

EFFECTS OF PORTABLE COMPUTING DEVICE USAGE ON POSTURE AND HEALTH AMONG UNIVERSITY STUDENTS

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Keywords: COMPUTING DEVICE, HUMAN HEALTH, BODY POSTURE, MUSCULOSKELETAL SYMPTOMS

Abstract

With the advancements in modern-day technology and the pandemic situation with COVID-19, portable computing devices use has increased and seems to take control of our daily activities. However, the usage of portable computing devices comes with many adverse effects, especially related to the health and posture of the people. Therefore, a study has been conducted to find out the common effects on posture and health that occurred towards university students that are heavy users of the portable computing device to do the assessments throughout their studies. A set of questionnaires and 15 interview questions were designed to gain primary data from the respondents about their responses to the effects. The study's overall findings indicate that most of the Universiti Malaysia Pahang (UMP) respondents agree that the neck, shoulder, and eyes were the most common effect on posture. At the same time, 'ear hearing function', 'brain disorder (Parkinson)' and gadget addiction were common health effects. At the end of the paper, a few recommendations were made to ensure the proper usage of portable computing devices to decrease the severity of the negative effect that can damage their health and posture.

1 Introduction

Nowadays, portable computing devices and cell phones are growing in the modern world [1]. More people feel the need to get to them anytime, anywhere. The demand and use of such technologies increased the popularity of portable computing devices. Portable computing devices such as personal digital assistants, keypad phones, touchscreen cell phones, and portable computers are widely used in communication and entertainment applications for information technology (IT) [2]. However, the successful usage of portable computing devices poses many questions, including public health and posture. Throughout the growing use of cell phones, questions about musculoskeletal disorders (MSDs) have also increased throughout extended cell phone use [3].

MSDs impact people's health conditions, reduce work efficiency and require considerable costs in treating the sickness. For instance, smartphone users continue to experience discomfort in the thumb, back, and shoulder as the device's overall time increases [4]. Faulty posture such as forward neck posture, slouched posture, or rounded shoulders is triggered by the excessive use of cell phones. The sustained posture of the forward neck can cause damage to the cervical and lumbar spine structure, as well as ligaments. Such structural issues due to incorrect posture can also contribute to respiratory dysfunction.

In the current situation of dealing with COVID -19, university students are among individuals who depend highly on the usage of portable computing devices. However, since many

researchers have reported about the negative effect on the body health of the users, this study focus on:

1. Identify the effects of portable computing devices on the university student's health and posture.
2. Recommend the safe duration for the students to spend on portable computing devices at one time.
3. Recommend the guidelines/prevention after prolonged usage of portable computer devices.

The study's outcome should be able to initiate improvement or new devices to support the usage of the portable computing device that can overcome the adverse effects related to the posture and health of the user.

2 Related Research

Several researchers have reported the negative effects of the high usage of portable computing devices. However, most of the research on the adverse impacts of portable computing devices that have been conducted mainly focuses on smartphone or cellphone usage.

Research by Suhag et al. [5] presents their finding from the interview with a group of medical doctors about the effect of excessive usage of mobile phones on humans. Based on their discovery, 97% of the respondents agree that mobile phone radiation affects humans from mobile phone usage. They also identify diseases due to mobile phone devices, such as brain tumors, male infertility, heart disease, effect on the fetus, ear hearing function, Alzheimer's, and Parkinson's. The same