

# Prevalence of Carpal Tunnel Syndrome Among the Faculty of Computer Science and Information Technology (FCSIT) Undergraduate Students in UNIMAS and Its Association with Computer Usage

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## ABSTRACT

Carpal Tunnel Syndrome (CTS) is the most common type of nerve entrapment and it is due to the compression of the median nerve which passes through the carpal tunnel in the wrist. Previous research had found that the development of CTS is related to the prolonged use and repetitive movement of the wrist such as typing. Thus, this research is conducted to determine the prevalence of CTS among the Faculty of Computer Science and Information Technology (FCSIT) undergraduate students in UNIMAS and its association with computer usage. To achieve the study's objective, a quantitative cross-sectional study was conducted to assess the prevalence of CTS and its association with computer use among UNIMAS FCSIT undergraduate students. The data was collected by distributing a self-administrated questionnaire through online platforms. The questionnaire contained 4 main sections, which consisted of the respondent demographic information, respondent's computer usage and knowledge on computer ergonomics, Patient Rated Wrist Evaluation (PRWE) and Boston Carpal Tunnel Syndrome questionnaire (BCTQ). The collected data were analysed by using SPSS statistical software version 21. A total of 338 responses from UNIMAS FCSIT students with a mean age of 22.04 were collected; 59.5% of the respondents were females and 40.5% were males. Among the 338 respondents, about 90.8% were healthy with no pre-existing medical condition while only 3.8% of them were diagnosed with CTS prior to this study. Next, most of the respondents had average knowledge on computer ergonomics. (28.4%). According to the PRWE result, most of the respondents had minimal pain (44.1%). For the BCTQ severity score result, most of the respondents showed minimal CTS symptoms (42%) while for the BCTQ function score, up to 60.7% of the respondents did not show CTS symptoms. Other findings of our study showed that there was no relationship between CTS and computer usage either in terms of daily duration on computer use, years on computer use or knowledge on computer ergonomics. In conclusion, there is minimal correlation between computer usage and the risk of developing CTS.

**Keywords:** Carpal Tunnel Syndrome (CTS), FCSIT undergraduate students, Patient Rated Wrist Evaluation (PRWE), Boston Carpal Tunnel Questionnaire (BCTQ)

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## INTRODUCTION

Carpal tunnel syndrome (CTS) is the most common type of nerve entrapment and it is due to the compression of the median nerve which passes through the carpal tunnel in the wrist (Chammas et al., 2014). The median nerve provides motor supply to the thenar muscles, index fingers, middle fingers, and the radial side of ring fingers and it also provides sensory innervation to the second digits, then third digits, and ventral-lateral two-thirds of the hand (Rapp & Soos, 2020). Apart from the median nerve, the carpal tunnel also serves as a canal for the tendon of *flexor pollicis longus*, four *flexor digitorum profundus*, and four *flexor digitorum superficialis* (Presazzi et al., 2011). Entrapment of the median nerve occurs when the pressure in the carpal tunnel increases and increased pressure in the carpal tunnel can be due to the flexion and extension of the wrist, and the flexion of fingers (Bland, 2007). In CTS, median nerve entrapment will lead to a series of symptoms such as tingling, numbness, burning, or pain sensation (Ashworth, 2016). These symptoms are described to deteriorate from midnight until awakening from sleep (Aroori & Spence, 2008).