

Worker compensation systems and their correlations with national hand surgery organizations around the world

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- Objective** : *To study the influence of the worker compensation system on the development of national hand surgery organizations around the world.*
- Setting** : *Christine M. Kleinert Institute for Hand and Microsurgery, Louisville, Kentucky, USA.*
- Study design** : *Cross sectional survey*
- Subjects** : *One hundred and fifteen former fellows of Christine M. Kleinert Institute from forty-two countries excluding the United States.*
- Methods** : *Questionnaires regarding development of national hand surgery. Organizations and worker compensation systems were sent via electronic mails.*
- Results** : *The response is 30.43 % (thirty-five from one hundred and fifteen). There was no statistical correlation between the two studied parameters. Thirty-one countries (88.6 %) have well developed Worker's Compensation Systems. All countries responded that they have their National Society dedicated to Hand and Microsurgery but only about half of them (54.3 %) have well developed training programs.*

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Conclusion : *No correlation between the worker compensation systems and development of national hand surgery organizations.*

Keywords : *Worker compensation system, national hand surgery organization.*

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วัตถุประสงค์ : เพื่อศึกษาความสัมพันธ์ระหว่างระบบกองทุนทดแทนสำหรับผู้ป่วยที่ได้รับบาดเจ็บจากการทำงาน และพัฒนาการขององค์กรวิชาชีพสาขาศัลยกรรมทางมือในประเทศต่าง ๆ ทั่วโลก

สถานที่ทำการศึกษา : สถาบันฝึกอบรม Christine M. Kleinert Institute for Hand and Microsurgery ประเทศสหรัฐอเมริกา

รูปแบบการวิจัย : แบบการสำรวจ

ประชากรตัวอย่าง : ศัลยแพทย์ทางมือซึ่งสำเร็จการฝึกอบรมจากสถาบัน Christine M. Kleinert จำนวน 115 คน จาก 42 ประเทศ ยกเว้นประเทศสหรัฐอเมริกา

วิธีการศึกษา : ใช้วิธีส่งแบบสอบถาม ส่งไปยังประชากรเป้าหมายทางไปรษณีย์อิเล็กทรอนิกส์

ผลการศึกษา : จำนวนตอบรับ 30.43% ไม่พบความสัมพันธ์ของระบบกองทุนทดแทน และพัฒนาการขององค์กรวิชาชีพสาขาศัลยกรรมทางมือ จากจำนวนผู้ตอบแบบสำรวจพบว่าประเทศส่วนใหญ่มีระบบกองทุนทดแทนผู้ที่ได้รับบาดเจ็บจากการทำงาน (88.6%) แต่มีเพียง 54.3% ที่องค์กรวิชาชีพมีความเจริญรุ่งเรือง

สรุป : ระบบกองทุนทดแทนสำหรับผู้ป่วยที่ได้รับบาดเจ็บจากการทำงานไม่มีผลต่อพัฒนาการขององค์กรวิชาชีพสาขาศัลยกรรมทางมือ

คำสำคัญ : ระบบกองทุนทดแทนสำหรับผู้ป่วยที่ได้รับบาดเจ็บจากการทำงาน, องค์กรวิชาชีพของสาขาศัลยกรรมทางมือ

Hand surgery has long been developed over half a century. Reconstruction of traumatic injuries of the hand and upper extremity became a special area of surgery during the World War II, and it flourished after successful development of surgical techniques of microvascular anastomosis. ⁽¹⁾ Firstly, in 1964 ⁽²⁾, arm replantation was done, followed by thumb revascularization in 1963⁽³⁾, and first thumb replantation took place in 1968. ⁽⁴⁾ All these events of success were reported, and shortly thereafter replantation centers were established throughout the world, not only in the United States and western countries. Replantation teams have become available in many tertiary care hospitals, offering training for a multitude of aspiring hand and microvascular surgeons have been provided.

So far educational development of hand surgery in the United States has been the best prototype. ⁽⁵⁾ Starting with a program of continuing medical education (CME) for physicians who are interested in the care of the hand and upper extremity. In residency programs, hand surgery is taught in the departments of orthopedic surgery, plastic surgery or general surgery. Postgraduate fellowships have been developed when designate as a surgical subspecialty because progressively larger number of general, orthopedic and plastic surgeons desired special training after completion of their residency programs to improve their knowledge and capabilities in surgery of the hand.

Although many hand surgeons refined their practices to only conventional hand surgery, acute hand injuries particularly replantation and mutilated hands still remain challenges. Most of these injuries are work-related. Interestingly, hand surgery is well

developed in most industrialized countries. Benefits from worker compensation system must be attractive enough to keep the rest of organizations running since acute hand injuries by nature involves working unpredictable hours, working in the middle of the night, interference with office practices and time away from families. ^(6, 7) As aforementioned, we postulated that worker compensation system should have roles in development of national hand surgery organizations.

Material and Methods

Questionnaires and scoring system were designed, part one was aimed to evaluate strength of hand surgery and part two for worker compensation system in individual country. One hundred and fifteen former fellows graduated from Christine M. Kleinert Institute for Hand and Microsurgery from forty-two countries outside the United States who provided e-mail addresses were enrolled.

Strength of hand surgery and worker compensation system were calculated and their scores were analyzed for correlation.

Results

Thirty-five surgeons from twenty countries responded to this survey (30.43 %). All thirty-five surgeons (100%) reported their valid national society or association dedicated to hand surgery, and hand surgery was recognized as subspecialty in majority of response (26 from 33). For particular training, only about half (19 from 35 - 54%) have a training program. Country list and frequency are shown in Table 1. Scores represent strength of hand surgery and worker compensation systems are shown in Table 2. Their correlation is presented in Table 3.

Table 1. Classification of countries and frequency of populations.

	Frequency	Percent	Valid Percent	CumulativePercent
Valid Argentina	1	2.9	2.9	2.9
Australia	3	8.6	8.6	11.4
Belgium	2	5.7	5.7	17.1
Brazil	1	2.9	2.9	20.0
Colombia	1	2.9	2.9	22.9
Denmark	2	5.7	5.7	28.6
Dominican Republic	1	2.9	2.9	31.4
Germany	1	2.9	2.9	34.3
India	3	8.6	8.6	42.9
Ireland	1	2.9	2.9	45.7
Japan	3	8.6	8.6	54.3
Korea	1	2.9	2.9	57.1
Malaysia	1	2.9	2.9	60.0
Mexico	2	5.7	5.7	65.7
New Zealand	1	2.9	2.9	68.6
Philippines	1	2.9	2.9	71.4
Singapore	2	5.7	5.7	77.1
Sweden	1	2.9	2.9	80.0
Switzerland	1	2.9	2.9	82.9
UK	6	17.1	17.1	100.0
Total	35	100.0	100.0	

Table 2. Statistical values.

		HANDSURG Strength of hand surgery	WORKCOMP Strength of Worker's Compensation	WRKCMP2 Strength of Worker's Compensation (employer burden)	WRKCMP3 Strength Of Worker's Compensation (govt burden)
N	Valid	33	26	26	26
	Missing	2			
Mean		4.1818	11.4615	11.6538	9.5577
Median		4.0000	11.5000	12.0000	9.5000
Mode		3.00	11.00	13.00	9.50
Std. Deviation		1.66686	1.92314	2.57592	1.66329
Minimum		2.00	7.00	5.00	5.50
Maximum		8.00	15.00	15.00	12.50

Table 3. Statistical Correlations.

		HANDSURG Strength of Hand surgery	WORKCOM P Strength Of Worker's Compensation	WRKCMP2 Strength of Worker's Compensation (employer)	WRKCMP3 Strength of Worker's Compensation (govt burden)
HANDSURG Strength of Hand surgery	Pearson Correlation	1	-.262	.043	-.227
	Sig. (2-tailed)	-	.216	.840	.286
	N	33	24	24	24
WORKCOMP Strength of Worker's Compensation	Pearson Correlation	-.262	1	.397*	.967**
	Sig. (2-tailed)	.216	-	.045	.000
	N	24	26	26	26
WRKCMP2 Strength of Worker's Compensation (employer burden)	Pearson Correlation	.043	.397*	1	.574**
	Sig. (2-tailed)	.840	.045	-	.002
	N	24	26	26	26
WRKCMP3 Strength of Worker's Compensation (govt burden)	Pearson Correlation	-.227	.967**	.574**	1
	Sig. (2-tailed)	.286	.000	.002	-
	N	26	26	26	26

*.Correlation is significant at the 0.05 level (2-tailed).

**.Correlation is significant at the 0.01 level (2-tailed).

Discussion

Scoring system for national hand surgery organizations was determined after historical events in the United States.⁽⁵⁾ Regarding scoring for worker compensation system, we give higher score for system in which employers hold major responsibility. In our opinion, poorly developed systems should need support from the government.

Our data indicated that correlation between the strength of hand surgery and worker compensation system is poor (Pearson's correlation coefficient, $r = -.262$). Worker compensation systems do not influence the existence or development of hand surgery as we postulated. Hand surgery grew steadily

without any support from worker compensation system. Surprisingly, it evolves with the decreased novelty in replantation surgery and poor reimbursement; many capable surgeons decided not to do replantation for social and professional reasons.^(6, 8)

Our data could also be concluded that government should play a major role in contributing the strength of worker compensation system ($r = .967$), although the majority of the countries in our report have their nations worker compensation system mandated for employers (eighteen from twenty-six respondents).

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Appendix

Questionnaires

Name.....

Country where you are practicing.....

Part 1 Questions regarding the national hand surgery organizations in your country

Is Hand Surgery recognized as a distinguished specialty in your country?

_____ No, it is not

_____ Yes, as a subspecialty (under Plastic Surgery, Orthopedics etc.)

_____ Yes, as a distinguished specialty (like USA)

Please check the status of Hand Surgery training program in your country.

_____ Absent

_____ Part of Orthopedic or Plastic Surgery residency training only

_____ Fellowship program, but belongs to individual Institute or University

_____ National fellowship program

Please check the status of Career Society (Hand Society and/or Reconstructive Microsurgery) in your country.

_____ Absent (If you check this, skip question 4)

_____ Present as the National Society level (please also check the following questions)

..... Hand Surgery Society only

..... Hand Surgery Society and Reconstructive Microsurgery Society

..... Others (please note).....

Is your National Career Society a member of International Career Society (e.g. IFSSH, APFSH)

_____ Yes, only National Hand Surgery Society

_____ Yes, both National Hand Surgery Society and Reconstructive Microsurgery Society

_____ Others, please note.....

Part 2 Questions regarding the workers' compensation system in your country

Is there any workers' compensation system in your country?

No

Yes

Please check whether the workers' compensation system is the obligation for employer.

Optional

Mandatory

Please check status of workers' compensation system

Separate Health Insurance

Under Federal/Government regulation

Does the workers' compensation system provide salary replacement for workers?

No

Yes, less than 25% of regular salary

Yes, 25-50% of regular salary

Yes, 50-75% of regular salary

Yes, 75% of regular salary or more

Does the workers' compensation system pay for medical bills?

No

Partially paid

Fully paid

Does the workers' compensation system provide post injury/treatment rehabilitation therapy for the workers?

No

Yes

Does the workers' compensation system provide training for job modification or alternative occupation?

No

Yes

Please check the benefits provided to hand surgeon in term of doctor fees by workers' compensation

Less paid compared to other health insurance system

Paid comparable to other health insurance system

Paid better than other health insurance systems

Scoring system for national hand surgery organizations

Recognition as distinguished specialty		
Not recognized		0
Subspecialty (Under Plastic Surgery, Orthopaedics)		1
Distinguished specialty		2

Training Program		
No		0
Yes, as part of the Plastic Surgery or Orthopaedic residency program		1
Yes, in university based hand surgery fellowship program		2
Yes, as part of a national hand surgery fellowship program		3

Career Society (Hand Society and/or Reconstructive Microsurgery Society)

No		0
National Society		
- Hand Society only		1
- Both		2
International Society		
- Hand Society only		1
- Both		2

Scoring system for workers' compensation system

Absent		0
Present		
Obligation for employer	Optional	1
	Mandatory	3
	Provided by Federal/Government	2
Financial support for Workers' compensation system		
	Optional for employers	1
	Mandatory for employers	3
	By Federal/Government	2

Benefits to worker

(1) Provide salary replacement for workers		
	No	0
	Yes, less than regular salary	1
	Yes, equal to regular salary	2
	Yes, more than regular salary	3

(2) Payment for medical bills by workers' compensation system		
No, all medical expenses must be paid by the employee		0
No, all citizens have national healthcare system support		1
Partially paid		2
Fully paid		3
(3) Provide post injury/treatment service		
Rehabilitation therapy	No	0
	Yes	1
Training for job modification or alternative occupation	No	0
	Yes	1
Benefits to Hand Surgeon in term of doctor fees		
Reimbursement is typically less than non work related injuries		
0 Reimbursement is not different from non work related injuries		1
Reimbursement is typically more than non work related injuries		2