgery simulation, and therapy.

Social Interaction: VR can facilitate social interactions in virtual environments.

Important Considerations:

Moderation: It's crucial to use VR technology in moderation to minimize the risk of negative side effects.

Individual Differences: People react differently to VR, and some individuals may be more susceptible to cybersickness or other negative effects.

Safety: Ensure that VR equipment is used safely and that users are aware of potential risks.

Ethical Considerations: Consider the ethical implications of VR technology, such as potential for addiction and misuse [32, 33, 36].



Figure 4: Virtual Reality (V.R)

5. AI SUNGLASSES

INTRODUCTION:

Wearable technology is transforming the way we interact with the world, offering new levels of convenience, safety, and independence. Among the most innovative advancements in this field are smart sunglasses, which incorporate Artificial Intelligence (AI), Augmented Reality (AR), and health tracking to deliver an all-encompassing, immediate solution for daily issues. These sunglasses are particularly valuable for individuals who face safety concerns, such as women and visually impaired users, by offering features that address their unique needs. For the visually impaired, smart sunglasses can act as a navigation aid, using real-time object detection to identify obstacles and provide audio feedback, helping users move safely through their environment. Additionally, for women's safety, features like voice-activated SOS alerts with GPS tracking provide an extra layer of security in case of emergencies. This solution aims to combine multiple technologies into one wearable device, creating a practical solution that promotes safety, health monitoring, and convenience in everyday life [37]. AI tools related to sunglasses can impact the human body in several ways, both positively and negatively. These tools typically enhance the

design, functionality, and personalization of sunglasses using artificial intelligence. Here are some key effects:

Positive Impacts:

1. Better Eye Protection – AI can optimize lens coatings and tint selection to block harmful UV rays and blue light, reducing the risk of eye diseases like cataracts and macular degeneration.
2. Personalized Fit – AI-powered virtual try-ons and custom-fit designs can improve comfort, reducing strain on facial muscles and preventing headaches.
3. Enhanced Vision – AI-integrated smart sunglasses can adjust to lighting conditions, improving visibility and reducing eye fatigue.
4. Posture & Health Monitoring – Some AI-enabled smart glasses monitor posture, remind users to blink, or detect early signs of eye strain and fatigue.

Negative Impacts:-

1. Over-Reliance on AI Features – Users may become dependent on AI-driven enhancements, potentially weakening natural adaptability to different lighting conditions.
2. Potential EMF Exposure – Smart sunglasses with AI and Bluetooth connectivity emit low levels of electromagnetic fields, though research is ongoing regarding long-term effects.

3. Strain on Eyes – Continuous use of AI-integrated screens in smart sunglasses may contribute to digital eye strain and discomfort [21].

4. Mental Distraction – AI-powered augmented reality (AR) features in sunglasses may divert attention, leading to accidents or cognitive overload.

CHALLENGES AND LIMITATIONS:

Technological Integration: Integrating multiple technologies (AI, AR, health monitoring) into a compact and lightweight design poses significant engineering challenges. Ensuring that all components work seamlessly together without

compromising functionality or user comfort is complex. **Power Consumption:** Managing power consumption is critical for wearable devices. The need for continuous operation of sensors, cameras, and processing units may lead to rapid battery drain, necessitating effective power management solutions and potentially limiting usability. **Limited Awareness of Users:** Visually impaired individuals may not be aware of the existence or benefits of smart wearables. Outreach and awareness campaigns will be necessary to reach these potential users [34, 37].

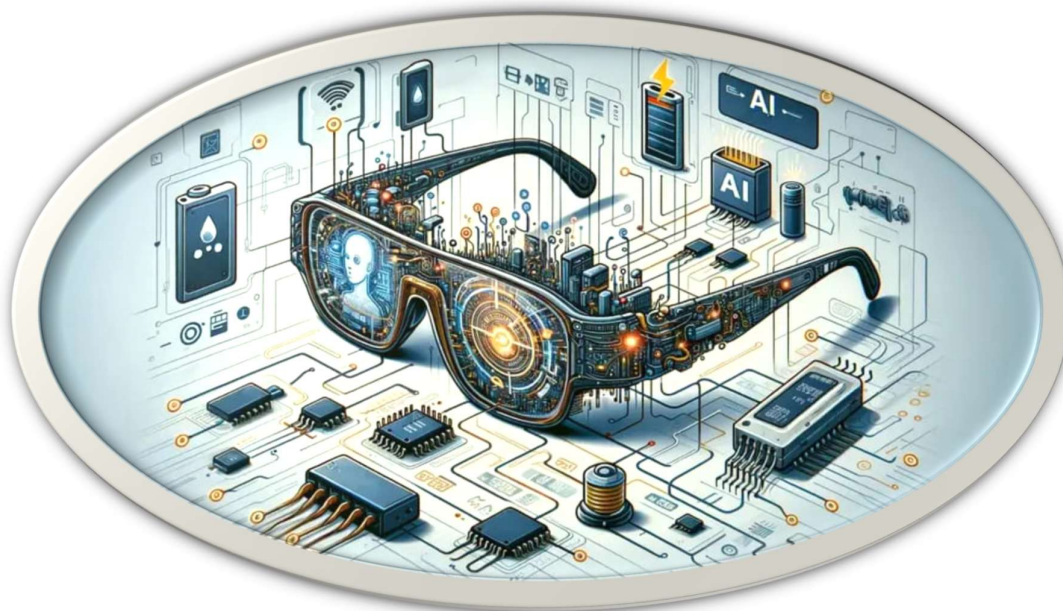


Figure 5: AI Sunglass

CONCLUSION

In conclusion, the evolution of AI-driven wearable technology, from "e-doctor" smartwatches for seniors to AI-enhanced

smart sunglasses for women's safety and visually impaired assistance, signifies a transformative shift in personal healthcare and accessibility. While these

advancements, including VR applications in therapy, offer substantial benefits, responsible development and usage are paramount. Brands must prioritize user behavior and satisfaction, ensuring devices are both effective and safe. Concerns regarding device quality, potential health risks like hearing loss from excessive earphone use, and the potential drawbacks of VR, such as motion sickness and social isolation, necessitate careful consideration. Moving forward, continued research and public awareness campaigns are crucial to maximize the positive impact of these technologies while mitigating their potential negative consequences.

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