Ergonomic Study of General Practice Physicians & Specialty Practitioners Performing Office-Based Surgeries

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Introduction

❑ About 80 million outpatient surgeries were performed each year more than 12 million were performed in doctor's offices, a national surgical-safety group estimates
(Institute for Safety in Office-Based Surgery, 2010).

❑ About 40,000 office-based surgery facilities are in operation throughout the United States
(The American Association for Accreditation of Ambulatory Surgery Facilities, AAAASF, 2006)

Reasons office-based surgeries are growing:

- ❑ *Flexibility & convenience*
- ❑ *Privacy*
- ❑ *Personalized Attention*
- ❑ *Reduced Cost*

❑Institute for Safety in Office-Based Surgery, 2012. *Gebhart, F. (2006). Office-based surgery: many opportunities, some challenges, Urology Times, 34 (14).*

WMSD's Risk Factors associated with the nature of the work….

- ❑ *Awkward & Static Postures*
- ❑ *Repetitive motions*
- ❑ *Stress*

Lteter, A., Koshy, and Rande, H. (2007). Ergonomics in office-based surgery, American Society for Dermatologic Surgery, 33, 1304-1314

Methods

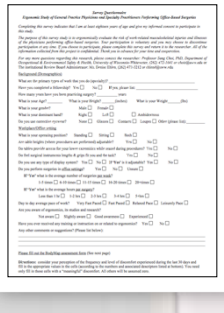
Survey questionnaire

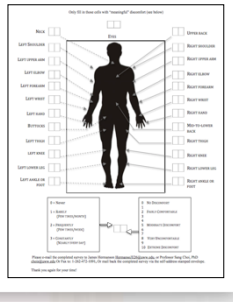
➢A total of 160 surveys sent out to Southern Wisconsin & Northern Illinois Surrounding Areas
- ❑120 mailed out
- ❑40 hand delivered

➢Targeted Facilities
- ❑Medical facilities performing office-based surgeries
- ❑Plastic surgeons
- ❑Office-based surgical centers
- ❑Outpatient clinics performing office-based surgeries

1. Questionnaire
- ➢Background (Demographics)
- ➢Workplace/office setting

2. BodyMap
- ➢25 body parts
- ➢Body discomfort
  - ➢Frequency and Severity





Results

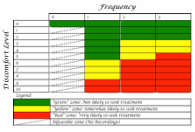
Demographics

- 19 responses
  - Family practitioners
  - Plastic surgeons
  - Dermatologist
  - General surgery
  - Urology
  - E&NT /head & neck surgeries
  - Podiatry (foot)
- Work Experience
  - Mean 5.2 years
    - (ranging 2 yr – 25 yr)
- Gender
  - Male (16) ~84%
  - Female (3) ~16%
- Age
  - Mean: 45.2 years old
    - (ranging 28 yr – 62 yr)
- Eye Wear
  - 11 – Yes (58%)
    - (e.g., glasses, contacts, and/ or loupes)
  - 8 – No (42%)
- Dominate hand
  - 19 - Right-handed (100%)
- Height
  - Mean 70.6 in. (or) 180 cm
    - (ranging 66 in. – 77 in.)
- Weight
  - Mean 195 lbs (or) 88Kg
    - (ranging 160 lbs – 265 lbs)

Office Setting

- Operating Position
  - 7- Standing (~37%)
  - 12 – Both (standing/sitting) (~63%)
- Operating Table (Adjustability)
  - 19 – height adjustable (100%)
- Operating Table (Leg Room)
  - 13 – Yes (~68%)
  - 2 – No (~11%)
  - 4 – Unsure (~21%)
- Foot pedal usage
  - 11 – Yes (58%)
  - 8 – No (42%)
- Surgical Instruments
  - (Fit to your hand – length and grip)
    - 19 – Yes (100%)
- Visual display
  - (monitor adjustability)
    - 7 – Yes (~37%)
    - 11 – No (~58%)
    - 1 – Unsure (~1%)
- Ergonomics awareness
  - (1-Not aware… 5-Experienced)
    - 9 – Slightly aware (2) (~47%)
    - 10 – Aware (3) (~53%)
- Ergonomics Training
  - 4 – Yes (21%)
  - 15 – No (79%)

BodyMap Scoring	Family Practice (n=10)										Plastic Surgeons (n=3)			Dermatologist (n=2)		Other Specialties (n=4)			
Body Region	FP 1	FP 2	FP 3	FP 4	FP 5	FP 6	FP 7	FP 8	FP 9	FP 10	PS 1	PS 2	PS 3	DERM 1	DERM 2	GS 1	UR 1	ENT 1	PO 1
Eyes																			
Neck																			
Right shoulder																			
Left shoulder																			
Right upper arm																			
Left upper arm																			
Right elbow																			
Left elbow																			
Right forearm																			
Left forearm																			
Right wrist																			
Left wrist																			
Right hand																			
Left hand																			
Upper back																			
Buttocks																			
Mid-Lower back																			
Right thigh																			
Left thigh																			
Right knee																			
Left knee																			
Right lower leg																			
Left lower leg																			
Right ankle or foot																			
Left ankle or foot																			



BodyMap Score *(Marley & Kumar, 1996*

Average Pace of Work	Frequency	Percentage
Very fast pace	7	37%
Fast pace	8	42%
Neutral	4	21%
Relaxed pace	0	0%
Leisurely pace	0	0%

Surgeries (Per-Week)	Frequency	Percentage
1 – 5	9	47%
6 – 10	7	37%
11 – 15	1	~1%
16 – 20	0	0%
20 – above	1	~1%
Not Indicated	1	~1%

Number of Hours Per Office-Based Surgery	Frequency	Percentage
Less than 1 hour	15	79%
1 – 2 hours	2	11%
2 - 3 hours	2	11%
3 – 4 hours	0	0%
5+ hours	0	0%

Ranking of body discomfort
(Freq x Intensity)

Body Region	Average	Min	Max
Right wrist (n=1)	15	15	15
Left hand (n=1)	10	10	10
Left knee (n=2)	8	6	10
Eyes (n=3)	6.7	2	10
Neck (n=9)	6.7	1	15
Right hand (n=2)	6.5	3	10
Right knee (n=4)	6.5	4	10
Left shoulder (n=5)	5.8	1	12
Upper back (n=4)	5.3	4	6
Mid-To-Lower back (n=12)	5.1	1	12
Right shoulder (n=5)	3.6	1	12
Right upper arm (n=4)	2.3	1	4
Left upper arm (n=2)	2	1	3
Buttocks (n=1)	2	2	2
Right thigh (n=1)	1	1	1
Left thigh (n=1)	1	1	1
Right lower leg (n=1)	1	1	1
Left lower leg (n=1)	1	1	1
Right ankle or foot (n=1)	1	1	1
Left ankle or foot (n=1)	1	1	1
Right elbow (n=19)	0	0	0
Left elbow (n=19)	0	0	0
Right forearm (n=19)	0	0	0
Left forearm (n=19)	0	0	0
Left wrist (n=19)	0	0	0

Conclusion

Results of this research study could provide further insight into providing greater awareness of WMSDs and better implementation of ergonomic interventions associated with office-based surgeries.