



**UNIVERSITI PUTRA MALAYSIA**

**ASSESSMENT OF WORK-RELATED HAND INJURIES AT HOSPITAL  
SERDANG, SELANGOR, MALAYSIA**

**AMEER NAJAH ABOOD AL-HUSUNY**

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**By**

**AMEER NAJAH ABOOD AL-HUSUNY**

**This thesis submitted to the School of Graduate Studies of University Putra Malaysia in  
the fulfillment of the requirements for the Degree of Master of Science**

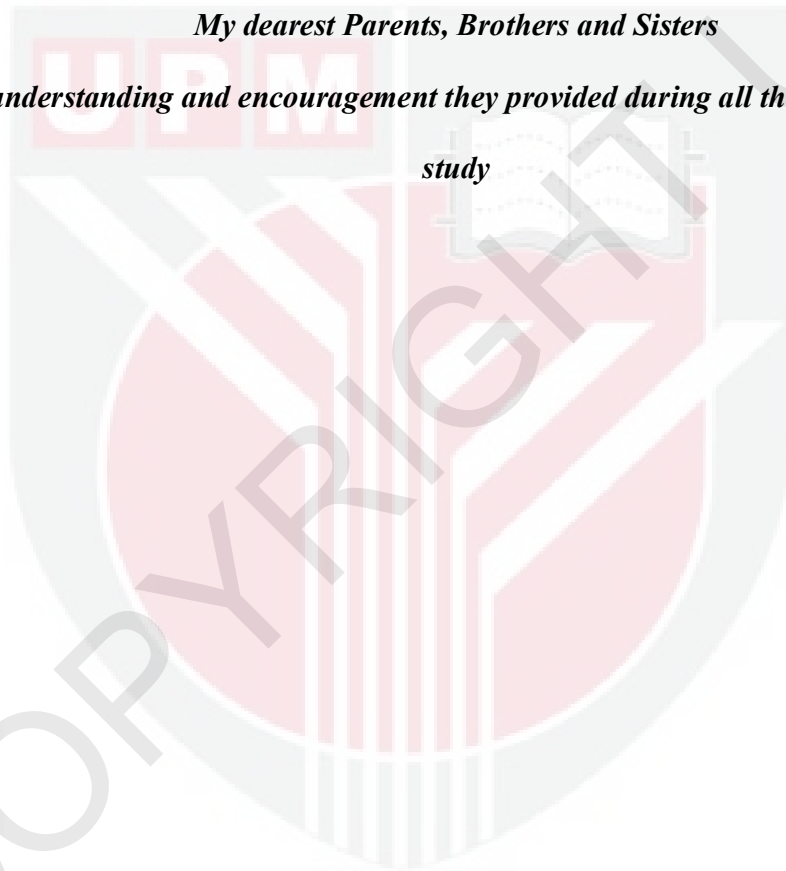
**APRIL 2011**

## DEDICATION

*This thesis is dedicated to*

*My dearest Parents, Brothers and Sisters*

*The understanding and encouragement they provided during all these years of the  
study*



Abstract of the thesis presented to the School of Graduate Studies of University Putra Malaysia in the fulfillment of the requirement for the degree of Master of Science

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**April 2011**

**Chairman: Prof. Lekhraj Rampal, PhD**

**Faculty: Faculty of Medicine and Health Sciences**

**Introduction:** Work-Related Hand Injuries (WRHIs) contribute to a significant workload of all accidents received at the Emergency Departments. The aim of this study is to determine the proportion and severity WRHI cases and factors associated at Hospital Serdang. **Methodology:** A cross-sectional study design was used in this study. The study duration was from January 2009 to December 2010 and the data collection continued five months from January 2010 to June 2010. Categorical variables were presented as frequencies and percentages. Continuous variables were presented as means with their 95% confidence interval (CI) and standard deviation. The Pearson's chi-square test ( $\chi^2$ ) was used to determine the associations between categorical variables. Binary Logistic regression was done for multivariate analysis. A  $p$ -value of  $< 0.05$  was considered as statistically significant. **Results:** The results showed that out of

428 industrial accidents, 106 (24.7%) were WRHIs. Among those with WRHI, 46.2% of them had severe WRHI. The overall mean age of the respondents was 30.27 ( $\pm$  8.71 SD) years. Majority (95.3%) was male and 76.4% of the respondents were aged between 18 and 35 years. Majority (81.1%) of the injuries occurred between Monday to Friday and machines were the source in 68.9% of the WRHIs. Majority (53.8%) of the respondents were involved in metal-machinery industry. The most common mechanism of the hand injury (48.1%) occurred when the hand was caught in the operating part of the machine. Open fracture occurred in 32.1% of the WRHIs. Majority (62.2%) of the respondents had finger's injuries. There was significant association between severity of WRHI with locations of injury, mechanisms of injury, sources of injury, sectors of industry and workplace crowding ( $p < 0.05$ ). **Conclusion:** Among all the industrial accidents seen at Serdang Hospital, 24.7% were WRHI, with 46.2% of those with WRHIs faced severe hand injuries. Mechanical machine and metal-machinery sector of industry were the strongest predictors to indicate severe WRHI. Respondent's medical history and social habits had no affect on Severity of WRHI.

**Key words:** WRHI, MHISS and Hospital Serdang.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PENAKSIRAN KECEDERAAN TANGAN BERKAITAN DENGAN KERJA DI  
HOSPITAL SERDANG, SELANGOR, MALAYSIA**

Oleh

**AMEER NAJAH ABOOD AL-HUSUNY**

April 2011

**Pengerusi: Prof. Lekhraj Rampal, PhD**

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**Pengenalan:** Kecederaan Tangan Berkaitan dengan Kerja (WRHI) menyumbangkan beban kerja nyata di antara semua kemalangan yang diterima di Jabatan Kecemasan. Tujuan kajian ini adalah untuk menentukan nisbah dan keterukan kes WHRIs serta faktor berkaitannya di Hospital Serdang. **Metodologi:** Satu reka bentuk kajian keratan rentas telah digunakan di dalam kajian ini. Jangka waktu kajian adalah dari Januari 2009 hingga Disember 2010 dan pengumpulan data diteruskan selama lima bulan dari Januari 2010 ke Jun 2010. Pemboleh ubah kategori dibentangkan sebagai frekuensi dan peratusan. Pemboleh ubah selanjar dibentangkan sebagai min dengan 95% selang keyakinan (CI) dan sisihan piawai. Ujian Chi-square Pearson ( $\chi^2$ ) telah digunakan untuk menentukan perhubungan di antara pembolehubah kategori. Regresi logistik binari dilakukan untuk analisis multivariat. Suatu nilai- $p < 0.05$  telah dianggap sebagai nyata dari segi statistik. **Keputusan:** Keputusan kajian menunjukkan bahawa daripada 428 kemalangan perindustrian, 106 (24.7%) adalah WHRIs. Di kalangan kemalangan

membabitkan WRHIs, 46.2% daripada mereka yang cedera telah mengalami kecederaan tangan yang dasyhat. Umur purata keseluruhan responden adalah 30.27 ( $\pm 8.71$  SD) tahun. Sebahagian besarnya (95.3%) adalah lelaki dan 76.4% dari responden berumur di antara 18 hingga 35 tahun. Kebanyakan (81.1%) dari kecederaan terjadi antara Isnin hingga Jumaat dan penggunaan mesin adalah punca kepada 68.9% daripada WRHIs. Majoriti (53.8%) responden yang terlibat dalam industri logam mesin. Paling kerap mekanisme kecederaan tangan (48.1%) berlaku apabila tangan terperangkap di dalam mesin semasa pengendalian. Keretakan tulang terbuka berlaku kepada 32.1% daripada WRHIs. Sebahagian besar (62.2%) responden mengalami kecederaan jari. Terdapat perkaitan yang nyata di antara kedasyatan WRHIs dengan bahagian tercedera, mekanisme kecederaan, sumber kecederaan, sektor-sektor industri dan kesesakan ( $p < 0.05$ ). **Kesimpulan:** Di antara kemalangan industri dilihat di Hospital Serdang, 24.7% adalah WRHIs, dengan 46.2% dari mereka yang WRHIs menghadapi kecederaan tangan yang dasyhat. Sektor industri mesin mekanikal dan mesin logam merupakan prediktor yang kuat menandakan kedasyatan WRHIs. Sejarah perubatan dan tabiat sosial tiada pengaruh kepada kedasyatan WRHIs.

**Kata kunci:** WRHI, MHISS and Hospital Serdang.

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Ameer N. Al-Husuny

April 2011





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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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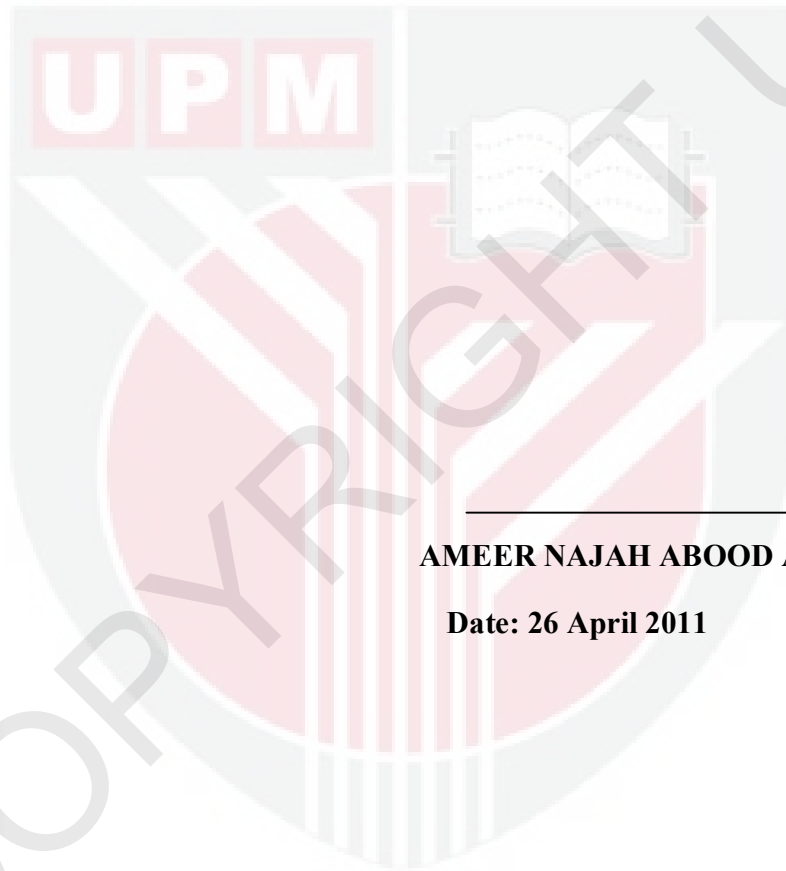
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## DECLARATION

I declare that the thesis is my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institutions.



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**AMEER NAJAH ABOOD AL-HUSUNY**

**Date: 26 April 2011**

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