



ความสัมพันธ์ระหว่างพฤติกรรมการเรียน และอาการของโรคออฟฟิศซินโดรม
ในกลุ่มนักเรียนมัธยมศึกษาปีที่ 6 โรงเรียนสาธิตมหาวิทยาลัยศรีนครินทรวิโรฒ ปทุมวัน
A Cross-Sectional Study on the Relationship Between Study Habits
and Office Syndrome Symptoms Among 12th-Grade Students

at Patumwan Demonstration School

อรชพร เต็มภัทราโชค¹, เอกวิน อังสุพานิช¹

Arachaporn Tempatarachoke¹, Eakkawin Angsoopanich¹

¹โรงเรียนสาธิตมหาวิทยาลัยศรีนครินทรวิโรฒ ปทุมวัน

¹Patumwan Demonstration School

วันรับบทความ : 26 มิถุนายน พ.ศ. 2568

วันแก้ไขบทความ : 16 พฤศจิกายน พ.ศ. 2568

วันตอบรับบทความ : 6 มิถุนายน พ.ศ. 2569

บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาความสัมพันธ์ระหว่างพฤติกรรมการเรียนกับอาการของโรคออฟฟิศซินโดรม
ในนักเรียนชั้นมัธยมศึกษาปีที่ 6 โรงเรียนสาธิตมหาวิทยาลัยศรีนครินทรวิโรฒ ปทุมวัน

วิธีการศึกษา: ผู้วิจัยได้ทำการสำรวจนักเรียนชั้นมัธยมศึกษาปีที่ 6 ของโรงเรียนสาธิต มศว.ปทุมวัน
ในช่วงเดือนสิงหาคม พ.ศ. 2567 โดยเก็บรวบรวมข้อมูลเกี่ยวกับพฤติกรรมการเรียน และอาการของ
โรคออฟฟิศซินโดรม นำข้อมูลที่ได้มาวิเคราะห์ เพื่อหาความสัมพันธ์ระหว่างพฤติกรรมการเรียน กับอาการ
ของโรคออฟฟิศซินโดรมด้วยสถิติ Chi-square test

ผลการศึกษา: จากการสำรวจนักเรียนจำนวน 135 คน พบว่า มีเพศหญิง ร้อยละ 49.6 เพศชาย
ร้อยละ 47.4 และไม่ระบุเพศ ร้อยละ 3 อายุระหว่าง 16-19 ปี นักเรียนที่มีการเรียนต่อเนื่องเกิน 120 นาที
มีอาการออฟฟิศซินโดรมมากกว่ากลุ่มที่เรียนต่อเนื่องน้อยกว่า 60 นาที อย่างมีนัยสำคัญทางสถิติ
($\chi^2 = 10.45$, $df = 2$, $p = 0.005$) อาการที่พบบ่อยที่สุด คือ ปวดบริเวณคอ ไหล่ และหลังส่วนบน โดยพบว่า
เพศหญิงรายงานอาการบ่อยกว่าเพศชาย

สรุปผลการศึกษา: การเรียนเป็นระยะเวลานานมีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับ
ความชุกของอาการออฟฟิศซินโดรม การส่งเสริมให้นักเรียนพักเป็นระยะ และปรับท่าทางการเรียน
ให้เหมาะสม อาจช่วยลดการเกิดความตึงเครียดของกล้ามเนื้อได้

คำสำคัญ: โรคออฟฟิศซินโดรม, พฤติกรรมการเรียน, นักเรียนมัธยมศึกษา

Abstract

Objective: To examine the relationship between learning behaviors and symptoms of office syndrome among 12th-grade students at Patumwan Demonstration School.

Methods: A cross-sectional descriptive study was conducted among 135 12th-grade students at Patumwan Demonstration School during August 2024. Data were collected through a structured questionnaire measuring study duration, break duration, and office syndrome symptoms. Associations between categorical variables were analyzed using the Chi-square test.

Results: A survey of 135 students, comprising 49.6% female, 47.4% male, and 3% who preferred not to specify their gender, aged between 16-19 years, revealed that students who studied continuously for more than 120 minutes reported a significantly higher prevalence of office syndrome symptoms compared to those who studied for less than 60 minutes ($\chi^2 = 10.45$, $df = 2$, $p = 0.005$). The most common symptoms were neck, shoulder, and upper back pain. Female students reported symptoms more frequently than male students.

Conclusion: Prolonged study duration was significantly associated with higher office syndrome symptom prevalence. Encouraging regular breaks and ergonomic posture during study sessions may help reduce musculoskeletal strain among students.

Keywords: office syndrome, study habits, high school students

Introduction

“Office Syndrome” refers to a group of health problems linked to long periods of desk work. These include muscle and joint disorders, eye strain, fatigue, repetitive strain injuries, and symptoms related to poor posture. Common complaints are back pain (upper or lower back), neck stiffness or pain, shoulder tension, and hand or wrist pain such as carpal tunnel syndrome.¹ These conditions are mainly caused by prolonged sitting and repetitive tasks in office environments. Recent study² shows that work-related musculoskeletal disorders (WMSDs) affect 27.2% of office workers within the past 7 days and 33.3% within the past 12 months.

In Thailand, the implementation of the Thai University Central Admission System (TCAS) has intensified academic competition, leading many high school students to study for long hours with limited physical activity. This sedentary lifestyle can lead to similar health issues³ to those experienced by office employees. Despite this, few studies have explored the relationship between study habits and office syndrome symptoms in adolescents.

This study aims to identify how study habits influence the prevalence of office syndrome symptoms among students at Patumwan Demonstration School in 12th-grade who are going through the TCAS system.

Objective

1. To examine the prevalence and types of office syndrome symptoms among 12th-grade students at Patumwan Demonstration School.
2. To analyze the learning behaviors of 12th-grade students and how these behaviors may contribute to the development of office syndrome symptoms.
3. To investigate the correlation between continuous study duration and the severity or frequency of office syndrome symptoms in students.

Methodology

Research Design

A cross-sectional descriptive study examined the relationship between study behaviors and symptoms of office syndrome among 12th-grade students at Patumwan Demonstration School. Data were collected using a questionnaire that assessed both study habits and the physical symptoms reported by students.

Population

The study included 12th-grade students from Patumwan Demonstration School during the 2024 academic year.

Sample size calculation

A total of 135 students participated in the survey. The sample was based on voluntary participation, meaning students chose to complete the questionnaire on their own.

Research instruments

Data were collected using a Google Form questionnaire consisting of three sections: 1) demographic information, 2) study habits (including average study duration and break duration), and 3) office syndrome symptoms across six categories: neck pain, shoulder pain, back pain, eye strain, wrist pain, and fatigue. Questions were phrased such as, "During a typical school day, how long do you study continuously before taking a break?"

Instrument Validation

The questionnaire was pretested with 20 students to ensure clarity and reliability. Cronbach's alpha for internal consistency was 0.82.

Ethical consideration

Before filling out the questionnaire, participants were informed about the purpose of the study and asked for their consent. Participation was completely voluntary, and all responses were kept anonymous and confidential. The data were used solely for research purposes.

Data Collection

The survey was conducted during August 2024, with the questionnaire distributed online through the school's internal communication channels.

Data Analysis

Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation). The Chi-square test was used to examine associations between study duration (≤ 60 min, 61-120 min, > 120 min) and symptom prevalence (≤ 3 vs. > 3 symptoms). Statistical significance was defined as $p < 0.05$.

Results

Demographic Characteristics

A total of 135 students participated in the study. Of these, 49.6% were female ($n = 67$), 47.4% were male ($n = 64$), and 3.0% did not specify gender ($n = 4$). Most participants were

17 years old (71.9%, n = 97), followed by 18 years (22.2%, n = 30), 16 years (3.7%, n = 5), and 19 years (2.2%, n = 3). The mean age was 17.2 years (range: 16–19).

Study Habits

The most common study duration was more than 120 minutes, with an average of symptoms reported per person (table 1). The most frequently reported break durations were 6–10 minutes and 11–15 minutes, each reported by 21.5% of participants (figure 1). Participants who reported taking breaks longer than 30 minutes had the highest average number of symptoms, at 4 symptoms per person (table 2).

Table 1: Summary of findings by study duration (n = 135)

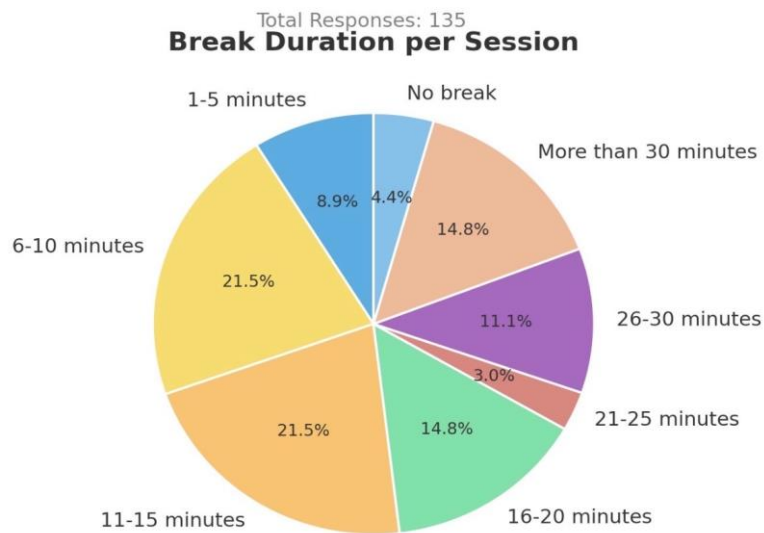
Study Duration	Amount Of Each Study Duration	Average Symptom Count	Most Common Symptom	Percentage Reporting Most Common Symptom
1-20 minutes	4 (3%)	3.5	Neck, shoulder, and shoulder blade pain	100%
21-40 minutes	6 (4.4%)	3.17	Neck, shoulder, and shoulder blade pain	70%
41-60 minutes	19 (14.1%)	3.32	Back pain	66%
61-80 minutes	18 (13.3%)	2.78	Neck, shoulder, and shoulder blade pain	72%
81-100 minutes	9 (6.7%)	3.44	Neck, shoulder, and shoulder blade pain	67%
101-120 minutes	18 (13.3%)	2.83	Neck, shoulder, and shoulder blade pain	68%
More than 120 minutes	61 (45.2%)	3.66	Neck, shoulder, and shoulder blade pain	84%

Table 2: Summary of findings by break duration (n = 135)

Break Duration	Amount Of Each Break Duration	Average Symptom Count	Most Common Symptom	Percentage Reporting Most Common Symptom
1-5 minutes	12 (8.9%)	3.1	Neck, shoulder, and shoulder blade pain	21.6%
6-10 minutes	29 (21.5%)	3.2	Neck, shoulder, and shoulder blade pain	22.8%
11-15 minutes	29 (21.5%)	3.5	Neck, shoulder, and shoulder blade pain	24.8%

Table 2: Summary of findings by break duration (n = 135) (Continued)

Break Duration	Amount Of Each Break Duration	Average Symptom Count	Most Common Symptom	Percentage Reporting Most Common Symptom
16-20 minutes	20 (14.8%)	3.6	Neck, shoulder, and shoulder blade pain	25.0%
21-25 minutes	4 (3.0%)	1.5	Back pain	66.7%
26-30 minutes	15 (11.1%)	3.0	Neck, shoulder, and shoulder blade pain	24.4%
More than 30 minutes	20 (14.8%)	4.0	Neck, shoulder, and shoulder blade pain	21.2%

**Figure 1:** Break duration per session

Symptom Analysis

The mean number of symptoms reported by participant was 3.41. The most commonly reported symptoms were neck pain, shoulder pain, and pain in the shoulder blade region, with a higher prevalence among females (84.6%) than males (72.1%). Other frequently reported symptoms included back pain and eye strain (figure 2).

A significant association was found between study duration and the number of reported symptoms, with longer study sessions linked to a higher symptom burden. Students who studied continuously for more than 120 minutes had the highest proportion of multiple symptoms (>3 symptoms per person). Chi-square analysis confirmed a statistically significant relationship between study duration and symptom count ($\chi^2 = 10.45$, $df = 2$, $p = 0.005$).

In addition, students who took shorter breaks (<10 minutes) reported more symptoms compared with those who took breaks every 15–20 minutes

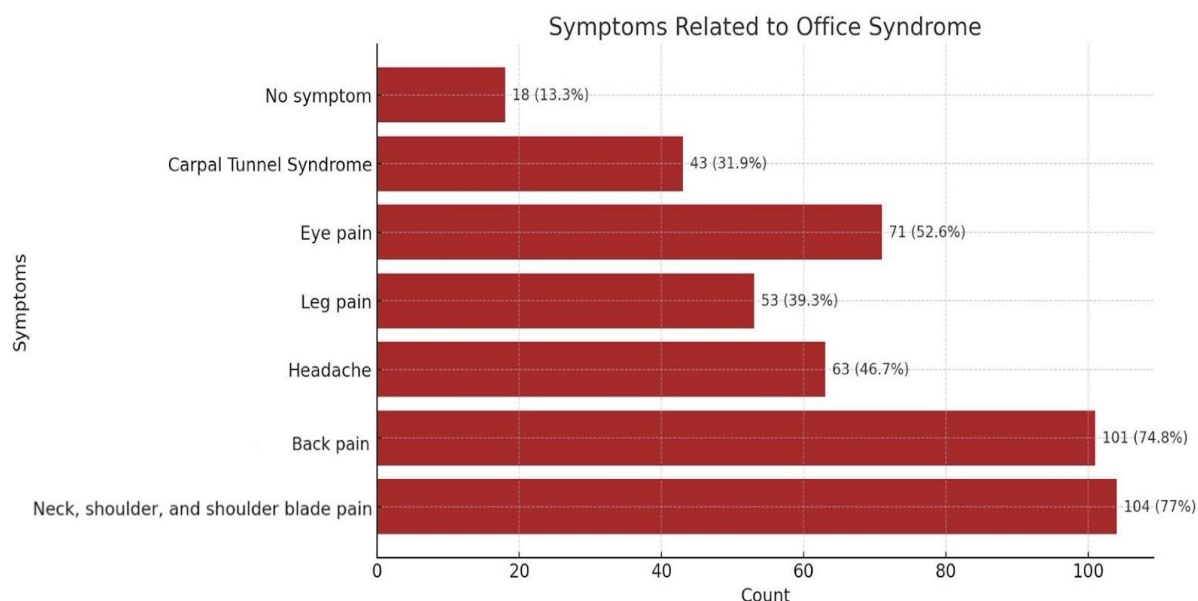


Figure 2: Symptoms related to office syndrome

Discussion

This study found that a substantial proportion of students experienced multiple symptoms consistent with office syndrome, with neck, shoulder, and upper back pain being the most commonly reported. Students who studied continuously for more than 120 minutes had a significantly higher prevalence of symptoms ($\chi^2 = 10.45$, $df = 2$, $p = 0.005$).

Previous studies among university students in Thailand have reported that musculoskeletal disorders most frequently affect the cervical (22.3%), thoracic (11.0%), and lumbar (10.7%) regions, largely associated with prolonged computer use and poor posture.⁴ Similarly, Piyapong et al.² found that 37.9% of office workers experienced musculoskeletal symptoms, most commonly in the neck and shoulder regions. These findings suggest that sedentary behavior, even among students who are not yet part of the workforce, can lead to similar ergonomic health problems. Office syndrome-like symptoms are therefore not limited to working adults but are increasingly observed among adolescents engaged in prolonged academic activities.

The significant association between continuous study duration and symptom frequency is consistent with previous evidence linking prolonged sitting and insufficient breaks to musculoskeletal strain. For example, a study of Thai office workers reported that sitting for ≥ 4 hours per day increased the risk of musculoskeletal disorders (OR = 1.57; 95% CI: 1.04-2.37).²

In addition, Booncharoen et al.⁵ demonstrated that poor posture and computer use exceeding 4 hours per day were significantly associated with neck and lower back pain among office employees.

The present study extends these findings to a younger population, indicating that prolonged study behaviors—particularly those influenced by competitive university admission systems such as TCAS—may predispose students to early-onset musculoskeletal discomfort. These results underscore the importance of early preventive strategies, including ergonomic education and behavioral modifications, within school settings.

This study has several strengths. It focuses on 12th-grade students, a population that is often underrepresented in ergonomic health research despite being in a critical academic period characterized by high sedentary behavior. The structured questionnaire comprehensively assessed six key categories of office syndrome symptoms and study-related behaviors, with acceptable reliability (Cronbach's $\alpha = 0.82$). In addition, the use of the Chi-square test was appropriate for analyzing categorical variables and enabled clear identification of significant associations between study patterns and symptom occurrence. However, some limitations should be considered. The cross-sectional design precludes causal inference, and the reliance on self-reported data may introduce recall and reporting biases. Furthermore, the sample was drawn from a single school, which may limit the generalizability of the findings. Finally, other potential contributing factors—such as physical activity, classroom ergonomics, and extracurricular workload—were not assessed or controlled for in the analysis.

Recommendations

1. Schools should encourage regular study breaks, such as short breaks every 45-60 minutes, to allow students to stretch and change posture; brief micro-breaks (1-2 minutes of light movement) may also help reduce muscle tension.
2. Improving classroom ergonomics is equally important, with administrators assessing and adjusting furniture (e.g., desk height and chair support) to promote proper body alignment during study.
3. Integrating physical activity into the school day—such as brief stretching or exercise sessions (5-10 minutes) during or between classes—may help reduce musculoskeletal strain.
4. Educational programs should also be implemented to increase awareness among students and teachers about proper posture, ergonomic risks, and self-care strategies for preventing office syndrome.

5. Future research should include longitudinal or intervention studies to evaluate the effectiveness of ergonomic education and physical activity programs in reducing symptoms over time.

Acknowledgement

The authors would like to extend sincere gratitude to Kanlaya Teerawattananon, MD.

References

1. Bangkok Hospital. Preventing Office Syndrome While Working from Home [internet]. [cited 2025 Apr 1]. Available from:
<https://www.bangkokhospital.com/en/content/work-from-home-and-office-syndrome>
2. Piyapong K, Sukprasert A, Chantharak S. Prevalence of work-related musculoskeletal disorders among office workers. J Occup Health. 2021;63(4):123–30.
3. Straker L, et al. The impact of prolonged static sitting. Appl Ergon. 2016;52:123–9.
4. Peungsuwan P, et al. Prevalence of musculoskeletal symptoms among university students in Thailand. 2012.
5. Booncharoen P, et al. Posture and musculoskeletal pain among Thai office workers. J Health Sci Res. 2020;14(2):45–53.