

ABSTRACT

Relationship Between Internet Gaming Disorder And Carpal Tunnel Syndrome among Junior High School Students in Yogyakarta

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The use of internet games has increased among teenagers and adults, addicted to playing online games causes a person to become an internet gaming disorder (IGD). The prevalence rate is reported of 0,6% to 5,4% worldwide. It is characterized by the inability to control the use of the internet or video games causing functional difficulties in life, especially in physical impact, such as carpal tunnel syndrome (CTS). The relationship between internet gaming disorder that involves using GAS-7 Ina and CTS in adolescents has not been much evaluated. The purpose of this study is to identify the relationship between internet game disorders and carpal tunnel syndrome among junior high school students in Yogyakarta.

This is a cross-sectional study, the research subjects are students in SMP Cangkringan 1, SMP N 1 Yogyakarta, Cangkringan 2 SMP, SMP N 4 Banguntapan, SMP N 8 Yogyakarta. Subjects who met the inclusion and exclusion criteria performed GAS-7 Ina examination and carpal tunnel syndrome assessment using the phalen's test and Boston Carpal Tunnel Questionnaire (BCTQ). Statistical analysis was used to determine the relationship between the IGD and demographic characteristics.

There were 130 subjects with a median age of 14 (12-15) years. Phalen test is considered positive result when the patient's symptoms are reproduced, test gives the same symptoms as that experienced with carpal tunnel syndrome, namely paresthesia (buring, tingling, numbness) in the distribution of the median nerve and BCTQ indicate clinically significant CTS is reported a compilation of total scores > 11 of severity symptom scale and >8 of functional symptom scale. In the bivariate test, variables that are significantly related to CTS are internet gaming disorders (95% CI, 1.11-4.54; $p = 0.018$), duration of gaming > 4 hours/day (95% CI, 1.18-4.86; $p = 0.011$), smartphone user (95% CI, 3.18-22.13; $p < 0.001$) and smartphone and computer user (95% CI, 1.55-9.39; $p = 0.004$). In the multivariate test, IGD status (OR = 4.62; $p = 0.002$) was significantly related to CTS.

The conclusion of the study was there is a relationship between IGD and CTS with 4.62 times greater chance of CTS among junior high school students with Internet gaming disorder (IGD).

Keywords: carpal tunnel syndrome, adolescents, internet game disorder, junior high school students

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ABSTRAK

Hubungan *Internet Gaming Disorder* dengan Kejadian *Carpal Tunnel Syndrome* pada Remaja SMP Di Yogyakarta

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Latar Belakang: Penggunaan game berbasis internet telah meningkat di kalangan remaja dan orang dewasa, sehingga kecanduan bermain game online menyebabkan seseorang mengalami *internet gaming disorder* (IGD). Prevalensi IGD dilaporkan 0,6% hingga 5,4% di seluruh dunia, ditandai dengan ketidakmampuan untuk mengontrol penggunaan internet atau video game dalam kehidupan, yang menyebabkan kesulitan fungsional, terutama terhadap dampak fisik, seperti *carpal tunnel syndrome* (CTS). Hubungan antara IGD yang menggunakan GAS-7 Ina dan CTS pada remaja belum banyak dievaluasi.

Tujuan: Tujuan dari penelitian ini adalah untuk membuktikan hubungan antara IGD dengan CTS pada remaja SMP di Yogyakarta.

Metode: Penelitian ini merupakan penelitian potong lintang, subjek penelitian adalah siswa di SMP Cangkringan 1, SMP N 1 Yogyakarta, SMP Cangkringan 2, SMP N 4 Banguntapan, SMP N 8 Yogyakarta. Subjek yang memenuhi kriteria inklusi dan eksklusi dilakukan pemeriksaan GAS-7 Ina dan penilaian *sindrom carpal tunnel* menggunakan tes Phalen dan *Boston Carpal Tunnel Questionnaire* (BCTQ). Analisis statistik digunakan untuk menentukan hubungan antara IGD dan karakteristik demografis.

Hasil: Terdapat 130 subjek dengan nilai tengah usia 14 (12-15) tahun. Tes Phalen dinyatakan positif ketika muncul gejala parestesia dalam distribusi saraf medianus dan BCTQ menunjukkan CTS yang signifikan secara klinis dilaporkan dengan hasil skor total > 11 pada skala gejala keparahan dan > 8 pada skala gejala fungsional. Pada analisis bivariat, variabel yang secara signifikan berhubungan dengan CTS adalah IGD (95% CI, 1,11-4,54; $p = 0,018$), durasi main > 4 jam/hari (95% CI, 1,18-4,86; $p = 0,011$), pengguna *smartphone* (95% CI, 3,18-22,13; $p < 0,001$), dan pengguna *smartphone* dan komputer (95% CI, 1,55-9,39; $p = 0,004$). Pada analisis multivariat, status IGD (OR = 4.62; $p = 0.002$) signifikan terhadap CTS.

Kesimpulan: IGD terbukti berhubungan dengan CTS. IGD memiliki *odd ratio* 4,62 kali lebih besar mengalami CTS pada remaja SMP di Yogyakarta

Kata Kunci : *carpal tunnel syndrome*, remaja, *internet gaming disorder*, pelajar SMP

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