

## Sharps Injury in Hospital Universiti Kebangsaan Malaysia (HUKM): Experiences of Health Care Workers and Students

<sup>1</sup>Santhna L.P, <sup>1</sup>Samsiah M, <sup>1</sup>Raja Lexshimi RG, <sup>2</sup>Roshdinom R, <sup>1</sup>Ho S.E, <sup>1</sup>Hamidah H

<sup>1</sup> Nursing Department, Faculty of Medicine, Universiti Kebangsaan Malaysia

<sup>2</sup> Psychiatric Department, Faculty of Medicine, Universiti Kebangsaan Malaysia

### ABSTRAK

Kecederaan tajam dikalangan pekerja kesihatan di HUKM telah mendapat perhatian yang serius di kebelakangan ini kemungkinan kerana wujudnya penyakit-penyakit seperti HIV, Hepatitis B dan Hepatitis C yang boleh membawa kesan buruk kepada yang tercedera. Matlamat kajian ini ialah untuk memperolehi kefahaman yang lebih mendalam terhadap masalah emosi yang dialami oleh pekerja-pekerja kesihatan yang telah dcedera oleh benda tajam dan strategi yang diguna untuk mengatasi masalah tersebut. Satu soal selidik separa struktur yang mengandungi 28 bahan telah direkabentuk oleh penyelia dan penyelidik kerana soal selidik tidak wujud untuk di guna pakai diatas sebab tiada kajian serupa dijalankan sebelum ini. Kumpulan sasaran terdiri daripada 64 pekerja kesihatan dalam pelbagai kategori yang bertugas di HUKM. Data telah dikutip dalam tempoh lima bulan dari November 2000 hingga Mac 2001. Hasil kajian menunjukkan bahawa kumpulan yang paling banyak tercedera ialah jururawat terlatih, 90% daripada mereka merasa sedih dan risau diatas kemungkinan mendapat penyakit . Didapati tiada perbezaan signifikan dalam perasaan stres dan setiap kategori mengguna strategi berlainan untuk mengatasi tragedi ini. Komen dan pendapat terbuka yang disuarakan oleh responden mengenai pencegahan dan pengendalian kecederaan tajam di HUKM telah diberi perhatian. Beberapa pendapat daripada responden telah dikumpul dan dibincang. Akhirnya beberapa implikasi kejururawatan dan syur telah dikemukakan.

*Kata kunci:* pekerja kesihatan, kecederaan tajam, pengalaman, masalah emosi

### ABSTRACT

Sharps injury among health care workers in HUKM has received serious attention lately due to the possible transmission of diseases like HIV, Hepatitis B and Hepatitis C, which can cause serious consequences for the victim. The aim of the study was to gain a deeper understanding of the emotional problems experienced by health care workers who had incurred a sharps injury and the coping strategies adopted by them to overcome the problem. A 28 item semi-structured questionnaire was designed by the supervisors and the researcher as there was no existing questionnaire to be adopted, as no research had been carried out in this area prior to this. The target group consisted of 64 health care workers of

**Address for correspondence and reprint request:** Santhna Letchmi Panduragan, Department of Nursing, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latiff, 56000 Cheras, Kuala Lumpur. Email: santhna@mail.hukm.ukm.my

different categories working in HUKM. Data was collected over a period of five months from November 2000 to March 2001. The results of the study revealed that the most frequently injured were the staff nurses, nearly 90% of whom were emotionally upset and were worried that they might contract a disease. There was no significant difference in the emotional stress experienced by the different categories of the health care workers, all were equally upset about the injury but each category of staff adopted different methods to overcome the tragedy. Open comments and opinions about prevention and the management of the sharps injury in HUKM as given by the respondents here are taken into account. Several views given by the participants were explored and discussed. Finally, several implications for nursing and recommendations have been presented.

*Keywords:* health care workers, sharps injury, experiences, emotional problems

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## INTRODUCTION

Exposure to infectious blood and hazardous fluids is one of the most reported events at Hospital University Kebangsaan Malaysia (HUKM). An average of two accidental sharps injuries among health care workers have been reported every month (infection control manual 1998). A great deal of anxiety (often out of proportion) can arise and at the same time the rights of the patient who was the source of infection should not be compromised.

Sharps injury may cause a number of potentially fatal infections with blood – borne pathogens. Stringer et al, (2001) have stated that when infected by needles, the risk can be high depending on the quantity of virus present in the blood of the source person at the time of the injury, the depth of the injury and the volume of body fluids breaching the cutaneous barrier. Stringer et al, (2001) further mentioned that donning of gloves may reduce the amount of solution introduced into the wound because the needle may lose half its volume on the glove surface.

Occupational exposures should be considered urgent medical events to ensure timely administration of post exposure prophylaxis. Unfortunately some of the health care workers in HUKM do not report their injuries (Infection Control Unit, HUKM). It is either because they do not

know where to report or are just ignorant to the dangers of the injury.

The other reasons for not reporting could be due to the fear of disciplinary action due to the negligence on the part of the health care workers, doubts about their profession on whether they will be allowed to continue giving care to patients if they were confirmed to have the disease, and most of all, this may be a potential stigma attached with the fear and denial of contracting a serious disease from a contagious person. Nurses may also not report the injury immediately if the ward is rather busy especially during night shift as they may not have the time to leave the ward.

According to Jantan (2000) most of the sharps injuries were due to the absence of sharps bin at the site of the procedure and neglected needles are left in trays, kidney dishes, among drapes and among trash. It also stated that non compliance or failure to adhere to guidelines can become a contributory factor to needle stick injuries.

Davies (2000) stated that in the operating theatre, 39% of the injuries were self inflicted while 61% were inflicted by the surgeon or assistant and the majority of the injuries occurred during transfer of sharps between personnel for eg. direct hand transfer of needles or scalpel blades on handle.

The cleaners were injured while clearing sharps bins or while cleaning bed linens where cannulas may have accidentally

dropped out of patients' hands or carelessly left behind by an attending doctor or nurse.

The sharps are sometimes disposed into ordinary disposal bags which are sometimes used for general purposes instead of disposing them into prepared yellow sharps bins. Disposing of sharps into any container other than the sharps bin is a very irresponsible act which can result in serious injuries to other persons. Such an act can be considered as negligence in carrying out one's duties. Syringes and sharps may not have been disposed of appropriately during emergency situation and all health care workers need to be vigilant clearing sharps after such events.

The ongoing stressor caused by the sharps injuries either due to negligence on the part of the victims or those working with them reinforces the need for continued administrative support through provision of protective equipment to limit occupational exposure and encouraging prevention and treatment strategies in the face of occupational exposure.

The study was carried out with the hope that it will contribute to the better management of the health care workers who are exposed to sharps injury and should assist in furthering the debate on how best to prevent such injuries. It is hoped that by identifying the problems encountered by the injured staff, appropriate treatment can be given to prevent further anxiety, stress and incapacitation.

The present study was carried out to:

- a. determine the prevalence of sharps injury in HUKM.
- b. describe some of the emotional problems and experiences by staff who had encountered sharps injury.
- c. identify contributing factors to the occurrence of the sharps injury and to suggest ways on which the injuries can be prevented.

## MATERIALS AND METHODS

The study was conducted using an exploratory, descriptive design with data collected via a semi-structured interview and a self prepared questionnaire which had been tested for validity and reliability. The study was conducted in several wards and the general operating theatres in HUKM. Approval to conduct the study was obtained from the Medical Research Ethics Committee and the director of HUKM.

The researcher used an exploratory/descriptive approach because this method seeks to explore, describe and expand knowledge about the experiences of the respondents. The questionnaire used for collecting data was known as the Sharps injury Experience Questionnaire (SIEQ). This is a 28 item questionnaire with semi-structured and open-ended questions. The questionnaire had three parts: Part one was on the demographic data of the respondents which consisted of age, nationality, place of work, occupational and marital status. The second section was on respondents experience after a sharps injury. The third section of the questionnaire tested the feelings of the respondents after the sharps injury.

## RESULTS

A total of 64 respondents participated in the study despite its sensitive nature. The majority of the respondents were within the age group of 22 to 26 years (n=35 or 54.7%) and seven were above 40 years of age. Malay staff comprised the majority of the respondents (n=47 or 73.4%) and the staff nurses comprised 51.6% of the sample (Table 1).

Forty-four of the respondents incurred injury only once, 14 were injured twice and 6 of them were injured more than twice and out of the 9 doctors who participated in the study, 6 were injured once and 3 twice

Table 1 : Number of respondents by age, ethnic group and profession

	Number	%
<b>Age</b>		
18 – 21 years	10	15.6
22 – 26 years	35	54.7
27 – 32 years	9	14.1
33 – 39 years	3	4.7
40 and above	7	10.9
<b>Ethnic group</b>		
Malay	47	73.4
Indian	10	15.6
Chinese	4	6.3
Others	3	4.7
<b>Occupation</b>		
Staff Nurses	33	51.6
Nursing students	14	21.9
Doctors	9	14.1
Cleaners	5	7.8
Ward assistants	3	4.7

Table 2 : Number of times the staff were injured using sharps

Occupation	N (%)	Once	Twice	> Twice
Staff Nurse	33 (51.5%)	23	5	5
Nursing Student	14 (21.9%)	12	2	-
Doctor	9 (14.1%)	6	3	-
Cleaner	5 (7.8%)	1	3	-
Ward assistant	3 (4.6%)	2	1	1
<b>Total</b>	<b>64</b>	<b>44</b>	<b>14</b>	<b>6</b>

Table 3 : Lists reasons for the injuries

Incidents	Number
Neglected, uncapped needles in the kidney dish/tray	12
Recapping a needle	11
Giving an injection to the patient	9
Taking blood from the patient	7
Performing dextrostik on the patient	6
Handling a garbage bag	6
Throwing needles into the sharps bin	5
I was careless with the needle	5
Handling an overflowing sharps bin	3
Injured while passing instruments	3
<b>Total</b>	<b>64</b>

Table 4 : Status of respondents after the sharps injury

Status	Number
Anxious that something awful might happen	43
Restless	11
Sudden feelings of panic	14
Angry with self	7
Feel like quitting my job	9
Episodes of depression	3

Table 5 : Measures that should be taken to reduce sharps injury in HUKM as suggested by the respondents

Measures	Number
Create awareness among the staff through seminars, courses and posters	29
Supply proper and sufficient devices to prevent sharps injury	15
Introduce policies pertaining to recapping and disposing sharps	9
Increase / employ staff nurses and phlebotomists during all shifts.	4
No responses	7

(Table 2). Several reasons have been identified as the cause of the sharps injury (Table 3).

Neglected needles in the kidney dish caused the majority of the injuries followed by recapping of needles. Handling garbage bags was one of the hazards posed to the janitors. The respondents were asked to identify their status after the sharps injury from a set of prepared answers. For this item, most of the respondents gave multiple answers. The results however showed that 43 of the respondents were anxious that something awful might happen and 9 felt like quitting their job. Some suggestions were given by the respondents to reduce the sharps injury in HUKM (Table 5).

Creating awareness among the staff through seminars, courses and posters were considered to be the most important among the respondents (n=29) and 15 of them suggested that proper and sufficient devices should be introduced to prevent injury by sharps.

## DISCUSSION AND CONCLUSION

The results of the present study suggest that the most frequently injured employees of HUKM were the staff nurses followed by the nursing students; often they were injured more than twice. Hanrahan et al, (1997) reported that two-thirds of all reported injuries occurred in nurses, they were involved with patients more often than any other hospital staff and sometimes they did not take any precautionary measures when performing hazardous procedures because they did not know the status of the patient.

It is basically believed that a small needle prick injury is harmless but stringer et al, (2001) stated that in a small needle prick injury a small amount of blood from the sharps can be introduced into the puncture site. This may not cause an infection to the health care worker but can pose a danger to the health care worker depending on the quantity of virus present in the blood of the source person at the time of the injury. The authors also found that most of the staff nurses were injured due to negligence of health care staff who left used sharps on trays or kidney dishes among trash like paper and gauze which covered the sharps. This is consistent with the findings of Wang et al, (2000), who found that the health care worker suffered injuries in the process of sorting and cleaning the instruments after use.

Injuries did not occur at random, nor were the substantial rates of needle stick injuries caused by a few health care workers who were injured repeatedly. Certain nursing practices were related to the likelihood of being injured and in this study, recapping needles appeared to be one of the most risky practices. Recapping persisted in spite of well documented hazards and prevention recommendations against the practice. Thurn's (1997) study supports this finding where recapping and improper disposal of sharps accounted for one-third of all work related injuries.

One doctor blamed tiredness and hunger for the sharps injury. She too mentioned that sometimes the doctors had too many wards to cover and post-call doctors did not get a day off the next day despite being busy the previous day. Osborn et al., (1999) believed that fatigue and stress

impeded the practice of safe procedures. Hence greater enforcement of scheduled day off and adequate opportunity for sleep seemed important.

Disposal of used sharps into sharps bin also poses a danger because sometimes the sharps bins overflow, especially over the weekends. This is consistent with the study carried out by Gershon et al., (2000) where three health care workers were injured while trying to dispose contaminated needles because they failed to see another needle sticking out of the container. The sharp bins should only be 'three-quarter' filled (OSHA) guidelines.

Throwing sharp items into garbage bags should be avoided and this should be instilled in the minds of all the health care workers. The present study shows that most of the cleaners got pricked by needles disposed into garbage bags. The janitors in the process of squashing the bags got pricked.

Health care workers also get injured in the process of blindly passing instruments. This was especially common in the operating theatre (n=3) and accords with the study carried out by Johnson (1996) who stated that emergency situations and careless passing of instruments are a frequent cause of injuries among health care workers.

Harnage (2000) stated that even if no infection is transmitted, the emotional impact of having been pricked by a contaminated sharp can be daunting and the uncertainties can lead to long term anxiety and may require further counselling. In the present study although 90% of the respondents were upset about the incident, only one of them was sent for counselling while the others were consoled by friends and colleagues.

The researcher is of the opinion that counselling might give peace of mind to some of the health care workers which in turn will give them the confidence to carry on with their duties. All and Sullivan (1997) had stated in their study that the fear of acquiring a blood borne disease generated

anxiety to the extent that the nurses could not show empathy and compassion to the patients. The fear of contracting the disease would prevent the health care workers from giving maximum care to the patients which in turn could affect the health care system quite badly.

In conclusion, it can be said that the present study provides evidence that the risk of sharps injury among health care workers is related to working conditions and to a certain extent carelessness on the part of the staff themselves who are handling the sharps. Although staff shortage in the hospital are more important issues, the consideration of organizational factors as well as equipment and other procedural aspects of care delivery will yield the best approaches in sharps injury protection and prevent further traumatic depression among certain injured health care workers. It can be concluded that sharps injury will always be a problem and will continue to increase the risk of serious and fatal diseases among health care workers if habits do not change. Greater efforts are needed by the administration to prevent such exposures to reduce work place hazards. The health care system must be made as safe as possible for both patients and health care workers. A new policy on work place injury prevention may achieve a high level of health care provider safety.

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