PROCEEDING
PROGRAM AND PROCEEDING

BOOK

THEME:
“UPDATED MANAGEMENT ON PEDIATRIC ORTHOPAEDIC MUSCULOSKELETAL DISORDERS”

May 9th - 12th, 2018
Golden Tulip Galaxy Hotel Banjarmasin
South Kalimantan - Indonesia
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66th Continuing Orthopaedic Education (COE) of Indonesian Orthopaedic Association (IOA)
FrP-A 03

COMPARISON OF BEHAVIOR IN TABLET COMPUTER USING ON CUBITAL TUNNEL INCIDENT

Ismunandar H, Arsa W, Ramdan A
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Faculty of Medicine Universitas Padjadjaran
Dr. Hasan Sadikin General Hospital

ABSTRACT

Background: The smart device utilization continues to increase exponentially. Nowadays, people spend more time with their smart phones. Length of usage time and bad posture increase the risk of cellphone elbow (cubital tunnel syndrome) incident.

Method: This is an observational study with cross-sectional design. Primary data were obtained by distributing the questionnaires.

Result: There were 175 respondents; 80 (46%) male and 90 (54%) female. Respondents who own a tablet computer (tablets) as much as 99 (56%) while 76 (44%) of respondents don’t have. In respondents who have tablets, 56 (26.5%) respondents experienced the cellphone elbow symptoms. While the respondents who do not have tablets only 8 (4.5%) who have complaints. From this study we know that respondents who have tablets are more at risk of having cellphone elbow symptoms compared with respondents who don’t have (p < 0.001). There was a significant difference of cellphone hand incidence (p = 0.005) in respondents who using tablet > 5.25 hours per day compared to the less one. Respondents who using a tablet with lying down position and feel hand > 1.4 hours per day also had more at risk to suffer cellphone elbow symptoms (p < 0.05). There were no significant differences between gender (p = 0.469), screen size (p = 0.563), and weight (p = 0.92) on cellphone elbow complaints.

Conclusion: There is a relationship between ownership of tablet computers, length of use, and posture against the occurrence of cellphone elbow. There is no relationship between gender, screen size, and weight to the cellphone elbow incidence.
FOTO
RESULT

36 (20.57%) of the respondents who have tablet experienced the cubital tunnel symptoms.

4 (2.45%) of the respondents who do not have tablet have complaints.
SERTIFIKAT
Certificate
Presented to

dr. Helmi Ismunandar

FOR FREE PAPER PRESENTATION CATEGORY BASIC SCIENCE

With presentation entitled

Comparison of Behavior in Tablet Computer Using on Cubital Tunnel Incident

66th Continuing Orthopaedic Education (COE) of Indonesian Orthopaedic Association (IOA)

Theme:
“UPDATED MANAGEMENT ON PEDIATRIC ORTHOPAEDIC MUSCULOSKELETAL DISORDERS”

Golden Tulip Galaxy Hotel, Banjarmasin, May 9th - 12th, 2018

Chairman of Organizing Committee
Izaak Zoelkarnain Akbar, MD, PhD

Chairman of The Indonesian College of Orthopaedic & Traumatology
Ifran Saleh, MD
PRESENTASI
Comparison Of Behavior In Tablet Computer Using On Cubital Tunnel Syndrome Incident

ISMUNANDAR H, ARSA W, RAMDAN A

DEPARTMENT OF ORTHOPAEDICS AND TRAUMATOLOGY
FACULTY OF MEDICINE UNIVERSITAS PADJADJARAN
DR. HASAN SADIKIN GENERAL HOSPITAL
INTRODUCTION

- The **smart device utilization** continues to **increase exponentially**.

- People **spend more time** with their smart devices.


INTRODUCTION

- Length of usage time and bad posture increase the risk of cellphone elbow (cubital tunnel syndrome) incident.

- But The exactly incidence of cellphone elbow is definitely unknown.


INTRODUCTION

Tablet Computer Ownership
Gender
Tablet Computer
Screen Size
Weight
Daily Usage
Time
Posture
Cellphone Elbow Incidence
This is an observational study with cross-sectional design.

Primary data were obtained by distributing the questionnaires.
There were 175 respondents.

80 (46%) are male and 90 (54%) are female.

Respondents who own a tablet computer as much as 99 (56%) while 76 (44%) of respondents don’t have.
RESULT

DIAGRAM 1 DISTRIBUTION OF TABLET COMPUTER MANUFACTURER

- **Apple**: 28%
- **Samsung**: 51%
- **Lenovo**: 9%
- **Xiaomi**: 5%
- **Asus**: 3%
- **HP**: 2%
- **Advan**: 1%
- **Evercross**: 1%
RESULT

- Screen size average: 8”
- Tablet Computer weight average: 334 gram
- Daily usage average: 5.25 hours
RESULT

- In respondents who have tablet, $36(20,57\%)$ respondents experienced the cubital tunnel syndrome symptoms.

- While the respondents who do not have tablets only $8(4,57\%)$ who have complaints.
RESULT

DIAGRAM 2 DISTRIBUTION OF CELLPHONE ELBOW INCIDENCE TIME

- Daylight: 19%
- Night: 81%
RESULT

DIAGRAM 3 DISTRIBUTION OF UPPER LIMBS INVOLVEMENT

- Both: 44%
- Right: 45%
- Left: 11%
## TABLE 1 Ownership and Cellphone Elbow

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Cellphone Elbow</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
<td>$p$</td>
</tr>
<tr>
<td>Have</td>
<td>36</td>
<td>63</td>
<td>0.00001</td>
</tr>
<tr>
<td>Don’t have</td>
<td>8</td>
<td>68</td>
<td></td>
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### TABLE 2 Gender and Cellphone Elbow

<table>
<thead>
<tr>
<th>Gender</th>
<th>Cellphone Elbow</th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>32</td>
<td></td>
<td></td>
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\[ p = 0.469 \]
### TABLE 3 Screen Size and Cellphone Elbow

<table>
<thead>
<tr>
<th>Screen Size</th>
<th>Cellphone Elbow</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;8”</td>
<td>(+) 8</td>
<td>(-) 11</td>
</tr>
<tr>
<td>≤8”</td>
<td>(+) 28</td>
<td>(-) 52</td>
</tr>
<tr>
<td>Weight</td>
<td>Cellphone Elbow</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
<td>&gt;334 gram</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>≤334 gram</td>
<td>30</td>
<td>52</td>
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</table>
## TABLE 5 Daily Usage and Cellphone Elbow

<table>
<thead>
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<th>Daily Usage</th>
<th>Cellphone Elbow</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
<td>&gt;5.25 hours</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>≤5,25 hours</td>
<td>13</td>
<td>41</td>
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$p = 0.005$
### TABLE 6 Posture and Cellphone Elbow

<table>
<thead>
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<th>Posture</th>
<th>Cellphone Elbow</th>
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<tbody>
<tr>
<td></td>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
<td>&gt;1.4 hours</td>
<td>29</td>
<td>16</td>
</tr>
<tr>
<td>≤1.4 hours</td>
<td>7</td>
<td>47</td>
</tr>
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</table>

$p = 0.000$
The use of smart devices continues to increase exponentially.

Some people spend more time with their smart than before.

Based on a study by the Digital Analysis Firm in 2016 → person spends about 2 hours 57 minutes with his smart device a day.

DISCUSSION

- Smart device makes life easier → But, there is an increasing number of people who have complaints on fingers, hands, and elbows due to the use of this smart device.

- The most common complaints are pain or numbness of the ring finger and little finger.

DISCUSSION

• This set of symptoms is referred cellphone elbow by press.

• In the medical term better known as cubital tunnel syndrome.

DISCUSSION

- It is believed that the ulna nerve is compressed at the elbow as it passes through a narrow gap.

- Flexed elbow (especially if $> 90^\circ$) for a long time can trigger irritation of the ulna nerve and cause the symptoms.


Tablet computers (tablets) is a portable computer.

This device is thin, equipped with touch screen, and rechargeable battery.
This device resembles a smart phone, the only difference is that the tablets are larger than smart phone.

The screen diagonal size is 7 inches (18 cm) or more.
DISCUSSION

- From this study we know that respondents who have tablet are more at risk of having cellphone elbow symptoms compared with respondents who don’t have (p:0.0001).

- There was a significant difference of cellphone elbow incidence (p:0.005) in respondents who using tablet > 5.25 hours per day compare to the less one.
Respondents who using a tablet with lying down position and flexion elbow >1,4 hours per day also had more at risk to suffer cellphone elbow symptoms (p:<0,05).

There were no significant differences between gender (p:0,469), screen size (p: 0,563), and weight (p: 0,92) on cellphone elbow complaints.
CONCLUSION

- There is a different between ownership of tablet computers, length of use, and posture against the occurrence of cellphone elbow.

- There is no different between gender, screen size, and weight to the cellphone elbow incidence.
THANK YOU