



Prevalence and Factors Associated with Attendance of Non-Urgent Cases of Pediatric Emergency Room in Riyadh, Saudi Arabia

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The care for emergency conditions is an important feature of developed the systems of healthcare. Emergency medicine is the medical specialty dedicated to diagnosis and treatment of unforeseen illness or injuries. Overcrowding of Emergency Room (ER) by non-urgent cases is a problem that should be raised and reasons for that need to be sought. The aim is to identify the prevalence and factors behind non-urgent cases attending to acute care in Riyadh. This is a cross-sectional study which was conducted over a one-year period. Questionnaires were distributed to parents of children ≤ 14 years attending pediatric emergency room (ER) in multiple hospitals in Riyadh, Saudi Arabia. The sample size was 383 participants recruited using convenience sampling technique. The inclusion criteria comprised of pediatrics ≤ 14 years attending to ER with urgent cases (level 1, 2 and 3 according to Emergency Severity Index) and minor trauma (contusion, abrasion), sore throat, upper respiratory tract infection (URTI), mild abdominal pain, vomiting alone or diarrhea alone with no sign of dehydration of (level 4 and 5 according to Emergency Severity Index). 383 questionnaires were collected. The sample consisted mostly of females 56%. Upper respiratory tract infection (URTI) was the highest reason for pediatric emergency room visits (55.1%). Only 12.2% have visited primary health care (PHC) prior to emergency room. Most of

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participants have sources for medical advice other than emergency physicians (80.3%). Results also show that many parents who have brought their kids to emergency lacked the knowledge that their cases could be managed in primary health care (76.2%). In Conclusion, results have shown that many parents choose ER whenever their children have any symptoms. Reasons for that varied between each participant. Many participants are ignorant of the capabilities of PHC centers, and their services. Raising awareness regarding primary health should be the objective to reduce number of non-urgent cases visiting emergency room.

Keywords: Emergency care; emergency medicine; non-urgent cases; pediatric; URTI.

1. INTRODUCTION

The care for emergency cases is an important feature of developing a holistic comprehensive healthcare system. General practitioners and family physicians have continued to provide many of unscheduled care for non-urgent conditions. The primary health care center services have shifted to an emergency department [1] in many centers in Saudi. One of the most important worldwide problems is using emergency room by non-urgent cases, in countries with public health system or private health system both have shown an increase in number of visitors to emergency <https://www.peerreviewcentral.com/department> [2]. Emergency medicine is the medical specialty dedicated to diagnosis and treatment of unforeseen illness or injuries [3]. The Emergency Department (ED) is the department of hospital responsible for the provision of medical and surgical care to patient arriving at a hospital who needs an immediate care [4]. Saudi ministry of Health (MOH) follow the Canadian national guidelines, patients should visit primary health care centers before visit ED except for those who have emergent cases where they transfer to ED, and some emergency cases require ED directly. [5]. The aims of this study are to assess patient knowledge on primary health care centers (PHCs) and to know non-urgent cases attending Saudi ministry of health hospitals. There are a lot of causes which let the patients visit ED rather than primary care centers. Many studies concentrate on the diseases and treatments. However, our study focusing on prevalence and the factors associated with this behavior. The emergency department is considered a link between before admission to the hospital and during the admission of the patients. [6]. On the point of view, emergency department is the specialty which has the future, including managing, evaluating, preventing, and treating not expected injury and illnesses [7].

ED visits were grouped as by a 5-level triage acuity score representing immediate, emergent, urgent, semi-urgent, or non-urgent, based on the triage nurse's judgment about the patient's need for immediacy of evaluation, stabilization, and/or treatment. A level 1, or immediate visit, was a severe condition where any delay in medical attention would likely result in death and included a major trauma or medical problem. A level 2, or emergent visit, required evaluation within 1–14 minutes and represented a severe illness or injury requiring immediate care to combat danger to life or limb and where any delay would likely result in deterioration. A level 3, or urgent visit, was an illness or injury requiring treatment within 60 minutes. A level 4, or semi-urgent visit, could be evaluated in between 1–2 hours. A level 5, or non-urgent visit. in our study, urgent cases include level 1,2 and 3 and non-urgent cases only level 4 and 5 [8]. In this study we will identify the factors and prevalence for inappropriate use of ER service in Riyadh region. Although inappropriate demand for ER services is a well-known problem, there are few studies addressing its causes. Thus, this study may provide important information for addressing the problem and improving health systems performance.

2. METHODS

This cross-sectional study was conducted during a one-year period. After obtaining approval and consent from the directors of the participating hospitals and program directors, we have collected questionnaires from the parents of all participants. The forms were collected from participants during the three months of the study. All eligible questionnaires were collected for the sampling frame be selected randomly for each hospital. The inclusion criteria have included all pediatric (≤ 5) with Urgent cases (level 1, 2 and 3 according to Emergency Severity Index) and minor trauma (contusion, abrasion), sore throat, URTI, mild abdominal pain (<4), vomiting alone or diarrhea alone with no sign of dehydration of

(level 4 and 5 according to Emergency Severity Index) who have attended pediatric emergent department in King Salman Hospital, King Saud Medical City, Imam Abdulrahman Alfaisal Hospital, Eman Hospital and Yamamh Hospital. The sample size of this study is calculated using Raosoft sample size online calculator. Assuming 5% margin of (α) error, 95% confidence level, 50% response distribution [14], and population size of unknown. The minimum recommended sample size was 383. Collected data will be entered to Excel sheet and analyzed by using SPSS software version 20. The variables that will be used include categorical and continuous variables. Categorical variables will be presented as frequencies, and continuous variables will be presented as mean and standard deviation. A test was considered significant if the P-value was <0.05 .

2.1 Study Area and Setting

The study will be conducted at the pediatric Emergency Department (ED) in King Salman Hospital, King Saud Medical City, Imam Abdulrahman Alfaisal Hospital, Eman Hospital and Yamamh Hospital Riyadh, Saudi Arabia. Population of the study is all children (≤ 14 years) in Riyadh, Saudi Arabia, who have visited the emergency room during the study period. The sample was collected using convenience sampling technique by giving parents of children questionnaire upon visiting emergency room.

2.2 Data Collections Tools

collected questionnaires from the parents of all participants. The forms were collected from participants during the three months of the study. All eligible questionnaires were collected for the sampling frame be selected randomly for each hospital.

2.3 Sample and Population Size

Calculated using Raosoft sample size online calculator. Assuming 5% margin of (α) error, 95% confidence level, 50% response distribution [14], and population size of unknown. The minimum recommended sample size was 383.

2.4 Inclusion Criteria

included all pediatric (≤ 5) with Urgent cases (level 1, 2 and 3 according to Emergency Severity Index) and minor trauma (contusion,

abrasion), sore throat, URTI, mild abdominal pain (<4), vomiting alone or diarrhea alone with no sign of dehydration of (level 4 and 5 according to Emergency Severity Index) who have attended pediatric emergent department in King Salman Hospital, King Saud Medical City, Imam Abdulrahman Alfaisal Hospital, Eman Hospital and Yamamh Hospital.

2.5 Statical Analysis

Collected data will be entered to Excel sheet and analyzed by using SPSS software version 20. The variables that will be used include categorical and continuous variables. Categorical variables will be presented as frequencies, and continuous variables will be presented as mean and standard deviation. A test was considered significant if the P-value was <0.05 .

3. RESULTS

The total number of respondents was 383 which comprised of 56% females and 44% males. Neonates (<1 year old) compose 16.8% of cases, while other age groups form 21.8%, 26.2%, 20.2%, and 15.0% for ages 1-4, 5-8, 9-11, and 12-14 years old, respectively. The hospitals from which we received our data include King Salman hospital (13.4%), King Saud Medical City (15.5%), AlEmam Abdulrahman Alfaisal hospital (15.5%), Aleman Hospital (42.1%) and Alyamamh hospital (13.4%). Most of the patients went to pediatrics emergency department for upper respiratory tract symptoms (55.1%), and other reasons for emergency visits included vomiting alone or diarrhea alone without dehydration signs, minor trauma (contusion, abrasion) and mild abdominal pain, sorted in increasing order of 7.3%, 14.0% and 20.0%, respectively. According to our study, the most followed action of parents after having any health problem is trying a home medication 59.5% and only 12.2% went to ER after visiting a primary health clinic (PHC) first. 43.8% of the participants have stated that they go to pediatrics emergency "one to two time per month" and 31.3% do so "three to four times". When asked for reason of choosing emergency and not a primary health clinic, 60.2% believed that the case is an emergency. 80.3% of the people who have visited the emergency room answered with "yes" for having another choice other than emergency. Of those 80.3%, 41.1% would choose telephone counseling (937), 20.1% would go to primary health clinic, 17.8% would go to outpatient clinic, and 69.4% would rather go to the pharmacy if

have not gone to the emergency room. 76.2% stated that they would not go to emergency room if they knew that a primary health clinic could deal with their case. However, a remaining 23.8% would still go emergency room and reasons for choosing the emergency as a first choice for managing their cases varied among participants. 54.7% said that the reason for that is because of limited working hours at PHC, and 38.9% believe that a PHC has limited services and resources. 90.7% knew about PHC and 76.7% have a PHC in their neighborhood, but only 24.8% knew that a PHC has an emergency department.

4. DISCUSSION

The results of the study are in line with previous literature in the fact that many Saudi patients choose ER as first choice for medical care of their children. Although most of the participant in this research knew about PHC and had one in their neighborhood, few of them knew about the services their working hours or the services they provide. Dawoud et al. looked for factors associated with ER utilization in Saudi Arabia. They found out that although most patients knew about PHC, they are visiting ER instead of PHC because of its limited resources and working hours [9]. While in comparison to data shown in our study, many patients did not go to PHC because they did not know if their cases can be managed in PHC. Another study which has taken place in Taif city, Saudi Arabia, and included 400 participants of ages <12 years old, attempted to find reasons for visiting ER with non-urgent cases. They have found that the majority have not visited PHC before coming to ER (82.8%) [10]. This raises a flag for lack of knowledge about the nature of PHC and when to visit it. A previous study conducted in western region of Saudi Arabia has explored the factors associated with non-urgent emergency room visits. It included sample of 400 patients of all ages and found out that 78.5% were non-urgent cases and the reason for their visits was mostly because they thought it was an emergency [11]. Al-Ayed et al. [12] recorded 36% of the cases attending King Khalid University Hospital pediatric emergency had non-urgent cases which could be managed by PHC physicians. A similar finding is seen in Al Saleh et al. [13] this confirms the necessity for educating people about PHC and the services provided there as well as gaining the trust of parents in family physician working there.

5. CONCLUSION

Results of the study have shown that many parents choose emergency room whenever their children have any symptoms. Reasons for that have varied between each participant. Many participants are ignorant of the capabilities of primary health care centers and the services provided there. This shows that primary care clinics are not being utilized effectively in Saudi Arabia which can reflect on overcrowding of emergency room with non-urgent cases, however this need to be studied further for more understanding. Raising awareness regarding primary health should be the objective to reduce number of non-urgent cases visiting emergency room.

ETHICAL APPROVAL & CONSENT

Permission to conduct this study need to grant by the ethics research committees of King Salman Hospital, King Saud Medical City, Imam Abdulrahman Alfaisal Hospital, Eman Hospital and Yamamh Hospital. All parents were informed that participation in this study was voluntary. Informed consent was obtained from all participants prior to their inclusion in this study. The consent forms, which also explain the purpose of this study, were included in the questionnaire.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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