A Study on the Factors Associated with Non- Urgent Utilization of Emergency Department

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ABSTRACT

Background: Increased use of Emergency Departments (EDs) for non-urgent primary care, overcrowding, and cost factors has forced healthcare systems to promote more "appropriate" use of the ED. However, few studies have evaluated patients' perceptions of emergency and why they utilize the ED for non-urgent medical care.

Objective: To understand the factors influencing patients' decision to visit ED for a non-urgent medical condition

Materials and Methods: This descriptive study evaluated the utilization of the ED for non-urgent healthcare problems in University Malaya Medical Centre (UMMC) .Two hundred and nine patients were surveyed prospectively regarding their perceptions of the urgeny of their presenting complaints during ED non-urgent visits. Physicians rated the subjects' level of urgency prospectively and retrospectively. The study evaluated patient's characteristics and factors that influence the use of the Emergency Departments for non-urgent cases

Results: The patients' perceptions of urgency were higher overall than the physicians' prospective and retrospective ratings. Patients ratings of emergency were 54% among the respondents. Physicians rated subjects urgency prospectively (6.7 % urgent , 36.4 % non-uregnt) and retrospectively (3.3 % urgent, 37.3 % non-urgent).

Conclusions: A number of demographic and socioeconomic factors arose from the study which elicited patients decision of choosing Emergency Departments for non-urgent conditions as well as their perceptions of urgency

Keywords: *Non urgent cases, Emergency Departments, Primary Care*

This article may be cited as: Ahmad N, Khan SS, Mehmood Y, Ahad B, Hussain H, Naeemullah
A Study on the Factors Associated with Non- Urgent Utilization of Emergency Department JSMC 2018.8;2:83-89.

INTRODUCTION

Accident and Emergency Departments (A&E) have been a popular source of primary care, and studies have shown that up to two thirds of patients attending A&E have problems that could be managed by general practitioners (GPs).[1]

The use of EDs has increased greatly during the past 25 years. A marked increase also has been seen in patients presenting to the ED with primary care or non-urgent conditions, which is often due to an inability to obtain timely alternative healthcare.[1]

Demand growth is partly due to inaccessibility to primary care services, and misapplication of Emergency departments by patients who seek care for non-emergent problems. Non-emergent visits of Emergency departments are typically defined as visits for conditions for which a delay of several hours would not increase the likelihood of an adverse outcome.[2]

The use of emergency services by non-emergent patients is an important and still unresolved problem causing a burden to the global health care Such improper use of hospital resources not only rises the costs but also could seriously jeopardize the quality of emergency care if Accident & Emergency Departments (A&ED) become overcrowded.[3]

An extensive, recent international literature review held in France, reported that between 4.8% to 90% of ED patients were potentially non-emergent cases, with a median of 32.1% (Lowthian et al., 2012). In 1992, the National Hospital Ambulatory Medical Care Survey (USA) identified 55.4% of the ED visits as non-emergent.[4] The percentage of patients going to A&ED for non-emergent problems is between 9% and 54% in the USA,[5] between 25.5% and 60% in Canada,[6] and between 19.6% and 40.9% in Europe;[7] Higher percentages have been found in Kuwait (61%)[8] and in Hong Kong (57%).[9]

In Malaysia, 38.3% of ED attendees were non-emergent cases in Hospital UniversitiKebangsaan Malaysia (HUKM) in 1987,[10] and 35% in Hospital Kuala Lumpur (HKL) in 2001. In both settings, it was reported as an increasing trend.[11]

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Received: October 03rd 2017, Accepted March 02nd 2018

Visiting the ED instead of another care site (e.g. physician's office, retail clinic, urgent care) for a non-emergent condition may lead to excessive healthcare spending, unnecessary testing and treatment and represent a missed opportunity to promote longitudinal relationships with primary care physicians.[12] A recent study in US projected $4.4 billion in annual savings if non-emergent ED visits were cared for in retail clinics or urgent care centers during the hours these facilities are open.[13]

There is widespread interest in interventions to discourage non-emergent ED visits. Interventions by health care systems have included patient education on what is appropriate ED use, encouraging primary care physicians (PCPs) to provide care in the evenings and weekends.[14]

Despite these efforts, non-emergent ED visits have continued to rise.[15] One explanation could be that prior interventions have not adequately addressed the underlying issues that lead patients to visit EDs for non- emergent conditions.[16]

The purpose of the current study is to produce an exploratory analysis of the decision-making process of patients to seek care in the emergency department of UMMC, for a non-emergent complaint. This will be accomplished by evaluating the experience and perceptions of patients in the context of an ED visit. One published study done in University Sains Malaysia illustrates inappropriate utilization in Emergency department services[17] however not many systemic review on recognizing patients factor's has been published to date in Malaysia.
So the aim of this study is to determine the factors influencing patients for choosing Emergency department for non-emergent cases with special focus on their demographics, pattern and characteristics of non-emergent cases and their perceptions behind this. This study will help to explore the motives why people with non-emergent complaints choose to come to Emergency department.

MATERIALS AND METHOD

This was a prospective descriptive study. This study was conducted in the Emergency Department of University of Malay Medical Centre (UMMC) which located in Kuala Lumpur, Malaysia. UMMC is affiliated to University Of Malaya. The Emergency department sees more than 100 thousands patients annually. Total population of ED visits from January 1st to March 31, 2015 triaged to green zone was (January 5638, February 5249, March 5193) 16,080. This study involves patients with non urgent medical conditions attending in Emergency Department of UMMC during the study period. Non-emergent visits of Emergency departments are typically defined as visits for conditions for which a delay of several hours would not increase the likelihood of an adverse outcome. Participants of this study were selected based on inclusion & exclusion criteria. Patients whose age was more than 18 years up to 60 years were included in the study while mental health patients were excluded. The present study was conducted from a period of January 1st to March 31, 2015. The days and times were selected for the convenience of the researcher. All days except Saturday were sampled, and timing was randomly selected from 24 hour. Collection of sample was randomly selected from patients. Data collection structured in a sectioned question which presented to the participants in a written content. All participants were ED patients. Data entered into SPSS 21 version to do the statistical analysis.

Patients arrived in the ED by walk-in, wheelchair, or ambulance. Patients were triaged by triage officer evaluating vital signs, chief complaint, medical history, current medications, allergies, and other relevant information by filling triage form. Potential subjects were identified from triage information to fit inclusion criteria. They were asked to participate in the research study prior to registration, after registration while waiting to be taken to an ED treatment room, or while in ED treatment areas. When patients were registered into the ED, they provided demographic information on the usual hospital forms. Subjects were ask for consent verbally for participation in the study, including access to the ED chart for review and documentation of information. Subjects were asked to complete the questionnaire while waiting for treatment in the waiting room. In cases where the patient was unable to answer the questions, the accompanying person was asked to help complete the patient questionnaire. ED physicians also were asked to complete a questionnaire relating to each subject's urgency level. Physician Questionnaires were placed on the front of the ED chart for subjects who consented to participate in the study.

Questionnaires were completed by physicians prior to their evaluation of the subject and after completion of their evaluation and diagnosis. Physicians were instructed individually by the researcher to answer the first question on initial contact with each patient and to answer the last three questions after thorough examination, assessment, and results of necessary tests or procedures to establish a diagnosis. Demographic information was obtained from the ED record and collected on the subject data form. Completed Subject Questionnaires were collected by the researcher during or at the end of the ED visit. Then attempts were made to clarify any questions or confusion about the questionnaire or the study. Completed Physician Questionnaires were collected by the researcher after completion of the patient's ED visit. Then questions or confusion were clarified. The Subject Questionnaire, Physician Questionnaire, and Subject Chart Data Collection Form were collated for each subject at the time of collection by the researcher.

RESULTS

Total Two hundred and thirty people were approached and asked to participate in this study, 21 people refused participation, stating severity of illness or disinterest and another nine patient unable to complete the form. So total 30 patients excluded from the data analysis. physician also served separate questions to collect the data from those 200 patients. All participants were ED patients triaged to consultation.

Table 1: Distribution of independent variables with patients' perceptions of urgency

Urgently (within minutes)		Number	promptly (1-2 hours)	soon (< 24 hours)	non urgent (within days)	P value
Age	<20Yr	22	15	0	2	0.23
		56.4%	38.5%	0.0%	5.1%	
	20-30Yr	26	25	5	6	
		41.9%	40.3%	8.1%	9.7%	
	30-40Yr	32	17	3	1	
		60.4%	32.1%	5.7%	1.9%	
	40-50Yr	13	10	0	0	
		56.5%	43.5%	0.0%	0.0%	
	>50Yr	15	8	0	0	
		65.2%	34.8%	0.0%	0.0%	
Sex	Male	64	24	3	6	
		66.0%	24.7%	3.1%	6.2%	
	Female	44	51	5	3	0.0019
		42.7%	49.5%	4.9%	2.9%	
Marital Status	Single	36	30	0	3	0.18
		52.2%	43.5%	0.0%	4.3%	
	Married	56	31	8	6	
		55.4%	30.7%	7.9%	5.9%	
	Divorcee	13	11	0	0	
		54.2%	45.8%	0.0%	0.0%	
	Others (widowers)	3	3	0	0	
		50.0%	50.0%	0.0%	0.0%	
Race and Ethnicity	Malay	30	17	3	5	
		54.5%	30.9%	5.5%	9.1%	
	Chinese	37	12	0	0	0.018
		75.5%	24.5%	0.0%	0.0%	
	Indian	20	28	2	0	
		40.0%	56.0%	4.0%	0.0%	
	Other	21	18	3	4	
		45.7%	39.1%	6.5%	8.7%	
Mode of Arrival	Car	29	24	0	0	
		54.7%	45.3%	0.0%	0.0%	
	Motorcycle	35	15	4	5	0.009
		59.3%	25.4%	6.8%	8.5%	
	Public Transport	37	18	4	4	
		58.7%	28.6%	6.3%	6.3%	
	Other	7	18	0	0	
		28.0%	72.0%	0.0%	0.0%	
Medically Insured	Yes	40	33	0	0	
		36.8%	45.2%	0.0%	0.0%	0.0007
	No	68	42	8	9	
		53.5%	33.1%	6.3%	7.1%	
NO of person in the household	Alone	36	20	6	3	
		55.4%	30.8%	9.2%	4.6%	
	Spouse	20	17	0	4	0.0039
		48.8%	41.5%	0.0%	9.8%	
	Parents	12	9	0	0	
		57.1%	42.9%	0.0%	0.0%	
	Children	29	8	2	2	
		70.7%	19.5%	4.9%	4.9%	
	Other	11	21	0	0	
		34.4%	65.6%	0.0%	0.0%	
Family Support	Yes	58	35	3	5	0.16

		57.4%	34.7%	3.0%	5.0%	
	No	50	40	5	4	
		50.5%	40.4%	5.1%	4.0%	
Level of Education	Post Grad	15	17	0	0	
		46.9%	53.1%	0.0%	0.0%	
	Degree	58	36	5	6	0.048
		55.2%	34.3%	4.8%	5.7%	
	Diploma/ Certificate	34	15	3	3	
		61.8%	27.3%	5.5%	5.5%	
	Secondary	1	7	0	0	
		12.5%	87.5%	0.0%	0.0%	
Employment Status	Yes	48	44	3	0	0.08
		50.5%	46.3%	3.2%	0.0%	
	No	60	31	5	9	
		57.1%	29.5%	4.8%	8.6%	
duration of the presenting problem	<24 hrs	40	35	3	1	0.12
		50.6%	44.3%	3.8%	1.3%	
	24-48 hrs	39	23	4	5	
		54.9%	32.4%	5.6%	7.0%	
	>48hrs	29	17	1	3	
		58.0%	34.0%	2.0%	6.0%	
Availability regular health care provider?	Yes	47%	36	3	6	
		51.1%	39.1%	3.3%	6.5%	0.001
	No	61	39	5	3	
		56.5%	36.1%	4.6%	2.8%	

Table 2: Logistic regression model results.

	B	S.E.	Wald	Sig.	OR	OR (95% C.I.for odds ratio)	
						Lower	Upper
Method of transport			18.457	.000			
MB vs car	-.617	.627	.968	.325	.540	.158	1.843
Public transport vs car	-.823	.756	1.186	.276	.439	.100	1.932
Other vs car	3.407	1.064	10.246	.001	30.176	3.747	243.035
Medical insurance	.964	.526	3.368	.066	2.623	.937	7.348
No of F/ member			5.736	.125			
Spouse vs alone	-.257	.626	.168	.682	.774	.227	2.641
Parents vs alone	-.516	.925	.311	.577	.597	.097	3.659
Children vs alone	-2.061	.862	5.711	.017	.127	.023	.690
Level of education			2.251	.522			
Degree vs PG	-.881	.970	.824	.364	.415	.062	2.775
Diploma vs PG	-1.461	1.179	1.536	.215	.232	.023	2.339
Secondary VS PG	-1.458	1.115	1.711	.191	.233	.026	2.069
RACE			6.654	.084			
Chinese vs Malay	-.284	.832	.116	.733	.753	.147	3.847
Indian vs Malay	1.795	.919	3.812	.051	6.017	.993	36.457
Others vs Malay	.817	.707	1.337	.248	2.264	.567	9.048
Monthly income			4.410	.220			
<5000 vs 5000to 10000	-.145	.570	.065	.799	.865	.283	2.642
10,001 to 20000 vs 5000 to 10000	1.542	.804	3.683	.055	4.676	.968	22.596
Constant	-1.524	1.346	1.282	.258	.218		

DISCUSSION

The use of emergency services by non-emergent patients is an important and still unresolved problem causing a burden to the global health care .Such improper use of hospital resources not only rises the costs but also could seriously threaten the quality of emergency care if Accident & Emergency Departments (A&ED) become overcrowded.[3] Demand growth of Emergency Departments is partly due to inaccessibility to primary care services, and misapplication by patients who seek care for non-emergent problems.

The purpose of this study was to survey patients' perceptions of the urgency of their presenting complaints during visits to the ED of University Malaya medical Centre (UMMC). The study also evaluated factors and socio demographic characteristics that influence the use of the ED for non-emergent medical problems**.** This study will help to explore the motives why people with non-emergent complaints choose to come to the Emergency department. This information will contribute to our knowledge gap in order to improve emergency services in the long run.

Patient demographic and socio economic characteristics that appear to most influence non urgent use of the ED include (a) male gender (b) Chinese ethnicity (c) lack of medical insurance d) staying alone in the house e) unemployed d) lower socioeconomic group)method of transport, and f) those unable to identify a healthcare provider .These findings are similar to Buesching et al.[18] and Grumbach et al.[19] study.

Near to similar study done in HUSM in 2000 , where male found majority than female in the inappropriate cases ,shows a similar analysis of this current study where male (66.0%) genders has a significant values of perceived urgency for their non-urgent cases.

Study showing Chinese ethnicity as a larger proportion (75.5%) who have of perception of urgency followed by Malay (54.5 %) considered a significant values among the factors. It explains the analysis as Chinese population are higher than Malay and Indians in this locality according to Population distribution by states and territories 2010.

Living within less than 30 minutes distance was found to be associated with a higher proportion of patients (55.9%) utilizing A&E for non urgent purposes, but it was not found to be statistically significant in multivariate analysis. Location of UMMC has an important role here, as most of the patients locating near by Petaling jaya are the major group of non urgent visitors , who can reach in short interval . Factors other than proximity to health care setting are usually more associated.

In contrast to many overseas studies, results of this study reveal that those patients who utilized A&E for GP problems were mostly lower socio-economic group (59.7%).[19] Lower cost is significantly associated with this findings .This implies that to save money patients tend to choose A&E rather than attending general practitioner. Affordability was the most pronounced reason for the GP patients, but did not apply to A&E patients.

Patients who were visited in the Emergency department by other method of transport (taxi) showed a higher association with the perception of patients urgency in the ED, rather than other method of transport. It also explain majority population comes with car has.

There is a significant finding of Patients without insurance had the greatest non urgent use of the ED, and they also rated their urgency level more frequently than other categories. This finding strengthens the supposition that a large portion of ED use is due to an inability to access alternative healthcare options.

A particular concern regarding the pattern of primary care usage in an area with hospital Emergency Department services which provide 24-h availability and open access, while the primary-care services are only available during office hours, few of them run by paramedics and also lacking of facilities like lab services and radiography also considered important role of ED utilization by non urgent patients. Majority of patients preferred hospital emergency department perceived emergency status of their disease because of feeling sick on public holidays or at night; living in close proximity to the hospitals; availability of proper diagnosis and efficient service at the time of day it was needed instead of long waiting hours compare to primary health care. It represents a large need of initiatives to promote longitudinal relationships with primary care physicians in near future.

54% patients examined in this study were self or relative referred to the Emergency Department showing a significant value, with relatively longer duration of problems. In comparison, patients referred by physicians showed a significantly lower proportion of non urgent visits. The most frequent reason stated by patients for choosing the Emergency Department for their care was that they believed it was an emergency. It shows an inappropriate knowledge regarding emergency care among general population. patients may be educated to recognize the severity of their illnesses and to utilize A&E appropriately. There is an widespread interest taken by many western health care services by discouraging non-emergent ED visits.[20] Interventions by health care systems have included patient education on what is appropriate ED use, encouraging primary care physicians (PCPs) to provide care in the evenings and weekends.[15]

As 70% of primary medical care is provided by general practitioner and paramedics in Malaysia and most of them are in solo practice, they cannot be expected to provide a 24-h service (Annual Report, Family Health Development Division, Ministry of Health, 2008) However, they could form a network to provide on-call system by rotation. With advanced technology and consent of patients, the network could link to the medical record system to facilitate decision making byon-call doctors. Alternatively GPs could establish record linkage with nearby private hospitals so that resident medical officers could have access to patient medical histories, and continuing care could be provided. This kind of arrangement needs to be well coordinated to enable greater care in the community and to decrease the utilization of A&E except for `true' emergencies

Comparison made in between patients perception versus physicians perception of urgency can show the patients' perceptions of urgency were higher overall than the physicians' prospective or retrospective ratings .Marked differences were found between physician and patients urgencyratings. The patient's perceptions of urgency differed notably from that of the doctors. According to the physicians perceptions retrospectively major group of patients can be treated as outpatients.
In addition to it approaches can be taken by A&E departments to triage away of non-emergent patients to decrease the burden of ED in future. There must be community support through the provision of clinics where referred non-emergent patients can receive timely care.

CONCLUSIONS & RECOMMENDATIONS

The use of the ED for non urgent cases is increasing throughout the world. ED overcrowding and cost factors have forced many healthcare systems to examine alternatives to promote more “appropriate” use of the ED. However, few studies have evaluated the patients' perceptions of urgency and why they choose to utilize the ED as their site of medical care. Patients' perceptions of their injuries or illnesses and the accessibility to healthcare may dictate which type of healthcare they utilize.

Excessive utilization of the ER for non-urgent problems has several consequences. Administratively, this results in overcrowding and congestion, resulting in over work for the Casualty doctor. The crowded conditions affect the quality of care in terms of the attention given by the doctor to each case. Also, the cost of health care is likely to be increased as a result of increased utilization of ER rather than PHC services.
In our study, the doctor reported that almost 37.3% cases are non urgent and can be seen as outpatients. This studies helps to find out the factors influencing patients for choosing ED for their non urgent cases and tried to provide a lot of evidence which might help in future studies. It also shows the importance of greater co-operation between primary care and hospital services may help to reduce non urgent attendance at hospital emergency departments.

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