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Title Page

Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

Abstract

Objective: To explore the causes for, consequences of, and solutions for nonurgent (NU) visits to EDs from the healthcare providers' viewpoints.

Design: We used a qualitative design, conducting in-depth, open-ended, semi-structured, and face-to-face interviews and applying inductive content analysis.

Setting: A territory, teaching, and military hospital in Iran.

Participants: Healthcare providers including nurses, emergency medicine specialists (EMSs), and emergency medicine resident.

Results: Twelve themes of causes for, nine themes of consequences of, and four solutions for NU visits to the EDs were identified. The causes included convenient access, financial incentives for EMSs, creating wrong and false culture and norms by some healthcare centers, lack of knowledge, inappropriate referrals, willing to pull strings, higher priority of the EDs for hospitalization, receiving rapid care, overcrowding in other hospital departments, well-equipped EDs, overestimating the urgency of the condition, and low costs. The consequences were patients and employees' dissatisfaction, overcrowding and the increases in the workload of the EDs, disruption to the delivery of care to urgent and semi-urgent (USU) patients, reductions in the efficiency and effectiveness of employees, ED employees' fatigue and burnout, unreasonable expectation of receiving elective care, imposing financial burdens, conflict and violence, and increased medical errors. And finally, the possible solutions for controlling and preventing the NU visits included regulatory plans, awareness raising plans, payment mechanism reforms, and organizational and managerial initiatives.

Conclusion: We highlights the need for high level attention to appropriate use of EDs in Iran as a LMICs. In order to control and prevention of NU visits, it is suggested that policy makers should design and implement a combination of possible solutions due to the complexity nature of EDs.

Strengths and limitations of this study

1. This study is the first to qualitatively explore the causes, consequences, and possible solutions of NU visits in EDs.
2. Semi-structured, in-depth, and open-end interviews with key informants including EMSs, nurses, and emergency medicine resident allowed us to gather the data from multiple viewpoints.
3. The findings are limited to one ED which was studied.

Introduction:

The emergency departments (EDs) have responsible and designed to provide rapid, high-quality, continuously accessible, and unscheduled care for emergency cases (1, 2). It means that EDs are not ideal place for nonurgent (NU) conditions (3). In the recent years, use of EDs by NU patients has been reported globally (4-8). The use of EDs for receiving NU care have potentially negative consequences, including crowding, increased costs, poor health outcomes, lack of continuity of care, and misdiagnosis and mistreatment (9-11).

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The causes for NU conditions are not clearly understood (12), especially in low and middle income country settings. To the best of our knowledge, there is no comprehensive study to identify the causes for, consequences of, and possible solutions for that problem in Iran as a LMIC. This study was conducted to determine their causes, consequences and solutions from providers' viewpoints.

Methods

Design

Using a qualitative descriptive design (13), we conducted in-depth, open-ended, semi-structured, and face-to-face interviews with the physicians and nurses working in an ED in order to capture their experiences and perceptions. Qualitative interviews are particularly useful for exploring stakeholders' viewpoints, as they give respondents the opportunities for discussing factors that the researchers may not have anticipated (14). Choosing a face-to-face interview design ensured that the researchers could be confident that they had discussed the information effectively. The study protocol, methods and materials, and interview procedures were reviewed and confirmed by the research committee in Baqiyatallah University of Medical Sciences (BUMS).

Setting, recruitment, and sampling

The interviews were conducted in an Iranian military and teaching ED hospital. The researchers used a combination of snowball and purposeful sampling methods to choose and recruit key informants from the healthcare providers working in the ED. The following key informants were interviewed: nurses working in the ED (n=8); EMSs (n=2), and an emergency medicine resident.

Data collection

The researchers asked the key informants about their viewpoints on the causes for NU visits, consequences, and possible solutions in order to implement appropriate and effective reforms. Further questions at the end of the interviews were based on the discussion process, and the researchers checked whether all topics had been covered. One of the researchers (SMM) interviewed with the key informants in the ED. Recruitment of the new key informants continued until the thematic and data saturation, that is, additional interviews did not develop any new idea. Due to interviewees' request, the audio was not recorded by the tape-recorder. Then, all interviews were transcribed and coded.

Data analysis

The interviews were fully transcribed verbatim after each interview and were rechecked in numerous occasions for assuring of accuracy, and imported into MAXQDA® software to assist qualitative data management and analyses. Using the inductive content analysis, the researchers identified, extracted and organized significant themes through internal discussion between the research team. Key steps of analyses included as follows (15): preparation, organizing, and reporting. The data were discussed collaboratively in several meetings between the research team to ensure consensus on thorough and consistent coding.

This study used two criteria which had to be met to prove and strengthen the trustworthiness: credibility and transferability (16). The researchers enhanced the credibility of the results through the source triangulation from obtaining in-depth information from a range of key informants on the research questions. In addition, we described the study setting, context, process of data collection, and analysis of data to enhance the transferability of the findings.

Ethical considerations

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The study was approved by the Ethics Committee of Research in the Baqiyatallah University of Medical Sciences (Ref: CH/7019/998). After giving written information about the study and its aims to the participants, the researchers obtained verbal informed consents for participating in the study from them before conducting the interviews.

Results:

12 themes of causes for NU visits and 9 themes of their consequences were identified (Figure 1). The causes for NU visits included: convenient access, financial incentives for EMSs, creating wrong and false culture and norms by some healthcare centers, lack of knowledge, inappropriate referrals, willing to pull strings, higher priority of the EDs for hospitalization, receiving rapid care, overcrowding in other hospital departments, well-equipped EDs, Overestimating the urgency of the condition, and low costs.

Participants indicated that NU visits had some negative consequences for the EDs, including patients and employees' dissatisfaction, overcrowding and the increases in the workload of the EDs, disruption to the delivery of care to urgent and semi-urgent (USU) patients, reductions in the efficiency and effectiveness of employees, ED employees' fatigue and burnout, unreasonable expectation of receiving elective care, imposing financial burdens, conflict and violence, and increased medical errors.

Possible solutions for controlling and preventing the NU visits were also categorized into four groups, including regulatory plans, awareness raising plans, payment mechanism reforms, and organizational and management initiatives (Figure 2).

The detailed descriptions of each theme are as follows:

Causes:

1. Convenient access

Because the ED is open 24/7 and provides services, patients' access to this department is relatively better and easier than other healthcare service centers. A convenient and easy access to the EDs was one of the causes that the interviewees mentioned. One of the interviewees said:

> *“The mentality of the entire community is that access to the ED is easier than other healthcare centers and it can make their admission easier.” (P1)*

2. Financial incentives for emergency medicine specialists (EMSs)

Because the EMSs receive the fee-for-service payment for admitting each patient to the ED, one of the causes the interviewees stated as a factor affecting the admission of NU patients was the EMSs' financial incentives. In other words, there is a direct financial relationship between the patient's admission to the ED and the increases in the EMSs' income in Iran. One of the interviewees said in this regard:

> *“There is a financial relationship between the number of patients admitted and the specialist's fee for service payment. There are some attending physicians whom the EMSs in the screening room have been their old medical students. One day, one of these EMSs in the screening room showed me a text message received from his attending physician who was in the ED in that day, in which he had asked the EMSs to let patients enter the ED.” (P10)*

3. Creating wrong and false culture and norms by some healthcare centers

Patients' previous referrals to some healthcare centers, especially private centers, have a significant effect on their current NU visits to the EDs, so that patients referring to the private

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centers to receive services are faced with receiving unnecessary services, which is due to the profiteering look of some hospitals and physicians to the patients:

> *“Private hospitals are encouraging this. Because when patients come to the EDs of private hospitals to receive services, they prescribe a number of unnecessary procedures for them and create this mentality in the patients that the EDs can do so and provide any services. As a result, a negative attitude and mentality forms in the patients, and when they go to the public hospitals, they expect to receive similar services to the private hospitals.” (P2)*

4. Lack of knowledge

Lack of patients' knowledge and awareness of the emergency and urgent conditions affects the NU visits to the EDs. This is due to the lack of education and training by the mass media and the formation of a false culture. One of the interviewees considered it as a main factor:

> *“The main factor is the knowledge and culture of our people and they do not have adequate knowledge, and the mass media have not also provided enough information for them about this issue.” (P2).*

5. Inappropriate referrals

Referring the NU patients to the EDs by the clinic physicians, either verbally or in writing, for admission is commonplace, to which most of the participants referred. Some physicians who do not have beds in the hospital are often not responsible and confine themselves to receive a sheet of the patient's insurance notebook and refer them to the EDs. It should be noted that this is rooted in some physicians' profiteering, so that the physician refers the patients to the ED with the aim of not losing them. Because physicians are not willing to lose their patients and urge patients to go to their private offices or to a private hospital where they are working there for later visits, they refer the patients to the EDs. One of the interviewees spoke more clearly and said:

> *“We have had a lot of patients, to whom at the same time the physician has given two letters: one for the hospital admissions officer and another for the ED. The physician also tells the patient: "go first to the hospital admissions officer and if he doesn't arrange a hospital appointment for you, then go to the ED with another letter.” (P10)*

It should be noted that inappropriate referrals to the EDs are not only by physicians, some hospitals also refer the patients to the EDs by an ambulance without coordination. Moreover, non-professional people, such as the physicians' secretaries and the guardians, may also advise patients to go to the EDs.

6. Willing to pull strings

Having kinship relationships and willing to pull strings was one of the causes that the interviewees referred to:

> *“We had a patient which had come to the ED and said: "I'm a close friend of Mr. X and this has been said to me to go to the ED and its personnel deal with your illness faster.” (P9).*

7. Higher priority of the EDs for hospitalization

Because the EDs have a higher priority, compared with other hospital departments e.g. inpatient admissions unit and clinics, for admitting patients and referring them to inpatient departments, the patients are more likely to go to the EDs to be admitted to the hospital and remain in them until

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the beds available in the inpatient departments are empty. In other words, patients use the EDs to remain in the hospital until a bed in the hospital inpatient department is empty:

> *"Some NU patients use the ED until a bed in an inpatient department is empty." (P4)*

8. Receiving rapid care

Due to the nature of the EDs, the provision of the diagnostic and therapeutic services is of high speed. This was not neglected by the interviewees and they acknowledged that the faster delivery of services is a reason for NU visits. According to one interviewee:

> *"The patients come to the ED to receive services and consultations faster; for example, if we ourselves (the personnel) want to make a rheumatology appointment, it will take about one month; but for the patients referring to ED, it will take up to the very next day." (P4)*

9. Overcrowding in other departments

Patients prefer to go to the EDs to receive services when some departments and units such as clinics and hospital admissions unit, etc. are overcrowded. The overcrowding in the clinics wanders the patients and they inevitably go to the EDs for receiving their required services. It should be noted that because the hospital is famous and its services are of high quality, patients from other cities also come to this hospital:

> *"The departments and clinics are overcrowded, and as the patients have usually had a long journey, therefore, they choose the ED to receive services." (P5)*

10. The well-equipped EDs

Having all the diagnostic facilities, as well as skilled personnel in the EDs was one of the reasons that the interviewees referred to. One of the interviewees mentioned this with an example:

> *"The focus on patients is more in the ED, in which all diagnostic groups and facilities are available. But if patients go to a physician's office and he/she requests a CT scan for them, they will go to the CT Scan center, and after performing the CT Scan, if the head of CT Scan center writes below the report sheet that performing the MRI is also required, the patients should go through another process to perform the MRI. However, in the ED, the process is not so. In general, the patient is assured that the physicians, nurses and guides, as well as all required facilities are available in the ED." (P8)*

11. Overestimating the urgency of the condition

Some patients use several ways to be admitted to the EDs. One of the most unconventional and unwise ways used by patients for being admitted to the EDs is to exaggerate the severity of their illness. This was well expressed by the interviewees:

> *"Some of the patients exaggerate their illnesses and show their condition and illness worse and more urgent in order to be admitted to the ED." (P5)*

12. Low costs

Because all inpatient services are free of charge for patients, they will endeavor to be hospitalized in any way to reduce considerably their costs. In other words, as soon as the patient's medical record is set, the costs of treatment will be free. Therefore, one of the reasons for NU patients to go to the EDs is to try to pay the lowest possible costs:

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> *"To pay less, their costs will be free of charge if they are admitted to the hospital. But the costs of outpatient services are not free of charge." (P6)*

Consequences:

1. Patients and employees' dissatisfaction

NU visits to the EDs cause both patients and service providers' dissatisfaction. Slowing down the process of providing services in EDs will lead to the dissatisfaction in patients due to NU visits and a feeling of wandering by them. Also, other patients with USU conditions also feel dissatisfied with the healthcare system due to the lack of timely delivery of services in EDs. In addition, the problems caused by overcrowding and repeated protests by patients also lead to dissatisfaction among the personnel and have negative effects on them. One of the interviewees acknowledged that:

> *"The NU patients themselves become pessimistic about the system because they think that they are wandering and circular. If they are not admitted to the ED, they say that they have been disrespected, and they protest to the hospital manager." (P9)*

2. Overcrowding and the increases in the workload of the EDs

The majority of interviewees believed that with an increase in NU visits to the EDs, it was expected that these departments would be busy and overcrowded and the workload would increase:

> *"This has a negative effect on the works of the ED, and it can cause to slow down work and duties." (P6)*

3. Disruption to the delivery of care to urgent and semi-urgent (USU) patients

The interviewees believed that NU visits to the EDs would impede the provision of services to the truly urgent patients and patients requiring urgent services. This is most often due to the lack of knowledge and awareness of NU patients who have not understood that unnecessary visits can lead to a risk for other patients with urgent conditions. Also, if NU patients have fewer visits, the employees will have enough time to provide emergency services:

> *"The urgent patients are neglected, but if the department isn't crowded, the patients' work is getting faster and they will receive services faster. In this ED, there was a cardiovascular patient for whom, because the department wasn't crowded, we got an electrocardiogram once, in which there was not any problem, and when again we did it, we realized that the patient was Vtac and the patient was immediately rescued; but if this department was overcrowded,* there was no way to save the patient's life. *Because of the overcrowding, we had a patient on whom we did not focus and the CPR was required for him and he didn't survive." (P4)*

Another interviewee said with a bitter experience that:

> *"The urgent patients who are really in need are not dealt with; we had a patient who was code 247 (MI), but* two hours later he was taken to perform angiography*, while his golden time was 30 minutes." (P10)*

4. Reductions in the efficiency and effectiveness of employees

The interviewees believed that NU visits reduced the efficiency and effectiveness of personnel:

> *"As an obstacle, they avoid doing good work and they can have negative effects on the good work of the personnel." (P1)*

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5. The ED employees' fatigue and burnout

Because of the high number of referrals and visits and the inevitability of personnel to provide patients with medical care services, NU visits have a negative effect on the emergency work process and will result in employees' fatigue, burnout and reluctance.

> *"It leads to tension among the personnel, because they should pay attention to both NU and USU patients. They have to deal with all patients." (P1)*

6. Unreasonable expectation of receiving elective care

When NU patients go to the EDs and are hospitalized, this leads to an expectation of receiving elective care. Because the patient, with admission to the ED, thinks that his condition also is urgent and, therefore, requires several treatment procedures:

> *"It leads to the unreasonable expectation for elective treatments. When these patients are admitted to the ED, they ask for different treatments. For example, a patient with low back pain constantly asks: "when will my MRI be performed?" (P3)*

7. Imposing financial burdens

Every patient admitted to the ED needs specialized staff (i.e. physicians, secretaries, nurses, and etc.) and special equipment, while he/she could receive the necessary care in the outpatient departments at lower costs. Therefore, NU visits impose additional financial burdens on the health center, as well as on the insurance system.

One of the interviewees made it clearer by giving an example, as follow:

> *"This causes the depreciation of the hospital equipment because of inappropriate use of them. A patient had come here and a blood test (for example, blood culture) had been asked for him, and then a specialist visited and discharged him. It means that two hours after ordering the blood test for the patient, he was discharged, while the result of the blood culture was usually prepared after 48-72 hours later. Therefore, the result of this test remained unused." (P10)*

8. Conflict and violence

One of the serious risks of NU visits is the creation of tension and conflict between patients and personnel, to which interviewees also referred. With increasing workload due to NU visits, patients' expectations rise and also the employees cannot properly serve patients, and this causes stress and conflict.

9. Increased medical errors

The interviewees believed that with increasing NU visits, because of providing faster patient care and treatment, the quality of services and visits as well as the patient care would decrease. These increase the probability of occurring medical errors due to overcrowding:

> *"When the ED is overcrowded by the NU visits, because the physician wants to make the system smoother, he/she spends less time on patients and wants to get rid of them faster. Therefore, the direct care and direct monitoring and follow-up of patients will be decreased." (P8)*

Solutions:

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The interviewees proposed several solutions for preventing NU visits and referrals, which can be categorized into four groups of regulatory plans, awareness raising plans, payment mechanism reforms, and organizational and management initiatives.

The regulatory plans included the delegation to the triage nurses and EMSs, creating the culture of accountability among physicians, effective monitoring and evaluation of healthcare centers, and setting rules to prevent NU visits (applying rules against kinship relationships and pulling strings).

The awareness raising plans solutions included increasing public and patients' awareness, and increasing physicians' awareness.

Payment mechanism reforms solutions included removing financial incentives for admitting NU patients, developing an appropriate payment system, receiving higher fees from NU patients.

Organizational and management initiatives solutions included setting up 24-hour and boarding clinics, referring the patients of other military hospitals, improving the quality of services in other military hospitals, strengthening the para-clinical departments to perform the diagnostic procedures, and strengthening the referral system.

1. Regulatory plans

1.1. Delegation to the triage nurses and EMSs

To prevent the NU visits, the interviewees believed that the triage nurses and EMSs had to be delegated, so that they can properly guide and refer patients. One of the interviewees stated that:

> *"The EMSs and nurses should be given power to refuse the NU patients' admission." (P6)*

1.2. Creating the culture of accountability among physicians

Creating and developing the culture and channels of accountability among physicians for referring and admitting patients to the EDs is an important approach, to which some interviewees noted. These can make physicians more sensitive to the referrals to the EDs and the EMSs will also be more cautious about admitting NU patients to EDs:

> *"The accountability mechanism among physicians should be created." (P1)*

1.3. Effective monitoring and evaluation (M&E) of healthcare centers

In order to avoid healthcare centers profiteering which could create an inappropriate culture of NU visits, interviewees stated that:

> *"The M&E of healthcare centers in the private sector should be increased to prevent their profiteering, because this leads to an inappropriate culture". (P2)*

1.4. Setting rules to prevent NU visits

Implementation of immutable rules and laws to deal with pulling strings is also a way to prevent NU visits. In addition, setting the new rules for dealing with and preventing NU visits was another solution that the interviewees referred to:

> *"Rules should be set to prevent such visits and encourage the prevention of NU admissions." (P2)*

2. Awareness raising plans

2.1. Increasing public and patients' awareness

Most interviewees believed that people had to be aware of urgent and NU visits through promoting their awareness in the mass media, schools, social networks, as well as in the EDs:

> *"Information should be provided to patients, so that they are informed through the mass media. But this approach is not also used properly. For example,*

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some TV series have been shown to the people, in which it has been shown that in the ED everything is calm and people are inspired if they go to an ED, they will be faced with such quiet environment. Therefore, people expect to have a quiet environment when they come to an ED, so that everything is in place and they are dealt with quickly." (P1)

Another interviewees believed that people had to be informed about the consequences of patients' late visits, and the public had to go to the ED for receiving services at the right time:

"We need to teach people about the consequences of early and late visits for receiving services through the mass media." (P2)

The interviewees believed that patients had to be justified:

"People should be made aware of not referring to the ED for NU conditions." (P7)

One of the interviewees said something interesting:

"Creating a culture should be over time. We tell our colleagues that don't admit such patients, and if you do this once and admit NU patients to the ED, the patients go to the ED for a lifetime and want to be admitted." (P11)

2.2. Increasing physicians' awareness

Increasing physicians' awareness was one of the solutions, to which the interviewees referred. Interviewees believed that, in addition to the clinic physicians, the EMSs also had to be advised to refrain from admitting NU patients to the EDs under any circumstances:

"EMSs should be justified, because some of them when sometimes see that the ED is empty, just for that reason they say that the department is empty and let the NU patients be admitted." (P3)

3. Payment mechanism reforms solutions

3.1. Removing financial incentives for admitting NU patients

As mentioned in the Causes section, the physicians' financial incentives have effects on admitting NU patients to the EDs. Therefore, one of the solutions provided by the interviewees (by the nurses and not by the EMSs) was that the financial relationship between the patients' admission and the physicians' payments had to be disconnected. Disconnecting the physicians' income from patients' admission can also be effective in improving the quality of care provided by the physicians. However, this should be accompanied by other financial incentives in order to prevent the physicians from not providing essential services to the patients:

"There should be no relationship between the physicians' income and the hospital admission rate in the ED, and the financial relationship must be discontinued." (P1)

3.2. Developing an appropriate payment system

The reform of the payment system was a solution that the interviewees referred to. This is such that the physicians often have motivation for admitting patients who have NU problems because this has no significant effect on their income, compared with those with acute conditions, and, therefore, they prefer to admit patients with more stable conditions, which has a great effect on the NU visits. One of the interviewees believed that:

"The policies of a health care system should be such that patients who need more care should pay more." (P2)

3.3. Receiving higher fees from NU patients

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Receiving higher fees from NU visits is an important strategy that should be paid special attention by the health policymakers. If patients come to this conclusion that receiving urgent services in the EDs for NU conditions has higher costs than that in other healthcare centers such as clinics, polyclinics, and etc., they will not select the EDs for receiving services. This solution, in addition to the short-term positive effect on the number of NU visits, will also have a major effect in reducing NU visits in the long run. One of the interviewees believed that:

> *"NU patients coming to the ED should pay fees from 30% to 40% of total cost." (P9)*

4. Organizational and management initiatives

4.1. Setting up 24-hour and boarding clinics

Setting up a 24-hour and boarding clinic for visiting patients was one of the solutions, to which some interviewees referred:

> *"The 24-hour backup centers should be set up. We have open clinics for up to 23 o'clock, and after that, patients who have had fun at their other hours or patients who have had, for example, sore throat, gradually come to the ED." (P1)*

Of course, all interviewees were not agreed with the establishment of a 24-hour clinic, as one of them stated that:

> *"Specialized clinics are not justified because they are not cost-effective." (P3)*

One of the interviewees believed that in some days of the year, when the patients' visits to the EDs were high, the specialized clinic had to be set up:

> *"The clinic should be developed and more patients should be admitted. Like the launch of a new train in the days of the year when there is a lot of passengers and an extra train is used for Mashhad, here in some days of the year when the number of patients is high, extra services (such as a 24-hours clinic) should be provided, it is expected that the situation will be very good (fine). In the clinic, it can be said to the patients that if we cannot visit them in this morning, we can visit them in the evening." (P9)*

Another interviewee believed that, first and foremost, we had to conduct studies to determine the proportion of visits and referrals and then set up a specialized clinic, and the managers had to pay attention to conducting such studies:

> *"Taking turns in the clinics should be strengthened. There is a need to study in this regard, for example, how many neurosurgery patients have referred to the clinic. The management of night clinics should be given to the new graduates and they will also welcome it." (P10)*

4.2. Improving the quality of services in other military hospitals

One of the ways to avoid referring to the EDs is to improve the quality of care provided by other military healthcare centers and hospitals, to which the interviewees referred. Of course, this solution can reduce the NU visits in the long run.

4.3. Strengthening the para-clinical departments to perform the diagnostic procedures

Strengthening the clinic to perform diagnostic procedures and not referring patients to the EDs for performing such procedures is a solution that the interviewees referred to:

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> *"The para-clinical system should be strengthened and all diagnostic procedures, such as sonography, and etc., should perform. Providing services should be more in order to make patients and the clinic comfortable and the para-clinical system shouldn't refer patients to the hospital itself. Para-clinical system should be strengthened in terms of time, number of visits and personnel." (P8)*

Another interviewee mentioned a successful experience in this regard:

> *"We have had a successful experience, i.e. setting up the wound clinic which has been very successful and patients with bedsore, diabetics, and etc. have been visited in it, and since establishing this clinic, NU visits to the ED have significantly been decreased." (P10)*

4.4. Strengthening the referral system

Justifying and rationalizing the referrals from the clinic to the ED is a solution, to which the interviewees referred:

> *"Referrals from the clinic to the ED should be logical, and this depends on the patient's culture." (P8)*

In addition, the referral system and family physician plan should also be implemented in the country. In this case, it can be expected that NU cases are easily managed by the family physician and the NU referrals to the specialized centers as well as the EDs will be prevented.

Discussion:

This study showed that NU visits to the EDs had several causes and there was not only one factor affecting such visits. The causes identified included convenient access, financial incentives for EMSs, creating wrong and false culture and norms by some healthcare centers, lack of knowledge, inappropriate referrals, willing to pull strings, higher priority of the EDs for hospitalization, receiving rapid care, overcrowding in other hospital departments, well-equipped EDs, overestimating the urgency of the condition, and low costs.

Also, the results showed that NU visits had negative consequences, including patients and employees' dissatisfaction, overcrowding and the increases in the workload of the EDs, disruption to the delivery of care to USU patients, reductions in the efficiency and effectiveness of employees, ED employees' fatigue and burnout, unreasonable expectation of receiving elective care, imposing financial burdens, conflict and violence, and increased medical errors.

Moreover, the solutions provided by the interviewees were categorized into four groups of regulatory, awareness raising plans, payment mechanism reforms, and organizational and management initiatives.

The convenient access to the EDs and the existence of the EDs equipped with advanced facilities, along with the provision of high quality services, are some reasons for NU visits to the EDs, which have well been addressed by the results of other studies (17, 18). In some studies, the lack of access to the family physicians has been reported as a reason for NU visits to the EDs (19, 20). This is despite the fact that the history of implementing the family physician plan in Iran is more than 10 years ago and, unfortunately, this plan has not yet been implemented across the country for several reasons. One of the main reasons to failure in the implementation is the changes in the senior management level of the Ministry of Health and Medical Education (MOHME). Because all health ministers have been medical specialists and have had no experience in the field of

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health policy and management and, therefore, they have not realized the importance of family physician plan, and in their four-year period, they often go through the process of orientation in the first three years and most of them in the fourth year realize the importance of this plan. It is worth noting that in only one year before the end of their tenure, they cannot do anything and the plan remains undecided. However, the role of financial incentives for some medical specialists and subspecialist in the failure should not be overlooked.

Having financial incentives by the EMSs was an important cause, to which the interviewees referred. In 1991, the fee-for-service payment policy was proposed by Minister of Health and approved by cabinet (21). The evidence showed that this policy has negative consequences, including having financial incentives for the provision of more services and the admission of more patients and, consequently, the imposition of additional financial burdens on the health system. The negative effects of this plan on the EDs are also evident and one of these negative effects is the admission of NU patients.

Changing the mechanism of payment to the physicians and disconnecting the financial relationships between the physicians' income and patients' admission should be paid attention by the healthcare managers and policymakers. The fee-for-service plan has had negative effects not only on the behavior of physicians, but also on the behavior of private centers, so that the patients in the private centers are exposed to the variety of healthcare services and procedures, and this leads to creating a false and inappropriate culture in patients so that they expect to receive unnecessary healthcare services in the public hospitals. Therefore, in addition to monitoring the physicians' behavior, the private centers should also be monitored and evaluated in order to prevent their profiteering.

The lack of patients' knowledge and awareness of the urgent conditions for referring to the EDs was a cause the interviewees referred to. This has also been confirmed by the results of other studies (22-26). The design and implementation of awareness raising plans in the EDs as well as in the mass media, schools and universities, social networks, clinics, and healthcare centers can help promote the knowledge and awareness of the patients and the community.

The inappropriate referrals by the clinic physicians, secretaries, and guardians have also effects on the patients' NU visits. The results of other studies have also confirmed the inappropriate and NU referrals by physicians (25, 27, 28) and others (29). To overcome such referrals, a combination of awareness raising plans to physicians and other healthcare employees', delegation to the triage nurses and EMSs, creating the culture of accountability among physicians, and setting rules to prevent NU visits should be considered. Some referrals for admission to the EDs are also made by people who want to use kinship relationships and willing to pull strings. Taking punitive measures can be effective for overcoming this problem.

The higher priority of the EDs in order to use their temporary beds for admission to the hospital inpatient department is one of the causes for NU visits. To the best of our knowledge as well as literature search, we did not find studies to address such problems. Inappropriate uses of EDs beds until the related beds in hospital inpatient department are empty can lead to negative consequences for the patients and also the financial burdens on the health system as well as health insurance systems. Also, such uses of EDs beds are an abuse of health facilities and resources, it requires serious actions from healthcare managers and policy makers.

Moreover, according to the results of the present study, one of the reasons for referring to the EDs was the low costs for patients. This is in line with the results of other studies (30, 31). It is

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recommended to receive higher fees from inappropriate and NU patients referring to the EDs in order to prevent NU visits.

The overcrowding in other healthcare centers, such as the clinics and physicians' offices, encourages patients to make NU visits to the EDs for receiving faster care, which is confirmed by other studies conducted in Iran (30), Turkey (32), Jordan (33), France (34), and the United States (35).

This study showed that patients' exaggeration of the severity of their illness in order to being admitted is one of the causes for NU visits to the EDs. The results of other studies are also similar to this result (36, 37). This problem can be solved by educating physicians, triage nurses and patients and caregivers, and enhancing public awareness. Also, in the awareness raising plans, the negative effects of NU visits should well be addressed, so that patients become aware of the negative effects of their NU visits, which this can act as a factor in reducing NU visits.

Designing and implementing clinical guidelines in the EDS is one of the issues that unfortunately have not been paid special attention in Iran, and most physicians are reluctant to use available guidelines. There is also little willingness to design and implement such guidelines at the national level and among health policy makers.

The existence of the EDs with advanced equipment, along with the provision of high quality services are some reasons encouraging patients to make NU visits. In other words, patients prefer going to a well-equipped center to receive required care to referring to and wandering in other centers. This has also been confirmed by the results of other studies (38). Strengthening the para-clinical departments to perform all diagnostic procedures can reduce the number of NU visits. Additionally, by conducting needs assessment studies and determining the importance of setting up 24-hour and boarding clinics, such clinics can be set up for some specialties.

Strengthening the referral system and improving the quality of services provided by other centers can also help control and reduce NU visits in the long run.

It is suggested to conduct other studies in order to examine how to apply incentive and punitive rules, improve the payment mechanisms to the physicians, develop patients and providers' awareness raising plans, and identify factors affecting the overcrowding in health centers and EDs.

This study has been conducted as the first qualitative study in Iran determining the causes for and consequences of NU visits, as well as the possible solutions for preventing such visits, which are the strengths of the present study. In this study, both the EMSs and nurses, who had several years of work experience in the ED, were interviewed.

One of the limitations of this study was the lack of conducting interviews with patients who had come to the ED. It is worth noting that in a prospective study, we explored the causes for NU visits from the patients' perspectives. However, carrying out an in-depth qualitative study to determine the patients' perspectives is necessary. Another limitation of the current study was the inability to digitally record interviews due to the opposition of the ED supervisor and, therefore, it was tried to overcome this limitation by taking notes during interviews.

Conclusion:

NU visits to the EDs have negative consequences for patients, providers, and the health system. Such visits have several causes, which were well addressed in this study. It is suggested that health policy makers design and implement a combination of solutions categorized into four

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groups of regulatory plans, awareness raising plans, payment mechanism reforms, and organizational and management initiatives. Last but not least, there is no studies carried out in Iran on the solutions for NU visits to the EDs, and little attention has been paid by researchers. This per se has led to the lack of producing evidences for informed policy making on the magnitude of the dilemma and their associated factors.

Author Contributions

SMM was responsible for conception, design, implementation, analysis, drafting the manuscript and supervision of the whole process of this study. MB is the principal researcher, who was involved in conception, development, implementation, data collection, analysis, and writing of the manuscript. ET and RR were responsible for intellectual development of the manuscript. All authors read and approved the final manuscript.

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Competing interests

The author declares that she has no competing interests.

Data sharing statement

Data are available and can be accessed by contacting SMM.

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FIGURES' LEGEND

Figure 1. Themes of causes for and consequences of NU visits

Figure 2. The possible solutions for preventing and controlling of NU visits to EDs

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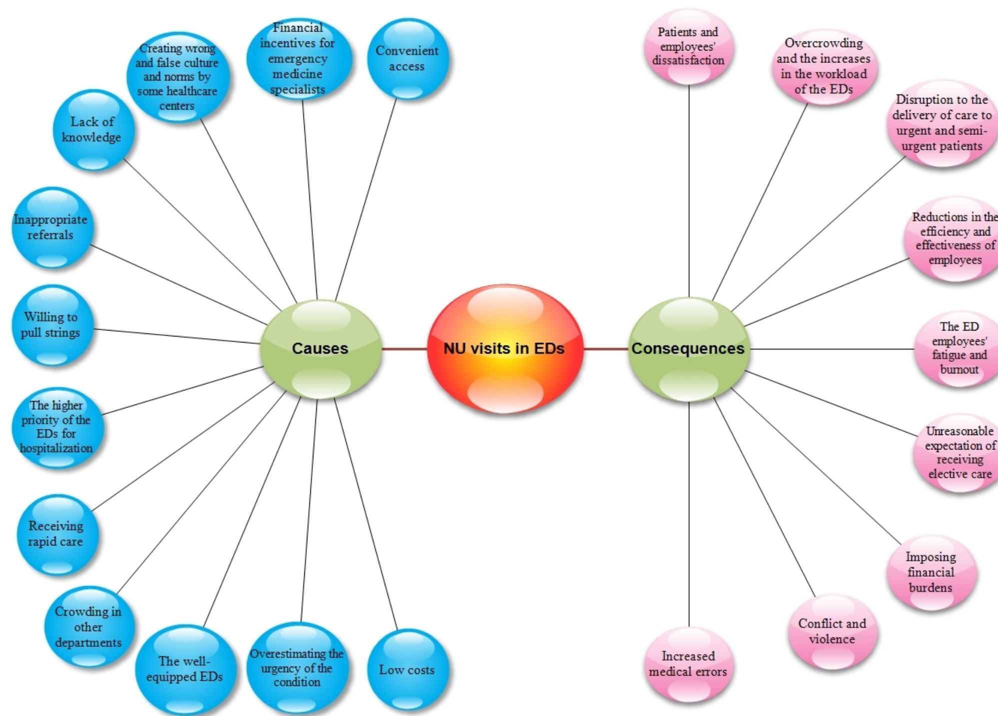

Figure 1. Themes of causes for and consequences of NU visits

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Figure 2. The possible solutions for preventing and controlling of NU visits to EDs

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Standards for Reporting Qualitative Research (SRQR)*

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Page/line no(s).

Title and abstract

Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	2
Purpose or research question - Purpose of the study and specific objectives or questions	3

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	3
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	3
Context - Setting/site and salient contextual factors; rationale**	3
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	3
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	3

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	3
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	3
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	3
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	3
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	3

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	4
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	4-12

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	12-14
Limitations - Trustworthiness and limitations of findings	14

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	15
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	15

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014 DOI: 10.1097/ACM.0000000000000388

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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

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Title Page

Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

Abstract

Objective: To explore the causes of, consequences of, and solutions for non-urgent (NU) visits to emergency departments (EDs) from the healthcare providers' viewpoints.

Design: It was a qualitative descriptive study conducted using in-depth, open-ended, semi-structured interviews and inductive content analysis, theoretically informed by the phenomenological approach.

Setting: A territory, teaching, and military hospital in Iran.

Participants: Healthcare providers including nurses, emergency medicine specialists (EMSs), and one emergency medicine resident.

Results: Twelve themes of causes of, nine themes of consequences of, and four solutions for NU visits to the EDs were identified. The causes included convenient access, financial incentives for EMSs, creating wrong and false culture and norms by some healthcare centers, lack of knowledge, inappropriate referrals, willing to pull strings, the higher priority of the EDs for hospitalization, receiving rapid care, overcrowding in other hospital departments, well-equipped EDs, overestimating the urgency of the condition, and low costs. The consequences were patients and employees' dissatisfaction, overcrowding and the increases in the workload of the EDs, disruption to the delivery of care to urgent and semi-urgent (USU) patients, reductions in the efficiency and effectiveness of employees, ED employees' fatigue and burnout, unreasonable expectation of receiving elective care, imposing financial burdens, conflict and violence, and increased medical errors. The possible solutions for controlling and preventing the NU visits included regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements.

Conclusion: We highlighted the need for special attention to the appropriate use of EDs in Iran as a low-and-middle income country. According to the complexity nature of EDs and in order to control and prevent the NU visits, it is suggested that policy makers should design and implement a combination of possible solutions.

Strengths and limitations of this study

1. This study is the first study to qualitatively explore the causes of, consequences of, and possible solutions for NU visits in Iran and other low-and-middle income countries (LMICs).
2. Semi-structured, in-depth, and open-ended interviews with key informants including EMSs, nurses, and an emergency medicine resident allowed us to gather the data from different perspectives.
3. This study did not include patients and, therefore, did not gain the patients' perspective on the NU causes and consequences.

Introduction:

Emergency departments (EDs) are designed to provide rapid, high-quality, continuously accessible, and unscheduled care for emergency cases (1, 2). It means that EDs are not ideal

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place for non-urgent (NU) conditions (3). Patients with the NU visits are those patients who do not have life-threatening problems, do not require rapid care, and their care can be safely delayed (4), and this delay would not increase the likelihood of adverse outcomes (5). It is estimated that about one-third of patients who come to EDs have NU problems which can potentially be addressed by the outpatient departments, primary care settings, and walk-in centers (6, 7). Some studies have reported even up to half of all visits to EDs as NU visits, and these differences in various studies can be due to the methodologies used to define NU visits (8). In the recent years, the use of EDs by NU patients has been reported globally (6, 9-12). The use of EDs for receiving NU care have potentially negative consequences, including crowding, increased costs, poor health outcomes, lack of continuity of care, timely urgent care for urgent and semi-urgent (USU) patients, and misdiagnoses and mistreatment (13-15).

The causes of NU conditions are not clearly understood (16), especially in the low and middle income countries (LMICs). To the best of our knowledge, there is no comprehensive study to identify the causes of, consequences of, and possible solutions for that problem in Iran as a Low-and-middle income country. This study was conducted to determine the causes of, consequences of, and solutions for NU visits to EDs from the providers' viewpoints.

Methods

Design

Using a qualitative descriptive design (17), we conducted in-depth, open-ended, semi-structured, and face-to-face interviews, informed by the theoretical perspective of the phenomenological approach to explore experiences and perceptions of physicians and nurses working in an ED. The qualitative interviews are particularly useful for exploring stakeholders' viewpoints, because they give respondents the opportunities for discussing factors that the researchers may not have anticipated (18). Choosing the face-to-face interview design ensured that the researchers could be confident that they had discussed the information effectively. The study protocol, methods and materials, and interview procedures were reviewed and confirmed by the Research Committee of Baqiyatallah University of Medical Sciences (BUMS). The triage process was conducted by a special triage nurse using the Canadian Triage and Acuity Scale (CTAS), in which the visits of patients classified into the levels 4 and 5 were considered as NU visits.

Setting, recruitment, and sampling

The studied hospital was a territory, military, and teaching hospital with 700 available beds, which was one of the largest hospitals in Tehran, the capital of Iran. Its accreditation grade was the one-Excellent, according to the latest national accreditation process performed by the Iranian Ministry of Health and Medical Education (MOHME). Its ED provided 24-hour emergency care for all patients, and had successfully run an emergency medicine residency program. During each shift, there were two Emergency Medicine specialists (EMSs), 10 to 15 nurses, and 4 to 5 nurse's aide in this ED. The researchers used a combination of snowball and purposeful sampling methods to recruit key informants from the healthcare providers working in the ED. The following key informants were interviewed: nurses working in the ED (n=8); EMSs (n=2), and an emergency medicine resident.

Data collection

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The potential key informants identified in the ED were invited to participate in the interviews on the aim of the study. Verbal informed consent was obtained from all informants participated in this study and they were assured of the confidentiality of their responses. The researchers asked the key informants about their viewpoints on the causes of, consequences of, and possible solutions for NU visits in order to implement appropriate and effective reforms. Further questions were asked at the end of the interviews about the discussion process, and the researchers checked whether all related topics had been covered. One of the researchers (SMM) interviewed the key informants in the ED. The recruitment of new key informants continued until the thematic and data saturation, in which additional interviews did not develop any new idea.

Data analysis

All interviews were recorded by the written notes and transcribed after each interview and rechecked for assuring the accuracy, and entered into MAXQDA® software to perform qualitative data management and analyses. Using the inductive content analysis, the researchers extracted and organized the significant themes through internal discussion among the research team. Key steps of analyses included as follows (19): preparing, organizing, and reporting. The data were discussed collaboratively in three virtual meetings among the research team to ensure the consensus on thorough and consistent coding.

In this study two criteria should be met to prove and strengthen the trustworthiness: credibility and transferability (20). The researchers enhanced the credibility of the results through the source triangulation by obtaining in-depth information from a wide range of key informants about the research questions. In addition, the researchers described the study setting and context, and the process of data collection and analyses to enhance the transferability of the findings.

Ethical considerations

This study was approved by the Ethics Committee of Research in Baqiyatallah University of Medical Sciences (Ref: CH/7019/998). After giving written information about the study and its aims to the participants, the researchers obtained verbal informed consent from all participants before conducting the interviews.

Patient and public involvement

Patients and public were not involved in research design, recruitment or conduct of this study.

Results:

12 themes of causes of NU visits and 9 themes of their consequences were identified (Figure 1). The causes of NU visits included: convenient access, financial incentives for EMSs, creating wrong and false culture and norms by some healthcare centers, lack of knowledge, inappropriate referrals, willing to pull strings, the higher priority of the EDs for hospitalization, receiving rapid care, overcrowding in other hospital departments, well-equipped EDs, overestimating the urgency of the condition, and low costs.

Participants indicated that NU visits had some negative consequences for the EDs, including patients and employees' dissatisfaction, overcrowding and the increases in the workload of the EDs, disruption to the delivery of care to USU patients, reductions in the efficiency and effectiveness of employees, ED employees' fatigue and burnout, unreasonable expectation of receiving elective care, imposing financial burdens, conflict and violence, and increased medical errors.

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Possible solutions for controlling and preventing the NU visits were also categorized into four groups, including regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements (Figure 2).

The detailed descriptions of each theme are as follows:

Causes:

1. Convenient access

Because the ED is open 24/7 and provides services, patients' access to this department is relatively better and easier than other healthcare service centers. A convenient and easy access to the EDs was one of the causes that the interviewees mentioned. One of the interviewees said:

> *"The mentality of the entire community is that access to the ED is easier than other healthcare centers and it can make their admission easier." (P1, a triage nurse)*

Another interviewee acknowledged that:

> *"Emergency departments are open all the time; however, other health centers have time limits." (P8, a nurse)*

2. Financial incentives for emergency medicine specialists (EMSs)

Because the EMSs receive the fee-for-service payment for admitting each patient to the ED, one of the causes the interviewees stated as a factor affecting the admission of NU patients was the EMSs' financial incentives. In other words, there is a direct financial relationship between the patient's admission to the ED and the increases in the EMSs' income in Iran. One of the interviewees said in this regard:

> *"There is a financial relationship between the number of patients admitted and the specialist's fee for service payment. There are some attending physicians whom the EMSs in the screening room have been their old medical students. One day, one of these EMSs in the screening room showed me a text message received from his attending physician who was in the ED in that day, in which he had asked the EMSs to let patients enter the ED." (P10, a nurse)*

3. Creating wrong and false culture and norms by some healthcare centers

Patients' previous referrals to some healthcare centers, especially private centers, have a significant effect on their current NU visits to the EDs, so that patients referring to the private centers to receive services are faced with receiving unnecessary services, which is due to the profiteering look of some hospitals and physicians to the patients:

> *"Private hospitals are encouraging this. Because when patients come to the EDs of private hospitals to receive services, they prescribe a number of unnecessary procedures for them and create this mentality in the patients that the EDs can do so and provide any services. As a result, a negative attitude and mentality forms in the patients, and when they go to the public hospitals, they expect to receive similar services to the private hospitals." (P2, an EMS)*

4. Lack of knowledge

Lack of patients' knowledge and awareness of the emergency and urgent conditions affects the NU visits to the EDs. This is due to the lack of education and training by the mass media and the formation of a false culture. One of the interviewees considered it as a main factor:

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"The main factor is the knowledge and culture of our people and they do not have adequate knowledge, and the mass media have not also provided enough information for them about this issue." (P2, an EMS).

However, another interviewee believed that:

"A small percentage of patients do not know that they are urgent or non-urgent." (P5, an EMS resident)

Also, the lack of awareness of and familiarity with the clinic can be a cause. One of the interviewees stated that:

"People are not aware of some parte and departments such as clinics." (P11, a triage nurse)

5. Inappropriate referrals

Referring the NU patients to the EDs by the clinic physicians, either verbally or in writing, for admission is commonplace, to which most of the participants referred. Some physicians who do not have beds in the hospital are often not responsible and confine themselves to receive a sheet of the patient's insurance notebook and refer them to the EDs. It should be noted that this is rooted in some physicians' profiteering, so that the physician refers the patients to the ED with the aim of not losing them. Because physicians are not willing to lose their patients and urge patients to go to their private offices or to a private hospital where they are working there for later visits, they refer the patients to the EDs. One of the interviewees spoke more clearly and said:

"We have had a lot of patients, to whom at the same time the physician has given two letters: one for the hospital admissions officer and another for the ED. The physician also tells the patient: "go first to the hospital admissions officer and if he doesn't arrange a hospital appointment for you, then go to the ED with another letter." (P10, a nurse)

It should be noted that inappropriate referrals to the EDs are not only by physicians, some hospitals also refer the patients to the EDs by an ambulance without coordination. Moreover, non-professional people, such as the physicians' secretaries and the security guards, may also advise patients to go to the EDs.

The role of non-professional people in the patients' NU visits to the EDs is also important:

"The patients are referred badly. Non-professional people, such as secretaries and security guards, refer patients to this department. We have patients from towns who visit the clinic and because a limited number of patients can be visited in the clinic, some non-professional employees tell them "if your condition is urgent, go to the emergency department" in order that the patients do not disturb them." (P9, a triage nurse)

6. Willing to pull strings

Having kinship relationships and willing to pull strings was one of the causes that the interviewees referred to:

"We had a patient which had come to the ED and said: "I'm a close friend of Mr. X and this has been said to me to go to the ED and its personnel deal with your illness faster." (P9, a triage nurse).

The introduction of some of the hospital units was also a cause one of the interviewees mentioned:

"Having kinship relationships is important. For example, they bring a letter from the hospital's technical officer and other managers for admission to the ED. The

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monitoring and evaluation office [in this hospital] also say to allow the patient to be admitted to the ED until the evening, then go to the hospital ward." (P10, a nurse)

7. The higher priority of the EDs for hospitalization

Because the EDs have a higher priority, compared with other hospital departments e.g. inpatient admissions unit and clinics, for admitting patients and referring them to inpatient departments, the patients are more likely to go to the EDs to be admitted to the hospital and remain in them until the beds available in the inpatient departments become empty. In other words, patients use the EDs to remain in the hospital until a bed in the hospital inpatient department becomes empty:

> *"Some NU patients use the ED until a bed in an inpatient department becomes empty." (P4, a nurse)*

Another interviewee also pointed out that:

> *"In addition to time justification, the emergency department has a different priority to admittance, it has priority over other hospital wards, and the ED patients have higher priority to be admitted to other hospital wards." (P8, a nurse)*

8. Receiving rapid care

Due to the nature of the EDs, the provision of the diagnostic and therapeutic services is of high speed. This was not neglected by the interviewees and they acknowledged that the faster delivery of services is a reason for NU visits. According to one interviewee:

> *"The patients come to the ED to receive services and consultations faster; for example, if we ourselves (the personnel) want to make a rheumatology appointment, it will take about one month; but for the patients referring to the ED, it will take up to the very next day." (P4, a nurse)*

Another interviewee pointed out that:

> *"The slow speed of the clinic's work is a cause of visiting the ED. But in the ED, the total speed of providing services, such as the lung consultation, is high." (P10, a nurse)*

9. Overcrowding in other departments

Patients prefer to go to the EDs to receive services when some departments and units such as clinics and hospital admissions unit, etc. are overcrowded. The overcrowding in the clinics wanders the patients and they inevitably go to the EDs for receiving their required services. It should be noted that because the hospital is famous and its services are of high quality, patients from other cities also come to this hospital:

> *"The departments and clinics are overcrowded, and as the patients have usually had a long journey, therefore, they choose the ED to receive services." (P5, an EMS resident)*

10. The well-equipped EDs

Having all the diagnostic facilities, as well as skilled personnel in the EDs was one of the reasons that the interviewees referred to:

> *"In addition to the emergency medicine specialists, other specialists are available in this department." (P6, a nurse)*

One of the interviewees mentioned this with an example:

> *"The focus on patients is more in the ED, in which all diagnostic groups and facilities are available. But if patients go to a physician's office and he/she*

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requests a CT scan for them, they will go to the CT Scan center, and after performing the CT Scan, if the head of CT Scan center writes below the report sheet that performing the MRI is also required, the patients should go through another process to perform the MRI. However, in the ED, the process is not so. In general, the patient is assured that the physicians, nurses and guides, as well as all required facilities are available in the ED." (P8, a nurse)

11. Overestimating the urgency of the condition

Some patients use several ways to be admitted to the EDs. One of the most unconventional and unwise ways used by patients for being admitted to the EDs is to exaggerate the severity of their illness. This was well expressed by the interviewees:

"Some of the patients exaggerate their illnesses and show their condition and illness worse and more urgent in order to be admitted to the ED." (P5, an EMS resident)

12. Low costs

Because all inpatient services are free of charge for patients, they will endeavor to be hospitalized in any way to reduce considerably their costs. In other words, as soon as the patient's medical record is set, the costs of treatment will be free. Therefore, one of the reasons for NU patients to go to the EDs is to try to pay the lowest possible costs:

"To pay less, their costs will be free of charge if they are admitted to the hospital. But the costs of outpatient services are not free of charge." (P6, a nurse)

According to another interviewee:

Because of being insured, they usually come to the ED; because as soon as the patient's record is set, the costs become free." (P8, a nurse)

Consequences:

1. Patients and employees' dissatisfaction

NU visits to the EDs cause both patients and service providers' dissatisfaction. Slowing down the process of providing services in EDs will lead to the dissatisfaction in patients due to NU visits and a feeling of wandering by them. Also, other patients with USU conditions also feel dissatisfied with the ED's services due to the lack of timely delivery of services in EDs. One of the interviewees mentioned that:

"The satisfaction decreases." (P5, an EMS resident)

In addition, the problems caused by overcrowding and repeated protests by patients also lead to dissatisfaction among the personnel and have negative effects on them. One of the interviewees acknowledged that:

"The NU patients themselves become pessimistic about the system because they think that they are wandering and circular. If they are not admitted to the ED, they say that they have been disrespected, and they protest to the hospital manager." (P9, a triage nurse)

2. Overcrowding and the increases in the workload of the EDs

The majority of interviewees believed that with an increase in NU visits to the EDs, it was expected that these departments would be busy and overcrowded and the workload would increase:

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> *"This has a negative effect on the works of the ED, and it can cause to slow down work and duties." (P6, a nurse)*

Another interviewee believed that:

> *"It causes the unreasonable crowding and disrupts the correct triage." (P8, a nurse)*

3. Disruption to the delivery of care to urgent and semi-urgent (USU) patients

The interviewees believed that NU visits to the EDs would impede the provision of services to the truly urgent patients and patients requiring urgent services. This is most often due to the lack of knowledge and awareness of NU patients who have not understood that unnecessary visits can lead to a risk for other patients with urgent conditions. Also, if NU patients have fewer visits, the employees will have enough time to provide emergency services:

> *"The urgent patients are neglected, but if the department isn't crowded, the patients' work is getting faster and they will receive services faster. In this ED, there was a cardiovascular patient for whom, because the department wasn't crowded, we got an electrocardiogram once, in which there was not any problem, and when again we did it, we realized that the patient was Vtac and the patient was immediately resuscitated; but if this department was overcrowded,* there was no way to save the patient's life. *Because of the overcrowding, we had a patient on whom we did not focus and the CPR was required for him and he didn't survive." (P4, a nurse)*

An interviewee explicitly pointed out that:

> *"If we want to admit the non-urgent patients, we have oppressed the urgent patients." (P9, a triage nurse)*

Another interviewee said with a bitter experience that:

> *"The urgent patients who are really in need are not dealt with; we had a patient who was code 247 (MI), but* two hours later he was taken to perform angiography*, while his golden time was 30 minutes." (P10, a nurse)*

4. Reductions in the efficiency and effectiveness of employees

The interviewees believed that NU visits reduced the efficiency and effectiveness of personnel:

> *"As an obstacle, they avoid doing good work and they can have negative effects on the good work of the personnel." (P1, a triage nurse)*

In other words, the personnel performance and proficiency will decrease in these situations:

*"It can reduce the nursing performance and proficiency." (P8, a nurse)***5. The ED employees' fatigue and burnout**

Because of the high number visits and the inevitability of personnel to provide patients with medical care services, NU visits have a negative effect on the emergency work process and will result in employees' fatigue and burnout.

> *"It leads to tension among the personnel, because they should pay attention to both NU and USU patients. They have to deal with all patients." (P1, a triage nurse)*

The interviewees believed that the NU visits are associated with the personnel's fatigue and burnout:

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"They cause burnout." (P5, an EMS resident)

6. Unreasonable expectation of receiving elective care

When NU patients go to the EDs and are hospitalized, this leads to an expectation of receiving elective care. Because the patient, with admission to the ED, thinks that his condition also is urgent and, therefore, requires several treatment procedures:

> *"It leads to the unreasonable expectation for elective treatments. When these patients are admitted to the ED, they ask for different treatments. For example, a patient with low back pain constantly asks: "when will my MRI be performed?" (P3, a nurse)*

7. Imposing financial burdens

Every patient admitted to the ED needs specialized staff (i.e. physicians, secretaries, nurses, and etc.) and special equipment, while he/she could receive the necessary care in the outpatient departments at lower costs. Therefore, NU visits impose additional financial burdens on the health center, as well as on the insurance system.

One of the interviewees made it clearer by giving an example, as follow:

> *"This causes the depreciation of the hospital equipment because of inappropriate use of them. A patient had come here and a blood test (for example, blood culture) had been asked for him, and then a specialist visited and discharged him. It means that two hours after ordering the blood test for the patient, he was discharged, while the result of the blood culture was usually prepared after 48-72 hours later. Therefore, the result of this test remained unused." (P10, a nurse)*

One of the interviewees stated that:

> *"The NU visits can result in imposing an expense on the ED and insurance organizations; any patient that is admitted to the ED needs a secretary, nurse, nurse assistant, and equipment, while he/she could be treated as an outpatient." (P3, a nurse)*

8. Conflict and violence

One of the serious risks of NU visits is the creation of tension and conflict between patients and personnel, to which interviewees also referred. With increasing workload due to NU visits, patients' expectations rise and also the employees cannot properly serve patients, and this causes stress and conflict.

One of the interviewees stated that:

> *"The NU visits can lead to the physical violence." (P5, an EMS resident)*

9. Increased medical errors

The interviewees believed that with increasing NU visits, because of providing faster patient care and treatment, the quality of services and visits as well as the patient care would decrease. These increase the probability of occurring medical errors due to overcrowding:

> *"When the ED is overcrowded by the NU visits, because the physician wants to make the system smoother, he/she spends less time on patients and wants to get rid of them faster. Therefore, the direct care and direct monitoring and follow-up of patients will decrease." (P8, a nurse)*

Solutions:

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The interviewees proposed several solutions for preventing NU visits and referrals, which can be categorized into four groups of regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements.

The regulatory plans included giving authority to the triage nurses and EMSs, creating the culture of accountability among physicians, effective monitoring and evaluation of healthcare centers, and setting rules to prevent NU visits (applying rules against kinship relationships and pulling strings).

The awareness raising plans solutions included increasing public and patients' awareness, and increasing physicians' awareness.

Payment mechanism reforms solutions included removing financial incentives for admitting NU patients, developing an appropriate payment system, receiving higher fees from NU patients.

Organizational arrangements solutions included setting up 24-hour and boarding clinics, referring the patients to other military hospitals, improving the quality of services in other military hospitals, strengthening the para-clinical departments to perform the diagnostic procedures, and strengthening the referral system.

1. Regulatory plans

1.1. Giving authority to the triage nurses and EMSs

To prevent the NU visits, the interviewees believed that the triage nurses and EMSs had to be authorized, so that they can properly guide and refer patients. One of the interviewees stated that:

> *“The EMSs and nurses should be given power to refuse the NU patients’ admission.” (P6, a nurse)*

Another interviewee believed that:

> *"A triage nurse should be strengthened and allowed to refer the NU visits to the clinic." (P8, a nurse)*

1.2. Creating the culture of accountability among physicians

Creating and developing the culture and channels of accountability among physicians for referring and admitting patients to the EDs is an important approach, to which some interviewees noted. These can make physicians more sensitive to the referrals to the EDs and the EMSs will also be more cautious about admitting NU patients to EDs:

> *“The accountability mechanism among physicians should be created.” (P1, a triage nurse)*

1.3. Effective monitoring and evaluation (M&E) of healthcare centers

In order to avoid healthcare centers profiteering which could create an inappropriate culture of NU visits, interviewees stated that:

> *“The M&E of healthcare centers in the private sector should be increased to prevent their profiteering, because this leads to an inappropriate culture”. (P2, an EMS)*

1.4. Setting rules to prevent NU visits

Implementation of strong and inflexible rules to deal with pulling strings is also a way to prevent NU visits. In addition, setting the new rules for dealing with and preventing NU visits was another solution that the interviewees referred to:

> *“Rules should be set to prevent such visits and encourage the prevention of NU admissions.” (P2, an EMS)*

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One of the interviewees has noted well that what kind of rules is needed in order to prevent the NU visits:

> *"Another solution is to enforce the immutable rules for those who want to be admitted to the ED through kinship relationships." (P2, an EMS)*

2. Awareness raising plans

2.1. Increasing public and patients' awareness

Most interviewees believed that people had to be aware of urgent and NU visits through promoting their awareness in the mass media, schools, social networks, as well as in the EDs:

> *"Information should be provided to patients, so that they are informed through the mass media. But this approach is not also used properly. For example, some TV series have been shown to the people, in which it has been shown that in the ED everything is calm and people are inspired if they go to an ED, they will be faced with such quiet environment. Therefore, people expect to have a quiet environment when they come to an ED, so that everything is in place and they are dealt with quickly." (P1, a triage nurse)*

Another interviewee believed that people had to be informed about the consequences of patients' late visits, and the public had to go to the ED for receiving services at the right time:

> *"We need to teach people about the consequences of early and late visits for receiving services through the mass media." (P2, an EMS)*

The interviewees believed that patients had to be educated:

> *"Culture creation (and training) should be done, so that the patient understands that the ED is not for NU patients." (P8, a nurse)*

One of the interviewees said something interesting:

> *"Creating a culture should be over time. We tell our colleagues that don't admit such patients, and if you do this once and admit NU patients to the ED, the patients go to the ED for a lifetime and want to be admitted." (P11, a triage nurse)*

2.2. Increasing physicians' awareness

Increasing physicians' awareness was one of the solutions, to which the interviewees referred. Interviewees believed that the EMSs also had to be advised to refrain from admitting NU patients to the EDs under any circumstances:

> *"EMSs should be justified, because they see that the ED is empty in some hours, and just for that reason they say that the department is empty and let the NU patients be admitted." (P3, a nurse)*

Clinic physicians should also be trained and justified on the inappropriate referrals:

> *"The awareness of physicians who don't work in the ED should be increased because some of them try to get rid of patients and say them that they should refer to the ED." (P1, a triage nurse)*

3. Payment mechanism reforms solutions

3.1. Removing financial incentives for admitting NU patients

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As mentioned in the Causes section, the physicians' financial incentives have effects on admitting NU patients to the EDs. Therefore, one of the solutions provided by the interviewees (by the nurses and not by the EMSs) was that the financial relationship between the patients' admission and the physicians' payments had to be disconnected. Disconnecting the physicians' income from patients' admission can also be effective in improving the quality of care provided by the physicians. However, this should be accompanied by other financial incentives in order to prevent the physicians from not providing essential services to the patients:

> *"There should be no relationship between the physicians' income and the hospital admission rate in the ED, and the financial relationship must be discontinued." (P1, a triage nurse)*

3.2. Developing an appropriate payment system

The reform of the payment system was a solution that the interviewees referred to. Since physicians often have a motivation for admitting patients who have NU problems because this has no significant effect on their income, compared with those with acute conditions, and, therefore, they prefer to admit patients with more stable conditions, which has a great effect on the NU visits. One of the interviewees believed that:

> *"The policies of a health care system should be such that patients who need more care should pay more." (P2, an EMS)*

3.3. Receiving higher fees from NU patients

Receiving higher fees from NU visits is an important strategy that should be paid special attention by the health policymakers. If patients come to this conclusion that receiving urgent services in the EDs for NU conditions has higher costs than that in other healthcare centers such as clinics, polyclinics, and etc., they will not select the EDs for receiving services. This solution, in addition to the short-term positive effect on the number of NU visits, will also have a major effect in reducing NU visits in the long run. One of the interviewees believed that:

> *"NU patients coming to the ED should pay fees from 30% to 40% of total costs." (P9, a triage nurse)*

Another interviewee believed that one of the causes of NU visits to the ED was the low cost of providing ED services and suggested that:

> *"In order to prevent the NU visits, more co-payment or co-insurance should be received from the NU patients visiting the ED." (P6, a nurse).*

4. Organizational arrangements

4.1. Setting up 24-hour and boarding clinics

Setting up a 24-hour and boarding clinic for visiting patients was one of the solutions, to which some interviewees referred:

> *"The 24-hour backup centers should be set up. We have open clinics for up to 23 o'clock, and after that, patients who have had fun at their other hours or patients who have had, for example, sore throat, gradually come to the ED." (P1, a triage nurse)*

Of course, all interviewees were not agreed with the establishment of a 24-hour clinic, as one of them stated that:

> *"Specialized clinics are not justified because they are not cost-effective." (P3, a nurse)*

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One of the interviewees believed that in some days of the year, when the patients' visits to the EDs were high, the specialized clinic had to be set up:

> *"The clinic should be developed and more patients should be admitted. Like the launch of a new train in the days of the year when there is a lot of passengers and an extra train is used for Mashhad, here in some days of the year when the number of patients is high, extra services (such as a 24-hours clinic) should be provided, it is expected that the situation will be very good (fine). In the clinic, it can be said to the patients that if we cannot visit them in this morning, we can visit them in the evening." (P9, a triage nurse)*

Another interviewee believed that, first and foremost, we had to conduct studies to determine the proportion of visits and referrals and then set up a specialized clinic, and the managers had to pay attention to conducting such studies:

> *"Taking turns in the clinics should be strengthened. There is a need to study in this regard, for example, how many neurosurgery patients have referred to the clinic. The management of night clinics should be given to the new graduates and they will also welcome it." (P10, a nurse)*

4.2. Improving the quality of services in other military hospitals

One of the ways to avoid referring to the EDs is to improve the quality of care provided by other military healthcare centers and hospitals, to which the interviewees referred. Of course, this solution can reduce the NU visits in the long run.

4.3. Strengthening the para-clinical departments to perform the diagnostic procedures

Strengthening the clinic to perform diagnostic procedures and not referring patients to the EDs for performing such procedures is a solution that the interviewees referred to:

> *"The para-clinical system should be strengthened and all diagnostic procedures, such as sonography, and etc., should perform. Providing services should be more in order to make patients and the clinic comfortable and the para-clinical system shouldn't refer patients to the hospital itself. Para-clinical system should be strengthened in terms of time, number of visits and personnel." (P8, a nurse)*

Another interviewee mentioned a successful experience in this regard:

> *"We have had a successful experience, i.e. setting up the wound clinic which has been very successful and patients with bedsore, diabetics, and etc. have been visited in it, and since establishing this clinic, NU visits to the ED have significantly been decreased." (P10, a nurse)*

4.4. Strengthening the referral system

Justifying and rationalizing the referrals from the clinic to the ED is a solution, to which the interviewees referred:

> *"Referrals from the clinic to the ED should be logical, and this depends on the patient's culture." (P8, a nurse)*

In addition, the referral system and family physician plan should also be implemented across the country, where it is expected that NU cases are easily well-handled by the family physicians.

Discussion:

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This study showed that NU visits to the EDs had several causes and negative consequences. The convenient access to the EDs and the existence of the EDs equipped with advanced facilities, along with the provision of high quality services, are some reasons for NU visits to the EDs, which have well been addressed by the results of other studies (21, 22). In some studies, the lack of access to the family physicians has been reported as a reason for NU visits to the EDs (23, 24). This is despite the fact that the history of implementing the family physician plan in Iran is more than 10 years ago and, unfortunately, this plan has not yet been implemented across the country for several reasons. The implementation of the family physician plan in Iran faces with some problems, including the delays in paying to the healthcare providers, lack of effective referral system, weaknesses of political will and executive authorities, serious weakness of coordination between stakeholders, and lack of an effective health information system across the country (25-28).

Having financial incentives by the EMSs was an important cause, to which the interviewees referred. In 1991, the fee-for-service payment policy was proposed by the Minister of Health and was approved by the Cabinet (29). The evidence showed that this policy had negative consequences, such as having financial incentives for the provision of more services and the admission of more patients and, consequently, the imposition of additional financial burdens on the health system. The negative effects of this plan on the EDs are also evident, one of which can be the admission of NU patients.

Changing the mechanism of payment to the physicians and disconnecting the financial relationships between the physicians' income and patients' admission should be paid special attention by the healthcare managers and policymakers. The fee-for-service plan has had negative effects not only on the behavior of physicians, but also on the behavior of private centers, so that the patients in the private centers are exposed to the variety of healthcare services and procedures, and this leads to creating a false and inappropriate culture in patients so that they expect to receive unnecessary healthcare services in the public hospitals. Therefore, in addition to monitoring the physicians' behavior, the private centers should also be monitored and evaluated in order to prevent their profiteering.

The lack of patients' knowledge and awareness of the urgent conditions for referring to the EDs was a cause the interviewees referred to. This has also been confirmed by the results of other studies (30-34). The design and implementation of awareness raising plans in the EDs as well as in the mass media, schools and universities, social networks, clinics, and healthcare centers can help promote the knowledge and awareness of the patients and the community.

The inappropriate referrals by the clinic physicians, secretaries, and security guards have also effects on the patients' NU visits. The results of other studies have also confirmed the inappropriate and NU referrals by physicians (33, 35, 36) and others (37). To overcome such referrals, a combination of awareness raising plans for physicians and other healthcare employees , giving authority to the triage nurses and EMSs, creating the culture of accountability among physicians, and setting rules to prevent NU visits should be considered. Some referrals for admission to the EDs are also made by people who want to use kinship relationships and willing to pull strings. Taking punitive measures can be effective for overcoming this problem.

The higher priority of the EDs in order to use their temporary beds for admission to the hospital inpatient department is one of the causes of NU visits. To the best of our knowledge as well as literature search, we did not find studies to address such problems. Inappropriate uses of EDs

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beds until the related beds in hospital inpatient department become empty can lead to negative consequences for the patients and also the financial burdens on the health system as well as health insurance systems. Also, such uses of ED beds are an abuse of health facilities and resources. It requires serious actions from healthcare managers and policy makers.

Moreover, according to the results of the present study, one of the reasons for referring to the EDs was the low costs for patients. This is in line with the results of other studies (38, 39). It is recommended to receive higher fees from inappropriate and NU patients referring to the EDs in order to prevent NU visits.

The overcrowding in other healthcare centers, such as the clinics and physicians' offices, encourages patients to make NU visits to the EDs for receiving faster care, which is confirmed by other studies conducted in Iran (38), Turkey (40), Jordan (41), France (42), and the United States (43).

This study showed that patients' exaggeration of the severity of their illness in order to being admitted is one of the causes of NU visits to the EDs. The results of other studies are also similar to this result (44, 45). This problem can be solved by educating physicians, triage nurses and patients and caregivers, and enhancing public awareness. Also, in the awareness raising plans, the negative effects of NU visits should well be addressed, so that patients become aware of the negative effects of their NU visits, which this can act as a factor in reducing NU visits.

Designing and implementing clinical guidelines in the EDs is one of the issues that unfortunately have not been paid special attention in Iran, and most physicians are reluctant to use available guidelines. There is also little willingness to design and implement such guidelines at the national level and among health policy makers.

The existence of the EDs with advanced equipment, along with the provision of high quality services are some reasons encouraging patients to make NU visits. In other words, patients prefer going to a well-equipped center to receive required care to referring to and wandering in other centers. This has also been confirmed by the results of other studies (46). Strengthening the para-clinical departments to perform all diagnostic procedures can reduce the number of NU visits. Additionally, by conducting needs assessment studies and determining the importance of setting up 24-hour and boarding clinics, such clinics can be set up for some specialties.

Strengthening the referral system and improving the quality of services provided by other centers can also help control and reduce NU visits in the long run.

It is suggested to conduct other studies in order to examine how to apply incentive and punitive rules, improve the payment mechanisms to the physicians, develop patients and providers' awareness raising plans, and identify factors affecting the overcrowding in health centers and EDs. Also, further quantitative studies should be conducted to determine the effects of NU visits on the EDs crowding and overcrowding in the Iranian hospitals. It should be noted that we require further studies on the frequency and causes of medical errors in the hospitals in order to prepare annual official reports.

This study has been conducted as the first qualitative study in Iran determining the causes of and consequences of NU visits, as well as the possible solutions for preventing such visits, which are the strengths of the present study. In this study, both the EMSs and nurses, who had several years of work experience in the ED, were interviewed.

One of the limitations of this study was the lack of conducting interviews with patients who had come to the ED. It is worth noting that in a prospective study, we explored the causes of NU visits

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from the patients' perspectives. However, carrying out an in-depth qualitative study to determine the patients' perspectives is necessary. Another limitation of the current study was the inability to digitally record interviews due to the opposition of the ED supervisor and, therefore, it was tried to overcome this limitation by taking notes during interviews.

Conclusion:

NU visits to the EDs have negative consequences for patients, providers, and the health system. Such visits have several causes, which were well addressed in this study. It is suggested that health policy makers design and implement a combination of solutions categorized into four groups of regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements. As a long term strategy, implementing the referral system and family physician plan across the country should be considered as a national priority. Last but not least, there is no study carried out in Iran on the solutions for NU visits to the EDs, and little attention has been paid by researchers. This per se has led to the lack of producing sufficient evidence for informed policy making on the magnitude of the dilemma and the associated factors.

Author Contributions

SMM was responsible for the conception, design, implementation, analysis, drafting the manuscript and supervision of the whole process of the study. MB is the principal researcher, who was involved in the conception, development, implementation, data collection, data analysis, and writing the manuscript. ET and RR were responsible for the intellectual development of the manuscript. All authors have read and approved the final manuscript.

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Competing interests

The authors have declared that no competing interests exist.

Data sharing statement

Data are available and can be accessed by contacting with SMM.

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822 **FIGURES' LEGEND**
823 Figure 1. Themes of causes of, and consequences of NU visits
824 Figure 2. The possible solutions for preventing and controlling of NU visits to EDs
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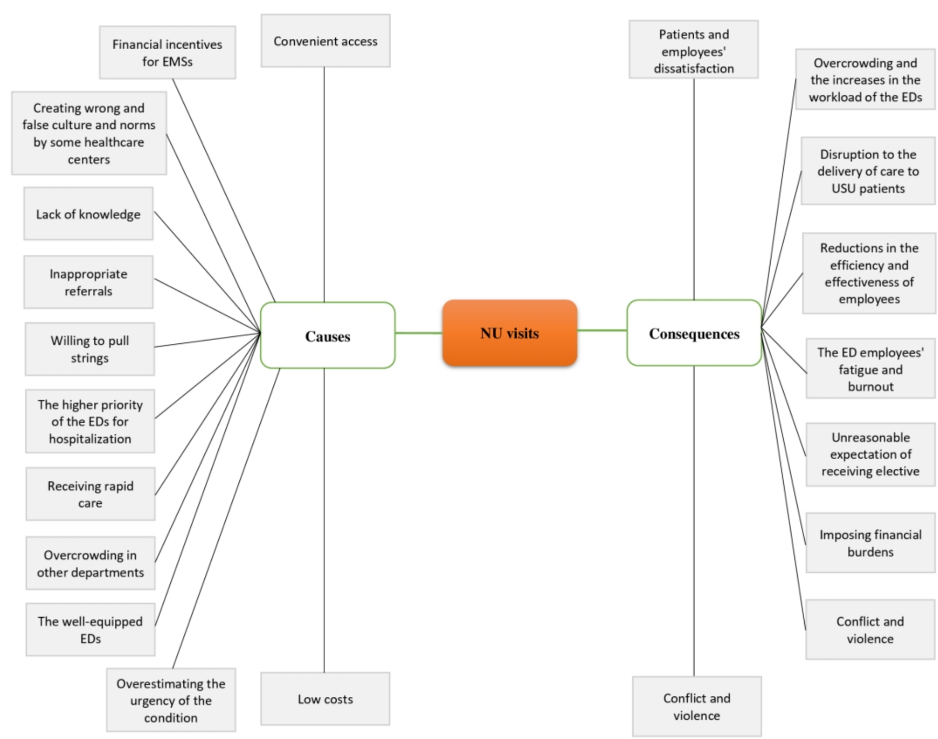

Figure 1. Themes of causes of, and consequences of NU visits

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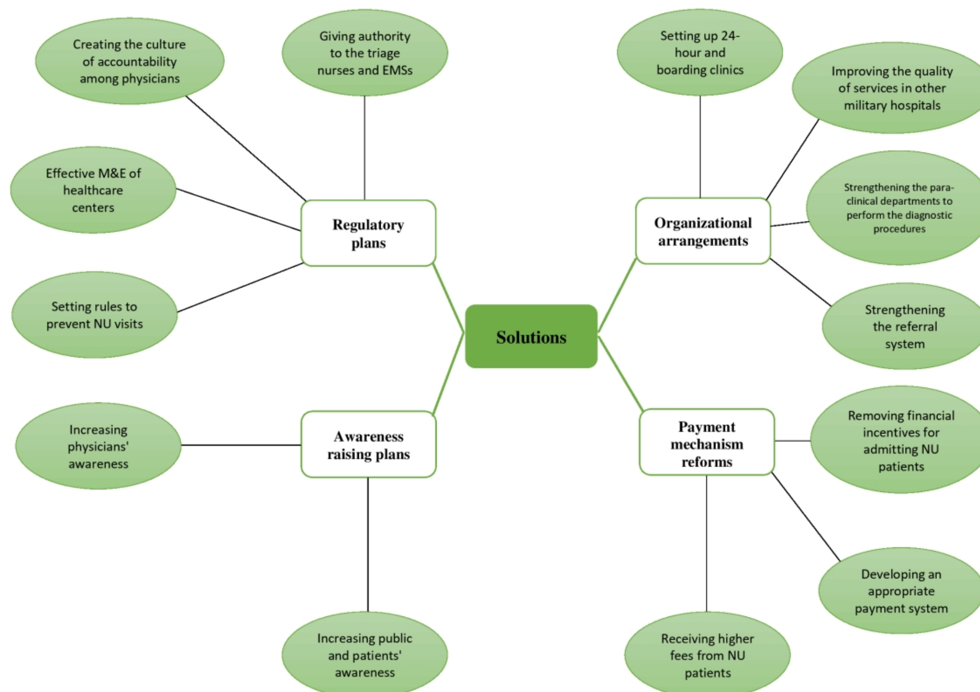

Figure 2. The possible solutions for preventing and controlling of NU visits to EDs

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Title and abstract

	Page/line no(s).
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	2
Purpose or research question - Purpose of the study and specific objectives or questions	3

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	3
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	3
Context - Setting/site and salient contextual factors; rationale**	3
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	3
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	3

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	3
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	3
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	3
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	3
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	3

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	4
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	4-12

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	12-14
Limitations - Trustworthiness and limitations of findings	14

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	15
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	15

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

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1 **Title Page**

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3 # Non-urgent visits to emergency departments: A qualitative study in Iran exploring
4 # causes, consequences, and solutions

5

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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

ABSTRACT

Objective: To explore the causes of, consequences of, and solutions for non-urgent (NU) visits to emergency departments (EDs) from the healthcare providers' viewpoints.

Design: A qualitative descriptive study conducted using in-depth, open-ended, semi-structured interviews and inductive content analysis, theoretically informed by the phenomenological approach.

Setting: A territory, teaching, and military hospital in Iran.

Participants: Healthcare providers including nurses, emergency medicine specialists (EMSs), and an emergency medicine resident.

Results: Three overarching themes of causes of, consequences of, and four solutions for NU visits to the EDs were identified. The causes included specialized ED services, demand side factors, and supply side factors. The consequences has been categorized in three overarching themes, including negative consequences for patients, healthcare providers, and EDs as well as the health system in general. The possible solutions for preventing and controlling NU visits also included regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements.

Conclusion: We highlighted the need for special attention to the appropriate use of EDs in Iran, as a low-and-middle income country. According to the complexity nature of EDs and in order to control and prevent NU visits it can be suggested that policy makers should design and implement a combination of possible solutions.

Strengths and limitations of this study

1. This study is the first study to qualitatively explore the causes of, consequences of, and possible solutions for NU visits in Iran and other low-and-middle income countries (LMICs).
2. Semi-structured, in-depth, and open-ended interviews with key informants including EMSs, nurses, and an emergency medicine resident allowed us to gather data from different perspectives.
3. This study did not include patients and, therefore, did not gain patients' perspective on the causes and consequences of NU visits to EDs.

INTRODUCTION:

Emergency departments (EDs) are designed to provide rapid, high-quality, continuously accessible, and unscheduled care for emergency cases (1, 2). It means that EDs are not ideal place for non-urgent (NU) conditions (3). Patients with NU visits are those patients who do not have life-threatening problems, do not require rapid care, and their care can be safely delayed (4), and this delay would not increase the likelihood of adverse outcomes (5). It is estimated that about one-third of patients who come to EDs have NU problems which can potentially be addressed by the outpatient departments, primary care settings, and walk-in centers (6, 7). Some studies have reported even up to half of all visits to EDs as NU visits, and these

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differences in various studies can be due to the methodologies used to define NU visits (8). In the recent years, the use of EDs by NU patients has been reported globally (6, 9-12). The use of EDs for receiving NU care have potentially negative consequences, including crowding, increased costs, poor health outcomes, lack of continuity of care, timely urgent care for urgent and semi-urgent (USU) patients, and misdiagnoses and mistreatment (13-15).

Causes of NU conditions are not clearly understood (16), especially in the low and middle income countries (LMICs). To the best of our knowledge, there is no comprehensive study to identify causes of, consequences of, and possible solutions for that problem in Iran, as a Low-and-middle income country. This study was conducted to determine the causes of, consequences of, and solutions for NU visits to EDs from the providers' viewpoints.

METHODS

Design

Using a qualitative descriptive design (17), we conducted in-depth, open-ended, semi-structured, and face-to-face interviews, informed by the theoretical perspective of phenomenological approach, to explore experiences and perceptions of physicians and nurses working in an ED. Qualitative interviews are particularly useful for exploring stakeholders' viewpoints, because they give respondents opportunities for discussing factors that researchers may not have anticipated (18). Choosing the face-to-face interview design ensured that researchers could be confident that they had discussed information effectively. The study protocol, methods and materials, and interview procedures were reviewed and confirmed by the Research Committee of Baqiyatallah University of Medical Sciences (BUMS). The triage process was conducted by a special triage nurse using the Canadian Triage and Acuity Scale (CTAS), in which levels 4 and 5 of patients' visits had been considered as NU visits.

Setting, recruitment, and sampling

The studied hospital was a territory, military, and teaching hospital with 700 available beds, which was one of the largest hospitals in Tehran, the capital of Iran. Its accreditation grade was one-Excellent, according to the latest national accreditation process performed by the Iranian Ministry of Health and Medical Education (MOHME). Its ED provided 24-hour emergency care for all patients, and had successfully run an emergency medicine residency program. During each shift, there were two Emergency Medicine specialists (EMSs), 10 to 15 nurses, and 4 to 5 nurse aides in this ED. The researchers used a combination of snowball and purposeful sampling methods to recruit key informants from the healthcare providers working in the ED. The following key informants were interviewed: nurses working in the ED (n=8); EMSs (n=2), and an emergency medicine resident.

Data collection

The potential key informants identified in the ED were invited to participate in interviews on the aim of the study. Verbal informed consent was obtained from all participants and they were assured of the confidentiality of their responses. The researchers asked the key informants about their viewpoints on the causes of, consequences of, and possible solutions for NU visits in order to implement appropriate and effective reforms. Further questions were asked at the end of interviews about the discussion process, and the researchers checked whether all related topics had been covered. One of the researchers (SMM) interviewed with key informants in the

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ED. The recruitment of new key informants continued until thematic and data saturation, in which additional interviews did not develop any new idea.

Data analysis

All interviews were recorded by the written notes and transcribed after each interview and rechecked for assuring the accuracy, and entered into MAXQDA® software to perform qualitative data management and analyses. Using the inductive content analysis, the researchers extracted and organized significant themes through internal discussion among the research team. Key steps of analyses included as follows (19): preparing, organizing, and reporting. The data were discussed collaboratively in three virtual meetings among the research team to ensure consensus on thorough and consistent coding.

In this study, two criteria had to be met in order to prove and strengthen trustworthiness: credibility and transferability (20). The researchers enhanced credibility of results through the source triangulation by obtaining in-depth information from a wide range of key informants about the research questions. In addition, the researchers described the study setting and context, and process of data collection and analyses to enhance transferability of the findings.

Ethical considerations

This study was approved by the Ethics Committee of Research in Baqiyatallah University of Medical Sciences (Ref: CH/7019/998). After giving written information about the study and its aims to the participants, the researchers obtained verbal informed consent from all participants before conducting interviews.

Patient and public involvement

Patients and public were not involved in the research design, recruitment or conducting this study.

RESULTS:

12 themes of causes of NU visits and 9 themes of their consequences were identified (Figure 1). Possible solutions for preventing and controlling NU visits were also categorized into four groups, including regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements (Figure 2).

The detailed descriptions of each theme are as follows:

Causes:

1. Specialized ED services

1.1. Convenient access

Because the ED is open 24/7 and provides healthcare services, patients' access is relatively higher, better, and easier than outpatient departments and other healthcare centers.

> *"Mentality of community is that access to EDs is easier than other healthcare centers and it can make their admission easier." (P1, a triage nurse)*
>
> *"EDs are open all the time; however, other health centers have time limits." (P8, a nurse)*

2.1. Receiving rapid care

Due to the nature of EDs, provision of diagnostic and therapeutic services is of high speed. This was not neglected by the participants and they acknowledged that faster delivery of care was a reason for NU visits.

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"The patients come to the ED to receive care and consultations faster. For example, if we ourselves (the personnel) want to make a rheumatology appointment, it will take about one month; but for the ED's patients, it will take up to very next day." (P4, a nurse)

"Slow speed of the clinic's workflow is a cause of visiting the ED, while in the ED, total speed of providing care, e.g. lung consultation, is high." (P10, a nurse)

3.1. Well-equipped EDs

Having all diagnostic facilities, as well as skilled personnel in EDs was one of the reasons that the participants well-recognized:

"In addition to EMSs, other specialists are available in the ED." (P6, a nurse)

"Focus on patients is more in the ED, in which all diagnostic groups and facilities are available. But if patients go to a physician's office and he/she requests a CT-Scan for them, they will go to the CT-Scan center, and after performing the test, if head of CT-Scan center writes below the report sheet that performing MRI is also required, the patients should go through another process to perform the MRI. However, in the ED, the process is not so. In general, the patient is assured that physicians, nurses and guides, as well as all necessary facilities are available in the ED." (P8, a nurse)

4.1. Higher priority of EDs for hospitalization

Because EDs have a higher priority for admitting patients and referring them to inpatient departments, compared with other departments e.g. inpatient admission unit and clinics, patients are more likely to go to EDs to be admitted to inpatient departments, and are remained in the ED until beds in inpatient departments become empty.

"Some NU patients use the ED until a bed in an inpatient department becomes empty." (P4, a nurse)

"In addition to time justification, the ED has a different priority to admittance, it has priority over other departments, and its patients have higher priority to be admitted to other departments." (P8, a nurse)

2. Demand side factors

2.1. Lack of knowledge

Lack of patients' knowledge and awareness of urgent conditions affects NU visits to EDs. This is due to lack of education by mass media and formation of a false culture.

"The main factor is the knowledge and culture of our people, since they do not have adequate knowledge. The mass media have not also provided enough information for them about this issue." (P2, an EMS).

However, another interviewee believed that:

"A small percentage of patients do not know that they are urgent or NU." (P5, an EMS resident)

Also, lack of awareness of and familiarity with main duties of clinic providing care to NU patients can be a cause.

"People are not aware of some departments such as clinics." (P11, a triage nurse)

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3 202 ***2.2. Willing to pull strings***

Having kinship relationships and willing to pull strings was one of the causes that participants referred to:

> *"We had a patient which had come to the ED and said: "I'm a close friend of Mr. X and this has been said to me to go to the ED and its personnel deal with your illness faster."" (P9, a triage nurse)*

The introduction of some hospital departments was also a cause:

> *"Having kinship relationships is important. For example, they [patients] bring a letter from the hospital's technical officer and other managers for admission to the ED. The monitoring and evaluation office [in this hospital] also say to allow the patient to be admitted until the evening and then will go to the hospital department." (P10, a nurse)*

2.3. Overestimating the urgency of conditions

Some patients use several ways to be admitted to EDs. One of the most unconventional and unwise ways used by patients is to exaggerate the severity of their conditions.

> *"Some of the patients exaggerate their illnesses and show their condition and illness worse and more urgent in order to be admitted to the ED." (P5, an EMS resident)*

3. Supply side factors

3.1. Financial incentives for emergency medicine specialists (EMSs)

Participants recognized that EMSs' fee-for-service (FFS) payment is a factor affecting the admission of NU patients, since FFS was depend on the number of patients admitted. In other words, there is a direct financial relationship between patient's admission to EDs and the increases in the EMSs' income in Iran.

> *"There is a financial relationship between the number of patients admitted and specialist's fee for service payment. There are some attending physicians whom the EMSs in screening room have been their old medical students. One day, one of these EMSs in the screening room showed me a text message received from his attending physician who was in the ED in that day, in which he had asked the EMSs to let patients enter the ED." (P10, a nurse)*

3.2. Creating wrong culture by some healthcare centers

Patients' previous referrals to some healthcare centers, especially private centers, have a significant effect on their current NU visits to EDs, so that patients referring to the private centers to receive services are faced with receiving unnecessary services, which is due to the profiteering look of some hospitals and physicians to patients.

> *"Private hospitals are encouraging this. Because when patients come to EDs of private hospitals to receive care, they prescribe a number of unnecessary procedures for them and create this mentality in the patients that EDs can do so and provide any services. As a result, a negative attitude and mentality forms in the patients, and when they go to public hospitals, they expect to receive similar services to those private ones." (P2, an EMS)*

3.3. Inappropriate referrals

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Referring the non-urgent patients to emergency departments by clinic physicians, either verbally or in writing, for admission in EDs is commonplace. Some physicians who do not have beds in the hospital are often not responsible and confine themselves to receive a sheet of the patient's insurance notebook and refer them to the ED. It should be noted that this is rooted in some physicians' profiteering, so that the physician refers patients to the ED with the aim of not losing them. Because physicians are not willing to lose their patients and urge patients to go to their private offices or to a private hospital where they are working there for later visits, they refer the patients to the ED.

"We have had a lot of patients, to whom at the same time their physician has given two letters: one for hospital admission officer and another for the ED. The physicians also tell patients: "go first to the hospital admission officer and if he/she doesn't arrange an appointment for you, then go to the ED with another letter." (P10, a nurse)

It should be noted that inappropriate referrals to the ED are not only by physicians and some other hospitals also refer patients to the ED by an ambulance without coordination. Moreover, non-professional people, e.g. physicians' secretaries and security guards, may also advise patients to go to the ED.

"The patients are referred badly. Non-professional people, such as secretaries and security guards, refer patients to the ED. We have patients from other towns who visit the clinic and because a limited number of patients can be visited in the clinic, some non-professional employees tell them "if your condition is urgent, go to the ED" in order that the patients do not disturb them." (P9, a triage nurse)

3.4. Overcrowding in other departments

Crowding and overcrowding in other departments such as clinics and hospital admissions unit is an important cause of visiting EDs for NU conditions. Overcrowding in the clinics wanders patients and they inevitably go to the ED. It should be noted that because this hospital is famous for its high quality services, patients from other provinces also come to the hospital.

"Departments and clinics are overcrowded, and as patients have usually had a long journey, therefore, they choose the ED to receive care." (P5, an EMS resident)

3.5. Low costs

Because all inpatient services are free of charge for some patients, they will endeavor to be hospitalized in any way to reduce considerably their costs. In other words, as soon as patient's medical record is set in inpatients departments, the costs will be free.

"To pay less, their costs will be free of charge if they are hospitalized. But the costs of outpatient services are not free of charge." (P6, a nurse)

Because of being insured, they usually come to the ED; because as soon as the patient's record is set, the costs become free." (P8, a nurse)

Consequences:

1. Patients

1.1. Patients and employees' dissatisfaction

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NU visits to EDs cause dissatisfaction in both patients and healthcare providers. Slowing down workflow of procedures in EDs will lead to dissatisfaction in both NU and USU patients. In the latter patients, it can be due to feeling of wandering and lack of timely delivery of care.

"The satisfaction decreases." (P5, an EMS resident)

In addition, problems caused by crowding and frequent complaints by patients also lead to dissatisfaction among ED's personnel as well as have negative effects on their mentality.

"NU patients themselves become pessimistic about the system because they think that they are wandering and circular. If they are not admitted to the ED, they say that they have been disrespected, and they complaint to hospital managers." (P9, a triage nurse)

1.2. Increased medical errors

Since speed of providing care in EDs is normally high, quality of care and focus on patients would decrease due to increasing NU visits, which potentially increase the probability of occurring medical errors due to crowding.

"When the ED is crowded by NU visits, because the physician wants to make the system smoother, he/she spends less time on patients and wants to get rid of them faster. Therefore, direct care and monitoring and also follow-up of patients will decrease." (P8, a nurse)

1.3. Disruption in delivery of care to urgent and semi-urgent (USU) patients

NU visits to EDs would impede the provision of care to truly USU patients. This is most often due to lack of knowledge and awareness of NU patients regarding increases of serious health risks for USU patients because of unnecessary and NU visits. Also, if NU patients have fewer visits, employees will have adequate time to provide emergency care:

"Urgent patients are neglected, but if the department isn't crowded, the patients' work is getting faster and they will receive care faster. In this ED, there was a cardiovascular patient for whom, because the department wasn't crowded, we got an electrocardiogram once, in which there was not any problem, and when again we did it, we realized that the patient was Vtac and he was immediately resuscitated; but if the ED was overcrowded, there was no way to save the patient's life. *Also, we had a patient on whom we did not focus because of the overcrowding, and CPR was required for him, and unfortunately he didn't survive." (P4, a nurse)*

"If we want to admit NU patients, we have oppressed the urgent patients." (P9, a triage nurse)

One participant had a bitter experience:

"The urgent patients who are really in need are not dealt with; we had a patient who was code 247 (MI), but two hours later he was taken to perform angiography*, while his golden time was 30 minutes." (P10, a nurse)*

2. EDs and the health system

2.1. Unreasonable expectation for receiving elective care

When NU patients go to EDs and are admitted, this leads to an expectation of receiving elective care. Because patients think that their condition also is urgent and, therefore, requires several treatment procedures.

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> *"NU visits lead to unreasonable expectation for elective services. When these patients are admitted to the ED, they ask for different procedures. For example, a patient with low back pain constantly asks: "when will my MRI be performed?""" (P3, a nurse)*

2.2. Imposing financial burdens

Every patient admitted to EDs will require equipment and specialized staff (e.g. physicians, nurses, secretaries), while he/she could receive necessary care in outpatient departments at lower costs. Therefore, NU visits impose additional financial burdens on the healthcare center and health system in general.

> *"NU visits cause depreciation of hospital equipment because of inappropriate use of them. A patient had come here and a blood test (for example, blood culture) had been asked for him, and then a specialist visited and discharged him. It means that two hours after ordering the blood test for the patient, he was discharged, while the result of the blood culture was usually prepared after 48-72 hours later. Therefore, the result of this test remained unused." (P10, a nurse)*

> *"NU visits can result in imposing an extra costs on the ED and insurance organizations; any patient that is admitted to the ED needs a secretary, nurse, nurse assistant, and equipment, while he/she could be treated as an outpatient." (P3, a nurse)*

2.3. Overcrowding and increases in the EDs' workload

It is inevitable that EDs would be busy and overcrowded due to increases in NU visits, which potentially affect the workload of EDs:

> *"This has a negative effect on the works of the ED, and it can cause to slow down work and duties." (P6, a nurse)*

> *"It causes unreasonable crowding and disrupts the accurate triage." (P8, a nurse)*

3. Healthcare providers

3.1. ED employees' fatigue and burnout

Because of high number of visits and inevitability of staff about providing care to patients, NU visits have a negative effect on the ED's workflow and will result in staff's fatigue and burnout.

> *"NU visits lead to tension among the personnel, because they should pay attention to both NU and USU patients. They have to deal with all patients." (P1, a triage nurse)*

> *"They cause burnout." (P5, an EMS resident)*

3.2. Reductions in the employees' efficiency and effectiveness

NU visits reduce the efficiency and effectiveness of staff.

> *"As an obstacle, they avoid doing good work and they can have negative effects on the good work of personnel." (P1, a triage nurse)*

> *"They can reduce the nursing performance and proficiency." (P8, a nurse)*

3.3. Conflict and violence

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One of the serious risks of NU visits is the creation of tension and conflict between patients and personnel. With increasing workload due to NU visits, patients' expectations rise and also the employees cannot properly provide services for patients, and it creates stress and conflict.

"NU visits can lead to the physical violence." (P5, an EMS resident)

Solutions:

The participants proposed different solutions for preventing and controlling NU visits, which can be categorized into four groups of regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements.

The regulatory plans included giving authority to triage nurses and EMSs, creating culture of accountability among physicians, effective monitoring and evaluation (M&E) of healthcare centers, and setting rules to prevent NU visits (applying rules against kinship relationships and pulling strings).

The awareness raising plans included increasing public and patients' awareness, and increasing physicians' awareness.

Payment mechanism reforms included removing financial incentives for admitting NU patients, developing an appropriate payment system, and receiving higher fees from NU patients.

Organizational arrangements included setting up 24-hour and boarding clinics, referring patients to other military hospitals, improving quality of care in other military hospitals, strengthening para-clinical departments to perform diagnostic procedures, and strengthening the referral system.

1. Regulatory plans

1.1. Giving authority to triage nurses and EMSs

The triage nurses and EMSs should be authorized, since they can properly guide and refer NU patients.

“EMSs and nurses should be given power to refuse NU patients’ admission.” (P6, a nurse)

"A triage nurse should be strengthened and allowed to refer NU visits to the clinic." (P8, a nurse)

1.2. Creating the culture of accountability among physicians

Creating and developing the culture and channels of accountability among physicians for referring and admitting patients to EDs is an important approach. These can make physicians more sensitive to their referrals and also they will be more cautious about admitting NU patients to EDs:

“The accountability mechanism among physicians should be created.” (P1, a triage nurse)

1.3. Effective monitoring and evaluation (M&E) of healthcare centers

In order to avoid healthcare centers profiteering which could create an inappropriate culture of NU visits, an interviewee stated that:

“The M&E of healthcare centers in private sector should be increased to prevent their profiteering, because this leads to an inappropriate culture”. (P2, an EMS)

1.4. Setting rules to prevent NU visits

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Implementation of strong and inflexible rules to deal with pulling strings is also a suitable way to prevent NU visits. In addition, setting new rules for dealing with and preventing NU visits is an alternative solution:

> *“Rules should be set to prevent such visits and encourage the prevention of NU admissions.” (P2, an EMS)*
>
> *"Another solution is to enforce immutable rules for those who want to be admitted to the ED through kinship relationships." (P2, an EMS)*

2. Awareness raising plans

2.1. Increasing public and patients' awareness

The community should be aware of USU and NU conditions through promoting their awareness in the schools, social networks, mass media, and in EDs:

> *"Information should be provided to patients, so that they are informed through the mass media. But this is not used properly. For example, some TV series have been shown to people, in which it has been shown that in the ED everything is calm and people are inspired if they go to an ED, they will be faced with such quiet environment. Therefore, people expect to have a quiet environment when they come to an ED, so that everything is in place and they are dealt with quickly." (P1, a triage nurse)*

Also people should be informed about the consequences of patients' late visits, and they should go to EDs for receiving services at the right time.

> *“We need to teach people about the consequences of early and late visits for receiving services through the mass media.” (P2, an EMS)*
>
> *"Culture creation (and training) should be done, so that patients understand that EDs are not a place for NU patients." (P8, a nurse)*
>
> *“Creating a culture should be over time. We tell our colleagues that they shouldn't admit such patients, and if they do this once and admit NU patients to the ED, the patients go to the ED for a lifetime and want to be admitted.” (P11, a triage nurse)*

2.2. Increasing physicians' awareness

The EMSs should be advised to refrain from admitting NU patients to EDs under any circumstances:

> *"EMSs should be justified, because they see that the ED is empty in some hours, and just for that reason they say that the department is empty and let NU patients be admitted." (P3, a nurse)*
>
> *"The awareness of physicians who don't work in EDs should be increased because some of them try to get rid of patients and tell them that they should refer to the ED." (P1, a triage nurse)*

3. Payment mechanism reforms

3.1. Removing financial incentives for admitting NU patients

As mentioned in the Causes section, physicians' financial incentives have effects on admitting NU patients to EDs. Disconnecting physicians' income and patients' admission can also be effective in improving quality of care provided by the physicians. However, this should be

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accompanied by other financial incentives in order to prevent physicians from not providing essential services to patients:

> *"There should be no relationship between the physicians' income and the hospital admission rate in the ED, and financial relationship must be discontinued." (P1, a triage nurse)*

3.2. Developing an appropriate payment system

The reform of payment system was a solution that the interviewees referred to. Since physicians often have a motivation for admitting patients who have NU problems because this has no significant effect on their income, compared with those with acute conditions, and therefore they prefer to admit patients with more stable conditions, which has a great effect on the NU visits.

> *“The policies of a health care system should be such that patients who need more care should pay more.” (P2, an EMS)*

3.3. Receiving higher fees from NU patients

Receiving higher fees from NU patients is an important solution that should be paid special attention by hospitals managers and policymakers. If patients come to this conclusion that receiving urgent services in EDs for NU conditions has higher costs than that in other healthcare centers such as clinics, polyclinics, etc., they will not prefer EDs for receiving care. This solution, in addition to the short-term positive effect on the number of NU visits, will also have a major effect on reducing NU visits in the long run.

> *“NU patients coming to the ED should pay fees from 30% to 40% of total costs.” (P9, a triage nurse)*
>
> *"In order to prevent NU visits, more co-payment or co-insurance should be received from NU patients visiting the ED." (P6, a nurse).*

4. Organizational arrangements

4.1. Setting up 24-hour and boarding clinics

Setting up a 24-hour and boarding clinic for visiting patients was one of the solutions, to which some interviewees referred.

> *“The 24-hour backup centers should be set up. We have open clinics for up to 23 o'clock, and after that, patients who have had fun at their other hours or patients who have had, for example, sore throat, gradually come to the ED.” (P1, a triage nurse)*

Of course, all interviewees were not agreed with the establishment of a 24-hour clinic, as one of them stated that:

> *“Specialized clinics are not justified because they are not cost-effective.” (P3, a nurse)*

Also, we should consider high burden of visits in some days of year.

> *“The clinic should be developed and more patients should be admitted. Like the launch of a new train in the days of the year when there is a lot of passengers and an extra train is used for Mashhad [a city in Iran], here in some days of year when the number of patients is high, extra services (such as a 24-hours clinic) should be provided, and in this case it is expected that the situation will be very good. In the clinic, it can be said to the patients that*

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if we cannot visit them in this morning, we can visit them in the evening." (P9, a triage nurse)

Nevertheless, conducting studies on determining the volume of visits and referrals and the need for setting up a specialized clinic are necessary and hospitals managers should pay attention to conducting such studies:

"Taking turns in the clinics should be strengthened. There is a need to study in this regard, for example, how many neurosurgery patients have referred to the clinic. The management of night clinics should be given to the new graduates and they will also welcome it." (P10, a nurse)

4.2. Improving quality of care in other military hospitals

Improving quality of care provided by other military healthcare centers and hospitals can reduce NU visits in the long run.

4.3. Strengthening para-clinical departments to perform all diagnostic procedures

The clinic should be strengthened to perform all diagnostic procedures in order for not referring patients to EDs for performing such procedures.

"The para-clinical system should be strengthened and all diagnostic procedures, such as sonography, etc., should perform. Providing services should be more in order to make patients confident, and the para-clinical system shouldn't refer patients to the hospital itself. Para-clinical system should be strengthened in terms of time, number of visits and personnel." (P8, a nurse)

"We have had a successful experience, i.e. setting up the wound clinic in which patients with bedsore, diabetics, etc. have been visited and since establishing this clinic, NU visits to the ED have significantly been decreased." (P10, a nurse)

4.4. Strengthening the referral system

Justifying and rationalizing referrals from the clinic to the ED is a solution, to which the interviewees referred:

"Referrals from the clinic to the ED should be logical, and this depends on the patient's culture." (P8, a nurse)

In addition, the referral system and family physician plan should also be implemented across the country, by which it is expected that NU cases are easily well-handled by the family physicians.

DISCUSSION:

This study showed that NU visits to EDs had several causes with negative consequences. The convenient access and existence of well-equipped EDs, along with provision of high quality care were some reasons for NU visits, which have well been addressed by other studies (21, 22). In some studies, lack of access to family physicians has been reported as a reason for NU visits to EDs (23, 24). This is despite the fact that history of implementing family physician plan in Iran is more than 10 years ago and, unfortunately, this plan has not yet been implemented across the country. The implementation of this plan in Iran has been faced with several challenges, including delays in paying to healthcare providers, lack of effective referral system, weaknesses

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of political will and executive authorities, serious weakness of coordination between stakeholders, and lack of an effective health information system across the country (25-28).

Having financial incentives by EMSs was an important cause, to which the interviewees referred. In 1991, the fee-for-service payment policy was proposed by the Iranian Minister of Health and Medical Education and was approved by the Cabinet (29). The evidence showed that this policy had negative consequences, such as having financial incentives for providing more services and admitting more patients and, consequently, imposing additional financial burdens on the health system. The negative effects of this plan on EDs are also evident, one of which can be the admission of NU patients.

Reforming the payment mechanism with the aim of disconnecting financial relationships between physicians' income and admission of patients should be paid special attention by healthcare managers and policymakers. The fee-for-service plan has had negative effects not only on the behavior of physicians, but also on the behavior of private centers, so that patients in the private centers are exposed to the variety of healthcare services and procedures, and this has led to creating a false and inappropriate culture in patients so that they expect to receive unnecessary healthcare services in public hospitals. Therefore, in addition to monitoring physicians' behavior, the private centers should also be monitored and evaluated in order to prevent their profiteering.

Lack of patients' knowledge and awareness of the urgent conditions for referring to EDs has also been confirmed by other studies (30-34). The design and implementation of awareness raising plans in EDs as well as in the mass media, schools and universities, social networks, clinics, and healthcare centers can help promote the knowledge and awareness of patients and community in general.

Inappropriate referrals by clinic's physicians, secretaries, and security guards have also effects on patients' NU visits. Other studies have also confirmed the inappropriate and NU referrals by physicians (33, 35, 36) and others (37). To overcome such referrals, a combination of awareness raising plans for physicians and other healthcare employees, giving authority to triage nurses and EMSs, creating culture of accountability among physicians, and setting rules to prevent NU visits should be considered. Some referrals for admission to EDs are also made by patients who want to use kinship relationships and to pull strings. Taking punitive measures can be effective.

Higher priority of EDs in order to use their temporary beds for admission to hospital inpatient departments is one of the causes of NU visits. To the best of our knowledge as well as literature reviews, we did not find studies to address such problems. Inappropriate uses of EDs' beds until the related beds in hospital inpatient departments become empty can lead to negative consequences for USU patients and also can result in financial burdens on the health system as well as health insurance organizations. Also, such uses of ED beds are an abuse of health facilities and resources. It requires decisive actions from healthcare managers and policy makers.

Moreover, according to our results, one of the reasons for referring to EDs was the low costs for patients, which is in line with the results of other studies (38, 39). It is recommended to receive higher fees from inappropriate and NU patients referring to EDs in order to prevent NU visits.

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Crowding in other healthcare centers, such as clinics and physicians' offices, encourages patients to make NU visits to EDs for receiving faster care, which is confirmed by studies conducted in Iran (38), Turkey (40), Jordan (41), France (42), and the United States (43).

This study showed that patients' exaggeration of the severity of their illness in order to being admitted is one of the causes of NU visits to EDs, which is similar to the results of other studies (44, 45). This problem can be solved by educating physicians, triage nurses, patients and caregivers, and increasing public awareness. Also, in the awareness raising plans, the negative effects of NU visits should well be addressed, so that patients become aware of the negative effects of such visits. This can act as a factor in reducing NU visits.

Designing and implementing clinical guidelines in EDs is one of the issues that unfortunately have not been paid special attention in Iran, and most physicians are reluctant to use available guidelines. It also seems that there is little willingness to design and implement guidelines among the senior policy makers.

Our study showed that patients prefer going to a well-equipped center to receive required care to referring to and wandering in other centers. This has also been confirmed by another study (46). Strengthening para-clinical departments to perform all diagnostic procedures can reduce the number of NU visits. Additionally, by conducting needs assessment studies and determining the importance of setting up 24-hour and boarding clinics, such clinics can be set up for some specialties.

Strengthening the referral system and improving the quality of care provided by other centers can also help control and reduce NU visits in the long run.

It is suggested to conduct other studies in order to examine how to apply incentive and punitive rules, improve payment mechanisms to physicians, develop patients and providers' awareness raising plans, and identify factors which affect overcrowding in healthcare centers and EDs. Also, further quantitative studies should be conducted to determine the effects of NU visits on EDs crowding and overcrowding.

This study has been conducted as the first qualitative study in Iran for determining causes and consequences of NU visits, as well as possible solutions for preventing such visits, which are the strengths of this study. In the present study, EMSs and nurses who had several years of work experience in the ED were interviewed.

One of the limitations of this study was the lack of conducting interviews with patients who had come to the ED. It is worth noting that although in a prospective study, we explored the causes of NU visits from the patients' perspectives, carrying out an in-depth qualitative study to determine the patients' perspectives is necessary. Another limitation of the current study was the inability to digitally record interviews due to the ED supervisor's opposition and, therefore, it was tried to overcome this limitation by taking notes during interviews.

CONCLUSION:

NU visits to EDs have negative consequences for patients, providers, and the health system. It is suggested that health policy makers should design and implement a combination of solutions categorized into four groups of regulatory plans, awareness raising plans, payment mechanism reforms, and organizational arrangements. As a long term strategy, implementing the referral system and family physician plan across the country should be considered as a national priority. Last but not least, there is no study carried out in Iran on the solutions for NU visits to EDs, and

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little attention has been paid by researchers. This per se has led to the lack of sufficient evidence for informed policy making on the magnitude of dilemma and the associated factors.

Author Contributions

SMM was responsible for the conception, design, implementation, analysis, drafting the manuscript and supervision of the whole process of the study. MB is the principal researcher, who was involved in the conception, development, implementation, data collection, data analysis, and writing the manuscript. ET and RR were responsible for the intellectual development of the manuscript. All authors have read and approved the final manuscript.

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Competing interests

The authors have declared that no competing interests exist.

Data sharing statement

Data will not be made publicly available. For more information, please contact the corresponding author.

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FIGURES' LEGEND

Figure 1. Themes of causes of, and consequences of NU visits

Figure 2. Possible solutions for preventing and controlling NU visits to EDs

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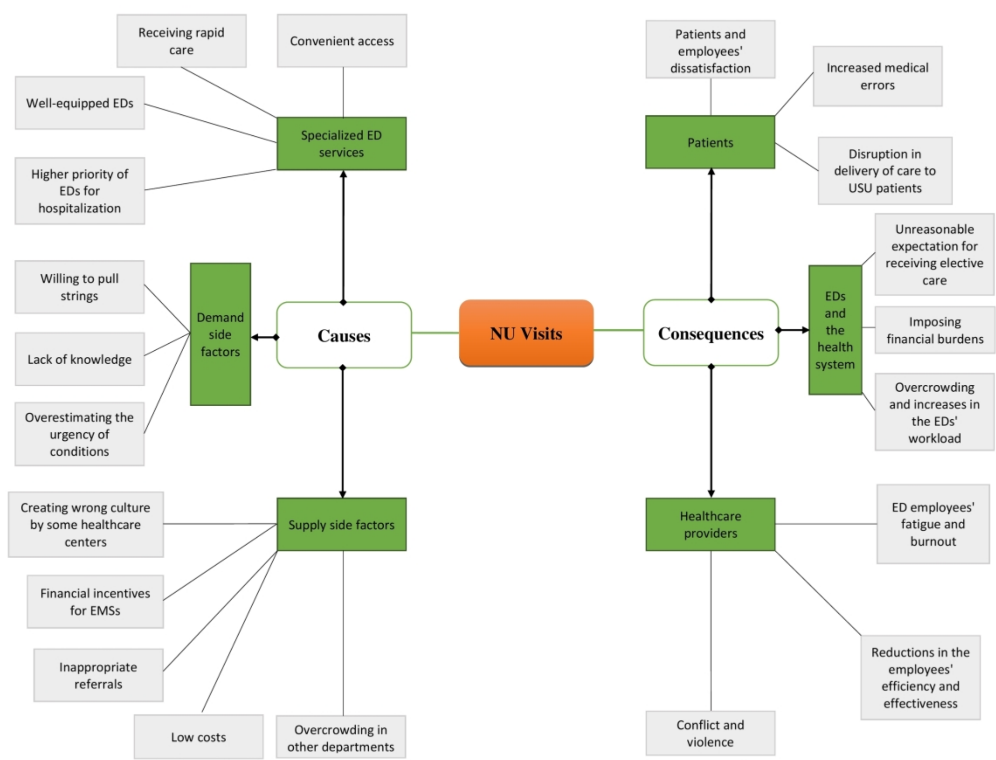

Figure 1. Themes of causes of, and consequences of NU visits

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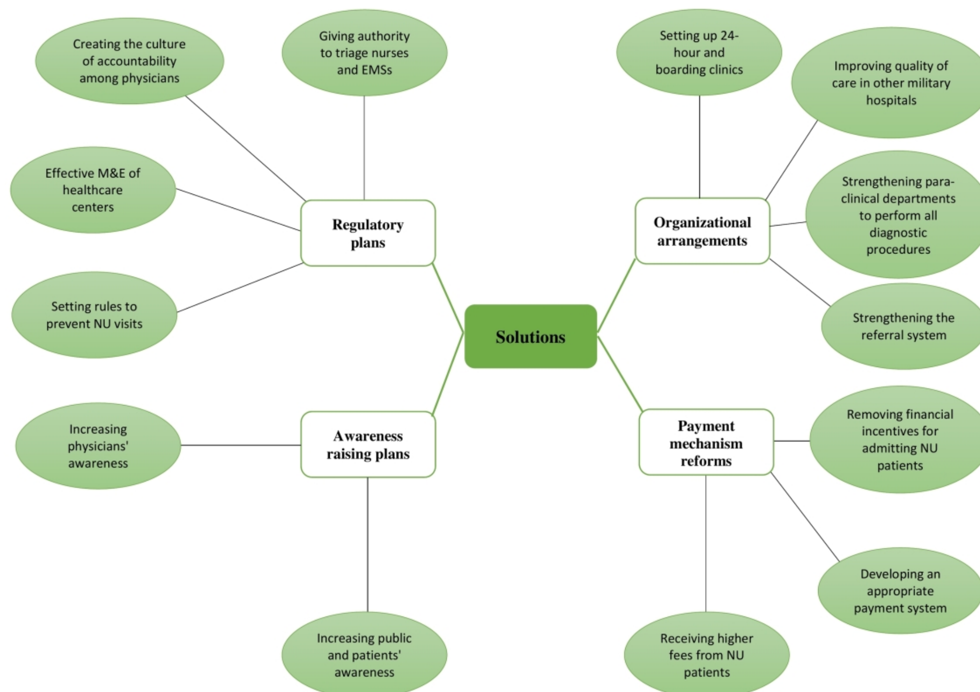

Figure 2. Possible solutions for preventing and controlling NU visits to EDs

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Title and abstract

	Page/line no(s).
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	2
Purpose or research question - Purpose of the study and specific objectives or questions	3

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	3
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	3
Context - Setting/site and salient contextual factors; rationale**	3
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	3
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	3

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	3
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	3
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	3
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	3
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	3

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	4
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	4-12

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	12-14
Limitations - Trustworthiness and limitations of findings	14

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	15
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	15

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014 DOI: 10.1097/ACM.0000000000000388

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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

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Secondary Subject Heading:	Emergency medicine, Qualitative research, Health services research
Keywords:	ACCIDENT & EMERGENCY MEDICINE, QUALITATIVE RESEARCH, HEALTH SERVICES ADMINISTRATION & MANAGEMENT

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Manuscripts

Title Page

Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

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Keywords: Emergency Department, Iran, Non-Urgent Visits, Qualitative Study

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Non-urgent visits to emergency departments: A qualitative study in Iran exploring causes, consequences, and solutions

ABSTRACT

Objective: To explore the causes and consequences of non-urgent visits to emergency departments in Iran and then suggest solutions from the healthcare providers' viewpoint.

Design: Qualitative descriptive study with in-depth, open-ended and semi-structured interviews which were inductively analyzed using qualitative content analysis.

Setting: A territorial, educational and military hospital in Iran.

Participants: Eleven healthcare providers including eight nurses, two emergency medicine specialists and one emergency medicine resident.

Results: Three overarching themes of causes and consequences of non-urgent visits to the emergency department in addition to four suggested solutions were identified. The causes have encompassed the special services in emergency department, demand-side factors, and supply-side factors. The consequences have been categorized into three overarching themes including the negative consequences on patients, healthcare providers and emergency departments as well as the health system in general. The possible solutions for preventing and controlling non-urgent visits also involved regulatory plans, awareness-raising plans, payment mechanism reforms, and organizational arrangements.

Conclusion: We highlighted the need for special attention to the appropriate use of emergency departments in Iran as a middle-income country. According to the complex nature of emergency departments and in order to control and prevent non-urgent visits, it can be suggested that policymakers should design and implement a combination of the possible solutions.

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Strengths and limitations of this study

1. This study is the first study which qualitatively explored the causes and consequences of non-urgent visits in Iran and other low-and-middle income countries and suggested solutions to treat the arising problems.
2. The semi-structured, in-depth and open-ended interviews with key informants allowed us to gather data from different perspectives.
3. This study did not include patients and then their perspectives were not considered in the proposed solutions.

INTRODUCTION

Emergency departments (EDs) are designed to provide rapid, high-quality, continuously accessible and unscheduled care to emergency cases (1, 2). It means that EDs are not ideal place for caring the non-urgent (NU) conditions (3). Patients with NU visits are those patients who do not have life-threatening problems, nor require rapid care, their care can be safely delayed (4), and this delay would not increase the likely adverse outcomes (5). It is estimated that about one-third of patients who visit EDs have NU problems which can potentially be addressed by the outpatient departments, primary care settings and mobile centers (6, 7). Some studies have reported even up to half of all visits to EDs are NU visits, and the differences in these studies can be due to the various methodologies used in defining NU visits (8). Recently, the misuse of EDs by NU patients has been reported globally (6, 9-12). This misuse has potentially negative consequences including overcrowding, increased costs, poor healthcare quality, lack of continuity of care and timely urgent care for urgent and semi-urgent (USU) patients in addition to the incidence of medical errors (13-15).

Causes of NU visits are not clearly understood (16), especially in the low-and-middle income countries (LMICs). To the best of our knowledge, there is no comprehensive study to

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identify causes and consequences of that problem in Iran, as a middle-income country. Therefore, this study was conducted to determine the causes, consequences of NU visits to EDs from the healthcare providers' viewpoint and then suggest solutions in the light of their perspectives.

Description of Iranian healthcare system

Iran has a unique model of medical education in which healthcare services and medical education have been integrated since 1985 under the supervision of Ministry of Health and Medical Education (MOHME). The health network has been established and expanded by MOHME throughout the country aiming at reducing inequities, reaching universal coverage and increasing access to health care services particularly in the deprived and rural areas. By achieving its goals, the World Health Organization has acknowledged this network as an incredible masterpiece and model of success (17). Although the normal flow of healthcare services is from the primary health care to secondary and tertiary hospitals, patients tend to bypass it and refer directly to the outpatient departments in the secondary and tertiary hospitals and healthcare centers which in turn reflects the weak referral system in Iran (18, 19).

METHODS

Design

Using a qualitative descriptive design (20), we held in-depth, open-ended and semi-structured interviews with key informants to explore the experiences and perceptions of physicians and nurses working in the ED. Qualitative interviews give respondents the opportunity in order to discuss the topic of interest in a way that may not be anticipated by the study researchers (21). Face-to-face interview also ensures the effective discussion of information between the researchers and interviewees. Basically, the study protocol, methods and materials, and interview guide were reviewed and approved by the Research Committee of University of Medical Sciences

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(BUMS). The Canadian Triage and Acuity Scale (CTAS) was used to sort the visits to the ED in which levels 4 and 5 had been considered as NU visits according to this scale.

Setting, recruitment, and sampling

The studied hospital, one of the largest in Tehran, is a territorial, military and teaching hospital with 700 available beds. Its accreditation grade was one-excellent, according to the most recent national accreditation undertaken by the MOHME. The ED provides 24-hour emergency care for all patients and successfully runs a residency program for emergency medicine. In each working shift in the ED, there are 2 emergency medicine specialists (EMSs), 10 - 15 nurses, and 4 - 5 nurse aides. The researchers used a combination of snowball and purposeful sampling methods to recruit key informants from among the healthcare providers working in the ED. Through which, nurses (n=8), EMSs (n=2), and emergency medicine resident (n=1) had been selected.

Data collection

The potential key informants were invited after the verbal informed consent was obtained from all participants and the confidentiality of their responses was assured. The researchers have asked the key informants about their viewpoints about the causes and consequences of NU visits to EDs and the possible solutions to be implemented. At the end of interviews, further questions were also asked about the discussion process and all related topics were checked whether they had been covered or not. One of the researchers (SMM) interviewed all key informants within the ED. The recruitment of new key informants continued until thematic/data saturation where no additional information nor new ideas could be developed.

Data analysis

All interviews were recorded by the written notes, transcribed verbatim, rechecked for more accuracy and entered into MAXQDA® software in order to perform qualitative data management

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and analysis. By using inductive qualitative content analysis, we extracted and organized significant themes through internal discussion among the research team. Qualitative content analysis is a well-established method which allows different levels of deep interpretation (22). Key steps of analysis include (23): preparing, organizing and reporting. The data were discussed collaboratively in three virtual meetings among the research team through which discrepancies had been discussed till reaching consensus on thorough and consistent coding.

In this study, two criteria had to be met in order to prove trustworthiness: credibility and transferability (24). Credibility refers to the believability of the data and whether the findings are faithfully linked to the real descriptions provided by the participants (24). To enhance the credibility of findings, we used a wide range of key informants to capture deep information about the research questions. Regarding the transferability, it should be noted that the local context may influence the findings (25) therefore we clearly described the study setting and context, selection process and characteristics of key informants in addition to the methods of data collection and analysis. Moreover, we appropriately presented the findings and selected quotations based on consensus in order to enhance transferability (22),

The quotes which had corresponded the different themes and subthemes were selected, translated from Persian to English, then read, checked, and evaluated by the team to ensure accuracy and fluency. Generally translation was literal meanwhile the specific Persian idioms, which were not easy to translate, were altered by native English speakers in the research team for more fair content, and bilingual team members have checked for confirming the accuracy. Any potential misinterpretations were clarified and agreed upon. Original quotes are available on reasonable request.

Ethical considerations

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149 The approval for this study was obtained by the Ethics Committee of Research in Baqiyatallah
150 University of Medical Sciences (Ref: CH/7019/998). In the light of study aim and objectives, verbal
151 informed consents were also obtained from all participants before conducting the interviews.

152

153 **Patients and public involvement**

154 Patients and public were not involved in the research design, recruitment or conducting this study.

155

156

157 RESULTS

158 We identified three overarching themes for causes and consequences of NU visits to EDs in
159 addition to four solutions for NU visits to EDs.

160 The causes included the specialized services provided in ED, demand-side factors, and
161 supply-side factors. It is worth noting that the specialized services involve convenient access,
162 receiving rapid care, well-equipped EDs and higher priority EDs for hospitalization. Demand-side
163 factors are the factors which are related to service users (i.e. patients referred to EDs). In other
164 words, they are the factors which encourage patients to refer to EDs including lack of knowledge,
165 willingness to pull strings and overestimating the urgency of their conditions. Pulling strings is a
166 term means making use of one's influence and contacts to gain an advantage unofficially or
167 unfairly. Supply-side factors were also those factors related to service providers and directly affect
168 the NU visits embracing the insufficient financial incentives for EMSs, inappropriate referrals,
169 overcrowding in other departments and low service costs (Figure 1).

170 The consequences of NU visits were categorized into three overarching themes including
171 the negative consequences on patients, healthcare providers and EDs as well as the health
172 system in general. The possible solutions for limiting and controlling NU visits also encompassed
173 regulatory plans, awareness-raising plans, payment mechanism reforms and organizational
174 arrangements (Figure 2). The detailed descriptions of each theme are as follows:

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Causes:

1. Specialized ED services

1.1. Convenient access

Because the ED provides healthcare services 24 hours all the week, patients access is relatively higher, better and easier than outpatient departments and other healthcare centers.

"The idea implanted in people minds is that access to EDs is easier than other healthcare centers and it can make their admission easier" [P1, a triage nurse].

"EDs are open all the time while the access to other health centers is limited to specific hours" [P8, a nurse].

2.1. Receiving rapid care

Due to the nature of EDs, prompt diagnostic and therapeutic services should be provided. This was not neglected by the participants and they acknowledged the quick care as a reason for NU visits.

"Patients come to the ED to receive rapid care and consultations. For example, if we ourselves (the personnel) want to make an appointment with a rheumatologist, it will take us month but for the ED's patients, it will be faster" [P4, a nurse].

"The delay in the clinics' workflow is a cause of NU visits to the ED. Meanwhile, providing care such as lung consultation occurs promptly" [P10, a nurse].

3.1. Well-equipped EDs

Having all diagnostic facilities as well as skilled personnel in EDs were one of the reasons that had been stated by the participants.

"In addition to EMSs, other specialists are available in the ED" [P6, a nurse].

"Focus on patients is prioritized in the ED in which all diagnostic groups and facilities are available. But if a patient goes to a physician's office and then has been asked to do a CT-Scan, the patient will go to the CT-Scan center and

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201 *then if the same patient has been recommended to perform MRI, the patient*
202 *should go through another process. In general, the patient is assured that*
203 *physicians, nurses and other staff are well-trained as well as all necessary*
204 *equipment are available in the ED" [P8, a nurse].*

205 ***4.1. Higher priority of EDs for hospitalization***

206 One of the main ED's roles is admitting patients and referring them to inpatient departments more
207 than other departments such as inpatient admission unit and clinics. Thus, patients tend to go to
208 EDs to be admitted to inpatient departments directly or to remain in the ED until having a space
209 in case of overcrowded inpatient wards.

210 *"Some NU patients occupy ED beds until having a space in inpatient departments" [P4,*
211 *a nurse].*

212 *"In addition to prompt care, the ED has a priority over other departments with regards to*
213 *admission and patients have higher priority to be admitted and referred to other*
214 *departments as well" [P8, a nurse].*

215 **2. Demand side factors**

216 ***2.1. Lack of knowledge***

217 Lack of patients' knowledge and awareness towards the definition of urgent conditions negatively
218 affects NU visits to EDs. This is due to lack of influential role of mass media in addition to the
219 formation of negative culture.

220 *"The main factor is the knowledge and culture of our people. They do not have*
221 *sufficient knowledge. The mass media don't provide enough information for the*
222 *community about this issue" [P2, an EMS].*

223 However, another interviewee believed that:

224 *"A small percentage of patients do not know that they are urgent or not" [P5, an*
225 *EMS resident].*

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Also, lack of awareness about the main duties of clinics in providing care to the NU patients can be another cause.

"People are not aware of the duties of some departments such as clinics" [P11, a triage nurse].

2.2. Willingness to pull strings

Willingness to pull strings was one of the causes that participants mentioned during the interviews.

"We had a patient came to the ED and said he is a close friend to Mr. X who told him to come to the ED and said don't worry, the personnel will deal with your illness sooner" [P9, a triage nurse].

There was another type of pulling the strings:

"Having kinship relationships is important. For example, patients bring a letter from the hospital's technical officer or other managers in order to facilitate their admission to the ED. The monitoring and evaluation office at this hospital also may inform the ED staff to allow patients admission till specific time, e.g. evening, and then to refer them to other departments" [P10, a nurse].

2.3. Overestimating the urgency of conditions

Some patients seek refuge to several ways for being admitted to EDs. One of these unwise ways is to exaggerate the severity and urgency of suffered conditions.

"Some of patients exaggerate illnesses and severity of their conditions as an attempt to convince the staff about providing them the necessary care in the ED" [P5, an EMS resident].

3. Supply-side factors

3.1. Financial incentives for emergency medicine specialists (EMSs)

Participants declared that EMSs' fee-for-service (FFS) payment is an important factor which is associated with the admission of NU patients thereby depending on the number of admitted

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patients. In other words, there is a direct financial relationship between patient's admission to EDs and the increases in EMSs' income in Iran.

> *"There is a financial relationship between the number of patients admitted to the ED and specialist's fee-for-service payment. Some of the EMSs in the screening room have been previous medical students of senior physicians. One a day, one of these EMSs showed me a text message in which a senior physician in the ED in that day asking him to let patients enter the ED" [P10, a nurse].*

3.2. Creating negative culture by some healthcare centers

Previous referrals of patients to some healthcare centers, especially private centers, have a significant effect on their current NU visits to EDs. That is because patients have received unnecessary services in these private centers in order to accomplish unfair profit from those patients.

> *"Private hospitals encourage this behavior in which unnecessary services are provided which in turn created this patients' mentality that leads to NU visits to EDs in order to get some services according to their desire. As a result, negative attitude of patients has been formed especially when they seek care at public hospitals in which they expect to receive similar services as happened at the private ones" [P2, an EMS].*

3.3. Inappropriate referrals

Referring the NU patients to EDs, either verbally or by written form, common. Some physicians who do not have beds at their hospital wards often don't feel accountability and easily refer patients to the ED. It should be noted that this is rooted in some physicians as a sort of profiteering or at least to keep their patients. Physicians are not willing to lose their patients and then urge them to come to their own private offices or to the private hospital where they are working at through which referring those patients to the ED.

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"We have a lot of patients to whom their physicians gave two letters: one for the hospital admission officer and the other one for the ED. The physicians also tell the patients to go first to the admission officer and if he/she doesn't respond, they can go to the ED with the second letter" [P10, a nurse].

Not only physicians refer patients inappropriately but also some other hospitals do the same using ambulance without any coordination. Moreover, some other employees such as secretaries and security guards within the health sector, hospitals in particular, may also advise patients to receive care in the ED.

"Patients are referred in a bad manner. Employees such as secretaries and security guards encourage patients to refer to the ED. We have patients from other towns who visit the clinics and they are recommended by some other employees to refer to the ED because of the limited number of patients on clinics' lists and in order to avoid their disturbances" [P9, a triage nurse].

3.4. Overcrowding in other departments

Overcrowding in other departments such as outpatient clinics and admission department is an important cause of NU visits to EDs. Overcrowding in the clinics wanders patients and they inevitably go to the ED. Importantly, patients from other provinces also used to come to this hospital as it is famous for its high quality services.

"Departments and clinics are overcrowded, so patients choose the ED to receive care especially when they travel for a long time and can't wait patiently" [P5, an EMS resident].

3.5. Low costs

All inpatient services are free of charge for some patients, hence they will endeavor to be hospitalized in any way in order to considerably reduce their costs.

"To pay less … their services will be free of charge if they are hospitalized but this is not the case for outpatient services" [P6, a nurse].

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"Patients usually come to the ED … as soon as the patient's record is set, they will not pay for rendered services" [P8, a nurse].

Consequences:

1. Negative consequences on patients

1.1. Patients and employees' dissatisfaction

NU visits to EDs result in dissatisfaction of both patients and healthcare providers. In addition, decelerating the workflow of procedures in EDs will lead to dissatisfaction in both NU and USU patients. In USU patients, dissatisfaction can be due to the lack of timely delivery of care.

"With NU visits, the satisfaction decreases" [P5, an EMS resident].

In addition, problems caused by crowding and the arising complaints from patients also lead to dissatisfaction and may be burnout of ED's staff as well as.

"NU patients themselves became pessimistic about the system because they think that they are trying for nothing. If they are not admitted to the ED, they say that they have been disrespected, and they will complain to hospital managers" [P9, a triage nurse].

1.2. Increased medical errors

Since the given time for providing care in EDs is too short for diagnosis and assessment the cases, the quality of care would decrease and this may raise the probability of medical errors. These are some of the consequences of increasing NU visits.

"When the ED is crowded by NU visits, the physicians spend less time with the single patient. Therefore, quality, monitoring and also follow-up of patients will decrease" [P8, a nurse].

1.3. Disruption the care provided to urgent and semi-urgent (USU) patients

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NU visits to EDs would hinder the provision of care to truly USU patients. This is often happens as a result of lacking the knowledge and awareness of the seriousness of USU circumstances which may be aggravated because of the increase in NU visits. In other words, the lesser NU visits, the lesser the crowding, the more available time and effort for USU cases.

> *"Whenever the department isn't crowded, the whole work is getting faster and the patients will receive care faster. In this ED, there was a patient suffering cardiovascular problems, the time he came the department wasn't crowded so we did an electrocardiogram test once for him without observing any problem. When we repeated the test again, a serious problem has been discovered and immediately managed. Sometimes, crowding and the available time is a matter of life or death" [P4, a nurse].*

> *"If we want to admit the NU patients, we will oppress the urgent patients" [P9, a triage nurse].*

One participant had an awful experience:

> *"The real urgent patients are not dealt with. We had a patient suffering myocardial infarction, he was taken for doing angiography two hours after his arrival to the ED meanwhile his golden time was only 30 minutes" [P10, a nurse].*

2. Negative consequences on EDs and the health system

2.1. Unreasonable expectation for receiving elective care

When they are admitted to ED, NU patients expect receiving elective care according to their desire as they think that their situation is also urgent. Therefore, they start to ask for several treatment procedures.

> *"NU visits lead to unreasonable expectation of elective services. When these patients are admitted to the ED, they ask for different procedures. For example,*

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3 353 *we had a patient with low back pain and constantly was asking: "when will I do*
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5 354 *my Magnetic Resonance Image (MRI)?" [P3, a nurse].*
6
7 355 ***2.2. Financial burdens***
8
9
10 356 Every patient admitted to EDs needs more specialized staff, equipment, medicines, fluids,
11
12 357 laboratory tests, imaging … etc. However, receiving necessary care in outpatient departments will
13
14 358 be at lower costs. Therefore, NU visits impose additional financial burdens on the healthcare
15
16 359 center and the health system in general as well.
17
18 360 *"NU visits* might *yield in squandering hospital resources as a result of overuse.*
19
20 361 *For instance, blood testing is a routine procedure in the ED for the vast majority*
21
22 362 *of admitted patients. However, some of those patients will be discharged on*
23
24 363 *the behalf of the specialist before getting the laboratory results. This means*
25
26 364 *misuse and wastage of the scarce materials" [P10, a nurse].*
27
28 365 *"NU visits can result in imposing extra costs on the ED and insurance*
29
30 366 *companies through which any patient admitted to the ED needs at least a*
31
32 367 *secretary, nurse, nurse assistant and equipment, while this patient could be*
33
34 368 *treated simply in the outpatient clinic" [P3, a nurse].*
35
36
37 369 ***2.3. Overcrowding and increases in the EDs' staff workload***
38
39 370 It is inevitable that EDs would be overcrowded due to the excess in NU visits which potentially
40
41 371 raise the workload of EDs' staff:
42
43 372 *"This has a negative effect on the load of the ED's staff, and it can slow down*
44
45 373 *work and disorganize duties" [P6, a nurse].*
46
47 374 *"NU visits might lead to unreasonable crowding and disrupt the accurate triage"*
48
49 375 *[P8, a nurse].*
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51
52 376 **3. Negative consequences on healthcare providers**
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54 377 ***3.1. Fatigue and burnout of EDs' employees***
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The huge number of NU visits to EDs is critical especially when we shed light on the supply-side, i.e. healthcare providers, for whom NU visits will be accountable for their fatigue and burnout.

“NU visits raise the tension among personnel, because of overload and the attention which should be paid to all patients, NU and USU” [P1, a triage nurse].

"They cause burnout" [P5, an EMS resident].

3.2. Reductions in the staff efficiency and effectiveness

NU visits reduce the efficiency and effectiveness of ED’s staff.

“As an obstacle, NU visits hinder the quality assurance of the work and this could reflected negatively on the performance of the staff” [P1, a triage nurse].

"They can diminish nurses’ performance and proficiency" [P8, a nurse].

3.3. Conflict and violence

One of the crucial risks of NU visits is the creation of tension and conflict between patients and providers or between the staff members themselves. At the time in which patients' expectations magnify, employees cannot properly meet these expectations because of work overload, and this creates stress and conflict.

"NU visits can lead to physical violence. Providers can’t provide appropriate services while patients expect to receive perfect care" [P5, an EMS resident].

Solutions

In our study, the participants proposed different solutions for preventing and controlling NU visits. These solutions can be categorized into four groups; regulatory plans, awareness-raising plans, payment mechanism reforms, and organizational arrangements.

Regulatory plans include: delegation of triage nurses and EMSs, creating culture of accountability among physicians, effective monitoring and evaluation (M&E) of healthcare centers, and setting rules to limit NU visits. Awareness-raising plans encompass: increasing the

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awareness of public, patients and physicians as well. Payment mechanism reforms include: removal of financial incentives for admitting NU patients, developing an appropriate payment system, and hiking the fees for NU cases. Organizational arrangements embrace: setting up 24-hour and mobile clinics, referring patients to other military hospitals, improving quality of care in other military hospitals, strengthening para-clinical departments to perform diagnostic procedures, and boosting the referral system.

1. Regulatory plans

1.1. Giving authority to the triage nurses and EMSs

The triage nurses and EMSs should be delegated with a real authority which could give them the ability to guide and refer NU patients properly.

> *"EMSs and nurses should be given power to refuse admission of NU patients" [P6, a nurse].*

> *"A triage nurse should be supported and allowed to refer NU visits to the outpatient clinics" [P8, a nurse].*

1.2. Creating the culture of accountability among physicians

Creating and developing the culture which implant the feeling of accountability among physicians for referring and admitting patients to EDs is considered an important approach. This can contribute in raising physicians' sensitivity towards referrals as well as admission of NU patients to EDs:

> *"The accountability perspective among physicians should be enhanced" [P1, a triage nurse].*

1.3. Effective monitoring and evaluation (M&E) of healthcare centers

In order to avoid healthcare centers profiteering which in turn forces the people to search for another way to get the service and this may be carried out inappropriately such as NU visits. An interviewee stated that:

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2
3 430 *“M&E of healthcare centers in the private sector should be increased to prevent*
4
5 431 *profiteering against patients … this is helpful in reducing NU visits to the ED”*
6
7 432 *[P2, an EMS].*
8
9 433 ***1.4. Setting rules and regulations to prevent NU visits***
10
11 434 Implementation of strong and inflexible rules and regulations is also a suitable way in preventing
12
13 435 or at least reducing NU visits.
14
15 436 *“Rules and regulations should be set properly to prevent such these visits” [P2,*
16
17 437 *an EMS].*
18
19 438 *"Another solution is to enforce immutable rules for those who want to be*
20
21 439 *admitted to the ED through personal relationships" [P2, an EMS].*
22
23 440
24
25 441 **2. Awareness-raising plans**
26
27 442 ***2.1. Increasing public and patients' awareness***
28
29 443 The community should be aware of USU and NU conditions through promoting their awareness
30
31 444 in the schools, social networks, mass media, and in EDs as well:
32
33 445 *"Information should be provided to patients through the mass media but this is*
34
35 446 *not used properly. For example, some TV series show that everything in the*
36
37 447 *ED is ideal which inspires people to go for receiving the desired care.*
38
39 448 *Unfortunately, this isn’t realistic” [P1, a triage nurse].*
40
41 449 Also people should be informed about the difference between early and late visits to the EDs and
42
43 450 the consequences of both of each.
44
45 451 *“We need to teach people the consequences of early and late visits for*
46
47 452 *receiving services through the mass media” [P2, an EMS].*
48
49 453 *"People have to understand that EDs are not a place for NU patients" [P8, a*
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51 454 *nurse].*
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"Creating a culture about that should be all the time. We tell our colleagues that admitting a patient to the ED for once means admitting all forever" [P11, a triage nurse].

2.2. Increasing physicians' awareness

The EMSs should be advised to refrain from admitting NU patients to EDs under any circumstances:

"EMSs see the ED empty in some hours and just for that reason they say let NU patients be admitted" [P3, a nurse].

"The awareness of physicians who don't work in EDs should be raised because some of them try to get rid of patients and refer them to the ED" [P1, a triage nurse].

3. Reforms in payment mechanisms

3.1. Removing financial incentives for admitting NU patients

As mentioned in the causes section, financial incentives for physicians have negative effects on admitting NU patients to EDs. Admission of patients to the ED should be irrelevant to physicians' income and this could be inverted effectively on improving quality of care provided by the physicians. However, policymakers have to look carefully at the role of incentives in motivating the physicians towards rendering the essential services to patients perfectly:

"There should be no relationship between the physicians' income and the hospital admission rate in the ED" [P1, a triage nurse].

3.2. Developing an appropriate payment system

The reform of payment system was a solution that the interviewees mentioned. Since physicians often have a motivation for admitting patients who have NU problems because this has no significant effect on their income, compared with those with acute conditions, and therefore they prefer to admit patients with more stable conditions, which has a great effect on the NU visits.

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"The policies of a health care system should be tailored … the patient who needs more care should pay more money" [P2, an EMS].

3.3. Receiving higher fees from NU patients

When the patients come to the ED with the idea that receiving urgent services in EDs for NU cases costs more fees than that in other healthcare centers such as clinics, polyclinics, etc., they will not prefer EDs for receiving care and this has it's consequent effect on reducing the number of NU visits to the ED in both short-term as well as long-term period.

"NU patients who come to the ED should pay fees from 30% to 40% of total costs [P9, a triage nurse].

"In order to prevent NU visits, more co-payment or co-insurance should be paid by NU patients who visit the ED" [P6, a nurse].

4. Organizational arrangements

4.1. Setting up 24-hour and mobile clinics

Setting up a 24-hour and mobile clinics was also one of the solutions to which some interviewees referred.

"The 24-hour health centers should be set up. Clinics are just open for up to 23:00 p.m. … Any patient has any problem, e.g. sore throat, will come to the ED directly" [P1, a triage nurse].

Some of interviewees were not agreed on the establishment of 24-hour clinics. One of them stated that:

"Establishing like these clinics are not reasonable because they are not cost-effective" [P3, a nurse].

Also, we should consider high burden of visits in some days of the year.

"The clinics should be developed and expanded in order to fit for more patients. During some annual occasions and events, the number of people increases in

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507 *some places within the country which requires more facilities for providing*
508 *health services, i.e. 24-hours and mobile clinics. We could visit the patients in*
509 *the morning or even in the evening" [P9, a triage nurse].*

510 Nevertheless, studies are recommended for determining the volume of visits, referrals and the
511 need for setting up specialized clinics are essential in order to support evidence-based decisions.

512 *"Taking turns in the clinics should be strengthened. There is a need to study in*
513 *this regard, for example, how many neurosurgery patients have referred to the*
514 *clinic. Night shifts in the clinic should be managed by the new graduates and I*
515 *think they will also welcome that" [P10, a nurse].*

516 ***4.2. Improving the quality of care in other military hospitals***

517 Improving quality of care rendered by other military healthcare centers and hospitals can reduce
518 NU visits in the long run.

519 ***4.3. Strengthening para-clinical departments to perform all diagnostic***
520 ***procedures***

521 The clinic should be strengthened to perform all diagnostic procedures in order to diminish the
522 referred patients to EDs.

523 *"The para-clinical system should be strengthened and all diagnostic*
524 *procedures, such as sonography, should be performed. Para-clinical system*
525 *shouldn't refer patients to the hospital itself, so it should be strengthened in*
526 *terms of time, number of visits and personnel. This will lead to patient's*
527 *confidence" [P8, a nurse].*

528 *"We had a successful experience, i.e. setting up the wounds clinic in which*
529 *patients with bedsores, diabetics, etc. have visited. With establishing this clinic,*
530 *NU visits to the ED have significantly been decreased" [P10, a nurse].*

531 ***4.4. Strengthening the referral system***

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532 Justifying and rationalizing the referrals from clinics to EDs is another solution, to which the
533 interviewees referred:

534 *"Referrals from clinics to EDs should be rational, and this depends on the*
535 *patient's culture" [P8, a nurse].*

536 Furthermore, it is important to boost the referral system and implement the program of family
537 medicine across the country, through which it is expected that NU cases are easily handled by
538 the family physicians.

539

540 **DISCUSSION**

541 The aim of our study was to explore the causes and consequences of non-urgent visits to
542 emergency departments in Iran and then suggest solutions from the healthcare providers'
543 viewpoint. The results showed that NU visits to EDs had several causes with negative
544 consequences. We identified three overarching themes of causes and consequences NU visits
545 to EDs and four subsequent solutions.

546 In the present study, the causes of NU visits were categorized into three themes including
547 specialized ED services, demand-side factors, and supply-side factors. Consequences were also
548 categorized into three themes; negative consequences on patients, healthcare providers, EDs
549 and the health system. In addition, potential solutions for preventing and controlling NU visits were
550 classified into four themes encompassing regulatory plans, awareness-raising plans, payment
551 mechanism reforms, and organizational arrangements. In this section, the results of the present
552 study will be discussed and compared with previous studies in the literature.

553 The good accessibility, the well-equipped EDs, the high quality care provided there were
554 among the reasons for increased NU visits which have been addressed in other studies (26, 27).
555 In some studies, lack of access to family physicians has been reported as a reason for NU visits

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to EDs (28, 29). Although the family physician program in Iran has been implemented since more than ten years, it didn't become nationwide.

Our study showed that patients prefer to approach to well-equipped centers in order to receive the required care, and this was consistent by another study (30). Developing para-clinical departments to perform all diagnostic procedures can reduce the number of NU visits in addition to conducting need assessment studies and determining the importance of setting up 24-hour and mobile clinics. Improving the referral system and the quality of care provided by other centers can also help in control and reduction of NU visits in the long run.

Tendency to use the beds of EDs temporarily for admitting to the hospital inpatient departments is one of the causes of NU visits. To the best of our knowledge and based on the literature review, we did not find studies that focused on addressing such these problems. This misuse of EDs' beds till finding a space for the admitted patients can lead to negative consequences on USU patients and result in financial burdens on the health system as well as health insurance companies. Like this wastage of resources requires decisive actions from healthcare managers and policymakers.

With regards to our results, low costs which paid by patients might be another reason and this was in line with the results of preceding studies (31, 32). It is recommended to hike the fees of services which are provided to NU patients who visit EDs. Crowding in other healthcare centers, e.g. clinics and physicians' offices, encourages patients to visit EDs for receiving faster care and this also corresponds other studies conducted in several countries such as in Iran (31), Turkey (33), Jordan (34), France (35), and the United States (36).

Financial incentives given to EMSs was an important cause. In 1991, the fee-for-service payment policy was proposed by the Minister of Health and Medical Education and was approved by the Cabinet (37). The evidence showed that this policy had negative consequences such as providing unnecessary services and admitting more patients and, consequently, imposing

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additional financial burdens on the health system. The adverse effects of this plan on EDs are also evident, one of which can be the admission of NU patients.

Special attention should be paid by healthcare managers and policymakers to reforming the payment mechanism without linking the physicians' income to patients' admission. The fee-for-service plan has more negative effects not only on the behavior of physicians but also on the behavior of private centers. So, patients in the private centers could undertake a lot of tests, images and take several medicines and this in turn yield in creating an inconvenient culture through expecting receiving similar healthcare services in public hospitals. Therefore, monitoring physicians' behavior in addition to that of private centers should be performed in order to avoid their profiteering.

Lack of patients' knowledge and awareness of the urgent conditions for referral to EDs has also been revealed by other studies (38-42). The design and implementation of awareness-raising plans in EDs as well as in the mass media, schools and universities, social networks, clinics, and healthcare centers can help in promoting the knowledge and awareness of patients and community in general.

NU referrals recommended by clinics' physicians, secretaries, and security guards have also its adverse effects which had been discovered by studies in the literature (41, 43, 44). To overcome such referrals, a combination of awareness-raising plans for physicians and other healthcare professionals, empowering triage nurses and EMSs, creating culture of accountability among physicians, and setting rules and regulations to deny NU visits should be considered. Taking punitive measures can be effective against those who try to use kinship relationships and pull strings to admit patients to EDs.This study showed that patients' exaggeration of the severity of their illness in order to be admitted is one of the reasons of NU visits to EDs, and this was consistent with other studies (45, 46). This matter can be resolved by educating physicians, triage nurses, patients and caregivers, and increasing public awareness. In the awareness-raising

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plans, the negative effects of NU visits should be well-addressed, so that patients become aware of the adverse effects of such visits. This can act as a factor in reducing NU visits.

Designing and implementing of clinical guidelines in EDs is one of the issues that unfortunately have not been considered in Iran. Most physicians are reluctant to use available guidelines. Interestingly, it also seems that senior policymakers are less willing to design and implement guidelines in EDs.It is suggested to do some researches in order to appraise the influence of incentives and punitive rules, improve payment mechanisms, develop patients and providers' awareness-raising plans, and identify factors which affect overcrowding in healthcare centers and EDs. Further quantitative studies should be conducted to determine the consequences of NU visits on crowding and overcrowding in EDs.

Strengths and limitation

This study has been conducted as the first qualitative study in Iran for determining causes and consequences of NU visits, as well as for suggesting possible solutions for preventing such visits, which are the strengths of this study. In the present study, expert EMSs and nurses who had in the ED had been also interviewed.

Interviews were only from providers' perspective while patients were not included. Another prospective study to explore the causes of NU visits from the patients' perspectives is recommended through conducting a qualitative study. Another limitation was the inability of digital recording of interviews due to the refusal of ED's head. However, it was overcome by taking notes during the interviews.

CONCLUSION

NU visits to EDs have undesirable consequences on patients, providers, and on the health system as well. It is suggested that policymakers in the health sector should design and implement a

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combination of solutions categorized into four groups of regulatory plans, awareness-raising plans, payment mechanism reforms, and organizational arrangements. As a long-term strategy, improving the referral system and expanding the family physician program across the country should be considered as a national priority. For the first time in Iran, it is the first study which has proposed solutions for NU visits to EDs. This could be beneficial for evidence-based policy as well as decision making.

Author Contributions

SMM was responsible for the conception, design, implementation, analysis, drafting the manuscript and supervision of the whole process of the study. MB is the principal researcher, who was involved in the conception, development, implementation, data collection, data analysis, and writing the manuscript. ET and RR were responsible for the intellectual development of the manuscript. All authors have read and approved the final manuscript.

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Competing interests

The authors have declared that there is no conflict of interests.

Data sharing statement

Data will not be publicly available. For more information, please contact the corresponding author.

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763 **FIGURES' LEGEND**

764 Figure 1. Themes of causes of, and consequences of NU visits
765 Figure 2. Possible solutions for preventing and controlling NU visits to EDs
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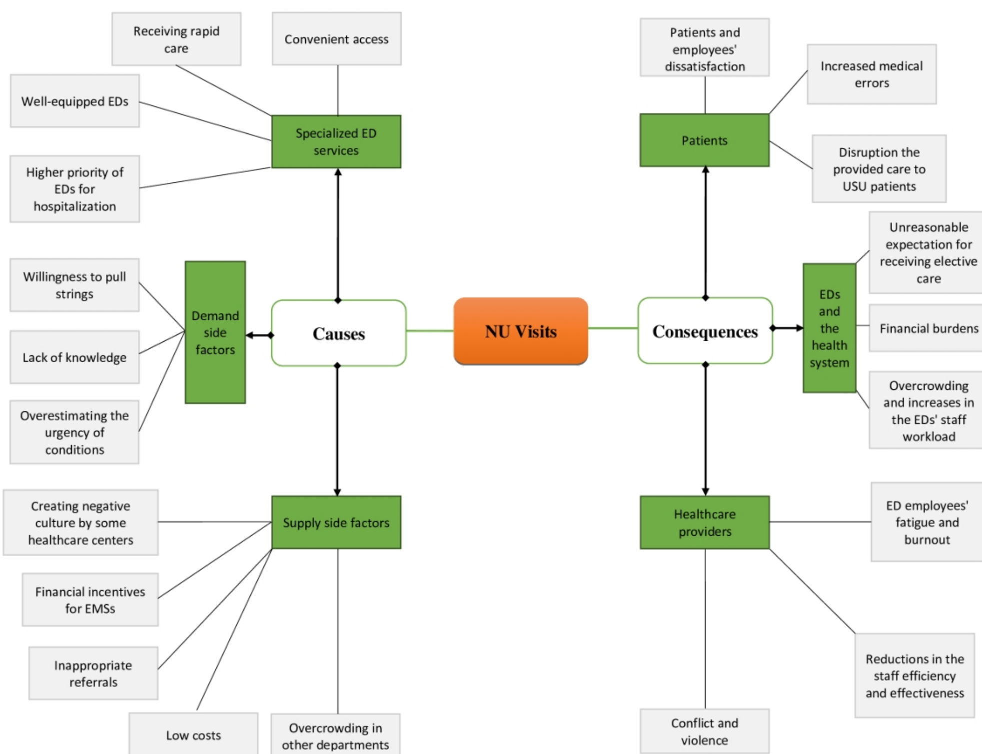

Figure 1. Themes of causes of, and consequences of NU visits

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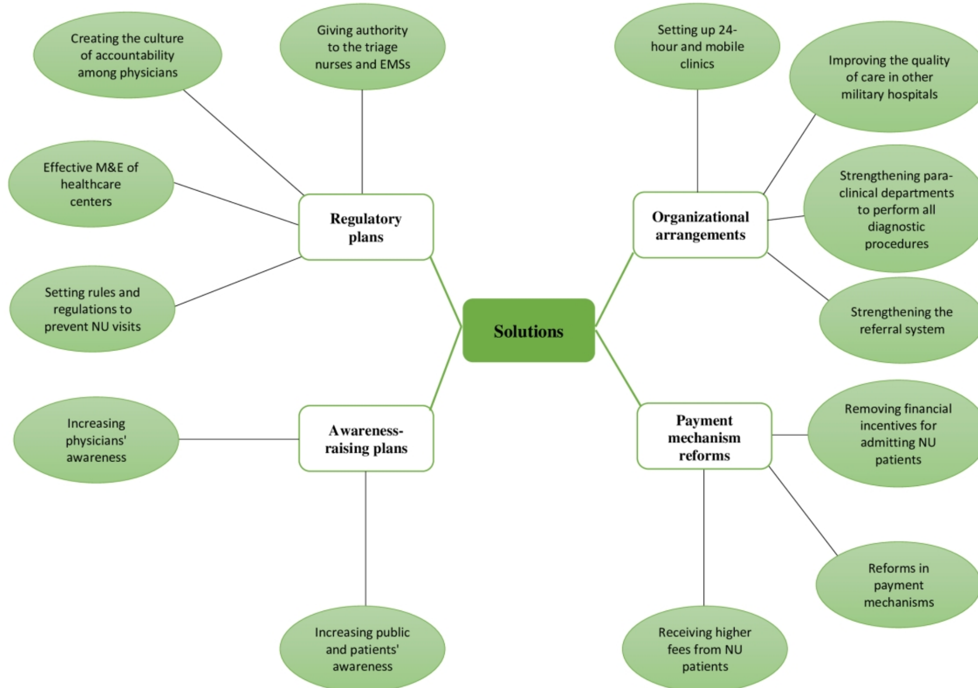

Figure 2. Possible solutions for preventing and controlling NU visits to EDs

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Standards for Reporting Qualitative Research (SRQR)*

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Title and abstract

	Page/line no(s).
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	2
Purpose or research question - Purpose of the study and specific objectives or questions	3

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	3
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	3
Context - Setting/site and salient contextual factors; rationale**	3
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	3
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	4
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	3

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	3
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	3
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	3
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	3
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	3

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	4
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	4-12

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	12-14
Limitations - Trustworthiness and limitations of findings	14

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	15
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	15

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014 DOI: 10.1097/ACM.0000000000000388

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