

**FAMILY NEEDS OF PATIENTS AT EMERGENCY
DEPARTMENT IN THE PEOPLE'S HOSPITAL
OF PU'ER CITY, THE PEOPLE'S
REPUBLIC OF CHINA**



WEI MIN

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**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
AUGUST 2019**

**FAMILY NEEDS OF PATIENTS AT EMERGENCY
DEPARTMENT IN THE PEOPLE'S HOSPITAL
OF PU'ER CITY, THE PEOPLE'S
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**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF NURSING SCIENCE**

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THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF NURSING SCIENCE

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Thesis Title Family Needs of Patients at Emergency Department in the People's Hospital of Pu'er City, the People's Republic of China

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ABSTRACT

Families are a crucial part of the holistic approach to patient care in emergency departments (ED). They are vulnerable as they inevitably confront sudden, unexpected, and uncertain situations when their loved ones are admitted to the ED. Few empirical data on their needs during this phase of care can be found. The purposes of this study were to examine family needs of ED patients and to compare the differences between family needs of the ED life-threatening patients and family needs of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China.

In this comparative descriptive study, purposive sampling was used to select 338 participants who were families of ED patients. An equal number of families of ED life-threatening patients and those of ED non-life-threatening patients were recruited from the People's Hospital of Pu'er City. Research instrument consisted of a Demographic Data Record Form and the Chinese version of the Critical Care Family Needs Inventory in ED (CCFNI-ED; Cronbach's alpha = .91). Data were analyzed through using descriptive and inferential (Mann-Whitney U test) statistics.

Results were as follows:

1. The family needs of the ED patients were, in order of importance, communication needs ($M = 3.34$, $SD = .43$), support needs ($M = 3.07$, $SD = .46$), proximity needs ($M = 2.96$, $SD = .48$), and comfort needs ($M = 2.69$, $SD = .54$). The average overall needs score was 3.01 ($SD = .43$);

2. The family needs of the ED life-threatening patients were, in order of importance, communication needs ($M = 3.37$, $SD = .42$), support needs ($M = 3.18$, $SD = .44$), proximity needs ($M = 3.01$, $SD = .49$), and comfort needs ($M = 2.78$, $SD = .56$). The average overall needs score was 3.07 ($SD = .43$);

3. The family needs of the ED non-life-threatening patients were, in order of importance, communication needs ($M = 3.31$, $SD = .44$), support needs ($M = 2.95$, $SD = .45$), proximity needs ($M = 2.92$, $SD = .47$), and comfort needs ($M = 2.61$, $SD = .51$). The overall needs score was 2.94 ($SD = .42$); and

4. There was a statistically significant difference of overall needs, support needs, and comfort needs of family members of ED life-threatening patients and those of ED non-life-threatening patients ($p \leq .05$).

The results show the baseline of family needs of the ED patients in the People's Hospital of Pu'er City, the People's Republic of China. Effective strategies to fulfill these needs should be designed to enhance coping, allowing for holistic and optimal care through family-centered services for both ED patients and their families.

หัวข้อวิทยานิพนธ์ ความต้องการของครอบครัวผู้ป่วยที่แผนกฉุกเฉินโรงพยาบาลประชาชน
เมืองผู่เอ๋อร์ สาธารณรัฐประชาชนจีน

ผู้เขียน นางสาวเว่ย มิน

ปริญญา พยาบาลศาสตรมหาบัณฑิต

คณะกรรมการที่ปรึกษา ผู้ช่วยศาสตราจารย์ ดร. อัจฉรา สุคนธ์สรรพ อาจารย์ที่ปรึกษาหลัก
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บทคัดย่อ

ครอบครัวผู้ป่วยเป็นส่วนสำคัญของการดูแลผู้ป่วยที่แผนกฉุกเฉินแบบองค์รวม พวกเขาเป็นกลุ่มที่มีความอ่อนแอและต้องเผชิญกับสถานการณ์ที่บุคคลอื่นเป็นที่รักต้องรับไว้รักษาที่แผนกฉุกเฉิน ซึ่งเป็นสถานการณ์ไม่อาจหลีกเลี่ยง ที่เกิดกะทันหัน ไม่คาดคิด ไม่แน่นอน และไม่ได้เตรียมตัวมาก่อน ข้อมูลเชิงประจักษ์เกี่ยวกับความต้องการของครอบครัวผู้ป่วยในระยะการดูแลมีน้อย การศึกษานี้มีเป้าหมายเพื่อศึกษาความต้องการของครอบครัวผู้ป่วยที่แผนกฉุกเฉินและความแตกต่างความต้องการของครอบครัวระหว่างครอบครัวผู้ป่วยฉุกเฉินที่มีภาวะคุกคามชีวิต และครอบครัวผู้ป่วยฉุกเฉินที่ไม่มีภาวะคุกคามชีวิต ณ. โรงพยาบาลเมืองผู่เอ๋อร์ สาธารณรัฐประชาชนจีน

ในการศึกษาเชิงบรรยายเปรียบเทียบครั้งนี้เลือกกลุ่มตัวอย่างที่เป็นครอบครัวผู้ป่วยฉุกเฉินแบบเจาะจงจำนวน 338 คน ครอบครัวผู้ป่วยแผนกฉุกเฉินที่มีภาวะคุกคามชีวิตและครอบครัวผู้ป่วยแผนกฉุกเฉินที่ไม่มีภาวะคุกคามชีวิต ณ. โรงพยาบาลเมืองผู่เอ๋อร์ถูกเลือกในจำนวนที่เท่ากัน เครื่องมือวิจัยประกอบด้วยแบบบันทึกข้อมูลทั่วไปและเครื่องมือประเมินความต้องการของครอบครัวผู้ป่วยภาวะวิกฤตที่แผนกฉุกเฉินฉบับภาษาจีน (ค่าสัมประสิทธิ์แอลฟาของครอนบาค .91) วิเคราะห์ข้อมูลโดยสถิติพรรณนาและสถิติเชิงอนุมาน (การทดสอบแมนวิทเนย ยู)

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1. ความต้องการของครอบครัวผู้ป่วยแผนกฉุกเฉินเรียงตามลำดับความสำคัญ ดังนี้ ความต้องการการสื่อสาร ($M = 3.34, SD = .43$) ความต้องการการสนับสนุน ($M = 3.07, SD = .46$) ความต้องการความใกล้ชิด ($M = 2.96, SD = .48$) และความต้องการความสุขสบาย ($M = 2.69, SD = .54$) ซึ่งค่าเฉลี่ยความต้องการโดยรวมเป็น 3.01 ($SD = .43$)

2. ความต้องการของครอบครัวผู้ป่วยแผนกฉุกเฉินที่มีภาวะคุกคามชีวิตเรียงตามลำดับความสำคัญดังนี้ ความต้องการการสื่อสาร ($M = 3.37, SD = .42$) ความต้องการการสนับสนุน ($M = 3.18, SD = .44$) ความต้องการความใกล้ชิด ($M = 3.01, SD = .49$) และความต้องการความสุขสบาย ($M = 2.78, SD = .56$) ซึ่งค่าเฉลี่ยความต้องการโดยรวมเป็น 3.07 ($SD = .43$)

3. ความต้องการของครอบครัวผู้ป่วยแผนกฉุกเฉินที่ไม่มีภาวะคุกคามชีวิตเรียงตามลำดับความสำคัญดังนี้ ความต้องการการสื่อสาร ($M = 3.31, SD = .44$) ความต้องการการสนับสนุน ($M = 2.95, SD = .45$) ความต้องการความใกล้ชิด ($M = 2.92, SD = .47$) และความต้องการความสุขสบาย ($M = 2.61, SD = .51$) ซึ่งค่าเฉลี่ยความต้องการโดยรวมเป็น 2.94 ($SD = .42$) และ

4. มีความแตกต่างอย่างมีนัยสำคัญทางสถิติของความต้องการโดยรวม ความต้องการการสนับสนุนและความต้องการความสุขสบายระหว่างครอบครัวผู้ป่วยแผนกฉุกเฉินที่มีภาวะคุกคามชีวิตกับครอบครัวผู้ป่วยแผนกฉุกเฉินที่ไม่มีภาวะคุกคามชีวิต ($p \leq .05$)

ผลการวิจัยแสดงข้อมูลพื้นฐานเรื่องความต้องการของครอบครัวผู้ป่วยแผนกฉุกเฉินในโรงพยาบาลเมืองสุเออร์ สาธารณรัฐประชาชนจีน การออกแบบกลยุทธ์ในการเติมเต็มความต้องการของครอบครัวผู้ป่วยแผนกฉุกเฉินที่มีประสิทธิภาพจะช่วยส่งเสริมการปรับตัวของครอบครัว การดูแลแบบองค์รวมโดยครอบครัวเป็นศูนย์กลางและการดูแลที่ดีที่สุดเท่าที่จะเป็นไปได้สามารถทำได้

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CHAPTER 1

Introduction

Background and Significance of the Research Problem

Family, as an entirety, is a coherent unit that consists of people who are tied together by biological, social, emotional and law relationships (Åstedt-Kurki & Hopia, 1996; Batista et al., 2017; Gonçalves, da Costa Moura, & Rabiais, 2017). Individually, families are whom you love, and who live in the same place and they have a series of relevant meaning and values, possess common affective ties, goals, and interact between one another (Bellou & Gerogianni, 2007; Ziegert, 2011). For sure, they are unconditionally willing to take care of anyone of them who gets sick or injured.

Most of the patients need support from their families to overcome physical and psychological crisis or need their families to make decisions on behalf of themselves for their best interests during their critical or life-threatening conditions. Families can assist in daily life care and give psychological support for the patients in order to maximize patients' comfort, faster recovery and enhance mentally well-being (Burr, 1997; Khosravan, Mazlom, Abdollahzade, Jamali, & Mansoorian, 2014). They can be helpful in daily care for the patients, such as personal hygiene, assistance during meals, replacing bed sheets and blankets, body massage, change position, protecting patient from unexpected harms (Bellou & Gerogianni, 2007). Families are the essential sources of maintaining psychological equilibrium for the patients. They accompany and encourage patients to face the awful conditions positively when they are in negative psychological conditions, such as anxiety, suffering and fear. Patients stated that the caring provided by families are different from that offered by medical staffs because the technical nursing offered by medical staffs is different from the emotional care given by families (Batista et al., 2017).

Additionally, in order to provide optimal care solution for patients timely, families must make decisions for patients (Almaze & de Beer, 2017; Shorofi, Jannati, Moghaddam, & Yazdani-Charati, 2016). Moreover, they can provide useful information about patients' condition that cannot be provided by the patients themselves when they are in life-threatening or unconscious conditions.

Patients seek care at emergency department (ED) after a sudden deteriorating condition which is caused by disease or accident (Hsiao et al., 2017). The situation is usually uncertain and unexpected because of various levels of illness severity. The prognosis of patient is fickle, complex and has too many inter-dependencies to be totally identified or understood (Smith & Feied, 1999). Thus, immediate physical treatment without an accurate diagnosis of their illness is usually required by life-threatening patients in the ED. Such patients may either die or survive, saving intervention, but further hospital admission for continual management is still required for some of them (Redley & Beanland, 2004). Whereas the non-life-threatening patients are not going to die shortly, but it is necessary to monitor the patients closely and control injury or illness. Proper management after a definitive diagnosis and continuous care are often provided for those ED patients with acute non-life-threatening condition.

ED is a crucial component of health system that is set to satisfy sudden, acute or life-threatening health demands of anybody at any time (Cypress, 2014; Sucu Dağ, Dicle, & Firat, 2017; Wilber & Gerson, 2009). Its care is typically different from care given in other departments. It is commonly based on unprepared, unplanned and sudden events, which preferentially focuses on life-saving (Almaze & de Beer, 2017; Redley, LeVasseur, Peters, & Bethune, 2003) and physical support of patients. A sequence of urgent coping and interventions must be started by ED staff to restore and stabilize patient's condition (Batista et al., 2017; Hsiao et al., 2017; Leung, Chien, & Mackenzie, 2000) quickly before a patient's condition changes suddenly from a non-life-threatening status to a life-threatening condition such as a cardiac arrest. Consequently, the needs of the patient's family are generally overlooked (Molter, 1979) or perceived inaccurately by ED medical staff.

Family is defined by Redley, LeVasseur, et al. (2003) as two or more persons related through genetic or interpersonal bonds, who have promises to nurture one another emotionally, physically and spiritually. Needs are defined in Merriam-Webster dictionary as something that a person must have or a physiological or psychological requirement for survival and the well-being of an organism. There is no universal definition of family needs. Family needs are categorized as four needs including the needs of communication, proximity, support and comfort (Maxwell, Stuenkel, & Saylor, 2007). The meaning of communication lays the foundation for decision making and guidance of patients, declines anxiety, and delivers a sense of control. Delivering proximity to patient means that helps families maintain relationships, keeps them close to each other emotionally, and provides support for their sick loved one. Providing support for families is to aid coping stress, increases family resources, and enable them to keep strength to support the patients, and offering comfort for families helps decrease stress and anxiety (Maxwell et al., 2007).

Families have some physical or mental needs which are similar to the patients' needs. Previous researches conducted in ED indicate that there are different needs of patients' families when they accompany and wait for a critically ill patient at ED. Findings show that identified family needs are the same or similar but have different rank orders. Hsiao et al. (2017) conducted a prospective cross-sectional survey in a medical center in Taiwan. The samples were 150 families of critically ill patients. Their findings revealed that the most prioritized family needs of ED patients were communication (to be kept updated frequently about the patient's condition; to know the results of the patient's tests or treatment) which was followed by proximity needs (be able to participate in emergency care), support needs (accompany the patient during ED stay) and comfort needs (be able to have food and refreshments nearby the ED); the study of Yildirim and Karaman Özlü (2018) found that prioritized family needs was communication which was followed by support needs, proximity needs and comfort needs. Moreover, they pointed out that merely 3 needs namely "trusting the comfort of your relative," "talking to a nurse," and "being treated as an individual" were mostly fulfilled by nurses.

ED is often a disordered and bustling environment to both patients and staffs. It can change from being very busy to quite peaceful and then back to busy again within a short

period of time (Smith & Feied, 1999). Furthermore, the number of patients seeking medical care in ED has been increasing recently worldwide (Di Giuseppe, Abbate, Albano, Marinelli, & Angelillo, 2008) and also in China (Zhou, Li, & Yan, 2014). The visiting ratios of emergency medical department also see synchronously dramatic increase worldwide (Kang & Park, 2015), and the relevant data reveals that there are more than 136 million patients seeking for treatment at ED in 2009 in the United States (US), and two-thirds of them become inpatients through the treatment at ED (Welch et al., 2012). There were 120.0 million ED visits in the US in 2006 while 137.8 million visits presented at ED in 2014, which was an increase of 14.8 percent (Moore, Stocks, & Owens, 2017). Likewise in China, findings of Li et al. (2016) reported that ED visits increased during the last 30 years. The mean value of ED users was 46.4 ± 40.4 thousand in the initial stage of Chinese ED development while the mean value of ED visits per year in 2012 was 147.4 ± 67.0 thousand which was increased from 91.0 ± 59.8 thousand in 2000. In China, the number of ED doctors and nurses fix for every shift. They are quite busy, tired and have to work on saving patient's life. Especially on night shifts, a fix number of personnel is not enough to take care of more and more the critical patients. For instance, when patient who may need resuscitate and emergency care presents at ED, the personnel will focus on patient urgency care and the family is often ignored.

It is common that ED patients are not alone. At least one of their families usually accompanies them into ED after the unexpected health event occurred (Verharen et al., 2015). Families accompanying either a life-threatening or non-life-threatening patient often encounter various negative impacts in a chaotic, crowded and specific ED environment. The families are exhausted physically and psychologically by long time waiting because EDs are often crowded and noisy and prognosis there is often uncertain. Consequently, they cannot give timely and sufficient response in the process of care implementation (Bellou & Gerogianni, 2007). On the other hand, they would suffer multiple emotional crises, such as anxiety, stress, anger and fear. Family is a united entity which means that the illness of one family member would affect the overall family (Batista et al., 2017; Burr, 1997; Chui & Chan, 2007; Ziegert, 2011). Usually, patients' families at ED are in a stressed, unknown, unpredictable and uncontrolled physiological or psychological situation (Hsiao et al., 2017) when their sick loved one admitted into ED. As sudden injury or illness often attack without any foreboding and warning, there

is no time for families to prepare for facing and coping such situation. So, at the beginning, they are usually vulnerable arriving at ED (Wang & Han, 2009). They will suffer from stress and anxiety due to the internal homeostasis which is caused by both noxious environment and the fear of death, uncertainty outcome of patient, role conflict, financial crisis, and unfamiliar ED environments.

Originally, physiological response of human body to stress is primed automatically to sustain homeostasis (Gonçalves et al., 2017). However, with stress magnitude increasing, sense of discomfort and unpleasant experiences without any support could result in more persistent mental problems. Consequently, families are physical and psychological exhausted (Henriksson, Benzein, Ternstedt, & Andershed, 2011). Especially, if their needs are not fulfilled; they are unable to provide appropriate support for their loved one (Bellou & Gerogianni, 2007) and communicate with medical staff effectively. Since prolong exposing to mental crisis is evident, families will have cognitive disequilibrium, unable to cope and make proper decision for the best interest of the patient along the process of ED treatment. Medical staff is required to assist them comprehending the situation and helps them to overcome the mental crisis. Their needs are met so that they can provide necessary support for patients. Unfortunately, because the management of accident and disease takes priority in a noisy and busy ED, medical staff often overlook the significance of family needs, or they are just too busy to take care of their needs.

Since the conditions of ED life-threatening patients may differ from those with non-life-threatening conditions, family needs of ED life-threatening patients may also differ from those of non-life-threatening patients. The focus of care on ED life-threatening patients may differ from ED non-life-threatening patients. Proper management after a definitive diagnosis and continuous care are often provided for those patients with an acute non-life-threatening condition in ED, whereas care for the life-threatening patients are usually given by ED medical staffs to immediately concern life-saving interventions and stabilization of a wide range of illness conditions without an accurate diagnosis (Redley & Beanland, 2004). These patients may die or their illness conditions may change rapidly at any moment and their prognosis is unpredictable. Furthermore, families of the ED life-threatening patients often have little or no time to plan and prepare for coping

such unexpected situations (Almaze & de Beer, 2017). By contrast, families of the ED non-life-threatening patients have sufficient time to prepare for the situation and wait for the laboratory results and a formal medical diagnosis. Therefore, they have enough time to choose the best treatment for their sick loved one. As a result, families of the ED life-threatening and non-life-threatening patients may have different needs' perception.

It is important to consider patients and their families as an entirety and accurately know their needs at the first place. To facilitate maximal family support for ED patients, it is necessary to fulfill the needs of their families. Nurses are the best staffs to take care of the patients' families at ED because they are not only responsible for the patients but also for their families (Batista et al., 2017; Khoshnodi, Reza Masouleh, Fazelpour, & Kazem Nezhad Leyli, 2017; Wang & Han, 2009).

The fulfilled family needs facilitate psychological and cognitive equilibrium as well as recovery of families' coping and adaptive competency, which enables families to perform maximum support for their loved one and to make the best treatment decisions for patients during the care process. Accurately knowing family needs is beneficial to design proper strategies to ensure the fulfillment of needs and improve quality of life among ED patients' families and increase their satisfaction on ED services. Furthermore, the effectiveness of the intervention and high quality care can be promoted. Family needs can be fulfilled only by research-based study. Therefore, the study of family needs of ED patients is needed. Through fulfilling the needs of the families, family-centered and best care for patients can be made possible.

Research Objectives

1. To identify family needs of the patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China.
2. To describe family needs of the life-threatening patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China.
3. To describe family needs of the non-life-threatening patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China.

4. To compare differences between the family needs of the ED life-threatening patients and the family needs of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China.

Research Questions

1. What are the family needs of the patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China?

2. What are the family needs of the life-threatening patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China?

3. What are the family needs of the non-life-threatening patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China?

4. Is there any difference between the family needs of the ED life-threatening patients and the family needs of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China?

Definition of Terms

The operational definitions for this study include:

Family refers to the persons who were genetically or inter-personally connected with the ED patient and had a promise to nurture their loved one emotionally, physically, and spiritually. They were parents, husband, wife, relatives or friends who accompanied the patient to ED and were assigned by other family members to make decisions for the best interest of the patient. The person was determined by other family members.

Family needs refers to a physiological and/or psychological requirement of ED patients' family. It consists of 4 needs: communication, proximity, support and comfort. It can be measured by the Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED) that was developed by Redley and Beanland (2004) and was translated into Chinese by the researcher.

Life-threatening patient refers to the ED patient who was in the critical condition and was immediately sent into the resuscitation room. Their conditions required immediate intensive and continuous management for survival. These patients were in a high probability of losing his/her life at any moment. Those people were determined by ED physicians who work in ED of the People's Hospital of Pu'er City, the People's Republic of China, based on the illness history, signs and symptoms, and results of laboratorial test.

Non-life-threatening patient refers to the ED patient who was in serious conditions and was sent into the observation room, emergency trauma surgery department or ED in-patient ward which is a part of ED of the People's Hospital of Pu'er City, the People's Republic of China. They had acute but not critical symptoms, signs or injuries. They need to be monitored and controlled during the progress of illness in ED. Those people were determined by the physicians who work in ED based on the illness history, signs and symptoms, the outcomes of physical examination as well as the results of laboratorial and radiological test.



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CHAPTER 2

Literature Review

This chapter describes the literature review and conceptual framework of the study. The literature review is organized as below:

1. Emergency Department
 - 1.1 Definition and Services of Emergency Department
 - 1.2 Trends of Emergency Care Services in ED
 - 1.3 Goals of ED Management
2. Characteristics of ED Patients
 - 2.1 General Characteristics of ED Patients
 - 2.2 ED Life-threatening Patients
 - 2.3 ED Non-life-threatening Patients
3. Impacts of Patients' ED Admission on Families
 - 3.1 Physical Condition
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4. Family Roles
 - 4.1 Definition of Family
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5. Family Needs of the ED Patients
 - 5.1 Definition of Family Needs
 - 5.2 Significance of Family Needs
 - 5.3 Measurement Tools for Family Needs of the ED Patients
 - 5.4 Studies about Family Needs of the ED Patients
6. Conceptual Framework

Emergency Department

Definition and Services of Emergency Department

There is no single agreed-upon definition of emergency department (ED). A few literatures defined emergency department and disparate definitions of ED were found in different dictionaries.

An Emergency Department (ED), also called as Accident & Emergency (A&E), Emergency Room (ER), Emergency Ward (EW), or Casualty Department is defined as “those departments providing a consultant led 24-hour service with appropriate resuscitation facilities and designated accommodation for the reception of accident and emergency patients” (Heat, 2008). ED is “an organized hospital-based facility for the provision of unscheduled episodic services to clients who present for immediate medical attention”; it must be available 24 hours a day, 7 days a week (Texas Health and Human Services, 2018). It was established for prompt assessment and treatment of the urgent needs of critically ill and injured patients (Wilber & Gerson, 2009), specializing in acute care of patients who present to a hospital without prior appointment, either by their own ways or by ambulance (Backman, 2010).

ED was also defined in English dictionaries. Collins English Dictionary (2009a) defines ED as “the room or department in a hospital where people who have severe injuries or sudden illnesses are taken for emergency treatment”. Merriam-Webster dictionary (1999a) defines it as “a hospital room or area staffed and equipped for the reception and treatment of persons with conditions (as illness or trauma) requiring immediate medical care”. Similarly to the definition of ED as defined by Toloo, Rego, and FitzGerald (2013), “an operational unit within hospitals which provide emergency reception, clinical evaluation, and intervention for patients suffering from acute health crises”.

ED service was defined as “an integrated system which provides the arrangements of personnel, facilities and equipment for the effective, coordinated and timely delivery of health and safety services to victims of accident illness or injury” (Al-Shaqsi, 2010). Its chief aim is to give timely care to the patients of accident, life-threatening injuries and

emergencies so as to protect life, promoting recovery and to minimize complications, early mortality or long-term morbidity (Al-Shaqsi, 2010; West, 2001).

In conclusion, emergency department refers to an organized hospital-based facility for prompting assessment and treatment of the unexpectedly severe injuries or sudden illnesses, specializing in acute care of patients who are sent there without advance appointment, either by their own ways or by ambulance. Service of emergency department is available 24 hours every day to provide care for a variety of illnesses and injuries. It is an integrated service system which provides timely, comprehensive, safe and continuous care for an individual.

Trends of Emergency Care Services in ED

Emergency care service in ED has been concerned increasingly worldwide. Its demand does not only see a sharp increase, but also meets a variety of unknown challenges. The ED visits have been continuing to rise substantially, which results in the dramatic growth of the demands of emergency care services worldwide (Anthony, 2011; Berchet, 2015; Hooker, Cipher, Cawley, Herrmann, & Melson, 2008; Hsia, Sabbagh, Guo, Nuckton, & Niedzwiecki, 2018). ED visit rates increased steadily from 352.8 to 390.5 per 1000 persons from 1999 to 2007 in the United States (Tang, Stein, Hsia, Maselli, & Gonzales, 2010), and it reached a 10-year high for all age groups from 2006 to 2015 as follows, the ED visit rate per 100,000 population for patients aged 65 years and older increased from 53,537 to 56,803, the visit rates of patients aged 45-64 years, aged 18-44 years and under 18 years of age were increased from 33,042 to 39,757, 43,252 to 47,022 and 34,400 to 38,552, respectively (Sun, Karaca, & Wong, 2006). Likewise, the annual ED visit rate increased from 10.2 to 14.2 million from 2005 to 2015 in California.

Emergency care service systems in China are becoming more and more important (Pan et al., 2019). In Hong Kong, China, there was a gradual augment in the entire ED visit rate from 17% in 1999 to 27% in 2005 (Wai et al., 2009). The annual ED visit in China mainland increased from 79 million in 2010 to 89.3 million of a total population of 1.3 billion in 2011 (Pei & Xiao, 2011; Peng & Hammad, 2015). In 2012, the mean visits of ED was 147.4 ± 67.0 thousand in China, a sharp increase compared with the mean

visits of 91.0 ± 59.8 thousand in 2000 (Li et al., 2016). In 2015, China's EDs managed an estimated 138.8 million visits and the demand for high quality acute and critical care services would continue to rise exponentially (Pan et al., 2019).

ED services tend to take care of the patients in a critical or life-threatening condition. Exactly, elderly patients are usually easy to suffer from life-threatening situation owing to aging, multiple medications, injury, a variety of underlying diseases and more complicated diseases existing among older people. Studies have revealed that, because of the aging trend worldwide, elderly patients are the main objects of emergency care services (van den Heede & Van de Voorde, 2016). A study conducted in the US have pointed out that, from 1997 to 2007, the highest growth of the visits to ED was brought about by the patients aged 45-64 and, from 2006 to 2015, it was the population group aged 45-64 who brought about the largest percentage increase of the ED visits (Sun et al., 2006; Hsia et al., 2018).

Similar to the USA, it was the elderly population who paid the most frequent visits to ED in other countries. ED visit rate of the patients aged 75 and over in both Switzerland and New Zealand accounts for 22% of the total ED visits, the largest population group in terms of ED visits. In France, patients aged 75 years or above represent nearly 12% of the total ED visits as well (Berchet, 2015). An Australia research indicated that 14,976 ED visits were paid by 8,469 older people (Halcomb, Smyth, & Ghosh, 2017). In China mainland, population aging directly associates with the increase of the demands of emergency care services. The Sixth National Population Census data showed that population aged above 60 and 65 increased by 2.93% and 1.91% respectively compared with the Fifth National Population Census in 2000 (Li et al., 2016). In Taiwan, patients aged above 70 years accounts for 45.2% of total adult patients (Chang et al., 2018).

Emergency care service will face various greater unknown challenges, which means the ED is going to provide services for more complex situations and critical illness conditions. On the one hand, EDs serve for severely ill patients, for the use of diagnostic technology, and for decisions about hospital admission, which makes ED care increasingly complex (Morganti et al., 2013). For another, a research in the USA has reported that the ED visits associated to the conditions like trauma and poisoning decreased while the chronic illnesses such as infectious and parasitic illnesses and mental

disorder increased, and the management of these conditions made ED service get even more complicated (Hsia et al., 2018) . This study report was similar to the findings of an observational study conducted in Hong Kong, China which revealed the decrease of the trauma patients from 35,148 in 1999 to 25,923 in 2004 (Wai et al., 2009).

In conclusion, the demands of the emergency care service in ED is seeing sharp increase worldwide, especially for the older population who easily falls into the life-threatening conditions. Meanwhile, emergency care service is still facing with many unknown challenges.

Goals of ED Management

The objectives of ED management are to rapidly diagnose and treat critically illness patients and to precaution cardiac arrest in patients emerged with signs of physiological instability so as to improve the outcomes and effectively minimize mortality as well as complication of patients (Anthony, 2011; Ferreira et al., 2008; West, 2001). Since saving lives of patients with life-threatening conditions is often the top priority at emergency department, ED system will delivery different management in line with different disease types so as to maximize the results of the treatment and save the patients' lives.

With regard to ED management of life-threatening disease, for instance, anaphylaxis is an acute systemic reaction with symptoms of an immediate-type allergic reaction which can involve the whole organism and is potentially life-threatening (Ring et al., 2014). Immediate emergent management and medical concerns on such situation in ED are needed immediately in order to improve symptoms and prevent the deterioration of the patients' conditions. The sequence of the treatment for the patients carried out in ED is as below: rapid intramuscular injection of epinephrine, placing the patient in an appropriate position, airway management, high flow oxygen, and promptly providing a large volume of intravenous fluid. Moreover, it is necessary to include an allergy specialist for risk assessment and institution of long term intervention to decline risk (Simons, 2008).

Ghajar (2000) pointed out that traumatic brain injury (TBI) was the most common cause of death in young people. TBI was classified as mild, moderate, or severe on the

basis of the level of consciousness or Glasgow coma scale (GCS) score after resuscitation, and patients with severe TBI had a significant risk of hypotension, hypoxemia, and brain swelling; Most secondary brain injury is caused by brain swelling, with an increase in intracranial pressure (ICP) and a subsequent decrease in cerebral perfusion leading to cerebral ischemia. Within hours of TBI, vasogenic fluid accumulating in brain causes cerebral edema, elevates ICP, and lowers the threshold of systemic blood pressure for cerebral ischemia. A reduction in cerebral blood flow or oxygenation below a threshold value or increased ICP leading to cerebral herniation increases brain damage and the risk of death (Ghajar, 2000). Hence, the aims of TBI regulation are accelerating exact care of the primary injury while preventing secondary brain injury, including maintenance airway patency, effective circulation, and monitoring the ICP and metabolic conditions (Dinsmore, 2013).

Additionally, many studies have reported that early goal-directed treatment in ED improved outcomes of the patients with severe sepsis and septic shock (Goldstein, 2005). Therefore, appropriate timely treatment is needed.

For the ED management of non-life-threatening disease, a fracture is a destruction of bone continuity, which is defined according to the type and degree of damage. The objectives of fracture management include preventing the movement of the injured part to reduce pain, avoiding serious bleeding and shock, preventing farther internal or external impair and keeping a closed fracture from turning into an open fracture (“Provide an emergency first aid response in an education and care setting”, 2014). Similarly, for acute kidney injury (AKI) patients, early identification, resuscitation with fluid or proper medicine timely and prevention of further renal damages are the primary aims in ED (Joslin & Ostermann, 2012). The goals of ED evaluation on chest discomfort patients are to identify the discomfort causes and initiate adequate treatment as soon as possible (Reeder, Awtry, Mahler, & Cannon, 2016).

In conclusion, ED management has the following goals: life-saving, relief of symptoms, prevention of the deterioration of illness conditions and improvement of prognosis through quick definite evaluation and timely appropriate therapy on disease.

Characteristics of ED Patients

General Characteristics of ED Patients

ED medical staff and laypersons including patients and families have different perceptions to emergency. Symptoms were often classified by laypersons as emergencies based on the onset of unexpected and severe symptom, uncomfortable intensity, suggestions of families and friends or symptoms beyond their control capacity rather than on physiological standard. They are usually defined emergency as loss of consciousness, seizure, paralysis, shock, coughing up blood, trouble breathing, chest pain, and choking as emergencies, whereas pain in addition to renal colic or chest pain was not believed as an emergency (Morgans & Burgess, 2011). Furthermore, patients often self-perceived a need for acute medical therapy either due to its urgency or being unable to access other health care (Diserens et al., 2015; Schneider, Hamilton, Moyer, & Stapczynski, 1998). It is the reason why patients complain non-life-threatening conditions as potentially emergent symptoms and attend at the ED.

Consequently, emergency department (ED) usually simultaneously serves for both the life-threatening patients and non-life-threatening patients with an urgent condition simultaneously. Generally, patients who have to seek care at ED have acute, severe or unexpected health problems which need promptly proper medical interventions by ED medical staff.

ED medical staff are requested to appraise, diagnose, provide urgent medical care and make decisions whether admit the patient or not, which should be done within extremely limited time (MacKichan et al., 2017). Nevertheless, ED medical staff often face many challenges to accomplish such tasks because of some particular characteristics of ED patients' conditions. For example, ED patients may get acute and serious illness conditions without any warning, planning and preparedness, and some ED patients even get extremely complicated situations (Pei & Xiao, 2011). Distinctly, acute care is often provided for such patients with multiple traumatic injuries, acute exacerbation of chronic obstructive pulmonary disease (AECOPD), acute alcohol intoxication, acute abdominal pain as well as the foot or ankle pain.

Multiple traumatic injury is one of the most commonly diseases that present in ED. Multiple trauma means that “the presence of two or more separate injuries, at least one or a combination of which endangers the patient’s life” (Frink, Lechler, Debus, & Ruchholtz, 2017). Frink et al. (2017) reported the management of multiple traumas in ED. They pointed out that the initial treatment of multiple traumas in ED is the crucial link between field first aid and ultimate hospitalization. The goals of initial emergency room care is the rapid recognition and prompt treatment of acute life-threatening injuries in the order of their priority. The initial assessment contains physical examination and ultrasonography according to the Focused Assessment with Sonography in Trauma for the recognition of intraperitoneal hemorrhage. Patients with penetrating chest injuries, massive hemothorax, and/or severe injuries of the heart and lungs undergo emergency thoracotomy, and those with signs of hollow viscus perforation undergo emergency laparotomy. Therapeutic strategy planning should take the patient’s physiological parameters, the overall severity of trauma and the complicity of the individual harms into consideration.

In addition, since one of the central problems in multiple trauma patients and a common cause of death is hemorrhagic shock, the source recognition and control of bleeding is also the primary measure to be taken. Coagulation parameters of the patient including prothrombin time, partial thromboplastin time, thrombocyte count, fibrinogen and/or viscoelastic procedures should be determined, and established any necessary corrective treatment initiated. The target systolic blood pressure of seriously injured patients with hemorrhagic shock is 80 to 90 mm Hg. Crystalloid solutions are used to reach these target blood pressure. Packed red cells (PRC) and fresh frozen plasma (FFP) should be transfused in a fixed ratio of 2:1 to reach hemoglobin concentration of 70 to 90 g/L. Also, fibrinogen and PRC can be given. Recombinant factor VIIa should be given to patients with heavy bleeding and persistent coagulopathy only after exhaustion of all alternative measures.

Likewise, patients often seek ED care for acute exacerbation of chronic obstructive pulmonary disease (AECOPD) that may progress to respiratory failure (Kumbhare, Beiko, Wilcox, & Strange, 2016). An AECOPD was defined by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) as “an event in the natural history of the

disease marked by acute worsening of dyspnea, cough, and/or sputum, outside of one's daily variant" (Welniak, Panzenbeck, Koyfman, & Foran, 2015). The main causes of AECOPD are tracheobronchial tree infections, commonly viral or bacterial. It is difficult to manage because there are many coexistent diseases accompanying it, such as cardiovascular disease, hypertension, osteoporosis, neuropsychiatric conditions, arthritis, and diabetes mellitus (Kumbhare et al., 2016). Supplemental oxygen could be the first step and an essential component in the management process. Such patients' symptoms, including comorbidities, vital signs, altered mental status, respiratory conditions and therapy effects, must be monitored closely and treated. Medication for AECOPD based on physician's advice contains using inhaled bronchodilators intermittently or continuously, anti-inflammation medicine corticosteroids and possibly antibiotics (Welniak et al., 2015). Other adjuvant interventions include proper position, nutrition support and psychological care and so on.

People with acute alcohol intoxication are frequently presented at ED, which contributes to high burden on both ED itself and the personnel working there. Acute alcohol intoxication is a common potentially life-threatening condition. Clinical symptoms of acute alcohol intoxication include tachycardia, nausea, vomiting, hypothermia, hypotension and even respiratory depression, which can cause several metabolic alterations such as hypoglycemia, lactic acidosis, hypokalemia, hypomagnesemia, hypoalbuminemia, hypocalcaemia, and hypophosphatemia (Morgan, 2015). Also, the drunks manifest a series of harmful problems including injuries, trauma, aggressive and sometimes violent behavior and other negative health consequences (Bertholet et al., 2014; Morgan, 2015).

Morgan (2015) pointed out a series of prioritized intervention measures of acute alcohol intoxication in ED which aims to stabilize the patient's clinical conditions, accelerate the elimination of alcohol, and treat the clinical symptoms: place the patient in a lateral position; follow the doctor's advice, establish intravenous infusion access; offer an intravenous fluid solution to hydrate the patient and correct electrolyte imbalances and hypoglycemia; check the patient's consciousness level at least once per hour, use electrocardiogram to continuously monitor the patient's vital signs; record the patient's urine output; and measure the patient's blood sugar, plasma electrolytes and blood gases

in every 4 hours until the recovery is assured. Hypoglycemia should be corrected as quickly as possible via proper approach either oral glucose or else with 5% or 10% IV dextrose. Assisted ventilation may be useful when respiration is severely depressed.

Acute abdominal pain, one of the most common causes of problems that bring the patients to ED, is still a diagnostic challenge for emergency physicians for the differential diagnosis is wide, ranging from mild to life-threatening conditions. Specific causes are difficult to determine because the specificity of related symptoms is absent and, especially, the older and diabetic patients usually have vague, nonspecific complaints and potentially life-threatening conditions (Kendall & Moreira, 2017). Acute abdominal pain should be regulated preferentially when the patients are sent to ED. Assessing the degree of pain rapidly and objectively is an important step for further guiding prioritized pain management. After that, other essential examinations and pharmacological administration should be conducted depending on the doctor's advice, such as the using of pain killers like non-opioid and opioid analgesics. Finally, it is necessary to provide adjuvant measures for patients as early as possible so as to decline their suffering. For example, placing the patient in a comfortable position to relieve tension of abdominal wall and offering reassuring solutions, such as sympathy and empathy (Falch et al., 2014).

Wedmore, Young, and Franklin (2015) described the evaluation and management of foot and ankle pain in ED, which include talus fractures, calcaneal fractures, navicular bone fracture, traumatic metatarsal fractures and ankle fracture and so on. Foot and ankle injury or dysfunction is a common cause for a visit to the ED. The patient's medical history and physical examination are the initial key factors for determining what, if any, imaging is needed. Next, a history, physical examination, and radiographic imaging will be taken into consideration to determine whether the injury is stable or unstable and whether the operative manipulation is required or not.

Talus fractures were classified as talar neck fractures and lateral process fractures. Talar neck fracture was one-half of major talar injuries; lateral process fractures were often misdiagnosed as ankle sprains. Physical examination may show point tenderness over the lateral process. Management of all talus fractures involved immobilization, non-weight-bearing with crutches, and urgent orthopedics consultation due to the high risk of nonunion and avascular necrosis.

Calcaneal fracture is the most common fractured tarsal bone, accounting for up to 60% of foot fractures. Diagnosis of a fracture starts with standard radiographs of the calcaneus. In order to make sure there is no intra-articular involvement or if a fracture is not seen on plain radiographs, CT should be considered after a fracture is identified. Management of calcaneal fractures includes detailed evaluation of relevant injuries like vertebral fracture, including immobilization with a posterior splint, non-weight-bearing with crutches, and orthopedic consultation. Additionally, compartment syndrome of the foot should be considered in all cases before final disposition,

Navicular bone fractures can be divided as traumatic and stress fractures. Traumatic navicular fracture is caused by crush and twisting forces and usually occurs on midfoot. This twisting force leads to avulsion, tuberosity, or body fractures of the tarsal navicular. Such injuries are difficult to see on plain radiography and are usually overlooked. CT is the primary choice to evaluate for navicular injury. Navicular stress fractures are unlikely to present a stress fracture on plain radiographs of the foot. Though CT and technetium bone scanning may be helpful in making the diagnosis, MRI is the better option. Management of navicular injuries includes immobilization, non-weight-bearing with crutches, follow-up with orthopedics or podiatry, and any prominent displacement, accompanied dislocation or open fracture ought to be urgently addressed by ED physician.

Traumatic metatarsal fractures are the most common foot fractures. Widespread swelling and tenderness around the affected metatarsal are usually found in examination, sometimes making it difficult to determine the location of the injury. Compartment syndrome should be considered if there are tense swelling, pain out of proportion to examination results, and obvious symptoms with passive movement of the toes. Management of traumatic metatarsal fractures includes being immobilized in a posterior splint, non-weight-bearing with crutches, follow-up with a foot specialist in 3 to 5 days and emergent consultation for any obvious fracture displacement, compartment syndrome, or open fracture. In addition, any displacement or angulation of the first metatarsal fracture would need manipulation.

Ankle fractures span the spectrum from simple to open comminuted, but its basic treatment includes assessing neurovascular status of the foot, reducing neurovascularly

compromised fractures or fracture-dislocations immediately. Open fractures treatment also involves emergent orthopedic consultation, removal of obvious contaminants, injection of intravenous antibiotics; as well as early tetanus test. Furthermore, severe displaced, unstable fractures or the fractures involving the intra-articular surface should accept orthopedic consultation in the ED. Non-displaced, stable fractures can be treated with a splint or cast and outpatient follow-up.

In conclusion, a lot of life-threatening or non-life-threatening patients with multiple conditions usually seek care in emergency department at the same time. These patients are commonly characterized with acute, severe and complicated conditions without any warning, planning and preparedness. ED medical staffs have to pay all their attention to these highly life-threatening patients and non-life-threatening patients with acute conditions at the same time in limited time and work space.

ED Life-threatening Patients

In the ED, the priority of critical care is to save life. Absolutely, life-threatening patients are taken care of in priority because these patients may die if they are not treated quickly. For instance, patients with ventricular arrhythmias in acute coronary syndromes (ACS) or heart failure (HF) need immediate care after entering into the ED.

Thomas and Thornley (2017) introduced the management of ventricular arrhythmias in ACS. Ventricular arrhythmias occur commonly following myocardial infarction which is a life-threatening complication of acute coronary syndromes. Arrhythmias occurring without hemodynamic compromise in the acute and sub-acute phases of an ACS are best managed with urgent revascularization in combination with Beta blocker therapy, while ventricular arrhythmias associated with hemodynamic compromise occurring during the acute, sub-acute, or chronic phase of an ACS must be managed with urgent or emergent direct current cardioversion. Strategies for managing these recurrent arrhythmias contain revascularization, drug therapy, over-drive pacing, intravenous sedation and catheter ablation.

Revascularization plays crucial role both in the prevention of ventricular arrhythmias and in the management of recurrent arrhythmias. Prompt and complete

revascularization is recommended to treat myocardial ischemia that may be present in patients with recurrent ventricular tachycardia (VT) and ventricular fibrillation (VF). Drugs for treatment of ventricular arrhythmias in acute and sub-acute phase include beta-blocker, amiodarone and lidocaine. Anti-arrhythmic effects of Beta-blocker are mediated through blockade of beta adrenoreceptors, which contributes to the heart rate reduction, decreased contractility and a decline in the rate of relaxation of cardiomyocytes. Beta-blocker ought to be considered as first line treatment in patients with VT or VF in the acute and sub-acute phase of an ACS. Amiodarone can be used as a therapy for recurrent VT and VF which is out of control with Beta blockers. Lidocaine can be used as an alternative to Amiodarone. Catheter ablation is beneficial for both the urgent therapy of refractory scar-related VT and the recurrent implantable cardioverter defibrillator (ICD) discharges because of sustained VT.

Inamdar and Inamdar (2016) provided the relevant information about HF. HF has been mainly identified as an illness of elderly people who are more than 60 years old, and is a kind of clinical syndrome caused by structural and functional defects in myocardium leading to impairment of ventricular filling or the ejection of blood. The most common cause is decreased myocardial function of left ventricle. The clinical manifestation of HF includes shortness of breath (SOB)/dyspnea, orthopnea/SOB on lying own paroxysmal nocturnal dyspnea, fatigue, weakness, lethargy, edema, abdominal distention as well as right hypochondrial pain. Early phases of HF lack specific signs because of the compensatory mechanisms, but show tachycardia, pedal edema, increased jugular venous pressure (JVP), abnormal lung sounds (crackles), the third heart sound gallop. The major aims of therapy in HF are to improve prognosis, decrease mortality, relieve symptoms and reduce morbidity by reversing or slowing the cardiac and peripheral dysfunction.

In conclusion, life-threatening ED patients are generally in a critical condition and are sent into the resuscitation room in ED. For example, patients, such as ventricular arrhythmias in ACS or HF, are usually managed in priority by ED medical staff. Their symptoms are often acute, severe and need to be immediately manipulated without an immediate and exact diagnosis by ED medical staff having professional, complicated and continuous treatment experience for patient's survival.

ED Non-life-threatening Patients

ED non-life-threatening patients are characterized by urgent conditions but low risk of death and stable symptoms. Therefore, for these patients, it is usually believed that a delay of several hours for treatment would not increase the probability of an adverse consequences (Uscher-Pines, Pines, Kellermann, Gillen, & Mehrotra, 2013) and death risk. Although these patients' conditions are considered as non-life-threatening, short-term treatment and observation at ED are still needed in order to manipulate in time when conditions become deteriorative. The common non-life-threatening conditions include mild traumatic brain injury (mTBI), soft-tissue bruising and abrasions as well as acute gastroenteritis.

The mTBI refers to “the acute neurophysiological event related to blunt impact or other mechanical energy applied to the head, neck or body (with transmitting forces to the brain)” (Ontario Neurotrauma Foundation, 2013). Its primary management is to exclude traumatic brain or spine injury that needs emergent manipulation, which is based on the evaluation of signs and symptoms, injury history and underlying inducing factors (Ontario Neurotrauma Foundation, 2013), and the temporary ED admission is required for observation to avoid condition change caused by the lack of timely intervention.

The ED management of soft-tissue bruising and abrasions is as follows (Young, Barnett, & Oakley, 2005): an ice bag and pain killer are generally needed in the short time after bruising. Early adequate activity is good for recovery. Abrasions often occur on the knees, elbows and face. Any invasive material must be removed at first by either clean water or normal saline and then the wound is covered by non-stick dressing. Intervention about relieving pain and tetanus prophylaxis are subsequently performed.

Zollner-Schwetz and Krause (2015) discussed the management and therapy of acute gastroenteritis which was presented in two epidemiological settings: community-acquired diarrhea and travelers' diarrhea. Diarrhea is defined as “the passage of three or more unformed stools each day or the passage of > 250 g of unformed stool per day, often accompanied by symptoms of nausea, vomiting, or abdominal cramps”. Diarrhea can be classified into acute (< 14 days), persistent (14-29 days), or chronic (\geq 30 days) based on duration. As for the patients with profuse, dehydrating, febrile or bloody diarrhea, the first

step for the doctor to take is to obtain a complete medical history for epidemiological and clinical information. A physical examination is aimed to examine hydration status of the patient and abdominal tenderness.

For the patients who have fever or symptoms indicative of systemic inflammatory response syndrome, the assessment of serum chemistry analysis, complete blood count, and blood cultures is necessary. The initial therapy of acute diarrheal diseases must include rehydration, which can be reached with oral electrolyte solutions or intravenous fluids. Any usage of antibiotics must be seriously weighed against unintended and potentially harmful consequences. However, empirical and specific antimicrobial treatment can be considered in exact situations, such as the patients with febrile diarrheal disease, fever and bloody diarrhea, and the symptoms persisting for more than one week, or immunocompromised status.

In conclusion, non-life-threatening ED patients are in serious conditions, such as mTBI, soft-tissue bruising and abrasions, and acute gastroenteritis, are still managed by ED medical staff even if the intervention is not as timely as that for the patients with life-threatening conditions. Their symptoms are often acute but not critical and able to be manipulated after getting an accurate diagnosis and inspection result.

Impacts of Patients' ED Admission on Families

The family system consists of the individual members in compatible relationships that form a sequence of relevant meanings and values (Ziegert, 2011). Every member in the family could be affected in a variety of ways when this harmonious relationship is broken (Pasquale, Pasquale, Baga, Eid, & Leske, 2010). The Chinese family is dominated by Confucianistic principles, with a belief in showing respect and concern and a strong emphasis on particular roles and proper relationships among families; if one family member suffers a stressful life event, then the entire family share the burden and show collective obligation for coping with the bad situation so as to restore the equilibrium in family structure and functions by supporting one another throughout the critical period (Leung et al., 2000).

Any incident that causes alters in behavior and function of a family influences the living patterns and functions of all members in the family support system (Leung et al., 2000). Life-threatening disease is such an incident. Unexpected life-threatening disease or injury which requires treatment in ED usually has the potential influence on families because they must take care of their sick loved one and themselves during specific ED admission. The admission of a family member to ED can bring the physical, psychological, social and spiritual effects for all family members (Redley, Beanland, & Botti, 2003).

Physical Condition

Emergent health event and the admission of the patient to ED can bring about the feelings of fatigue and exhaustion to the patient's families. No idea of the sudden situation and uncertainty of the patient's outcomes can cause the loss of the other family members' energy. Many things like frequently trip from home to ED, continuous duty for daily work, taking care of home, children, older person and so on can exhaust the families (Wåhlin, Ek, & Idvall, 2009). Moreover, such pressures as role alterations, financial problems, uncertain prognosis of their loved one, separation from other families, unplanned disruptions in daily life, decisions making and unfamiliar care environments, could cause or aggravate physical and psychological exhaustion (Leske, McAndrew, Brasel, & Feetham, 2017).

Chaotic and unique ED environment is so uncomfortable that the families could not fall asleep. Life threatening ED patient is generally supported by various medical equipment and therapeutic measures, such as monitoring devices, ventilator, intravenous infusion and medicine infusion pumps. All sounds and stimulation of these electronic devices added the feelings of insecurity in a chaotic and disordered ED situation make the families' sleep far from possible (Williams, 2005).

In order to find food, accommodation and how well to support patient become difficult for families in an unfamiliar ED environment. Though families often do not feel hungry nor sleepy, yet actually they still need to eat something and find a place to sleep. Since several tubes and medical equipment are usually used to support patients, families are confused about where to sit or sleep for energy recovery, what they can do and

whether they can touch and talk to their sick loved one when the patients are quite weak and unconscious (Wåhlin et al., 2009).

Consequently, as families are also exhausted, weak, listless and depleted, they are unable to provide daily life care for the patients and cannot give effective information needed by ED medical staff. More unfortunately, physical health of families themselves also declines.

In conclusion, there are physical impacts on families when their sick loved one is admitted into ED. These impacts include energy loss, fatigue and exhaustion, lack of sound sleep, and the basic needs of family members, such as finding food and a places to sleep in a strange ED environment, are difficult to be met.

Psychological Condition

ED admission itself and a series of unpredictable events after admission are the sources of psychological problems for families of ED patients. Sudden ED admission often leave the families limited time or no time to prepare themselves psychologically (Hallgrimsdottir, 2000). In consequence, families suffer a variety of psychological influences like stress, guilt, anger, loneliness, concerns, fear, the frustrated feeling and anxiety.

Relevant studies emphasize that caring or accompanying a patient is stressful for the majority of caregivers, especially in the original stages (Ziegert, 2011). For instance, the patient with life-threatening injury has a significant psychological impacts on their families. Their families usually feel guilt and anger (Fridh, Forsberg, & Bergbom, 2009), since they are afflicted continuously by recurrent exacerbation, sense of uncertainty, waiting and ongoing concerns on the unpredictable outcomes and loss of their sick loved one (Wåhlin et al., 2009). The original stage of life-threatening injury maintains the highest magnitude of stress and the psychological influence would be prolonged if the stress cannot be reduced timely and excellently (Leske & Brasel, 2010). Similarly, 52 families of critically ill patients reported that they encountered various psychological stress including hopelessness, fear, concerns, anger, helplessness and exhaustion (Van Horn, Fleury, & Moore, 2002).

Additionally, a potential stress crisis for families may result from ED medical staff once the patient is admitted into ED. ED medical staff hope families to adapt unique ED environment, either the unfamiliar circumstance or all of the medical-associated highly technical equipment, as soon as possible. They are often asked to make prompt but optimal decision related to the treatment and care of the patient under an urgent situation, for example (Leske et al., 2017).

Families are asked to wait out of the room where their sick loved one is staying due for the unique demand of ED therapeutic measures, which often brings about emotional impacts on the families, such as loneliness, abandonment, worry, anxiety and sense of loss (Fridh et al., 2009). For example, as resuscitation is performed for life saving in limited time and space, and the ED medical staff worry that, during resuscitation, families may have negative psychological emotions, misunderstand professional manipulations and even become too emotional or out of control so as to disturb the resuscitative efforts and impact the efficiency of the resuscitation (Leske & Brasel, 2010; Pasquale et al., 2010). Therefore, families of the patient are not allowed to be present at ED during the resuscitation process. They are asked to wait out of the resuscitation room without further information concerning their loved one, because ED medical staff need to pay all their attention to save the patient's life and could not be disturbed by the families.

Generally speaking, families of the patients hope to stay in the same place (Williams, 2005) with their sick loved one during resuscitation and to know everything possible being done for the patient, sustain family-patient relationships and would not like to miss any changes in patient condition (Leske & Brasel, 2010; Leske, McAndrew, Evans, Garcia, & Brasel, 2012). However, the isolation of the patient from his or her families takes place frequently during a period though the patients and their families have a strong demand to stay together. Consequently, they would become anxious and worry for the patient's survival because of the physical and affective separation from their sick loved one (Pasquale, Pasquale, Baga, Eid, & Leske, 2010). Added the lack of the information about the patient's current condition, fantasy often prevail among the families. However, fantasy often produces more stress and can result in anxious, hostile, disorganized or even hysterical behaviors from families (Hallgrimsdottir, 2000; Leske, 1991b).

Unfamiliar and unique ED physical and care environment can make families more scared. The ED physical circumstance is characterized by bustling, disordered and chaotic situation, which upsets the families and give them the feeling of fear. Strange and unfamiliar ED care environment where many medical equipment, like monitoring instruments, ventilators, infusion pumps, micro pumps, defibrillators and hemodialysis machine, are placed often terrifies the families of the patients as if all of these phenomena are reminding them how serious their sick loved one is and they may lose his or her forever. Additionally, a person's psychological resources can be exhausted when the person is exposed to a special stressor, such as uncertainty of survival, role change, loss of loved ones, inability to control surrounding environment, disturbance of daily life, and ED admission would induce all such stressors (Gulrajani, 1995). Families themselves are vulnerable after experiencing sudden, unprepared and unexpected admission of their loved one into ED. As a result, families are often scared and even terrified.

Families of patients feel more frustrated when they are not able to do anything for their sick loved one. Families are too fatigued and debilitated to cope the present event related to the patient (Gulrajani, 1995). Numerous factors, such as insufficient preparation time of ED admission, fear of death, role change, making ineffective decisions, financial problems and unacquainted ED environment and personnel (Redley, Beanland, et al. 2003), will make the families to feel frustrated, guilty and weak to provide the support for the patients.

With regard to other psychological impacts on families when a family member is admitted into ED, anxiety is common among family members during the life-threatening experience. At least one-third of the families of critical care patients suffer from the symptoms of anxiety. Families' anxiety usually concentrates highly upon the concerns for the survival of their sick loved one and is often induced by physical separation (Leske et al., 2017).

Excessive mental stimulation by fear, concerns and depression usually causes the families making ineffective decisions because of their impaired cognitive competency. What's worse, they may transfer their negative emotions to the patient. The psychological impacts of families might be prolonged if such negative distress is not addressed timely (Leske & Brasel, 2010). In addition, the patient's external and visible conditions

deterioration can influence the families' psychological health, especially the cognitive and affective exacerbation which will become increasingly obvious during daily life care (Ziegert, 2011).

In conclusion, the families of the life-threatening patients would suffer many negative psychological effects, including stress, guilt and anger, loneliness, concerns, fear, the frustration as well as anxiety.

Social Condition

Unexpected ED admission often interferes with family relationships, structure and functions and also affects the family's intrinsic patterns of behavior (Leske & Brasel, 2010). Family social relationships can be weakened after an urgently acute health-related event (Van Horn et al., 2002). There is a risk that caring the sick loved one would upset families because of the leisure time lost for taking care of the patients in ED for a long time (Ziegert, 2011). They need to face the role changes of family, bear more family responsibilities and reorganize their routine activities.

Families with a patient in ED may bear the role changes and more family responsibilities compared with a normal family without patient in ED. A family is a system or organization in which people have a conjunct economy (Ziegert, 2011). Generally, the male in a family mainly undertakes the role or responsibility to earn money, whereas this duty no doubt falls on the woman when the man got sick. Obviously, the female has to bear her original duty and role and, at the same time, shoulder extra responsibility and role which are supposed to be borne by the patient.

A variety of limitations influence the family's concentration on dealing with routine activities. Unforeseen restraint occurring in any time and place would impact and weaken the competency of the family to address family activities, such as preparing and eating meals together, watching TV, sleeping, working, travelling. People not only interact with their surrounding circumstances but also with a broader environment in the outer world (Ziegert, 2011). Individuals have their own families and they have to take care their family members, including children, older persons, spouse, and, at the same time, need to have a rest, interact with external environment such as working, traveling and making

new friends. However, if one of the family members get sick and is sent to ED, their own routine life is generally altered dramatically and their demands may hardly be met anymore because their plans to meet these demands may be affected by the sudden changes of family structure. In addition, families' behaviors and responses are usually impeded in an ED particular environment among strangers (Redley & Hood, 1996).

In conclusion, unexpected ED admission can suddenly change family relationships, structure and function. The families of the patient have to bear multiple family responsibilities and role alterations and have no time and energy to deal with their own routinely social activities.

Spiritual Condition

People have a spiritual aspect to themselves in addition to the biological, psychological and social aspects (Poston & Turnbull, 2004). Religious and spiritual attentions seem to get especially prominent in suffering from disease, dilemma, and distress. Spirituality is defined as “the area of life that includes the need to find meaning in our existence; a search for fulfilling relationships between oneself and others, the universe, and reality as one views and understands it; as well as the way that we respond to the sacred” (Poston & Turnbull, 2004). Spirituality is an essential element of human life and plays a significant support role for everyone in coping with some of the emergencies or disasters (Tabei, Zarei, & Joulaei, 2016). It is an individual internal world of values, beliefs and inspiration that assist ascertain the process of coping (Poston & Turnbull, 2004).

Spiritual distress is defined as “a disruption in one's beliefs of value system, a shaking of one's basic beliefs” (Richardson, 2014). Once an individual is unable to find sources of meaning, hope, love, peace, comfort, strength, and connection in life or when conflict occurs between their faiths and what is happening in their life, spiritual distress appears (Richardson, 2014). Spiritual support, belief in God and praying are adopted by families to cope their stressful events (Rahmati, Khaledi, Salari, Bazrafshan, & Haydarian, 2017). However, when one of families gets sick and is admitted into ED, accomplishment of spiritual demands on families is usually influenced due to the elements as below.

Long-term stay for taking care of the ED patient is a kind of threat to complete their religious activities. Religion is defined as “the institutionalized and organized patterns of beliefs, moral, rituals and social structures that people create to help fulfill their spiritual quest”; in other word, spirituality is expressed via religion and religious practices, yet it can also be voiced by nonreligious and nonsectarian modalities (Poston & Turnbull, 2004). Families worry about whether their loved one will survive or die. They would like to go to a specific place to seek help from a holy and divine source against what they are encountering (Rahmati et al., 2017), to express their or the patient’s wishes and pray everything well. Unfortunately, they have no time and energy to go temples and churches even though literature has revealed that spiritual beliefs and prayers as the practical presentation of spirituality is effective in improving someone’s capacity to conquer disease, and promoting the recovery procedure of acute and chronic diseases (Rahmati et al., 2017; Tabei et al., 2016).

Families do not have a alone space, time and vigor to do spiritual or religious practice, such as prayer, spiritual reading, meditation, or attending community religious activities; Families who want to do those practices might have to ask other family members or close relatives to help them take care of their children or older persons so as to have enough time to seriously perform their spiritual or religious practices (Arrey, Bilsen, Lacor, & Deschepper, 2016; Poston & Turnbull, 2004), whereas seeking such help usually become difficult during a family admission in ED.

Generally, religious practice by religious communities and pastors are not allowed in hospitals, which prevents the effective release of the spiritual distress in the hospitals. However, religious leaders or pastors often can provide assistance for their followers and there are specific support groups or organizations that can give support for the families in need. In addition, approaching religious communities is quite necessary for that sometimes it is difficult to share an individual and family’s dilemma with others in spite of the fact that others would try their best to understand the situation (Poston & Turnbull, 2004).

Additionally, spiritual demands of families who value mental strength are often overlooked during admission; Spirituality is a crucial part of life for many people and cannot be ignored during the hospitalization (Schleder, Parejo, Puggina, & Silva, 2013).

Researches have demonstrated that religious or spiritual engagement was positively correlated with the well-being, satisfaction and quality of life, hope, optimism, meaning in life, higher self-esteem, less loneliness, less anxiety and greater marital stability as well as the satisfaction and so on (Reeves, Beazley, & Adams, 2011). Nevertheless, ED medical staff usually fail to talk with the families to fully understand their spiritual needs (Johnson et al., 2014) because of the high ED workload and chaotic ED environment despite the fact that they ought to pay more close attention to explore and identify the religious needs of the families and even to provide diversified support to fulfill the families' potential spiritual requirements.

In conclusion, spirituality is an essential element of human life and plays an important role for everyone in coping with some disasters. Whereas spiritual health of families is often affected when one of the families is admitted to ED: they have no time to join the religious activities for spending too much time in taking care of the ED patient; families do not have alone spaces, time and vigor to do spiritual or religious practice; religious communities and pastors' religious practice are not allowed in hospitals, which prevents the effective release of the families' spiritual distress ineffective; and spiritual demands of the families who value mental strength are often overlooked by ED medical staff.

Family Roles

Definition of Family

Family is defined in literature and dictionaries as below:

Family refers two or more persons related to each other through genetic or interpersonal bonds, who had promises to nurture one another emotionally, physically and spiritually (Redley & Hood, 1996; Redley, LeVasseur, et al., 2003). Families are individuals who are associated with each other through bonds of marriage, blood and adoption and interact between one another; family widely refers to two or more individuals who live in the same place, have common sentimental bonds, aims and tasks, and satisfy interdependent activities (Bellou & Gerogianni, 2007). Pasquale et al. (2010) defined family as the people with whom another shared an established relationship.

Family are defined in the medical field chiefly as family members or other close relatives such as spouse, partner, children, parents, siblings, grandparents, and adopted children (Ziegert, 2011).

Family is also defined as persons bonded by biological, legal, or social relationships (Leske & Brasel, 2010; Leske, McAndrew, & Brasel, 2013; Leske et al., 2012). Families are individuals bonded by biological, legal, social, or emotional relationships (Leske et al., 2017). Family is the one who is related to another one by blood, marriage or adoption (Hsiao et al., 2017). Family are defined as two or more people which are genetically associated and have a commitment to nurture one another emotionally, physically, and spiritually (Sucu Dağ et al., 2017).

Different English dictionaries define family in different ways. Merriam-Webster (1999b) dictionary defines family as the people living under one roof and being united by certain convictions or a common affiliation. English Oxford Living Dictionaries (2016a) defines family as individuals bonded by blood or marriage. Wordnik.com describes family as two or more persons who share same targets and values, have long-term promises to one another and usually live in the same place. Business Dictionary (2018) defines it as two or more people related by blood, marriage or adoption and having a shared commitment to the mutual relationship. Cambridge English Dictionary :(2008a) defines it as “people who are related to one another such as a mother, a father, and their children”. Family defined in Collins English Dictionary (2009b) refers to a group of people making of parents and their offspring and the principal function of the family is provision for its members. Your Dictionary (1996a) also defines family as “people that may be made up of partners, children, parents, aunts, uncles, cousins and grandparents”.

In this study, family refers to the persons who are genetically or interpersonally connected with the ED patient and have promises to nurture their loved ones emotionally, physically, and spiritually.

Family Roles in General Condition

Every family is a system and all family members who live together affect and support each other. Everyone not only relies upon his or her own but also needs family to help him or her to deal with the difficulties that arise along the life (Ziegert, 2011), and every family member has obligations and responsibilities to treat all other family members equally (Bernardes, 1999). Particularly, Chinese families, especially extended families, have very strong kinship and traditional concepts of family obligations, roles, and interdependent relationships; Chinese families are very cohesive and rely on one another for emotional support and support in performing daily missions. In addition, Chinese show their concerns and emotions for one another by looking after mutual needs rather than by communicating those feelings in words (Leung et al., 2000). They value harmony, mutual obligation, and family solidarity and emphasize on interdependence rather than independence, as in Western culture; continual receiving and offering help among siblings and between generations are seen by the Chinese as indications of family solidarity (Leung et al., 2000).

Thus, family plays a variety of essential obligate roles/functions in general condition to accomplish their good family functions, needs and obligations as below (Peterson & Green, 2009): 1) Provision of physical resources, one of the most basic and important functions, which is to offer resources for all families such as money, food, clothing, and accommodation; 2) life skills development which contains the physical, emotional, educational, and social development of families. For Examples, parents bring up and educate their children as well as guide their career path; 3) family management that involves role allocation, leadership, solving family problems, decision making, addressing family economy and keeping sound relationships with extended family, friends and neighbors. Additionally, it is essential to establish fine family moralities and principles; and 4) bring up and support among families that includes affective support and encouragement to other families, including giving comfort, warmth, empathy and commitment for families. For example, a wife comforts her husband after he failed in his profession promotion, or families sustain each other after the death of a loved one, for instance.

Role allocation is the assignment of responsibilities within a family that enables the family to function adequately (Peterson & Green, 2009). Clear role allocation is extremely necessary in a healthy family to perfectly complete its functions and complete the daily tasks efficiently. In a study, Chinese families expressed their traditional beliefs of obligations, roles and the interdependent relationships of a family: the wife or mother is usually expected to be the one who takes care of household affairs and the general health of every family member, especially the children (Lee & Mackenzie, 2000). Generally, mother is the person who takes out the garbage, takes the child to school and looks after them, prepares meals and does the laundry and finishes her missions in company, etc. Father is often working and giving financial support for the family.

In conclusion, there are four family functions, including provision of physical resources, life skill development, family management and bring up and support. In a healthy family, clear role allocation and maintaining the manner of family daily activities are quite essential.

Family Roles during Patients' ED Admission

Families of patients are the most important source of social support with which illness occurs and is solved and it is one of the main elements in delivering health care to patients (Rahmati et al., 2017; Van Horn et al., 2002). Family role is always expanding or changing over time, especially when one of families admits into ED because of unexpectedly sudden accident or life-threatening illness. A temporary or permanent shift in roles is needed at the time (Peterson & Green, 2009). Undoubtedly, they, as caregivers, have to take care of the patient and themselves during ED admission. Furthermore, the families play the unique and vital role in facilitating the health and well-being of the patient (Pasquale et al., 2010). During the process of the patient receiving treatment in ED, his or her families' functions include providing physical and psychological support and making decisions for the patient, and providing patient's information for both ED medical staff and other family members who are absent in ED.

Family can deliver successive physical support for their sick loved one during ED admission. A study employing a pragmatic clinical trial with a nonequivalent control group pretest-posttest design demonstrated that patient's basic care, such as combing hair,

massage, mouth care and bathing, delivered by family could improve the patient's comfort, facilitate a sense of closeness between patient and family, make the patient feel safe and happy as well as assist the patient through a suffering period (Mitchell, Chaboyer, Burmeister, & Foster, 2009). Similarly, by participating in the daily care or physical care for their sick loved one, both families and patients could experience comfort and emotional connection. For example, mouth care and skin care can enable the families to connect with the patients but also enhance patients' subjective comfortable sensation (Mitchell & Chaboyer, 2010).

Families provide psychological support for the patient. Family close proximity to the patient is useful for comforting and making the patient less worried and anxious through touching and verbal communication (Williams, 2005), and praying with the patient (Leske et al., 2013). As an unfamiliar environment might make patients feel fearsome and stressful, psychological support from families could help the patients establish an atmosphere of trust and facilitate the sense of security for the patients. For life-threatening, dying patients or the patients who may regain temporary consciousness, family support of psychological level would promote the loving affective communication at the last moment and encourage their sick loved one to bravely accept the death (McMahon-Parkes, Moule, Bengner, & Albarran, 2009). Patients say that they are afraid, hurt and in pain during the emergency event at ED, yet they also perceive the feelings of being loved, supported and belonging as well as the sense of security and less alone and fear if their families are present and support them psychologically (Eichhorn et al., 2001; McAdam, Arai, & Puntillo, 2008). Families would also motivate the patient's desire to live, empowerment and can be the persons for the patients to fight for in this world (Engström, Uusitalo, & Engström, 2011).

Families must make optimal decision for the patient. Families cannot but speak for and make decisions health-related on behalf of their loved one for their best interests during unconscious or life threatening conditions in ED, including choices about therapy and therapeutic care (Olding et al., 2016). For example, families of patients with high dose paraquat poisoning have to reply whether they agree with the ED physician's strategies around life support about using expensive replacement therapy, such as plasma

exchange, blood perfusion and hemofiltration, to rescue the patient with a slim chance of survival.

Families deliver information of patient to both ED medical staff and family other members who are absent during ED admission. Families claim that they are able to provide information required for the care for patients by ED medical staff, including patient's illness history, allergic history, current medications, insurance and everything that patients cannot answer. In addition, families of patients are able to sensitively perceive or acquire the needs of the patients, and then they help the patients convey the information to ED medical staff when the patients could not do so themselves (Eichhorn et al., 2001). What's more, they could also provide latest medical information of the patients to other families who are not accompanying the patients during ED admission (Leske et al., 2013; McMahon-Parkes et al., 2009). This is intensively useful for other families to decrease their anxiety and concern.

In conclusion, Families play a good many essential roles during the period when their loved one is admitted into ED. Four significant roles are physical, psychological support and decision making roles for the patients, and providing information of the patients to both ED medical staff and other families who are absent during ED admission.

Family Needs of the ED Patients

Definition of Family Needs

There is no uniform definition of family needs was found in the literature review. Family and need are separately defined in some English dictionaries and a few studies. Definitions of the family have been introduced above and the definitions of the need will be discussed below:

Although there is no generally agreed definition of the need in literature (Sheiham, Maizels, & Cushing, 1982), we can still find some definitions in some dictionaries. English Oxford Living Dictionary (2016b) states that need is one thing that is wanted or required. Merriam-Webster (1999c) defines need as something that a person must have or a physiological or psychological requirement for survival and the well-being of an organism. Similarly, Cambridge English Dictionary (2008b) defines it as “the things that

a person must have in order to have a satisfactory life or a feeling, or state of strongly wanting something”. Wikipedia (2019) defines “a need is something required for a safe, stable and healthy life such as food, water, shelter, which can be objective and physical, such as the need for food, or psychological and subjective, such as the need for self-esteem”. Besides above needs, human beings also have the needs of social nature. For example, people need to be socialized as one member of a family unit.

Random House (2001) defines the need as the necessity resulting from the circumstances of a situation or case. Collins English Dictionary (2009c) defines it as the necessity arising from some situations which would improve a situation or prevent something from happening. The Free Dictionary by Farlex (2011) and Your Dictionary (1996b) define the need as “a condition or situation in which something must be supplied in order for a certain condition to be maintained or a desired state to be achieved”.

Family needs can be categorized as four types, namely communication needs, proximity needs, support needs and comfort needs. Communication needs, play the fundamental role in contributing to make decisions, guide the patient, decline anxiety and deliver a sense of control. For example, families want ED medical staff to tell their loved one’s realistic conditions, ongoing treatments, outcomes and prognosis. Providing proximity to the patient helps families keep relationship with the patient, remain emotionally close and deliver support to their sick loved one. Families would like to stay with their sick loved one to keep family integrity and link family relationship as a network. They might feel that they are supporting their sick loved one by being physically close to them. Providing support for the families is to help the patient bear down stress, increase family resources and enable them to keep energy to support the patient. Families accompanying their sick loved one to an unfamiliar ED environment encounter changes of their daily life at home. They hope ED to meet their basic physical needs during ED admission, such as providing food and a place where they can take a bath and have a good rest. Offering comfort for families can assist in decreasing their stress and anxiety (Maxwell et al., 2007). Families may want to be encouraged to express their emotions, share their emotions with the ED medical staff and be reassured what normal emotional responses are.

In conclusion, family needs refer to a physiological and/or psychological requirement of ED patients' family. It includes four needs, needs of communication, needs of proximity, needs of support and needs of comfort.

Significance of Family Needs

Family-centered care (FCC) is a partnership approach to health care decision-making between the family and health care provider, and it is usually employed to describe optimal health care as experienced by patients' families. It means FCC at its best, with information sharing, partnering, respect and negotiation, contributes to a successful outcome in a difficult clinical context (Kuo et al., 2012). The implementation of FCC in ED may be beneficial to facilitate the fulfillment of family needs. There is of great significance of family needs in some fields, such as nursing administration, nursing practice and nursing education.

Nursing administration. Family needs lend itself to assist nursing administrator to develop appropriate strategies and interventions to care the families of ED patients, which is to improve the quality of ED nursing services so as to accomplish high-quality care. Furthermore, satisfaction of both the families and patients on ED services will gradually increase. A foundation for further family-centered care implemented in ED will be established.

Nursing practice. Family needs guide nurses serving for different families of ED patients in the nursing process. Nurses are able to meet the family needs in a timely, high-efficiency and targeted manner. Additionally, family needs are important to address families' health crisis and to provide useful information for identifying areas of nursing intervention (Sucu Dağ et al., 2017).

Nursing education. Family needs fill the gap of nursing knowledge of prioritizing needs in the area of caring for the families accompanying a life-threatening patient into ED (Redley, LeVasseur, et al., 2003). It is necessary to set curriculum about the FCC and family needs in college education, which contributes nursing students to realize the importance of concerning patients' families care. With proper nursing education, their work performance can be promoted in the future.

Measurement Tools for Family Needs of the ED Patients

According to the literature review related to family needs, there are two instruments for the assessment of patients' family needs (Olano & Vivar, 2012; Van den Broek et al., 2015), namely the Critical Care Family Needs Inventory (CCFNI) (Leske, 1986) and the Society of Critical Care Medicine Family Needs Assessment (SCCMFNA) (Johnson et al., 1998).

Critical Care Family Needs Inventory (CCFNI). In 1979, a list of 45 need statements were developed for the first time by Molter through literature review and a structured interview of 23 graduate students of nursing. Subsequently, this 45 need statements were utilized to determine family needs of the critically ill patient at intensive care units in an exploratory, descriptive research. The need statements were read to the respondents and they were requested to respond to each need statement by rating its importance to them on a scale of 1 (not important at all) to 4 (very important). In this research, no more information about the 45 need statements was mentioned.

Molter and Leske (1983) designed the 45 need statements of Molter (1979) into a measurement instrument known as the Critical Care Family Needs Inventory (CCFNI) to assess family needs of the critically ill patients in intensive care unit (ICU). It composes of 45 items that are rated 1 to 4 according to their importance (1 = not important, 2 = slightly important, 3 = important, and 4 = very important). Total scores range from 45 to 180 and the higher scores reflect the higher important levels of the needs. Validity and reliability of the CCFNI were not tested.

In 1986, Leske constructed the CCFNI on the basis of a comprehensive literature review on crisis and human need theories and a study exploring and examining the family needs of critically ill patient (Chien, Ip, & Lee, 2005) to identify family needs of the ICU patients. It consists of 45 items which are rated on a 4-point self-report scale, ranging from 1 (not important), 2 (slightly important), 3 (important) to 4 (very important). Total scores range from 45 to 180 and the higher scores reflect the higher important levels of perceived needs. An alpha coefficient of .98 for the whole CCFNI was reported (Kleinpell & Powers, 1992). Its reliability was not clear.

Leske (1991a) examined the internal consistency reliability and construct validity of the CCFNI. Family needs data on 677 subjects, collected by 21 nurse investigators in 14 states over a period of 9 years (1980-1988), were used as an aggregate data base. 45 items and five factors of the CCFNI were labeled as needs for assurance (7 items), information (9 items), proximity (9 items), support (14 items), and comfort (6 items). Items were rated on a 4-point self-report scale, ranging from 1 (not important), 2 (slightly important), 3 (important) to 4 (very important). Principal components factor analysis with varimax rotation resulted in five factors solution as determined by eigenvalues greater than one, scree plot, magnitude of residuals, simple structure convergence, item loadings and conceptual clarity. Face validity of the CCFNI was established by using the panel of graduate students, content validity was established by a panel of clinical experts and construct validity was established by factor analysis. Factor loading was set at the acceptable level of 0.30 (Redley & Beanland, 2004). The Cronbach's alpha coefficients for each sub-scale range from .88 to .98 (Maxwell et al., 2007), and the alpha value for the entire inventory was .92 (Büyükçoban, Çiçeklioğlu, Yılmaz, & Civaner, 2015).

The CCFNI has been translated into multiple versions in different languages and used by plentiful studies in diverse cultural contexts in Western and Asian countries (Chien et al., 2005; Maxwell et al., 2007).

Bijttebier et al. (2000) translated CCFNI (Molter & Leske, 1983) into Dutch version by a native speaker of English by back-translation methodology. It consists of five factors and 45 items: 7 items of assurance and anxiety reduction, 14 items of information, 6 items of proximity and accessibility, 9 items of support, and 9 items of comfort. Items were answered on a 4-point self-report scale, ranging from 1 (not important), 2 (slightly important), 3 (important) to 4 (very important). Total scores range from 45 to 180. The participants involved 200 adult families visiting a patient within the 72 hours interval after admission to an intensive care unit of university hospital. Participants received the CCFNI via the social workers. Differences between the original version and the translated one were discussed to establish the quality of the Dutch version. Factor analysis was conducted to establish construct validity of the instrument. The Cronbach's alpha coefficient of the resulting subscales ranged from .62 to .80, and all factors were

significantly correlated to one another. The Cronbach's alpha coefficient of whole translated scale was not mentioned in the article.

Chien et al. (2005) translated CCFNI (Leske, 1986) into Chinese version (C-CCFNI). It consists of five factors and 45 items: 7 items of assurance, 9 items of information, 9 items of proximity, 14 items of support and 6 items of comfort. Items are rated on a 4-point self-report scale, ranging from 1 (not important), 2 (slightly important), 3 (important) to 4 (very important). Total scores range from 45 to 180. The higher of the scores, the higher importance levels of the perceived needs. The similarity of expressions between the two versions was also examined through 40 families from a convenience sampling who were caring for an ICU critically ill patient was to complete both the original English and the translated Chinese versions of CCFNI. The quality of C-CCFNI was established in a sample of 190 Chinese families of ICU patients. The construct validity and internal consistency of the Chinese version were evaluated. By the expert panel review, the content of validity index (CVI) of the entire C-CCFNI was 93% and that of the items ranged from 87% to 100%, indicating similarity in content and aspects with the original English version. Thus, the content validity of the Chinese version was acceptable. The intra-class correlation coefficient (ICC) between the two versions were .89 ($p < .01$) for total scores and from .83 to .90 ($p < .05$) for the five sub-scales. Construct validity was established by exploratory factor analysis. The internal consistency of the C-CCFNI was .90 for the whole scale and ranging from .80 to .92 for the five sub-scales. However, test-retest reliability was not investigated because the perceptions of needs importance may change over time. Concurrent validity also was not assessed because it was not possible to find an appropriate criterion for comparison.

Büyükcoban et al. (2015) translated and adapted CCFNI (Leske, 1986) for Turkish-speaking population use and to evaluate validity and reliability of the updated inventory. It consists of three factors and 40 items: 11 items of assurance/proximity, 9 items of information, and 20 items of support/comfort. Items are rated on a 4-point self-report scale, ranging from 1 (not important), 2 (slightly important), 3 (important) to 4 (very important). Total scores range from 40 to 160. The higher of the scores, the higher importance levels of the perceived needs. The study was conducted in a state hospital with the participation of 191 families of critical care patients implemented the CCFNI

Turkish version. The adapted inventory has a content validity ratio higher than the minimum acceptable level. Content validity was appraised by experts opinions, and construct validity was established by exploratory factor analysis (EFA). Cronbach's alpha coefficient for the entire inventory was .93 and from .83 to .92 for the three sub-scales, which exhibiting the translated version's sound reliability. The item-total correlation coefficient lays between .28 and .65 for each item. The only one item "to have questions answered honestly" less than .30 criteria (item-total correlation of .28).

Dharmalingam, Kamaluddin, and Hassan (2016) translated CCFNI (Leske, 1991a) for Malaysians using (CCFNI-M). It consists of five factors and 42 items: 11 items of assurance, 6 items of information, 7 items of proximity, 12 items of support and 6 items of comfort. Items are rated on a 4-point self-report scale, ranging from 1 (not important), 2 (slightly important), 3 (important) to 4 (very important). Total scores range from 42 to 168. The higher scores reflect the higher level of that perceived need among families. Three independent bilinguists with psychology, psychiatry and critical care nursing backgrounds were requested to translate it by forward-backward translation method. A professional language proof-reader was recruited to endorse the CCFNI-M. Ten families were selected to ensure the face validity via requested to give feedback in terms of layout of the questionnaire, font size, readability and appropriateness of language used in CCFNI-M. A few modifications were made to the CCFNI-M after getting the feedback and advice from the 10 families. Three experts from psychology, psychiatry and nursing background reviewed all the items in CCFNI-M and agreed that those items were correlated to the scope of measurement within Malaysian context, which established content validity of the CCFNI-M. Construct validity was established by exploratory factor analysis. The entire internal consistency value was .93 and values for five sub-scales ranged from .72 to .87 indicating good Cronbach's alpha coefficients.

Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED). Redley LeVasseur, et al. (2003) modified the CCFNI for Emergency Department use (CCFNI-ED) based on the CCFNI (Leske, 1986) because there are some of perceived differences on family needs between ICU and the ED context. It consists of five factors and 40 items: 9 items of meaning, 11 items of communication, 5 items of proximity, 9 items of support, and 6 items of comfort. A four-point Likert scale was used in this tool

as follows: 1 (not important), 2 (slightly important), 3 (important), 4 (very important). The total scores ranged from 40 to 160, where a higher score indicated the needs more important. Researchers directly kept sixteen need statements from the original CCFNI and 14 others were reworded for the use in the developing instrument. Since available literature concerning the needs of families accompanying critically ill relatives in the ED was insufficient, Redley, LeVasseur, et al. (2003) adopted a sequence of qualitative interviews with five qualified families, and then formed 10 new need statements. Content validity was evaluated employing several approaches including the analyses of interviews with five families together with relevant variables identified from the literature. A panel of five experts in emergency care was independently asked to review the measurement instrument. An inter-rater agreement level of 90% was reached for the relevance of items and no new needs were found. Minimizing inconvenience of respondents was considered in design of questionnaire format, and decreasing the possibility of investigators influence biasing responses. Information about instrument reliability was not mentioned.

Redley and Beanland (2004) revised the CCFNI (Leske, 1986) again for ED use (CCFNI-ED), and quality of the CCFNI-ED was examined. It consists of four factors and total 40 items: 10 items of communication, 14 items of proximity, 6 items of support, and 10 items of comfort, which showed the multidimensional attributes of the needs of families with a critically ill patient in the ED. A four-point Likert scale was used to measure the importance of need items: 1 (not important), 2 (slightly important), 3 (important), 4 (very important). The total scores ranged from 40 to 160, where a higher score indicated the needs more important. Since the ED and ICU represent disparate care context, and not all items on the CCFNI are related to the ED setting, it is essential to adapt the CCFNI for ED use. After permission to revise the CCFNI for ED use was got from one of its original developers J.S. Leske, qualitative interviews with four eligible families who accompanied a critically ill patient into the ED were conducted in order to further confirm adaptation of the CCFNI; they were asked: 1) “would you tell me what it was like when you arrived in the ED with your ill relative” 2) “what things were important to you while you were in the ED” 3) “How well did the staff meet your needs while you were in the ED” 4) “Is there anything else you would like to add”.

Interview process was audio-taped and transcribed verbatim. The analysis of each interview returned to the families for validation before using data to inform the content of the revised instrument. Transcripts are analyzed for content, which the factors meaning and proximity, communication, support and comfort were identified, and the frequency of their occurrence was measured. The analytic results contributed to modify and adapt the need statements in the CCFNI for ED use. Moreover, analysis had suggested that there was redundancy of items. A shorter, more explicit tool is preferable. Items from the original CCFNI that were displayed to be good indicators of need were kept. Based on the analytic data of qualitative interview, some of the items were revised considering ED context and environment, and several new need statements were developed. A final list of 40 need statements was developed. Then, exploratory factor analysis was employed to test construct validity of the adapted instrument (CCFNI-ED). Four factors including communication, proximity, support and comfort were identified.

Redley and Beanland (2004) established validity of the CCFNI-ED in multiple methods as follows: 1) review of the available literature that supported face validity; 2) as the absence of enough literature specific to the needs of families accompanying patients in the ED, a series of qualitative interviews with four selected eligible families was conducted to support the content validity; 3) a multidisciplinary team of clinical experts (two medical and three nursing) that supported face and content validity; 4) and finally families were invited and asked to identify needs that did not include in the tool, to support content validity. For the ED version, the panel of five experts in emergency care was independently invited and requested to review the measurement instrument. Exploratory factor analysis was employed to test construct validity of CCFNI-ED.

Additionally, multiple tests including internal consistency, inter-rater reliability and stability were carried out to examine reliability by developer. Internal consistency was used to test correlations between various items in the tool and the extent to which all items measured the same construct. The Cronbach's alpha coefficient for the whole instrument was .90 and .87, .86, .83 and .58 respectively for each sub-scale (comfort, proximity, communication and support). The inter-rater reliability coefficient calculated was .90. Inter-rater agreement of 0.8 was attained on all items included. Test-retest reliability was not considered appropriate for this tool since it has been established that family needs

changed over time. Moreover, ethical issue that assigning tools repeatedly over a short time would stress families was considered.

Sucu Dağ et al. (2017) translated CCFNI-ED (Redley & Beanland, 2004) into Turkish following the standard of back-translation method. It consists of four factors and 40 items: 10 items of communication, 14 items of proximity, 7 items of support, and 9 items of comfort. A four-point Likert scale was used to measure the importance of need items: 1 (not important), 2 (slightly important), 3 (important), 4 (very important). The total scores ranged from 40 to 160. CCFNI-ED was translated from English into Turkish independently by two experts. The translated versions were assigned to two native Turkish speakers (one an English lecturer, one a nursing lecturer) for back-translation. Each item's translation was consulted and consensus was reached. Besides, the content of each item in the translated tool was appraised by ten academic experts, including one emergency doctor, one English instructor, six nursing lecturers, and two expert ED nurses, in order to make sure that this content was suitable and that semantic equivalence had been achieved. A pilot study was performed after the assessment of the linguistic and content validity and the adapted CCFNI-ED was completed by 18 families who had accompanied a critically ill patient into ED at a university hospital. It was then ascertained that the items were understandable and no changes were made. The tool's construct validity was tested by confirmatory and exploratory factor analyses and Cronbach's alpha examined the internal consistency reliability for each of the four subscales of CCFNI-ED. The internal consistent coefficient of the whole updated instrument was .91 and ranging from .68 to .87 for each sub-scale.

Hsiao et al. (2017) translated CCFNI-ED (Redley & Beanland, 2004) into Chinese language. Chinese version of the CCFNI-ED consists of four factors and 40 items: 10 items of communication, 14 items of proximity, 6 items of support, and 10 items of comfort. 40 items ranked on a four point Likert scale to measure need importance: 1 (not important), 2 (slightly important), 3 (important), 4 (very important). The total scores ranged from 40 to 160, where a higher score indicated the needs more important. As back-translation of CCFNI-ED resulted in minor revisions, the modified Chinese version was pilot tested with 30 families who were excluded in the study. No further modifications were made. Face and content validity for the Taiwanese context were reviewed by a panel

of local experts. Internal consistent coefficient of the entire Chinese CCFNI-ED was .94, indicating acceptable internal consistency. The Cronbach's alpha coefficient for subscales ranged from 0.84 to 0.91.

The Society of Critical Care Medicine Family Needs Assessment (SCCMFNA). Johnson et al. (1998) developed the SCCMFNA which consists of 14 items and four factors identified by factor analysis through using the principle components and varimax rotation: communication, attitude, comforting skill, and isolation. Items are rated on a 4-point self-report scale, ranging from 1 (extreme satisfaction) to 4 (extreme dissatisfaction). The total scores ranged from 14 to 56, where the smallest score indicated extreme satisfaction, and vice versa. Face and content validity of this tool was found to be good. Poor results of construct validity and internal consistency were reported. The Cronbach's alpha for each factor was .79, .70, and .55 and the value for factor four was not mentioned. The internal consistency for the whole scale was 0.76. Other psychometric data as measures of central tendency, mean and standard deviation of the items as well as completion time of the questionnaire were not reported in the original article (Van den Broek et al., 2015).

Published three studies related to SCCMFNA scale were found, which includes the study developed the tool (Van den Broek et al., 2015). One of three studies was published in Portuguese (Neves et al., 2009).

Damghi et al. (2008) translated SCCMFNA tool (Johnson et al., 1998) into Arabic version recruiting a back-translation method followed by a transcultural adaptation with regard to international guidelines. It consists of 14 items and is rated on a 4-point self-report scale ranging from 1 (extreme satisfaction) to 4 (extreme dissatisfaction). The total scores ranged from 14 to 56, the smallest score reflecting extreme satisfaction and the highest score indicating extreme dissatisfaction. Independent forward translation into Arabic by three native Arabic speakers who were also master in English; and then separate backward translation into English by two different native English speakers; inconsistencies in the translated version were discussed and resolved by the translators. Finally, authors as a review committee tested the translation and produced an Arabic version of SCCMFNA that was culturally applicable and reflected the intent of the original version. It was examined by five families of hospitalized ICU patients whether

the questionnaire was clearly understood. Slight rewording was made based on the families' feedback. Internal consistency of the Arabic version of SCCMFNA was assessed through using Cronbach's alpha coefficient and alpha value more than .70. Construct validity also was supported. Yet specific values about validity and reliability of instrument were not reported.

In this study, English version of the Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED) revised by Redley and Beanland (2004) from Leske (1986) was used to determine family needs of ED patients. Previous studies have reported high validity and reliability of CCFNI-ED. The Cronbach's alpha coefficient for this instrument was acceptable and it is a valid and reliable instrument designed specifically for investigating family needs of ED patients. Additionally, four factors of CCFNI-ED exactly indicated the multidimensional natures of ED patients' family needs. Whereas, information about the quality of the SCCMFNA scale is incomplete and it is used by few study. Merely three studies on the SCCMFNA have been found, and it was only used in ICU setting.

In conclusion, CCFNI-ED is a proper measurement instrument to examine family needs of ED patients. It has been used frequently in different countries. Studies performed in ED have proved that the psychometric properties of this tool including its validity and reliability were eligible. Consequently, it is an appropriate tool for this research conducted in ED.

Studies about Family Needs of the ED Patients

Families are an important part of the holistic care in emergency departments (ED). Families are people who protect and support the patients and, at the same time, they also need to be supported and protected (Blom, Gustavsson, & Sundler, 2013). Their needs should have been part of the nursing research and ED care. However, results of systematic review found that literature about family needs of ED patients was limited, and it have been often being overlooked when formulated the care options (Redley, Beanland, et al., 2003). Four studies on family needs conducted in ED were found (Botes & Langley, 2016; Ocak & Avsarogullari, 2018; Redley, LeVasseur, et al., 2003; Yildirim & Karaman Özlü, 2018).

Redley, LeVasseur, et al. (2003) conducted a pilot study in Australia using modified CCFNI (CCFNI-ED) to investigate the perceived needs of families accompanying critically ill patients in ED and families' perceptions of ED professionals' ability to fulfill these needs. Eighty-six families of ED critically ill patients during the 6-week data collection period participated in this study. 73% of selected families completed and gave back the questionnaires. As a result, families perceived meaning as the most important needs followed by the needs of proximity, communication, comfort and support. Descriptive statistics demonstrated that needs for proximity were the best fulfilled, followed by meaning, communication, comfort and support. Researcher suggested the measurement tool has acceptable reliability and validity and ED nurses must concern families' emotional needs as part of a holistic method to patient care. Nevertheless, since this was a retrospectively pilot study, families' perceptions of events and their needs may have been affected by factors like morbidity and mortality of their sick loved one, and that the small sample size and restricted examining of the revised tool might contribute to limitations of this pilot study.

The descriptive study of Botes and Langley (2016) aimed to explore family needs accompanying an injured patient admitted into ED and determine the degree of these needs fulfilled. 100 participants were selected from a level 1 trauma facility in Johannesburg, South Africa. The CCFNI was employed in this study. The result showed that families of injured patient reported the most important on the needs for meaning followed by the needs of communication, proximity, comfort and support. Needs for meaning was met highly while communication was the lowest fulfilled. The study emphasized that further exploring the function of nurses in family care is necessary.

Ocak and Avsarogullari (2018) conducted a prospective cross-sectional survey of 873 families of non-traumatic and critically ill patients to identify their expectations and needs at ED of a university hospital in Turkey. Turkish version of CCFNI-ED was used to collect data. Findings showed that needs for meaning was reported as the highest priority followed by the needs of communication, comfort, proximity and support. Besides, research results indicated female families and families of lower educational status possessed more sensitive on most needs, and these families have more uncertainty and anxiety. More concerns ought to be provided to such individual by ED medical staff.

A descriptive study of Yildirim and Karaman Özlü (2018) investigated the needs of critically ill patients' families in ED and whether these needs were met well. 202 critically ill patients' families at emergency department of a University Research Hospital in Turkey were sampled to carry out this research. The data were gathered through employing the CCFNI-ED and a form for fulfilling the family needs of patients. The results have showed that the most important family needs is communication followed by the needs of support, proximity and comfort. Considering the families of ED patients as a part of holistic care was advised in order to enable families with a kind of normal status to support the patient well and increase comfort of patient. In addition, large sample was suggested in future studies.

In China, researcher searched on Google, Google Scholar, PubMed, CINAHL Complete, ScienceDirect and Chinese database including Wan-fang database and China National Knowledge Infrastructure (CNKI). Merely one article exploring family needs of ED patients in Taiwan using CCFNI-ED was found (Hsiao et al., 2017). No literature concerning family needs was acquired in other provinces of China mainland.

A prospective cross-sectional survey of Hsiao et al. (2017) has explored needs of Taiwanese families who accompanied a critically ill patient in ED when waited for an inpatient bed and compared these needs with perceptions of emergency nurses on family needs of those ED patients. 150 families of patients and 150 emergency nurses were selected as subjects from a medical center in Taiwan. The participants completed questionnaires of CCFNI-ED Chinese version. The result indicated that families of critical patients reported communication as the most important needs followed by the needs of proximity, support and comfort. Rankings were similar to perceptions of emergency nurses. Additionally, findings pointed out differences between families and nurses in their perceptions on importance of family needs as well as how well they were met.

In conclusion, overall studies mentioned above explored family needs of ED patients among disparate populations from different regions and countries. Findings of these studies revealed that family needs of ED patients were similar, but the needs order and important degree of demands were different on families from disparate regions and countries. In Yunnan province, family needs of ED patients are still not explored.

Conceptual Framework

Conceptual framework of this study is based on literature review. The situation of having their loved ones treated at the emergency department (ED) has major impacts on families. During such stressful situation, families who accompany the ED patient have significant roles not only to support the patients, but also to provide necessary information regarding the patients' illness and making an appropriate judgment on the patients' best interests. In order to fulfill such roles, families themselves need suitable and enough support from medical staff as needed.

Family needs are defined as physiological and/or psychological requirement of persons who are genetically or interpersonally connected with the ED patients and have a promise to nurture their loved ones emotionally, physically, and spiritually. In this study, family needs are categorized into 4 needs; namely communication needs, proximity needs, support needs, and comfort needs. Information in regard to ED life-threatening and non-life-threatening patients' family needs is significant and can be used as baseline information to design for an appropriate care to fulfill family needs in the future. Finally, family-centered care will be made possible and the best possible care for the ED patients will be ensured.

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CHAPTER 3

Methodology

This chapter describes the methodology of this study; it consists of research design, population and sample, research setting, research instrument, human rights protection, data collection procedure and data analysis.

Research Design

In this study, a comparative descriptive study was employed to identify family needs of ED patients and to compare differences between family needs of the ED life-threatening patients and family needs of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China.

Population and Sample

Population

The target population of this study was the patients' families who accompanied the life-threatening or non-life-threatening patients at emergency department (ED) in the People's Hospital of Pu'er City, the People's Republic of China.

Sample

The samples of this study consisted of the ED patients' families who met the inclusion criteria:

1. A person with 18 years old or above and are connected with the ED patients through genetic or interpersonal bonds and was assigned by other families to make the decisions for the best interest of the patients, such as spouse, partner, children, parents, siblings, grandparents, or non-biological child.

2. Accompanied a patient who was admitted to ED less than 8 hours and able to understand and speak Chinese language as well as agreed to participate in this research and provide informed consent.

Sample size. Taro Yamane's (Yamane, 1973) formula at 0.05 significant level is employed to calculate the sample size of this study, as follows:

$$n = N / (1 + N (e)^2)$$

n = sample size

N = total number of population

e = the error in the sample defined as 0.05

$$n = 961 / (1 + 961(.05)^2)$$

$$n = 282$$

From the formula, 282 ED patients' families who met the inclusion criteria were included in this study. However, considering probability of the participants missing, 20% drop out rate (56 ED patients' families) was added (Burns & Grove, 2007). Definitely, 338 ED patients' families who satisfied the inclusion criteria were recruited in this study, 169 life-threatening and 169 non-life-threatening patients' families respectively.

Sampling method. A purposive sampling method was used to select the samples.

Research Setting

This study was conducted at the emergency department (ED) in the People's Hospital of Pu'er City, the People's Republic of China. The samples were ED patients' families who accompanied patients at ED for less than 8 hours. The researcher carried out the data collection from the end of February to the beginning of April 2019 after acquiring approval from the People's Hospital of Pu'er City, the People's Republic of China (Appendix G).

Research Instrument

Research instrument consisted of two parts, including the Demographic Data Record Form and the Chinese version of the Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED) (Appendix D).

Demographic Data Record Form

The demographic data record form was developed by the researcher and was employed to gather some of basic characteristics and information of the samples containing age, gender, religion, educational level, marital status, number of family member, relationship with the patient, insurance status, monthly family income, and contact information of the sample as well as clinical information of the patient including admission date, age, gender, diagnosis of disease and ED admission unit where the patient was admitted.

The Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED)

The Chinese version of CCFNI-ED, translated by using translation and back-translation method, was used to measure family needs of ED patients in this study. First, the questionnaire was translated into Chinese by the researcher. Then the Chinese version was back-translated into English by two persons who are fluent in both Chinese and English. The back-translated version of the questionnaire were compared with the original one by the researcher and the Advisory Committee. Finally, the Chinese version was adjusted properly.

This instrument consisted of four needs with total 40 items: 1) communication needs (10 items), 2) proximity needs (14 items), 3) support needs (6 items), and 4) comfort needs (10 items). A four-point Likert scale was used to measure the importance of the needs items: 1 = not important, 2 = slightly important, 3 = important, and 4 = very important. The possible scores ranged from 40 to 160, where a higher score indicated the higher importance of such needs.

Validity and Reliability for Chinese Version of the CCFNI-ED

Validity. The initial CCFNI was developed based upon a comprehensive review of the literature available at that time and a structured interview of 23 graduate students of nursing (Molter, 1979; Leske, 1986). Subsequently, it has been translated into multiple versions in different languages and used by numerous studies in diverse culture contexts both in Western and Asian countries (Chien et al., 2005; Maxwell et al., 2007).

Redley and her colleagues (Redley & Beanland, 2004; Redley, LeVasseur, et al., 2003) modified and revised the CCFNI (Leske, 1986) for ED use (CCFNI-ED) after getting permission from its original author, J.S. Leske. The validity of the CCFNI-ED was established by using multiple methods as follows: 1) review of the available literature that supported face validity; 2) as the absence of enough literature specific to the needs of families accompanying patients in the ED, a series of qualitative interviews with four selected eligible families were conducted to support the content validity; 3) examination by the multidisciplinary team of clinical experts (two physicians and three nurses) to support face and content validity; and 4) families were invited and asked to identify needs that were not included in the tool to confirm the content validity. For the CCFNI-ED, the panel of five experts in emergency department were independently invited and requested to review the measurement instrument. Exploratory factor analysis was employed to test construct validity of CCFNI-ED. Four factors covering communication, proximity, support and comfort were identified. Furthermore, the CCFNI-ED has been used in some studies (Botes & Langley, 2016; Ocak & Avsarogullari, 2018; Sucu Dağ et al., 2017; Yildirim & Karaman Özlü, 2018).

Since the CCFNI-ED was translated equivalently without any change, the tool's validity was not checked in this study.

Reliability. Reliability of the CCFNI-ED was tested by employing Cronbach's alpha coefficient in this study. Twenty samples who had similar characteristics from emergency department of the People's Hospital of Pu'er City were selected for reliability testing. The Cronbach's alpha obtained for the overall, communication, proximity, comfort and support needs were .91, .83, .79, .83 and .31, respectively.

Human Subjects Protection

The procedures of this research and data collection processes were designed to cover all aspects of protecting the participants' rights by following ethical principles. At first, the research proposal was submitted to the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University, Thailand for approval. Next, permission to perform this study in emergency department of the People's Hospital of Pu'er City was requested from the director of medical department. Samples were selected after obtaining the permission. Prior to data collection, samples were approached and informed of the research purposes, benefits, data collection processes and time needed for completing the questionnaire. Also, they were informed that the involvement in this study was totally voluntary, and they had rights to refuse to participate or withdraw from this study at any time without losing any benefit. The researcher reassured the samples that their answers and privacy were protected. Samples' identities were replaced with code number. The outcomes of this research were presented in the overall picture. Study participation information sheet which specifically explained this study was distributed to all samples. In this study, all samples who were approached were all willing to participate in this study. All of them were requested to sign the informed consent or stamp their thumbprints on the informed consent.

Data Collection

The data was collected as follows:

1. Researcher submitted the research proposal and instrument to Research Ethics Committee of the Faculty of Nursing, Chiang Mai University for approval.
2. After receiving the approval letter, research proposal, questionnaire, and official letter from Dean of the Faculty of Nursing, Chiang Mai University were submitted to the director who worked in the medical department of the People's Hospital of Pu'er City, the People's Republic of China, and requested for data collection permission.
3. After getting approval for data collection, the researcher met the ED head nurses to explain information related to the research that would be conducted including the

objectives, benefits, data collection procedure, and human rights protection issues. All clarification in every point was made as necessary.

4. After receiving the approval from the ED head nurses, a purposive sampling method was employed to choose samples who fulfilled the inclusion criteria. The samples were families who accompanied the patients to the ED. In case that there were more than one person, the person who authorized by other families to make the decision on the behalf of the patient was selected.

5. Study participation information sheet was handed to the samples, and the objectives, benefits, data collection procedure, and human rights protection issues of this study were explained by researcher to the samples. Then the samples who voluntarily agreed to participate in this study were asked to either sign the informed consent or thumbprint when signing was not possible.

6. After receiving the signed/thumbprint stamped on informed consent from the samples, the researcher requested the samples to respond to the questions. The researcher read each of the items to the samples and noted their responses on the questionnaire one by one. Approximately 20-30 minutes were taken to complete the questionnaire.

7. The completeness of questionnaires was checked by researcher. The researcher thanked the samples for their participation.

Data Analysis

Data analysis was performed based upon the type of data and objectives of this study through employing English version of the Statistic Package for Social Science 13.0 (SPSS13.0). Both descriptive and inferential statistics were applied and significant alpha was set at the level of .05. The procedures of data analysis were described as below:

1. Descriptive statistics, including frequency, range, mean, standard deviation and percentage, were used to describe the demographic data of the samples.

2. Two of descriptive statistics, including mean and standard deviation, were also employed to organize family needs scores in ranking.

3. The Kolmogorov–Smirnov Z test was used to examine whether the data was normal distribution or not. It was found that the data was not normally distributed (Appendix A). As the two groups of samples were independent, Mann-Whitney U test was used to compare differences between family needs of the ED life-threatening patients and family needs of the ED non-life-threatening patients in the People’s Hospital of Pu’er City, the People’s Republic of China.



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CHAPTER 4

Results and Discussion

This chapter includes the research findings and discussion based upon the research objectives of the study. The results are presented in four parts with tables and descriptions as below:

Part I: Demographic Data of the ED Patients' Families

Part II: Clinical Characteristics of the ED Patients

Part III: Family Needs

Part IV: Differences between Family Needs of the ED Life-threatening Patients and Family Needs of the ED Non-life-threatening Patients in the People's Hospital of Pu'er City, the People's Republic of China.

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Results

Part I: Demographic Data of the ED Patients' Families

There were 338 ED patients' families participated in this study. Their demographic data is presented in Table 4-1:

Table 4-1

Number, Frequency, Percentage, Mean, Standard Deviation, and Range of the ED Patients' Families' Demographic Characteristics (N = 338)

Demographic Characteristics	Families of LTP	Families of NLTP	Total	χ^2	p
	(n = 169)	(n = 169)	(N = 338)		
	n (%)	n (%)	N (%)		
Gender ^a				.19	.66
Female	82 (48.52)	78 (46.15)	160 (47.34)		
Male	87 (51.48)	91 (53.85)	178 (52.66)		
Age ^a				2.40	.30
18-35 (Young adults)	64 (37.87)	78 (46.15)	142 (42.01)		
36-55 (Middle aged adults)	84 (49.70)	72 (42.60)	156 (46.15)		
≥55 (Older adults)	21 (12.43)	19 (11.25)	40 (11.84)		
(Families of LTP: M = 39.40, SD = 11.60, Range = 19 - 70)					
(Families of NLTP: M = 39.04, SD = 12.96, Range = 18 - 76)					
(Total: M = 39.22, SD = 12.28, Range = 18 - 76)					
Insurance ^a				.06	.80
No insurance	8 (4.73)	9 (5.33)	17 (5.03)		
Have health insurance	161 (95.27)	160 (94.67)	321 (94.97)		
Education level ^a				.85	.99
No formal education	4 (2.34)	6 (3.55)	10 (2.96)		
Primary school	26 (15.38)	22 (13.02)	48 (14.20)		
Junior high school	47 (27.81)	48 (28.40)	95 (28.11)		
Senior high school	20 (11.83)	22 (13.02)	42 (12.43)		
College degree	39 (23.08)	38 (22.49)	77 (22.78)		
Bachelor degree	32 (18.93)	32 (18.93)	64 (18.93)		
Master degree	1 (.59)	1 (.59)	2 (.59)		

Table 4-1 (continued)

Demographic Characteristics	Families of LTP (n = 169) n (%)	Families of NLTP (n = 169) n (%)	Total (N = 338) N (%)	χ^2	p
Monthly income (1USD = 6.72 CNY) ^a				3.35	.34
< 6985 CNY ^c	120 (71.01)	107 (63.31)	227 (67.16)		
\geq 6985 CNY ^c	28 (16.57)	31 (18.34)	59 (17.46)		
Unknown (refused to provide information)	11 (6.51)	13 (7.69)	24 (7.10)		
No incomes	10 (5.92)	18 (10.65)	28 (8.28)		
Relationship with the patients ^a				14.10	.12
Spouse	28 (16.57)	28 (16.57)	56 (16.57)		
Guardian	0 (.00)	1 (.59)	1 (.30)		
Niece or nephew	7 (3.14)	9 (5.33)	16 (4.73)		
Children	93 (55.03)	72 (42.60)	165 (48.82)		
Parent	1 (.59)	9 (5.33)	10 (2.96)		
Daughter/son-in-law	11 (6.51)	9 (5.33)	20 (5.92)		
Brother/sister-in-law	1 (.59)	4 (2.37)	5 (1.48)		
Grandchild	8 (4.73)	8 (4.73)	16 (4.73)		
Brothers and sisters	10 (5.92)	13 (7.69)	23 (6.80)		
Friend	10 (5.92)	16 (9.47)	26 (7.69)		
Marital Status ^b				1.49	.49
Single	33 (19.53)	40 (23.67)	73 (21.60)		
Married	133 (78.70)	124 (73.37)	257 (76.04)		
Divorced	3 (1.78)	5 (2.96)	8 (2.36)		
Religion ^b				1.17	.81
No religion	155 (91.72)	157 (92.90)	312 (92.30)		
Christianism	4 (2.37)	2 (1.18)	6 (1.78)		
Buddhism	8 (4.73)	9 (5.33)	17 (5.03)		
Islam	2 (1.18)	1 (.59)	3 (.89)		

Table 4-1 (continued)

Demographic Characteristics	Families of LTP	Families of NLTP	Total	χ^2	p
	(n = 169)	(n = 169)	(N = 338)		
	n (%)	n (%)	N (%)		
The number of family member ^b				5.22	.85
1	2 (1.18)	3 (1.78)	5 (1.48)		
2	9 (5.33)	10 (5.92)	19 (5.62)		
3	53 (31.36)	49 (28.99)	102 (30.18)		
4	40 (23.67)	49 (28.99)	89 (26.33)		
5	30 (17.75)	29 (17.16)	59 (17.46)		
6	23 (13.61)	16 (9.45)	39 (11.54)		
7	5 (2.96)	8 (4.73)	13 (3.85)		
8	5 (2.96)	3 (1.76)	8 (2.37)		
9	1 (.59)	0 (.00)	1 (.30)		
10	1 (.59)	2 (1.18)	3 (.89)		
(Families of LTP: M = 4.27, SD = 1.55, Range = 1 - 10)					
(Families of NLTP: M = 4.18, SD = 1.53, Range = 1 - 10)					
(Total: M = 4.22, SD = 1.54, Range = 1 - 10)					

Note. LTP = life-threatening patients, NLTP = non-life-threatening patients.

^a Pearson Chi-square. ^b Fisher's Exact Test. ^c Average income of Chinese population.

* p < .05.

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The characteristics of the 338 families participated in this study are presented in Table 4-1. Of these families, 52.66% were males and the number of male was obviously more than that of the female in both families of life-threatening patients (51.48%) and families of non-life-threatening patients (53.85%). The age of families ranged from 18 to 76 years old and the average age was 39.22 (SD = 12.28), most of the families were middle aged adults with the age between 36 and 55 years (46.15%) and 42.01% of families were young adults. Families were children (48.82%) or spouses (16.57%) of ED patients and 76.04% of them were married. Their monthly incomes were less than CNY 6985 (67.16%), but 94.97% of them had health insurance. In addition, the majority of the families (57.70%) received senior high school or lower education and the majority of the samples (92.30%) were not religious. The number of the families ranged from 1 to 10 with the average of 4.22 (SD = 1.54) and most of them lived with their families (98.52%) and 62.72% of them had three or more than three families. For all demographic characteristics containing gender, age, relationship with the patients, marital status, monthly incomes, health insurance, education level, religion, and the number of families between families of the ED life-threatening patients and families of the ED non-life-threatening patients were not statistically significant as tested with Pearson Chi-square and Fisher's Exact Test.

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Part II: Clinical Characteristics of the ED Patients

The clinical characteristics of the 338 ED patients are presented in Table 4-2.

Table 4-2

Number, Frequency, Percentage, Mean, Standard Deviation, and Range of the ED Patients' Clinical Characteristics (N = 338)

Demographic Characteristics	ED LTP	ED NLTP	Total	χ^2	p
	(n = 169)	(n = 169)	(N = 338)		
	n (%)	n (%)	N (%)		
Gender ^{a*}				4.03	.05*
Female	57 (33.73)	75 (44.38)	132 (39.05)		
Male	112 (66.27)	94 (55.62)	206 (60.95)		
Age ^{a*}				12.57	.00*
18-35 (Young adults)	14 (8.28)	35 (20.71)	49 (14.50)		
36-55 (Middle aged adults)	51 (30.18)	55 (32.54)	106 (31.36)		
≥55 (Older adults)	104 (61.54)	79 (46.75)	183 (54.14)		
(LTP: M = 61.54, SD = 17.30, Range = 20 - 92)					
(NLTP: M = 54.38, SD = 19.76, Range = 9 - 94)					
(Total: M = 57.96, SD = 18.89, Range = 9 - 94)					
Admission department ^{a*}					
Resuscitation Room	169 (100)		169 (50.00)		
Emergency Trauma		21 (12.43)	21 (6.21)		
Surgery Department					
Observation Room		120 (71.00)	120 (35.50)		
Emergency In-patient Ward		28 (16.57)	28 (8.29)		

Table 4-2 (continued)

Demographic Characteristics	ED LTP	ED NLTP	Total	χ^2	p
	(n = 169)	(n = 169)	(N = 338)		
	n (%)	n (%)	N (%)		
Number of diseases ^{a*}				29.23	.00*
1	37 (21.89)	60 (35.50)	97 (28.70)		
2	41 (24.26)	62 (36.69)	103 (30.47)		
3	42 (24.85)	29 (17.16)	71 (21.00)		
4	20 (11.83)	12 (7.10)	32 (9.47)		
5	29 (17.16)	6 (3.55)	35 (10.36)		
(LTP: M = 2.78, SD = 1.37, Range = 1 - 5)					
(NLTP: M = 2.07, SD = 1.06, Range = 1 - 5)					
(Total: M = 2.42, SD = 1.28, Range = 1 - 5)					
Top five diseases					
Hypertension ^c	63 (37.10)	39 (23.10)			
Cerebral infarction ^c	36 (21.41)	16 (9.50)			
Coronary heart disease ^c	25 (14.79)				
GI bleeding ^c	22 (13.00)				
Pulmonary infection ^c		14 (8.30)			
Craniocerebral injury ^c		13 (7.70)			
Fracture ^c		12 (7.10)			
Anemia ^c	21 (12.48)				

Note. GI bleeding = Gastrointestinal bleeding, ACS = Acute coronary syndrome

LTP = life-threatening patients, NLTP = non-life-threatening patients.

^a Pearson Chi-square. ^b Fisher's Exact Test. ^c Top five diseases in each group.

* p < .05.

As shown in Table 4-2, 60.95% of ED patients were males and the number of the males were obviously more than that of females in both ED life-threatening patients (66.27%) and ED non-life-threatening patients (55.62%). Ratio of females to males among the ED patients were different as tested by Pearson Chi-square ($p = .05^*$). The age of the ED patients ranged from 9 to 94 years old. Most of the patients were older adults aged over 55 years (54.14%) with the average of 57.96 (SD = 18.89). The ED life-threatening patients (M = 61.54, SD = 17.30) were statistically significant older than the ED non-life-threatening patients (M = 54.38, SD = 19.76) as tested by Pearson Chi-square ($p = .00^*$). The number of the diseases ranged from 1 to 5 and the majority of ED patients (30.47%) generally had 2 coexistence diseases (M = 2.42, SD = 1.28). Nevertheless, 53.84% of ED life-threatening patients had 3 or more than 3 coexistence diseases (M = 2.78, SD = 1.37). By contrast, only 27.81% of ED non-life-threatening patients had 3 or more than coexistence diseases (M = 2.07, SD = 1.06). There was statistically significant difference between two groups in the number of disease as tested by Pearson Chi-square ($p = .00^*$).

Top five diseases among the ED life-threatening patients were hypertension (37.10%), cerebral infarction (21.41%), coronary heart disease (14.79%), gastrointestinal bleeding (13.00%) as well as anemia (12.48%). For the ED non-life-threatening patients, top five diseases were hypertension (23.10%), cerebral infarction (9.50%), pulmonary infection (8.30%), craniocerebral injury (7.70%) as well as fracture (7.10%). Obviously, hypertension and cerebral infarction were the most common diseases for both the ED life-threatening patients and the ED non-life-threatening patients at that time. In addition, 169 ED patients were selected from resuscitation room (50%); 21, 28 and 120 ED patients were selected from emergency trauma surgery department (6.21%), emergency in-patient ward (8.29%) and observation room (35.50%) at ED in this study, respectively.

Part III: Family Needs

The perceived family needs of ED patients in the People's Hospital of Pu'er City, the People's Republic of China are presented in Table 4-3.

Table 4-3

Needs of the Patients' Families, Families of Life-threatening Patients and Non-life-threatening Patients at ED in the People's Hospital of Pu'er City, the People's Republic of China (N = 338)

Category of Needs	Families of LTP	Families of NLTP	Total
	(n = 169)	(n = 169)	(N = 338)
	M (SD)	M (SD)	M (SD)
Communication	3.37 (.42)	3.31 (.44)	3.34 (.43)
Support	3.18 (.44)	2.95 (.45)	3.07 (.46)
Proximity	3.01 (.49)	2.92 (.47)	2.96 (.48)
Comfort	2.78 (.56)	2.61 (.51)	2.69 (.54)
Total	3.07 (.43)	2.94 (.42)	3.01 (.43)

Note. LTP = life-threatening patients, NLTP = non-life-threatening patients

Family needs were categorized as the needs of communication, proximity, support and comfort. Table 4-3 reveals that families of the patients at emergency department in the People's Hospital of Pu'er City, the People's Republic of China considered communication (M = 3.34, SD = .43) as the most important needs, followed by support needs (M = 3.07, SD = .46), proximity needs (M = 2.96, SD = .48) as well as comfort needs (M = 2.69, SD = .54). Families of the ED life-threatening patients rated communication (M = 3.37, SD = .42) as most important needs, followed by support needs (M = 3.18, SD = .44), proximity needs (M = 3.01, SD = .49) and comfort needs (M = 2.78, SD = .56). Similarly, families of the ED non-life-threatening patients placed communication (M = 3.31, SD = .44) as most important needs, followed by support needs (M = 2.95, SD = .45), proximity needs (M = 2.92, SD = .47) as well as comfort needs (M = 2.61, SD = .51). It was found that the overall needs of the ED life-threatening patients' families (M = 3.07, SD = .43) was higher than those of the ED non-life-threatening patients' families (M = 2.94, SD = .42). In particular, support needs and comfort needs among families of the ED life-threatening patients was significantly higher than the ED non-life-threatening patients' families.

Part IV: Differences between Family Needs of the ED Life-threatening Patients and Family Needs of the ED Non-life-threatening Patients in the People’s Hospital of Pu’er City, the People’s Republic of China

Table 4-4

Differences between Family Needs of the ED Life-threatening Patients and Family Needs of the ED Non-life-threatening Patients in the People’s Hospital of Pu’er City, the People’s Republic of China (N = 338)

Category of Needs	Rank	U	P
Communication	1	13618.50	.46
Support	2	10354.50	.00*
Proximity	3	13213.00	.23
Comfort	4	11285.00	.00*
Total		11980.00	.01*

* $p < .05$

The differences between the family needs of the ED life-threatening patients and the family needs of the ED non-life-threatening patients in the People’s Hospital of Pu’er City, the People’s Republic of China, are presented in Table 4-4. There are statistically significant difference in overall needs ($p = .01^*$), support needs ($p = .00^*$), and comfort needs ($p = .00^*$) between the ED life-threatening patients’ families and the ED non-life-threatening patients’ families in the People’s Hospital of Pu’er City, the People’s Republic of China, as tested through Mann-Whitney U test ($p < .05$).

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Discussion

The results of this study are discussed in four parts based upon the research objectives.

Part I: Objective 1: To Identify Family Needs of the Patients at Emergency Department in the People's Hospital of Pu'er City, the People's Republic of China

It was observed that the most important needs defined by ED patients' families in CCFNI-ED was for communication, followed by support needs, proximity needs as well as comfort needs (Table 4-3, $M = 3.01$, $SD = .43$). For subcategories, participants rated communication ($M = 3.34$, $SD = .43$) as the most important needs, followed by support needs ($M = 3.07$, $SD = .46$), proximity needs ($M = 2.96$, $SD = .48$) and comfort needs ($M = 2.69$, $SD = .54$).

Families of ED patients in the People's Hospital of Pu'er City, the People's Republic of China ranked communication as the most prioritized needs. ED is a disordered and bustling environment. Normally, patients often seek care at ED after a suddenly unexpected deteriorated condition, illness or accident. This situation is usually unfamiliar, unknown and unplanned with various levels of illness severity, and the prognosis of patient is fickle, complex and has too many interdependencies to be totally identified or understood (Hsiao et al., 2017; Smith & Feied, 1999). The ED patient's conditions are quite urgent and extremely unstable. Therefore, saving life and controlling patient's conditions are always the priorities for ED medical staff. Families are usually left at ED without being informed about their loved one's conditions, outcomes and prognoses (Redley, LeVasseur, et al., 2003). They are often vulnerable as they encountered various negative impacts in such situation. Families of ED patients are worried and afraid that their loved ones may die. They would like to know the patient's conditions, prognoses and ongoing treatments that the patient received. Families participated in the study conducted by Hsiao et al. (2017) pointed out that their communication with the medical staff was important but not sufficient. They desired medical staff providing enough time to explain the patient's conditions to them and answer their questions timely, honestly and frequently. This opinion is consistent with the families participated in this study. As such, communication was considered as the most

important needs. ED medical staffs are also responsible for paying attention to families and continually providing updated information of the patients for the families.

EDs serve for prompt assessment and treatment of the unexpectedly severe injuries or sudden illness, specializing in acute care of patients who are submitted there without advance appointment. It can go from being very busy to quite peaceful and then back to busy again within a short period of time. In ED of the People's Hospital of Pu'er City, many critical and acute patients are submitted there to seek effective and timely care at any time. The number of ED doctors and nurses is constant on each shift, and they are quite busy, tired and have to work on saving patients' lives. ED medical staffs have no time or a little time to communicate with patients' families who are required to make decisions for the patients in a very short period. They are often asked to make decisions as soon as possible. However, ICU medical staff have enough time to communicate with the families of the patients to choose an optimal strategy for the patients. They are willing to explain all the specific facts associated with the patients to them, and the families have sufficient time and energy to make better decisions on behalf of the patients. Family needs of patients are often overlooked or ignored in ED. Families of the patients need to communicate with the medical staff, so as to get real-time information about the patients' conditions, such as updated progress of conditions and specific facts, and to know, expected outcomes and transfer plan (if necessary) of the patients.

Communication was ranked as the most important needs by families of the ED patients in this study, which is consistent with several previous studies. The result of this study is lower than that of the study conducted among ED critically ill patients' families in Taiwan by Hsiao et al. (2017) ($M = 3.66$, $SD = .37$), and also lower than the study conducted among the families of the ED critically ill patients in Turkey with the mean of 3.88 ($SD = .28$) (Yildirim & Karaman Özlü, 2018). In addition, it is also lower than the study conducted among ED injured patients by Botes and Langley (2016) and among ED critically ill patients in Australia by Redley, LeVasseur, et al. (2003) with the means of 3.58 and 3.35, respectively. However, the result of this study is higher than the study conducted among ICU critically ill patients' families in Rwanda by Munyiginya and Brysiewicz (2014) with mean of 3.08. It is also higher than the study conducted among

ICU critically ill patients' families in Hong Kong by Lee and Lau (2003) with the mean of 3.30.

Families of the ED patient ranked support as the second priority needs. Since most patients were submitted to ED because of acute, serious, or even life-threatening clinical problems (Ocak & Avsarogullari, 2018), the patients' families may feel helpless, fear and anxious. Moreover, the top five diseases bring the patients to ED in this study are hypertension, cerebral infarction, coronary heart disease, acute coronary syndrome as well as gastrointestinal bleeding, which makes the submission of the patients into ED with a rapid onset, lack of warning and difficulty in controlling. These negative facts only aggravate the families' puzzle, worry and fear for some of the symptoms, such as dyspnea, severe chest pain, disturbance of consciousness, hematemesis, as well as hematochezia, and there is a lack of effective treatment for controlling such frightening conditions. In addition, families of ED patients usually need to face a unique, unfamiliar and stressful ED environment without any physical and psychological preparation, which seriously impacts their normal daily life at home. They might feel stress crisis and physical exhaustion. Moreover, medical staff working in the ED do not consider their daily needs like food and a place where they can take a bath and had a good rest. Therefore, families might need more support from the ED or medical staffs.

In this study, the majority of families (48.82%) are children of the patients. It is no doubt that the patient must be one of the extremely important persons to their children in their family roles. Since one of the families got sick, their children need to take on more responsibility and roles. For example, they must take care of their sick loved one at ED and, at the same time, take care of other families, handle their normal daily work and life and care about the patient's treatment and recovery. Furthermore, daily lives of families in ED are different from these at their own home. They stay at an unfamiliar and bustling ED environment from day to night for accompanying their sick loved one. They were afraid of losing their sick loved one and needed to stay with the patients closely. However, in the ED of the People's Hospital of Pu'er City, there is no a private place for their waiting or having a rest. There was nobody in the ED to take care of them and was not easy to find meals they prefer, which made the families' feel physically and

psychologically exhausted and have a feeling of stressful crisis, such as anxiety, anger and fear. Therefore, support were extremely needed for the families.

Support was ranked as the second important needs by the families of the ED patients in this study, which is consistent with a study conducted by Yildirim and Karaman Özlü (2018). The result is lower than the study carried out among the families of ED critically ill patients in Turkey with the mean of 3.40 (SD = .42) (Yildirim & Karaman Özlü, 2018), and lower than the study conducted among the ED critically ill patients' families in Taiwan by Hsiao et al. (2017) (M = 3.44, SD = .43). It is also lower than the study conducted among the ED injured patients by Botes and Langley (2016) with the mean of 3.35. However, the result of this study is higher than the study conducted among ICU critically ill patients' families in Rwanda by Munyiginya and Brysiewicz (2014) with the mean of 2.64. It is also higher than the study conducted among ICU critically ill patients' families in Hong Kong by Lee and Lau (2003) with the mean of 2.50, and higher than the study conducted among ED critically ill patients in Australia by Redley, LeVasseur, et al. (2003) with the mean of 2.80.

Proximity was considered as the third important needs by ED patients' families. ED patients usually have sudden, unknown and unpredictable conditions. Life-saving interventions and stabilization of a wide range of illness conditions are given by ED medical staffs immediately. Doctors and nurses are busy to control patient's conditions so that they have no time to focus on the physical care of families. Unfamiliar and stressful ED physical and care environment make families more scared as if all of these phenomena are reminding them of how serious the patients are and they would lose their loved one forever. It is difficult for the families to understand what they are seeing and feeling in such an unfamiliar and chaotic ED environment, which makes them even eager to know why certain treatments are provided by ED medical staff for their loved ones. Furthermore, sometimes families must make optimal decisions on behalf of the patients timely. Therefore, they hope to stay close to their loved ones.

Proximity was ranked as the third important needs by the families of the ED patients. This result is consistent with a study conducted by Yildirim and Karaman Özlü (2018). The result is lower than the study conducted among the families of the ED critically ill patients in Turkey with the mean of 3.27 (SD = .34) (Yildirim & Karaman

Özli, 2018), and lower than the study conducted among ED critically ill patients in Australia by Redley, LeVasseur et al. (2003) with the mean of 3.40. It is lower than the study conducted among the ED critically ill patients' families in Taiwan by Hsiao et al. (2017) ($M = 3.49$, $SD = .44$), and lower than the study conducted among ED injured patients by Botes and Langley (2016) with the mean of 3.49. Similarly, the result of this study is lower than that of the study conducted among ICU critically ill patients' families in Rwanda by Munyiginya and Brysiewicz (2014) with the mean of 3.00, and lower than the study conducted among ICU critically ill patients' families in Hong Kong by Lee and Lau (2003) with the mean of 3.30.

Comfort category was considered as the lowest needs by the families of the ED patients. The ED physical circumstance is characterized as bustling, disordered and chaotic situation. Many medical equipment, such as monitoring instruments, ventilators, infusion pumps, micro pumps, defibrillators, as well as hemodialysis machine, are placed there. The impacts suffered by families include physical and psychological exhaustion, and multiple emotional crises such as anxiety, stress, anger and fear. Whereas, ED medical staff often hardly recognized the impact or significance of a sudden life-threatening disease or death on families, and do not realize the importance of maximizing comprehension to provide necessary comfort for these families. It is essential to provide a feeling of acceptance and physical comfort to fulfill families' daily personal needs. They need these because they need to take care of their loved one at ED, and they cannot do this if they are not physically and mentally ready. However, comforting services, such as sharing emotions with the medical staff, being encouraged to express their emotions and reassured what normal emotional responses are, were considered as the least important needs, which revealed families' desire to concentrate on the needs of their sick loved ones.

The situation of intensive care unit (ICU) is similar to that of ED even though essential distinction exists between them. Regardless of an ICU or ED admission, it is an event that significantly impacts on families of the patients. Particularly, families of ED patients have heavier stress and impact than the families of ICU patients, because the ED patients are usually presented without an advance appointment after suffering a life-threatening, critical illness or unexpected accident. ED doctors and nurses have to work

on saving life and controlling patients' severe conditions in spite of that there is not an explicit pathogenesis and diagnosis or any test result. Nevertheless, ICU patients are primarily referred from ED or each inpatient ward and, usually have an explicit diagnosis and a variety of test results. ICU doctors and nurses are able to control patients' current conditions through design complete and pointed therapeutic schedule. Besides, this study investigated family needs during the period within 8 hours after the patient's admission to ED. By contrast, studies about family needs were generally conducted after beyond 24 hours after the patient's admission to ICU. From the families' different situations and perspectives in the ICU and ED, it can be seen that ED patients' families have more requests on comfort needs than families of ICU patients.

Comfort was considered as the least important needs by the families of ED patients. This result is consistent with the two studies conducted by Yildirim and Karaman Özlü (2018) as well as Hsiao et al. (2017), respectively. The result is lower than the study conducted among the families of ED critically ill patients in Turkey with the mean of 3.20 (SD = .51) (Yildirim & Karaman Özlü, 2018), and lower than the study conducted among ED critically ill patients' families in Taiwan by Hsiao and colleagues (2017) (M = 3.04, SD = .57). It is also lower than the study conducted among families of ED critically ill patients in Australia by Redley, LeVasseur, et al. (2003) with the mean of 3.10, and lower than the study conducted among ED injured patients' families by Botes and Langley (2016) with the mean of 3.39. Also, the result of this study is lower than the study conducted among ICU critically ill patients' families in Rwanda by Munyiginya and Brysiewicz (2014) with the mean of 3.11. However, it is higher than the study conducted among ICU critically ill patients' families in Hong Kong by Yin King Lee and Lau (2003) with the mean of 2.60.

Part II: Objective 2: To Describe Family Needs of the Life-threatening Patients at Emergency Department in the People's Hospital of Pu'er City, the People's Republic of China

Families of the ED life-threatening patients in this study ranked the communication as the most important needs, followed by the needs of support, proximity and comfort (Table 4-3, $M = 3.07$, $SD = .43$). For subcategories, the subjects rated communication ($M = 3.37$, $SD = .42$) as the most important needs, followed by support needs ($M = 3.18$, $SD = .44$), proximity needs ($M = 3.01$, $SD = .49$) and comfort needs ($M = 2.78$, $SD = .56$).

Families of the ED life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China ranked communication as most prioritized needs. The need item 'to be kept updated frequently' was placed by the life-threatening patients' families as most important one, followed by having explanations given in understandable terms and knowing all the specific facts concerning the patient's progress. Families are the major sources of the social support and play a crucial role in managing and assisting the recovery of life-threatening patients. Detailed and accurate communication between the medical staff and the families might promote improvement of patients' conditions through absolute cooperation of families during the treatment process (Ocak & Avsarogullari, 2018). Informing specific facts about the patient's progress and giving explanation in understandable term are important to families, because families staying with the ED patient during some of procedures in the People's Hospital of Pu'er City are not allowed, such as the resuscitation process. Generally, the medical staff know medical terminologies well, yet they need to assess families' abilities of understanding these terminologies and adapting into the critical care environment because none of these is routine to families (Leske, 1991b). Therefore, having explanations given in understandable terms is necessary.

In addition, conditions of the ED life-threatening patients were often unfamiliar, unplanned and unprepared. Therefore, these patients may either die or survive after life-saving interventions (Almaze & de Beer, 2017; Redley & Beanland, 2004). Hence, immediate physical treatment is usually required by the ED life-threatening patients even without an accurate diagnosis of their illness. Families accompanying a life-threatening patient have no time to prepare for facing and coping this unexpected situation and

encounter a variety of physical and psychological impacts such as fear of death, uncertain outcomes, role change, financial concerns and unfamiliar critical care environment in such a unique, crowded and chaotic ED environment. They would suffer multiple emotion crisis such as anxiety, stress and fear (Hsiao et al., 2017; Leske, 1991b). In such a context, to be told all the specific facts concerning the patient's progress is definitely necessary.

In the ED of the People's Hospital of Pu'er City, families are not allowed to stay in the resuscitation room while the patient is being resuscitated. They are often hastily asked to stay out of the room. Therefore, they do not know the situation inside and fall into worry, anxiety, fear and distress. During the whole resuscitation process, ED doctors and nurses completely focus on saving the patient's life and have no time to communicate with the families about what is happening to the patient. Finally, families will be told that ED medical staffs have tried their best in the case of the patient passing away. By contrast, families will be allowed to see and accompany the patient at resuscitation room if the patient survives after experiencing a series of life-saving interventions. The patient may wear a ventilator with many tubes, ureter and more than one venous access. Families may see a completely different unconscious loved one. However, before families visit the patient, ED medical staff do not explain in details for them why certain treatments are done for their loved one. Therefore, they may feel unbelievable, perplexed, helpless, guilty and scared, which results in stress crisis and physical and mental exhaustion.

Communication was ranked as the most important needs by the families of the ED life-threatening patients, which is consistent with several previous studies in this field. The result is lower than the study conducted among ED critically ill patients' families in Taiwan by Hsiao et al. (2017) ($M = 3.66$, $SD = .37$), and lower than the study conducted among families of the ED critically ill patients in Turkey with the mean of 3.88 ($SD = .28$) (Yildirim & Karaman Özlü, 2018). Also, it is lower than the study conducted among families of the ED critically ill patients in Turkey by Ocak and Avsarogullari (2018) with mean of 3.57. However, it is higher than the study conducted among ED critically ill patients' families in Australia by Redley, LeVasseur, et al. (2003) with the mean of 3.35.

Families of the ED life-threatening patients ranked support as the second priority needs. Among the items included in the support needs category, "finding out the condition of the patient before being asked to sign papers" was considered by the families as the

most important needs. “Having a doctor or nurse to meet them on arrival at the hospital” was considered the second most important needs in the support category, followed by “to feel there is hope”. When a nurse or doctor meets the patient on arrival, the nurse or the doctor may get valuable information about the clinical problem from their very first observation of the patient (Ocak & Avsarogullari, 2018). This finding appears to support the fact that the availability of a medical staff to offer support is important to families (Redley, LeVasseur, et al., 2003). Family needs for support entails both physical and emotional aspects. ED staff need to frequently deal with critical clinical conditions, including suddenly developing and life-threatening situations without warning such as trauma, burn, cardiac arrest, acute coronary syndrome, cerebrovascular disease, and shock. These acute clinical conditions leave just a little or no time for families to prepare for the unexpected stress and uncertainty, which negatively impacts patients’ families’ quality of life (Al-Hassan & Hweidi, 2004; Ocak & Avsarogullari, 2018). Families are usually requested to sign medical papers in such an urgent situation without being informed of the patients’ conditions.

Furthermore, ED admission, especially the sudden life-threatening disease of a family, is a stressful situation for patient’s families and may limit their coping abilities. It would bring about several negative stressors for the families, inducing role alteration, disorganization and fragmentation of families, and the families might experience a psychological crisis in which new needs emerge (Al-Hassan & Hweidi, 2004). Families accompanying a life-threatening patient into ED are an integral part of the ED care unit. Nurses must regard both emotional and physical needs of the patients’ families as a part of a holistic approach of the patient care. Related studies have identified that the support is important to relieve the families from the distress of sorrow (Redley, LeVasseur, et al., 2003). It is important to support patients’ families who have an intensive stress and sorrow in terms of easing and improving their psychological conditions as well as relieving their anxieties and fears (Yildirim & Karaman Özlü, 2018), which contributes to maintain their hopes. Moreover, ED resuscitation room admission is high-cost and outpatient expenses are not included into the scope of health medical insurance in China. In other words, families themselves must pay for all expenses at ED. Obviously, families of the ED life-threatening patients are faced with more serious financial problems and other circumstances than the families of non-life-threatening patients.

Support was ranked as the second important needs by the families of the ED life-threatening patients, which is consistent with a study conducted among the families of the ED critically ill patients in Turkey by Yildirim and Karaman Özlü (2018). The result is lower than this study with the mean of 3.40 (SD = .42) (Yildirim & Karaman Özlü, 2018). By contrast, support needs is usually ranked as the least important by the families of the ED life-threatening patients in several other related studies (Hsiao et al., 2017; Ocak & Avsarogullari, 2018; Redley, LeVasseur, et al., 2003). The result is higher than the study conducted among ED critically ill patients' families in Australia by Redley, LeVasseur, et al. (2003) with the mean of 2.80, and yet it is lower than the study conducted among ED critically ill patients' families in Taiwan by Hsiao et al.(2017) (M = 3.44, SD = .43), and also lower than the study conducted among the families of the ED critically ill patients in Turkey by Ocak and Avsarogullari (2018) with the mean of 3.21.

Proximity was considered as the third important needs by the ED life-threatening patients' families. The need item 'to know why things were done for the patient' was placed by the families of ED life-threatening patients as the most important in subscale of proximity, followed by 'To talk to a nurse' and 'to see the patient as soon as possible'. Families have a strong desire to be close to the bedside and see the patient frequently during the first few hours after an emergent illness, and feeling physically and emotionally close to their sick loved one is extremely important to them (Wetzig & Mitchell, 2017). Approaching and seeing the patient is beneficial for validating the seriousness of the situation, acquiring direct information about the progress of the patient's health conditions and promoting a realistic evaluation of the illness. By contrast, physical separation is a constant reminder of the threat to the family system of permanent loss of their loved one (Leske, 1991b). The more critical the patient's condition, the greater needs for the families wanting to stay with the patient closely, because they need to keep family integrity and link family relationship as a network in this way (Leske, 1991b). Families of ED life-threatening patients would feel that they are supporting their sick loved one by being physically close to them when they try to relieve their feelings of desperation and out of control (Ocak & Avsarogullari, 2018). Therefore, the families need to be close to their sick loved one and hope to do something they can do for the patient on the bedside.

Proximity was ranked as the third important needs by the families of the ED life-threatening patients, which is consistent with a study conducted among the families of the ED critically ill patients in Turkey by Yildirim and Karaman Özlü (2018). The result is lower than this study with the mean of 3.27 (SD = .34) (Yildirim & Karaman Özlü, 2018), and is lower than the study conducted among ED critically ill patients' families in Australia by Redley, LeVasseur, et al. (2003) with the mean of 3.40. Also, it is lower than the study conducted among the families of the ED critically ill patients in Turkey by Ocak and Avsarogullari (2018) with the mean of 3.51, and lower than the study conducted among ED critically ill patients' families in Taiwan by Hsiao et al. (2017) (M = 3.49, SD = .44).

The comfort category was given the lowest priority by the families of the ED life-threatening patients. The need item 'to be able to contact staff at a later date to ask questions' was placed by the families as the most important needs in the subscale of comfort. Having toilet facilities nearby was considered as the second important needs, followed by "being treated as an individual". In the absence of current information, fantasy leads to more stress and anxious, hostile, disorganized behaviors from families. Giving both physical and emotional comfort is important in easing distress, anxiety, and sadness of patients' families. Needs of comfort aim to fulfill the daily personal needs of the families and reinforce the personal sense of identity and importance in order to assist them relieve from the distress or sorrow (Ocak & Avsarogullari, 2018; Redley, LeVasseur, et al., 2003). However, families often place the priority on the needs related to their loved one more than on their own.

Comfort was ranked as the least important needs by the families of the ED life-threatening patients, which is consistent with the two studies conducted by Yildirim and Karaman Özlü (2018), and Hsiao et al. (2017), respectively. The result is lower than the families of the ED critically ill patients in Turkey with the mean of 3.20 (SD = .51) (Yildirim & Karaman Özlü, 2018), and lower than the study conducted among ED critically ill patients' families in Taiwan by Hsiao et al. (2017) (M = 3.04, SD = .57). Also, it is lower than the study conducted among ED critically ill patients' families in Australia by Redley, LeVasseur, et al. (2003) with the mean of 3.10, and lower than the

study conducted among the families of the ED critically ill patients in Turkey by Ocak and Avsarogullari (2018) with the mean of 3.56.

Part III: Objective 3: To Describe Family Needs of the Non-life-threatening Patients at Emergency Department in the People’s Hospital of Pu’er City, the People’s Republic of China

Families of the ED non-life-threatening patients ranked communication as the most important needs, followed by the support needs, proximity needs and comfort needs (Table 4-3, $M = 2.94$, $SD = .42$). For subcategories, they rated communication ($M = 3.31$, $SD = .44$) as the most important needs, followed by the support needs ($M = 2.95$, $SD = .45$), proximity needs ($M = 2.92$, $SD = .47$) and comfort needs ($M = 2.61$, $SD = .51$).

Families of the ED non-life-threatening patients in the People’s Hospital of Pu’er City, the People’s Republic of China ranked communication as the most prioritized needs. The families hope to: 1) keep information updated timely, 2) have questions answered honestly, and 3) feel ED staff caring about their sick loved one. Families need to have realistic information about the care and treatment of the patient and this information can assist families knowing what to expect and what to do next. Families need more information to understand the illness situation and make decision, learn what needs to be known as well as balance between overload (Leske, 1991b). Thus, Families might need timely information from ED medical staff or to be with and see the patients so as to ascertain about the progress of the patient’s conditions. Realistic information might help the families to make appropriate decisions as to what to do next and decrease their stress and uncertainty (Al-Hassan & Hweidi, 2004). Meanwhile, because of their feelings of fear, distress, and worry, the families need honest and clear answers from the ED medical staff regarding the conditions and treatment course of the patient (Ocak & Avsarogullari, 2018).

Families of the ED non-life-threatening patients ranked the support as the second priority needs. The need item of “Finding out the conditions of the patient before being asked to sign papers” was placed by the families as the most important one, followed by ‘To feel there is hope’ and ‘have a doctor or nurse meet you on arrival at the hospital’. Although, the conditions of the ED non-life-threatening patients have got stable and they

would not die in a few moment, it is still necessary to monitor the patients closely and control over the progress of injury or illness. The families accompanying an ED non-life-threatening patient for a long time have enough time to prepare to deal with the situation and wait for the accurate diagnosis from doctor to determine the optimal treatment for their sick loved one. Furthermore, families rely on the information support of ED medical staff who are considered as experts (Wetzig & Mitchell, 2017). Those families who are less educated have more needs on support. A well-educated and knowledgeable person may use the accessible information to make the proper decisions and take appropriate actions to bring about the desired outcomes (Mendonca & Warren, 1998). Most of the families of the ED non-life-threatening patients (80.48%) in this study have a low education level and less knowledge to understand the situation and have more needs for support from the medical staff. Hence, considered the support needs as the most important needs in ED.

Proximity was considered as the third important needs by the ED non-life-threatening patients' families. The need item "To know why things were done for the patient" was placed by the families as the most important needs in the subscale of proximity. Being given directions regarding what to do at the bedside was reported as the second important needs, followed by "Seeing what was happening to the patient". The families reported that they did not give up their connections and involvement while a family is admitted to the hospital and were unable to function in their routine roles at their home or work. They acknowledged that they feel comfortable when they were close to the patient. Being there at the patient's bedside only gives the families a feeling that they are participating in their loved ones' recovery and also improves the understanding of the complex conditions of their loved one, which gives them the confidence for hope (Al-Hassan & Hweidi, 2004; Wetzig & Mitchell, 2017). Families of patients in ED often express that they feel useless and frustrated when they are not given the opportunity to be close to and involved in their sick loved one's care in ED (Wetzig & Mitchell, 2017). This situation also exists in China. Furthermore, spouses' helping behaviors at the bedside indicated that the feelings of closeness and helpfulness are integrated with each other, and it could facilitate the spouses' feeling that they were helping the patient. Also, families' involvement in the care of the patient will empower the families to further support the patient (Al-Mutair, Plummer, O'brien, & Clerehan, 2013). Among the families

participated into this study, many of them are the spouses of the ED non-life-threatening patients, which is one of the reasons that the families were eager to stay with the patients at bedsides.

The comfort category was given the least priority by the families of the ED non-life-threatening patients. The need item “To be able to contact staff at a later date to ask questions” was placed by the families as the most important needs in the subscale of comfort. “Having toilet facilities nearby” was considered as the second important needs, followed by “being treated as an individual”. Physical comfort needs include disruptions in physiologic mechanisms that need correcting and maintaining of homeostasis; psychological spiritual comfort needs refer to the individual needs for inspiration, motivation and being able to rise above discomfort and problems; environmental comfort needs include the needs for a quiet, peaceful, safe and comfortable environment; finally, sociocultural comfort needs refer to the individual needs for support, reassurance and caring that are culturally sensitive (Al-Hassan & Hweidi, 2004). Usually, environment within EDs is a special, crowded and bustling. It can go from being very busy to be very peaceful and then back to be very busy again within a short period of time (Smith & Feied, 1999). Medical staff often work against the clock. Even so, families are still eager to be treated as an individual and contact the staff to ask questions. Family who ranked the comfort as the least important needs might expect the ED medical staff to take care of their sick loved one more instead of, providing comfort for themselves. They may also get comfort from other families rather than seeking it from the medical staff (Redley, Phiri, Heyns, Wang, & Han, 2019).

Families of the ED non-life-threatening patients and those of the life-threatening patients are faced with different circumstances when they accompany their sick loved ones at ED. Families of the ED non-life-threatening patients refer to the persons who accompany an ED patient with serious conditions at the observation room, emergency trauma surgery department or ED inpatient ward. In the ED of the People’s Hospital of Pu’er City, patients will be admitted into these departments if they have stable conditions, chronic illness or disease dangerous which are not emergent or critical. There are five most common diseases for ED non-life-threatening patients including hypertension, cerebral infarction, pulmonary infection, craniocerebral injury and fracture. Clinical

manifestations of these diseases of ED non-life-threatening patients are less terrible than the clinical manifestations of the ED life-threatening patients. Furthermore, ED non-life-threatening patients have less coexistence diseases than ED life-threatening patients according to the ED patients' clinical characteristics. Families may suffer fewer stress crisis, such as anxiety, fear and anger than those families of the ED life-threatening patients.

The three admission departments where the ED non-life-threatening patients are admitted more peaceful and, orderly than the resuscitation room where the ED life-threatening patients stay. The ED medical staffs serve for all the patients by following a routine process to implement treatment and care here. In addition, the daily life of the families in ED is more similar to their life at home even though their loved one is sick. They are able to stay and accompany the patient at any time as needed and as they want. Additionally, ED medical staffs have enough time to communicate with the families so as to choose an optimal treatment strategy for the patient. They are willing to explain all the specific facts associated with the patient to the families, and the families have sufficient time and energy to make better decisions for the best interest and treatment of the patients.

Communication was ranked as the most important need by the families of the ED non-life-threatening patients, which is consistent with a study conducted among the families of the ED injured patients by Botes and Langley (2016). However, the result of this study is lower than the result of the study conducted by Botes and Langley (2016) of which the mean is 3.58. Support was ranked as the second important needs by the families of the ED non-life-threatening patients. The result is lower than the study conducted by Botes and Langley (2016) with the mean of 3.35. Proximity was ranked as the third important needs by the families of the ED non-life-threatening patients. The result is lower than the study conducted by Botes and Langley (2016) with the mean of 3.49. The least important needs rated by the families of the ED non-life-threatening patients is comfort. The result is lower than the study conducted by Botes and Langley (2016) with the mean of 3.39.

Part IV: Objective 4: To Compare Differences between Family Needs of the ED Life-threatening Patients and Family Needs of the ED Non-life-threatening Patients in the People's Hospital of Pu'er City, the People's Republic of China

The results of the differences between the family needs of the ED life-threatening patients and the family needs of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China are presented in Table 4-4. The results of Mann–Whitney U test reveals that there are statistically significant differences between the family needs of the ED life-threatening patients and the family needs of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China ($p = .01, p < .05$). For subcategories, it should be noted that the families of the ED life-threatening patients and the families of the ED non-life-threatening patients had statistically significant difference in terms of support needs ($p = .00, p < .05$) and comfort needs ($p = .00, p < .05$). In other words, the families of the ED life-threatening patients need more support and comfort than ED non-life-threatening patients' families when they accompany a patient at ED. Nevertheless, the ED life-threatening patients' families and the non-life-threatening patients' families have no statistically significant difference in terms of communication needs ($p = .46, p < .05$) and proximity needs ($p = .23, p < .05$), which means that the communication and proximity needs of the families of ED life-threatening patients same with those of the families of ED non-life-threatening patients when they accompany a patient at ED.

There are some possible explanations for the differences between the family needs of ED life-threatening patients and the family needs of ED non-life-threatening patients. Generally speaking, as patients seek ED care after suffering a suddenly deteriorating condition whether caused by illness or accident (Hsiao et al., 2017), coupled with the families of the patients usually stay in an unfamiliar, unwelcoming, chaotic and unique ED environment, it is an unexpected and unprepared event without any warning that significantly impacts the families' lives of the patients, physically and emotionally. Nevertheless, there is no doubt that the families of the ED life-threatening patients and the families of non-life-threatening patients are faced with different situations. Conditions of the ED life-threatening patients are usually urgent, inconstant and unknown, and sometimes even the ED doctors and nurses have the difficulties in understanding the state

of the illness perfectly. The ED life-threatening patients may die, and immediate treatment is often required by such patients without a formal disease diagnosis. The families of the ED life-threatening patients only have a little time or even no available time to plan and prepare for addressing the situation. Therefore, they may feel physically and psychologically exhausted and a series of mental crises, such as anxiety, fear, stress, and anger (Batista et al., 2017; Wang & Han, 2009). For the non-life-threatening patients, even though their conditions are acute and dangerous, it is not life-threatening and ED medical staff are able to partially control the conditions in a short time. Such patients are not going to die, but it is essential to monitor the patient closely and control over the progress of the health conditions after an accurate illness diagnosis is provided. The families of the ED non-life-threatening patients have enough time to design and prepare for coping the situation at ED and they have time to wait for those auxiliary examination results, and then make optimal decisions for their sick loved one. It is clear that the conditions faced by the families of the ED life-threatening patients are different from the conditions faced by the families of the ED non-life-threatening patients. Likewise, the family needs of ED life-threatening patients are different from these of the families of the ED non-life-threatening patients.

Families of life-threatening patients and families of non-life-threatening patients are faced with different circumstances when they accompany their sick loved one at ED. Families of life-threatening patients refer to the persons who accompany an ED patient with critical conditions at resuscitation room. The patients being admitted to the resuscitation room can get worse or die at any time. The illness of such patients can be extremely severe with some of terrible clinical manifestations, such as massive haematemesis, dyspnea, severe headache and chest pain as well as, and anepia. Coupled with short admission duration, their families usually didn't understand or unfamiliar with the situation of the patients (67.46% of the ED life-threatening patients in this study stayed at resuscitation room less than 4 hours). ED medical staff need to use a variety of facilities and instruments to manage and control patient's vital signs and symptoms.

For instance, the families of chronically ill children emphasize communication needs while the families of dying people place greatest importance on proximity and support needs and the families in ICU give importance to hope (Redley, LeVasseur, et al.,

2003). Liu, Zhu, Liu, and Guo (2015) explored the family needs of severe, moderate and mild traumatic brain injury (TBI) patients. Their study indicates that there are significant associations between the level of TBI severity and family needs, and the needs for communication and proximity in the severe TBI group are significantly higher than the mild and moderate TBI group. As the risk of mortality or disability in the patients with severe TBI is larger than moderate or mild TBI, these families are more worried about the patients' safety and prognosis than those with mild or moderate TBI. Moreover, the families of severe TBI patients have more serious psychological problems and they need more proximity from others. Consequently, the families often emphasize intensive needs for communication and emotional support because they cannot but struggle to adapt to the changes in their life style.

Rank order of four needs between the families of ED life-threatening patients and the families of ED non-life-threatening patients are similar. The ED patients with either life-threatening or non-life-threatening conditions are quite urgent and unexpected. These patients receive treatments at ED. The families of both ED life-threatening and non-life-threatening patients are exposed to a chaotic, unfamiliar and unique ED environment. They encounter a series of negative impacts resulted from unknown prognosis and ongoing treatment of patients and worry that their loved one may die. Therefore, four needs, namely communication, support, proximity and comfort, are ranked in a similar order by the families of both ED life-threatening patients and ED non-life-threatening patients.

Families of ED life-threatening patients emphasize more on support and comfort needs than the ED non-life-threatening patients' families. They experience a series of physical, psychological and spiritual impacts when they accompany a life-threatening patient in ED. Generally, medical staffs prefer to save the patients' lives and concentrate their full energy on medical treatment of the patients instead of the patients' families who are often left alone or overlooked (Silva, Fortunatti, Muñoz, & Rojas, 2017). In the People' Hospital of Pu'er City, ED staffs usually do not allow the families to accompany the patients during the resuscitation or invasive procedures. No matter the treatment outcomes are good or bad, they have to wait out of the resuscitation room without being informed of the real-time information about the patients. The families of ED life-

threatening patients suffer a series of negative feelings, such as anxiety, denial, depression, fatigue, a sense of powerlessness and fear of losing their loved one (Hsiao et al., 2017). The routine of normal family is changed by the unknown, life-threatening and unexpected or sudden change in a patient's conditions during resuscitation room admission at ED. Moreover, ED resuscitation room admission is high in cost and outpatient expenses are not included into the scope of health medical insurance in China. In other words, families themselves must pay for all expenses at ED. However, ED non-life-threatening patients can be transferred to the inpatient ward after their conditions get stable and the expenses in inpatient ward can be paid partially by health medical insurance. Coincidentally, 71.01% of ED life-threatening patients' families in this study have low monthly incomes. In comparison, the financial problems faced by the families of the ED life-threatening patients participated in this study are more serious than these faced by the families of non-life-threatening patients. Consequently, the families of the ED life-threatening patients needed more support and comfort to maintain a normal physical and psychological state for assisting the patient's recovery, delivering patient preferences and making decision on behalf of the best benefit of the patients.

Furthermore, family needs are influenced by their culture, the context of care (Hsiao et al., 2017) and the clinical characteristics of the patients. Pu'er city, located in the border area of southwestern China, is an oasis on the Tropic of Cancer. Cultural diversity is the most vivid characteristic of the region. Those admitted into the ED of the People's Hospital of Pu'er City are mainly the patients with low education level. Life-threatening patient refers to the ED patient who is in critical conditions and is immediately sent into the resuscitation room equipped with many medical equipment, including monitoring instruments, ventilators, micro pumps, defibrillators, and hemodialysis machine. All of these make the families of ED life-threatening patients more terrified than non-life-threatening patients' families as if this phenomena are reminding them of how serious their sick loved one is and they would lose him or her forever.

In addition, 53.85% of ED life-threatening patients had more than 3 coexistence diseases while there was merely 27.81% of ED non-life-threatening patients with 3 coexistence diseases. Top five diseases among ED life-threatening patients are hypertension (37.10%), cerebral infarction (21.41%), coronary heart disease (14.79%),

gastrointestinal bleeding (13.00%) and anemia (12.48%). For the ED non-life-threatening patients, the top five diseases are hypertension (23.10%), cerebral infarction (9.50%), pulmonary infection (8.30%), craniocerebral injury (7.70%) as well as fracture (7.10%). Obviously, more support and comfort needs from medical staff might be needed by the families of the ED life-threatening patients because of the multiple coexistence diseases and some of terrible clinical manifestations, such as massive haematemesis, severe headache and chest pain, physical mobility disorder, as well as anepia, etc.



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CHAPTER 5

Conclusions, Implications, and Recommendations

In this chapter, conclusions are organized based on findings and discussion. Implications of results from the study and recommendations are also addressed.

Conclusions

This comparative descriptive study was designed to identify the family needs of ED patients and to compare differences between family needs of the ED life-threatening patients and these of the ED non-life-threatening patients in the People's Hospital of Pu'er City, the People's Republic of China. Samples were recruited from the emergency department, from the end of February to the beginning of April 2019 through using a purposive sampling method. A total of 338 samples who reached the eligibility criteria were identified. Informed consent was obtained and each sample was requested to complete a questionnaire with two parts: 1) Demographic Data Record Form; 2) The Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED). Totally 338 questionnaires were completed with a response rate of 100%. Finally, data were analyzed by using the Statistical Package for Social Sciences (SPSS). The reliability test for the Chinese version of CCFNI-ED was .91. Data was not normally distributed ($KS = 1.86$, $p = .00$). Descriptive statistics was used to describe demographic characteristics of the samples. Man-Whitney U test was employed to compare the differences between family needs of the ED life-threatening patients and those of the ED non-life-threatening patients. Pearson Chi-square was used to test differences of clinical characteristic between the ED life-threatening patients and non-life-threatening patients as well as demographic data of their families.

Results were as follows:

1. The family needs of the ED patients were, in order of importance, communication needs ($M = 3.34$, $SD = .43$), support needs ($M = 3.07$, $SD = .46$),

proximity needs ($M = 2.96$, $SD = .48$), and comfort needs ($M = 2.69$, $SD = .54$). The average overall needs score was 3.01 ($SD = .43$);

2. The family needs of the ED life-threatening patients were, in order of importance, communication needs ($M = 3.37$, $SD = .42$), support needs ($M = 3.18$, $SD = .44$), proximity needs ($M = 3.01$, $SD = .49$), and comfort needs ($M = 2.78$, $SD = .56$). The average overall needs score was 3.07 ($SD = .43$);

3. The family needs of the ED non-life-threatening patients were, in order of importance, communication needs ($M = 3.31$, $SD = .44$), support needs ($M = 2.95$, $SD = .45$), proximity needs ($M = 2.92$, $SD = .47$), and comfort needs ($M = 2.61$, $SD = .51$). The overall needs score was 2.94 ($SD = .42$); and

4. There was a statistically significant difference of overall needs, support needs, and comfort needs of family members of ED life-threatening patients and those of ED non-life-threatening patients ($p \leq .05$).

Implications

Nursing Practice

ED health care staff should be supported to meet family needs of both life-threatening patients and non-life-threatening patients. Intervention to fulfill family needs of the ED patients should be developed to facilitate the families to deal with ED situations.

Nursing Administration

The results of this study provide important baseline information for ED administrators to design the proper strategies to ensure fulfillment of the needs among ED patients' families to increase their satisfaction. As a result, it is beneficial to establish a foundation for further family-centered care implementation in emergency department. The high quality care will generate optimal physical and psychological outcomes for both patients and their families. Quality of care and satisfaction of families and patients will be prompted, and families report that beneficial behaviors for meeting their needs and satisfying care have been delivered.

Nursing Research

Nursing intervention to fulfill ED families' needs can be developed and has to be tested to ensure the effectiveness of the intervention and quality care. The results indicate that family needs have statistically significant differences in different samples. Furthermore, it is essential that similar research is conducted in the different samples in hospitals, which will deliver evidence quickly for medical staff to fulfill family needs accurately in their future work.

Recommendations for Future Study

Intervention study regarding families' needs fulfillment should be designed and test its effectiveness before implement in ED. Thus, quality care at ED will be implemented.



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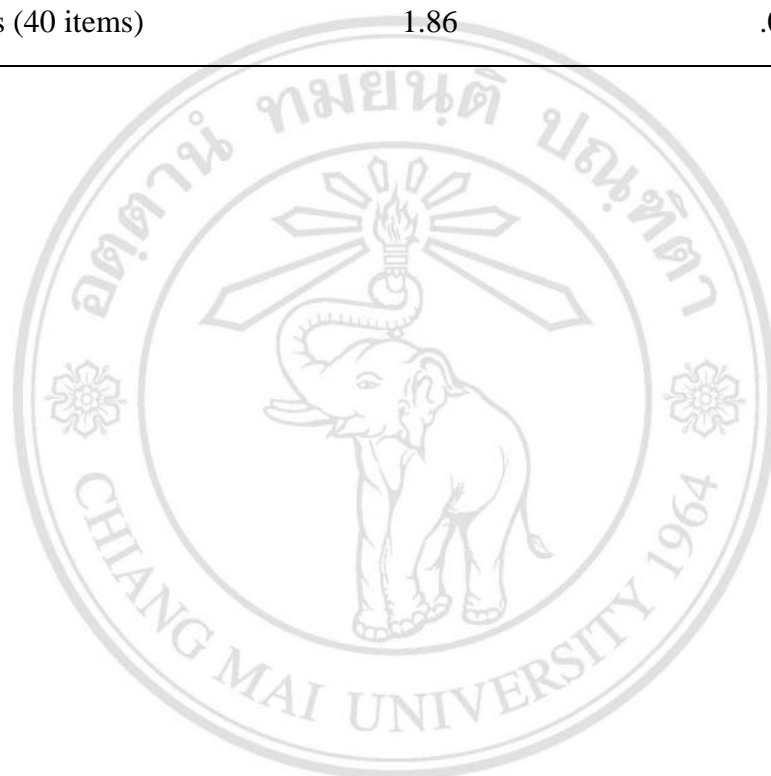


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APPENDIX A

Kolmogorov-Smirnov (KS) Test

Variable	Kolmogorov-Smirnov Test	
	Statistic	Sig. (2-tailed)
Family needs (40 items)	1.86	.00



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APPENDIX B

Study Participant Information Sheet

Study Participant Information Sheet (English Version)

Proposal Title:	Family Needs of Patients at Emergency Department in the People's Hospital of Pu'er City, the People's Republic of China
Research Team:	Wei Min, Assist Prof. Dr. Achara Sukonthasarn, Lecture Dr. Suparat Wangsrikhun
Institute:	Faculty of Nursing, Chiang Mai University, Thailand
Research Funding:	None

You are invited to take part in this study because you are **a family of emergency department (ED) patient**. The **338** participants who meet the study inclusion criteria will be selected.

Before you decide to take part in this study, please read this information sheet carefully to make sure that you understand what you will be asked to participate in this study. If you have any questions regarding this study, please feel free to ask the investigator or consult with someone who is close and trustful to you. You can refuse to participate in this study and withdraw from the study at any time. If you do not decide to participate, the treatment of your sick family member and all existing services in emergency department will not be affected.

Again, your decision making to participate in this study **is completely voluntary**.

Frame 1 Participation in this study is voluntary.

- You **can refuse** to participate in this study.
- You can **withdraw** from this study at any time.

Participation in this study is completely voluntary. You have rights to refuse to participate this study and stop or withdraw from the study at any time, and that you

will not have to state the reason. If you refuse to participate or withdraw from this study, it will not have any negative effects or lose any benefit.

Frame 2 Alternative courses of treatment if you are unable to participate in this study (if any)

No medical treatment is involved in this study.

Information related to this study

The situation of having their loved ones treated at the emergency department (ED) has major impacts on families. During such stressful situation, family members who accompany the ED patient has significant roles not only to support the patients, but also to provide necessary information regarding the patients' illness and make an appropriate judgment on the patients' best interests. In order to fulfill such roles, family members themselves need suitable and enough support from health care personnel as needed.

Family needs refer to the physiological and/or psychological requirement of persons who are genetically or interpersonally connected with the ED patients and have a promise to nurture their loved one emotionally, physically, and spiritually. In this study, family needs compose of 4 factors; namely, incorporate communication, proximity, support, and comfort. Information in regard to ED life-threatening and non-life-threatening patients' family needs is significant to be used as baseline information to design for an appropriate care to fulfill family needs in the future. Finally, family centered care will be made possible and the best possible care for the ED patients will be ensured.

Frame 3 Possible adverse events from this study

There will be minimum risk of burden for the study participants as to spend time around 20-30 minutes responding to the questions regarding their needs at that moment. The questions are simple and easy to understand and respond. All of participants will be approached based upon their readiness. They can voluntarily refuse to participate in the study and able to withdraw from the study at any time without losing any benefit.

Information collected for this study will be maintained confidential. Any information regarding participants will have a code on it instead of their real name. No one but the researcher is able to see it.

Frame 4 Study design
 This study is a comparative and descriptive cross-sectional survey.

Frame 5 Study plan and participant responsibilities
 If you agree to engage in this study, you will be requested to do the following:
 Firstly, informed consent need to be signed. The written signature can be replaced by thumbprint signature if you cannot sign it. Subsequently, you will be requested to respond to the questions that the researcher will read for you one by one which compose of two parts: 1) the Demographic Data Form (15 items), and 2) the Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED) (40 items). Completing the questionnaire may take 20-30 minutes.

Frame 6 Anticipated risks and benefits to study participants
 The investigator summarizes risks and benefits to study participants

Risks and means to minimize or avoid risks	Benefits
<p>-Risks: participants may feel burden and uncomfortable during responding to the questions.</p> <p>-Means to minimize or avoid risks: Readiness of the participants will be ensured. Participants can take some breaks at any time. In addition, refusal to participate will be fully respected.</p>	<p>-Direct benefits: Some needs that they stated will be fulfilled. For instance, some of needs they responded based upon what the researcher had read to them will be met such needs as “to be told about religious services”, “to have food and refreshments nearby” and “to have toilet facilities nearby”. The researcher based upon what she knows is able to tell them about toilet facilities nearby and where</p>

	<p>they can get the religious services and food and refreshments.</p> <p>Indirect benefits: Findings resulting from this study can be used in the future as information to provide better services in ED in the People’s Hospital of Pu’er City.</p>
--	---

<p>Frame 7 Situations may occur during the study</p> <p>The investigator summarizes the practical guideline or the care of various situations that may occur during the study</p>	
<p>If you choose to withdraw during the study.</p>	<p>If you decide to withdraw the study, you do not need to give the reason.</p> <p>It will not affect the treatment of your family member in ED and all the services at ED will be maintained.</p>
<p>When there is new and significant information affecting to your decision making.</p>	<p>If researcher receives any new or significant information related to or affecting this study, the researcher will present it to you as soon as possible. After you receive this information you can reconsider whether to continue or withdraw this study.</p>

All information collected in this study will be retained confidential. Only researcher can access to the data and relevant information. Ethics and human rights can be guaranteed throughout the research process. The questionnaire will be coded by number and does not display your name. The presentation of study results at any conference or in a publication will not involve your name and specific institute. All information you provide will be limited to this study only and the results of this study will not reflect an individual person but will be shared to the public as an entire result. Any benefit from this study will be provided as allowed by the regulations of Chiang Mai University.

There is no payment to you for engaging in this study.

If you have any question or experience any side effects before or during participating in this study, you can contact the person in **Frame 8**

Frame 8 Research contact person (s) for further information	
1. Miss. Min Wei	Address: Emergency department of the People's Hospital of Pu'er city, No.44, Zhenxing avenue, Pu'er City, Yunnan Province, the People's Republic of China Phone number: +86-18087738082 / +66-0956750946 Email: minweiA@163.com / 1657853478@qq.com
2. Assistant Prof. Dr. Achara Sukonthasarn	Address: 110 Inthavaroros Road, Sriphum, Muang, Chiang Mai, 50200, Faculty of Nursing, Chiang Mai University, Thailand. (N1-204, Office of the Dean, 2 nd Floor, Building 1, Faculty of Nursing, Chiang Mai University). Phone number: +66-053949068 / +66-539435041 (office hours) Email: achara.su@cmu.ac.th / acharasu@gmail.com

If you have any questions about your rights before or during participating in this study, please contact the Research Ethics Committee, Faculty of Nursing, Chiang Mai University. Tel. 66-53-936080 (Office hours) or Fax. 66-53-894170

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Study Participant Information Sheet (Chinese Version)

研究题目: 中国普洱市人民医院急诊科病人家属的需求
研究团队: 魏敏, Assist Prof. Dr. Achara Sukonthasarn,
Lecture Dr. Suparat Wangsrikhun
学校: 泰国清迈大学护理学院
研究资金: 无

您被邀请参加本次研究, 是因为您是急诊科患者的家属, 总共338名满足研究纳入标准的参与者会被选择。

在您决定参加本次研究之前, 请阅读此信息表, 以确保您明白您将被要求参加本次研究。如果您对本研究有任何疑问, 请随时向研究人员咨询, 或向您亲密和信任的人咨询。您可以拒绝参加本次研究并可以在任何时候退出本次研究。如果您决定不参加, 您生病的家庭成员的治疗和所有急诊科服务将不会受到任何影响, 您也不会受到任何影响。

此外, 您参与这项研究的决定是完全自愿的。

表 1 参与本研究是自愿的。

- 您可以拒绝参加本次研究。
- 您可以在任何时候退出本次研究。

参与本次研究是完全自愿的, 您有权拒绝参加本研究, 并有权随时停止或退出本研究且无需说明原因。如果您拒绝参加或退出本次研究, 将不会产生任何负面影响或失去任何利益。

表 2 如果您无法参与本研究, 您可以选择其他治疗方案(如果有)
本研究不涉及任何医学治疗。

与本次研究相关的信息

亲人在急诊科接受治疗的情况对家人有重大影响。在这种紧张的情况下, 陪伴急诊科患者的家庭成员身负多种重要角色, 他们不仅要为患者提供支持, 还要提供患者病情的重要信息, 并为患者的最佳利益做出恰当的决断。为了履行这些角色, 家庭成员本身需要医务人员根据他们的需求提供适当和足够的支持。

家人的需求是指承诺在情感上、身体上和精神上培养所爱的人，在基因上或人际间与急诊科患者有联系的人的生理上和/或心理上的需求。在本研究中，家人需求由4个因素组成：交流、亲近、支持和舒适。关于急诊科有生命危险和无生命危险患者的家人需求的信息，对未来设计恰当的护理以满足患者家人的需求具有重要意义。从而，以家庭为中心的护理将成为可能，并可确保尽可能为急诊科患者提供最好的护理。

表 3 本研究可能的不良事件

对于研究参与者来说，花费20-30分钟的时间来回答关于他们当时需求的问题只有非常小的负担风险。这些问题很简单，很容易理解和回答。所有参与者将根据他们的准备情况被选取。他们可以自愿拒绝参加研究，并且可以随时退出研究而不损失任何利益。
 为本次研究收集的信息将予以保密。关于参与者的任何信息都将由一个代码代替真实姓名。只有研究人员才能看到这些信息。

表 4 研究设计

本次研究采用比较性描述性横断面调查设计。

表5 研究计划和参与者责任

如果您同意参加本研究，您将被要求做：
 首先，知情同意书需要您签字。如果您不会签名，书面签名可以用拇指手印代替。随后，您将被要求回答研究者读出的所有问题，它们包含两部分的调查表:1)人口统计学数据表(15项)，2)急诊科危重护理家属需求量表(40项)。完成问卷可能需要20-30分钟。

表 6 研究参与者参与的风险和利益 研究者总结对研究参与者的风险和利益

风险和最小化或避免风险的方法	利益
<p>-风险:参与者在回答问题时可能会感到烦扰和不舒服。</p> <p>-减少或避免风险的方式:研究参与者的准备情况会被考虑。参与者可以在回答问题期间的任何时候提出休息。此外，拒绝参与本次研究也完全会被尊重。</p>	<p>-直接利益:参与者所陈述的某些需求会被满足。例如，一些基于研究者读给他们的需求如“被告知宗教服务”，“附近有食物和点心的地方”和“附近有洗手间”等可以被满足。研究人员能够根据她所知道的告诉他们附近的洗手间设施，以及在哪里可以得到宗教服务、食物和点心。</p> <p>-间接利益: 本研究结果可作为普洱市人民医院提供未来急诊服务的参考。</p>

表 7 在研究中可能发生的情况

研究者总结实用性指南或者在研究中可能发生的情况

如果你在研究进行期间退出	<p>如果您决定退出研究，您不需要说明原因。</p> <p>它不会影响到您的家人在急诊科的治疗和所有在急诊科的服务，您也不会受到任何影响。</p>
当有一个新的重要能够影响你决策的信息时。	如果研究人员收到与本研究相关或影响本研究的任何新的或重要的信息，研究人员将会尽快

将其告知您。在您收到这些信息后，您可以考虑是继续参与还是退出该研究。

本研究中收集的所有信息将予以保密。只有研究者才能获得数据和相关信息，伦理和人权可以在整个研究过程中得到保障。量表将用号码编码，不会显示您的姓名。研究结果在任何会议或出版物上的展示都不会涉及您的姓名和所在单位名称。您提供的所有信息将仅限于本次研究，本次研究的结果不会反映单独个人的情况，而是作为一个综合结果向公众展示。本研究的任何收益将根据清迈大学的规定提供。

此外，你参加本次研究是没有报酬的。

如果您在参与本研究之前或期间有任何问题，您可以联系表8中的人。

表 8 研究联系人的详细信息

- | | |
|--|---|
| 1. 魏敏 | 地址: 中国云南省普洱市振兴大道44号普洱市人民医院急诊科
电话号码: +86-18087738082 / +66-0956750946
电子邮箱: minweiA@163.com / 1657853478@qq.com |
| 2. Assistant Prof. Dr. Achara Sukonthasarn | 地址: 泰国清迈大学护理学院 (110 Inthavaroros Road, Sripnum, Muang, Chiang Mai 50200)
电话号码: +66-053949068 / +66-539435041 (上班时间)
电子邮箱: achara.su@cmu.ac.th / acharasu@gmail.com |

如果您在参与本研究之前或过程中您有关于权利的任何疑问，请联系清迈大学护理学院研究伦理委员会。电话: 66-53-936080 (办公时间)或传真: 66-53-894170

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APPENDIX C

Volunteer Research Agreement Form

Volunteer Research Agreement Form (English Version)

Volunteer Research Agreement Form	
<p>I have already read the above information thoroughly and have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate in this study by signing my signature in this form as an evidence of my decision making (However, this signature does not mean that I waive any right provided by law)</p>	<p>I certify that the study participant has been given an opportunity to have any questions and has been received answers clearly. The study participant voluntarily agrees to participate in this study.</p>
<p>Name of study participant</p> <hr/>	<p>Name of a person who requests agreement from study participants (or the investigator)</p> <hr/>
<p>Signature of study participant</p> <hr/>	<p>Signature of a person who requests agreement from study participants (or the investigator)</p> <hr/>
<p>Day/Month/Year</p>	<p>Day/Month/Year</p>

Volunteer Research Agreement Form (Chinese Version)

研究志愿者知情同意书	
我已经认真阅读了该研究的相关信息，我有机会问任何问题，而且所问问题得到了满意的回答。我同意参与该项研究并签署此份知情同意书作为依据（但是，这并不意味着我放弃法律所赋予我的权利）。	我保证该项研究的参与者有机会提出任何问题并能得到详尽的解释。该研究参与者自愿同意参与本次研究。
参与者姓名 _____	研究者或调查者姓名 _____
参与者签名 _____	研究者或调查者签名 _____
日期： 年 月 日	日期： 年 月 日

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APPENDIX D

Research Instrument

Demographic Data Record Form (English Version)

Demographic Data (Participant Code: _____)

1. Age: _____ years
2. Gender: Male Female
3. Religion
 No religion Christianity Buddhism Islam
4. Educational level
 No formal education Primary school Junior high school Senior high school
 College degree Bachelor degree Master degree Doctoral degree
5. Marital status
 Single Married Divorced Widowed Separated
6. Number of family member _____
7. Relationship with the patient _____
8. Insurance status No health insurance Have health insurance _____
9. Monthly family income _____
10. Contact information: Phone number _____

Clinical Information of Patient

1. Admission date _____
2. Age _____
3. Gender _____
4. Diagnosis of disease _____
5. Department type for ED admission
 Resuscitation Room
 Emergency Trauma Surgery Department Observation Room
 Emergency In-patient Ward

人口统计学数据记录表 (Chinese Version)

参与者编码：

人口统计学数据 (说明：请在指定区域勾选 (“√”) 符合的选项)

1. 年龄: ___ 岁

2. 性别:

男 女

3. 宗教信仰

无 基督教 佛教 伊斯兰教

4. 文化程度

文盲 小学 初中 高中 中专、大专 本科

硕士 博士

5. 婚姻状况

单身 已婚 离异 寡居 分居

6. 家庭成员的数量 _____

7. 与病人的关系 _____

8. 医疗保险状态：
 无保险 有保险 _____

9. 月收入 _____

10. 联系信息:

电话号码 _____

病人的临床资料

1. 入院日期 _____

2. 年龄 _____

3. 性别 _____

4. 疾病诊断 _____

5. 入住急诊科部门类型

抢救室 急诊创伤外科 留观室 急诊住院病房

Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED)
(English Version)

Code # _____

Please check () how IMPORTANT each of the following needs is to you.	Not important (1)	Slightly important (2)	Important (3)	Very Important (4)
1. Have a doctor or nurse meet you on arrival at the hospital				
2. To have a person to care for the family				
3. To find out the condition of your ill relative before being asked to sign papers				
.....				
.....				
.....				
.....				
.....				
.....				
36. To be told about religious services				
37. To have food and refreshments nearby				
38. To have a telephone in or near the waiting room				
39. To have toilet facilities nearby				
40. To be able to contact staff at a later date to ask questions				

急诊科危重病人家属需求量表 (Chinese Version)

请检查 () 以下各项需求对于您的重要性如何。	不 重要 (1)	有些重要 (2)	重要 (3)	非常 重要 (4)
1.到医院时直接与医生或护士见面				
2.有人照顾家人				
3.在被要求签署文件之前,先搞清楚你生病亲属的病情				
.....				
.....				
.....				
.....				
.....				
.....				
36.被告知宗教服务				
37.附近有食物和点心				
38.候诊室内或附近有电话可用				
39.附近有卫生间				
40.能够在日后联系到工作人员咨询问题				

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APPENDIX E

Permission Letter to Use the Instrument of Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED)

Permission to Use CCFNI-ED (English Version)

From: Bernice.redley bernice.redley@deakin.edu.au at 31/8/2018 (Friday) 6:40am

Good Morning Wei

Thank you for your e-mail. You have my permission to use the tool and I have attached the latest version for your use. Would you be happy to share your de-identified data with me at the conclusion of your study as I have been undertaking comparison of data collected in different cultures; the findings suggest that not all items are answered in the same way across different cultures. I have attached a presentation I gave at the International Emergency Nursing conference in 2016 and hope to have a manuscript available shortly.

Kind regards

Dr Bernice Redley
Associate Professor

School of Nursing and Midwifery, Deakin University
+61-3-9244 6807 (Deakin)

Bernice.redley@deakin.edu.au (Deakin)

Bernice.redley@monashhealth.org (Monash Health)

www.deakin.edu.au Deakin University CRICOS Provider Code 00113B

From: 鲨鱼 <1657853478@qq.com> Sent: Thursday, August 30, 2018 12:37 AM

To: Bernice Redley <bernice.redley@deakin.edu.au>

Subject: scale permission request

Dear teacher Redley:

How are you? My name is Min Wei who comes from China, a graduate student of adult nursing studying in Chiang Mai University, Thailand. I am preparing my thesis regarding family needs of patients in emergency department. So I would like to request your permission of using critical care family needs inventory in ED (CCFNI-ED) to continue my thesis. Thank you for your help.

Sincerely,
Min Wei

Permission to Use CCFNI-ED (Chinese Version)

发件人: Bernice.redley bernice.redley@deakin.edu.au, 2018年8月31日 星期五 早晨6:40

早上好! 魏

感谢你的邮件! 我允许你使用这个研究工具, 并已发送最新版本供你使用。在您的研究结束时, 您是否愿意与我分享您的数据, 因为我一直在比较不同文化中收集的数据; 研究表明, 并不是所有的问题在不同的文化中都有相同的答案。附件是我在2016年国际急诊护理会议上做的一个演讲, 期望能拿到手稿。

谨致问候

副教授 Bernice Redley 博士

迪肯大学护理及助产学院

2018年8月30日星期四 下午12:37, 鲨鱼 <1657853478@qq.com> 写道:

亲爱的Redley老师:

你好! 我叫魏敏, 来自中国, 是泰国清迈大学成人护理专业的研究生。我正在准备关于急诊病人家庭需求的论文。所以我想请求您允许我使用急诊科危重病人家属需求量表来继续我的论文。谢谢你的帮助!

您诚挚的朋友
魏敏



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**Permission Letter to Translate the CCFNI-ED into Chinese Language
(English Version)**

From: Bernice.redleybernice.redley@deakin.edu.au at 17/10/2018 (Wednesday) 9:36am

To : 鲨鱼 <1657853478@qq.com>

Sure you can Min Wei. Good luck with your study

Kind regards

Dr Bernice Redley

From: 鲨鱼 <1657853478@qq.com>

Sent: Wednesday, October 17, 2018 12:03 PM

To: Bernice Redley <bernice.redley@deakin.edu.au>

Subject: Re: RE: validity of CCFNI-ED

Good morning, teacher Redley, thank you for reply, I have contact professor Han one month ago by email (cyhan@gw.cgust.edu.tw), but no answer. So I want to get your permission to translate the tool into Chinese, may I? Otherwise, I am worried I won't graduate. Thank you for help. Best wishes!

Sincerely,

Min Wei



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**Permission Letter to Translate the CCFNI-ED into Chinese Language
(Chinese Version)**

发件人：Bernice.redleybernice.redley@deakin.edu.au 2018年10月17日 星期六早上9:36

收件人：鲨鱼 <1657853478@qq.com>

你可以把它翻译成中文使用，祝你论文进展顺利！

谨致问候

Bernice Redley 博士

发件人：鲨鱼 <1657853478@qq.com> 2018年10月17日 下午12:03 星期三

收件人：Bernice Redley <bernice.redley@deakin.edu.au>

早上好，Redley老师，感谢您的回复，我一个月前通过邮件联系过韩教授(cyhan@gw.cgust.edu.tw)，但是没有得到回复。所以我想请您允许我把这个工具翻译成中文，可以吗？否则，我担心我不能及时毕业。谢谢你的帮助！最美好的祝福！

您诚挚的朋友，
魏敏



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APPENDIX F

Certificate of Ethical Clearance



Research Ethics Office
Faculty of Nursing, Chiang Mai University

AF 04-021



No. 026/2019

Certificate of Approval

Name of Committee : Research Ethics Committee, Faculty of Nursing, Chiang Mai University Address of Committee: 110/406 Intavaroros Rd., Amphoe Muang, Chiang Mai, Thailand 50200	
Principal Investigator : Miss Min Wei Master of Nursing Science (International Program) Faculty of Nursing, Chiang Mai University	
Protocol Title : Family Needs of Patients at Emergency Department in the People's Hospital of Pu'er City, the People's Republic of China Research ID: 2019 - 026 ; Study Code : 2019 - EXP016 Sponsor : -	
Documents filed	Document reference
Research protocol	Version 1 Date January 14, 2019
Informed consent documents	Version 2 Date February 1, 2019
Patient information sheet	Version 1 Date January 14, 2019
Instrument	Version 1 Date January 14, 2019



Progress report is required to be submitted to the Ethics Committee for continuing review

- at 3 month interval
 at 6 month interval
 annually (in this case please submit at least 60 days prior to expiration date)

This Ethics Committee is organized and operates according to GCPs and relevant international ethical guidelines, the applicable laws and regulations.

Signed :

(Professor Emerita Dr. Wichit Srisuphan)

Chairperson, Faculty of Nursing, Chiang Mai University

Signed :

(Professor Dr. Wipada Kunaviktikul)

Dean, Faculty of Nursing, Chiang Mai University

GENERAL CONDITION OF APPROVAL:

1. Research Ethics Committee approval is required before implementing any changes in the consent documents or protocol unless those changes are required urgently for the safety of subjects.
2. Any event or new information that may affect the benefit/risk ratio of the study must be reported to the REC promptly.
3. Any protocol deviation/violation must be reported to the REC.
4. Review of close study report is required to be submitted to the REC.
5. Review of progress report to the REC before expiration date at 2 months.

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APPENDIX G

Approval to Conduct Research in the People's Hospital of Pu'er City

CERTIFICATE

证明

February 12, 2019

兹证明，魏敏，学生号 601235807，护照号 E93386993，允许在中华人民共和国普洱市人民医院急诊科收集数据。该数据仅限用于该同志的硕士毕业论文“普洱市人民医院急诊科病人家属的需求”的调查研究中。数据收集工具包括 1) 人口统计学问卷 (15 项)，2) 急诊科危重病人家属需求量表 (40 项)。

This is to certify that Miss. Min Wei, Student Code 601235807, Passport Number E93386993, has got the permission to collect data in Emergency Department, the People's Hospital of Pu'er City for her master thesis on "Family Needs of Patients at Emergency Department in the people's hospital of Pu'er city, the People's Republic of China". The data collection instrument contains: 1) the Demographic Data Form (15 items), and 2) the Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED) (40 items).

特此证明

Hereby certificated,

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普洱市人民医院医务部
Director of Medical Department
The People's Hospital of Pu'er city
The People's Republic of China

CERTIFICATE

证明

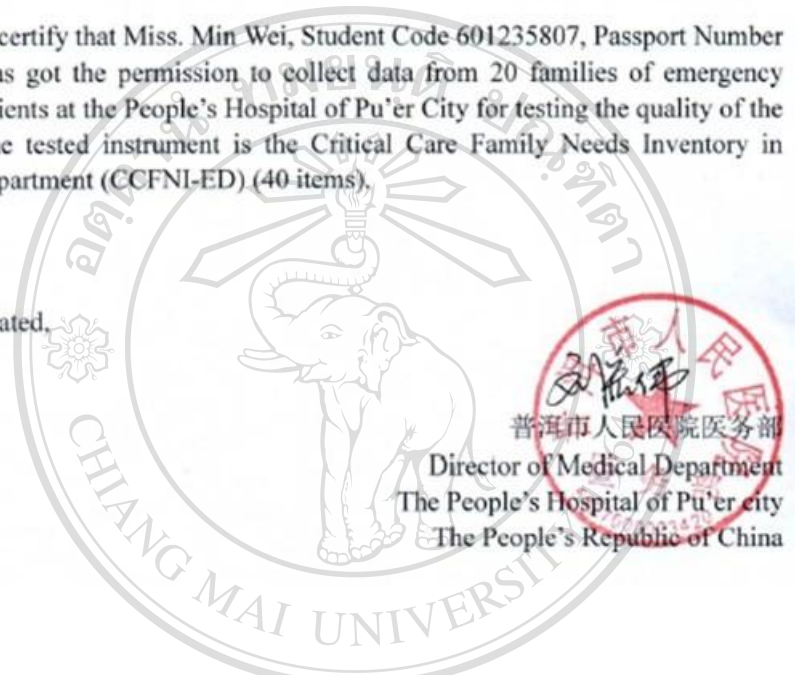
February 12, 2019

兹证明，魏敏，学生号 601235807，护照号 E93386993，允许在普洱市人民医院急诊科采集 20 个急诊科患者家属的数据，用于检测研究量表的质量。所测量表为急诊科危重病人家属需求量表（40 项）。

This is to certify that Miss. Min Wei, Student Code 601235807, Passport Number E93386993, has got the permission to collect data from 20 families of emergency department patients at the People's Hospital of Pu'er City for testing the quality of the instrument. The tested instrument is the Critical Care Family Needs Inventory in Emergency Department (CCFNI-ED) (40 items).

特此证明

Hereby certificated.



普洱市人民医院医务部
Director of Medical Department
The People's Hospital of Pu'er city
The People's Republic of China

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APPENDIX H

Mean, Standard Deviation, Frequency, and Percentage of Each Item of Family Needs

Table H1

Mean, Standard Deviation, Frequency, and Percentage of Each Item of Family Needs (N = 338)

Items	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Communication						
7. To be kept updated frequently	3.47	.56	2 (.59)	4 (1.18)	165 (48.82)	167 (49.41)
8. To know all the specific facts concerning your relative's progress	3.38	.59	3 (.89)	9 (2.66)	181 (53.55)	145 (42.90)
6. To have explanations given in understandable terms	3.37	.62	5 (1.48)	10 (2.96)	179 (52.96)	144 (42.60)
15. To have questions answered honestly	3.36	.61	4 (1.18)	12 (3.55)	179 (52.96)	143 (42.31)
30. To feel hospital staff care about your relative	3.36	.61	3 (.89)	14 (4.14)	180 (53.25)	141 (41.72)
14. To know about the expected outcome	3.33	.64	6 (1.78)	13 (3.85)	181 (53.55)	138 (40.83)
17. To be assured that the best care possible has been given to your relative	3.29	.61	4 (1.18)	16 (4.73)	195 (57.69)	123 (36.39)



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Table H1 (continued)

Items	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Communication						
11. To talk to a doctor	3.28	.58	3 (.89)	13 (3.85)	210 (62.13)	112 (33.14)
31. To be assured of the comfort of your relative	3.28	.63	6 (1.78)	15 (4.44)	196 (57.99)	121 (35.80)
16. To be told about transfer plans while they are made	3.27	.63	5 (1.48)	19 (5.62)	195 (57.69)	119 (35.21)
Support						
3. To find out the condition of your ill relative before being asked to sign papers	3.44	.56	2 (.59)	5 (1.48)	172 (50.89)	159 (47.04)
35. To feel there is hope	3.32	.63	4 (1.18)	17 (5.03)	183 (54.14)	134 (39.64)
1. Have a doctor or nurse meet you on arrival at the hospital	3.31	.55	2 (.59)	9 (2.66)	208 (61.54)	119 (35.21)
2. To have a person to care for the family	3.04	.83	28 (8.28)	27 (7.99)	188 (55.62)	95 (28.11)
4. To have friends and relatives with you while in the emergency department	2.69	.87	44 (13.02)	62 (18.34)	186 (55.03)	46 (13.61)
21. To have a staff member with you while visiting your relative	2.60	.94	59 (17.46)	67 (19.82)	162 (47.93)	50 (14.79)

Table H1 (continued)

Items	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Proximity						
9. To know why things were done for your relative	3.22	.69	12 (3.55)	16 (4.73)	195 (57.69)	115 (34.02)
22. To see what was happening to your relative	3.17	.64	9 (2.66)	18 (5.33)	219 (64.79)	92 (27.22)
19. To see your relative as soon as possible	3.16	.64	7 (2.07)	25 (7.40)	213 (63.02)	93 (27.51)
24. To be given directions regarding what to do at the bedside	3.15	.68	8 (2.37)	33 (9.76)	197 (58.28)	100 (29.59)
12. To talk to a nurse	3.14	.64	6 (1.78)	30 (8.88)	214 (63.31)	88 (26.04)
25. To feel helpful to your relative's care	3.09	.63	6 (1.78)	35 (10.36)	218 (64.50)	79 (23.37)
26. To be included when decisions were made	3.09	.77	17 (5.03)	34 (10.06)	188 (55.62)	99 (29.29)
28. To feel accepted by hospital staff	3.07	.66	13 (3.85)	24 (7.10)	228 (67.46)	73 (21.60)
23. To be with your relative at any time	2.94	.74	15 (4.44)	57 (16.86)	198 (58.58)	68 (20.12)
13. To know about the expertise of staff caring for your relative	2.91	.86	32 (9.47)	45 (13.31)	183 (54.14)	78 (23.08)
27. To have time alone with your relative	2.82	.85	37 (10.95)	47 (13.91)	193 (57.10)	61 (18.05)
20. To have explanations about the treatment area before going in to see your relative for the first time	2.77	.88	40 (11.83)	59 (17.46)	178 (52.66)	61 (18.05)

Table H1 (continued)

Items	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Proximity						
10. To be spared distressing details about your relative's illness or injury	2.59	1.00	71 (21.01)	51 (15.09)	161 (47.63)	55 (16.27)
18. To stay out of the way during your relative's care	2.38	1.00	90 (26.63)	67 (19.82)	144 (42.60)	37 (10.95)
Comfort						
40. To be able to contact staff at a later date to ask questions	3.28	.64	5 (1.48)	19 (5.62)	189 (55.92)	125 (37.98)
39. To have toilet facilities nearby	3.17	.63	8 (2.37)	19 (5.62)	219 (64.79)	92 (27.22)
29. To be treated as an individual	3.03	.75	20 (5.92)	31 (9.17)	206 (60.95)	81 (23.96)
33. To be reassured what normal emotional responses are	2.93	.73	15 (4.44)	56 (16.57)	204 (60.36)	63 (18.64)
32. To be encouraged to express emotions	2.84	.79	26 (7.69)	60 (17.75)	195 (57.69)	57 (16.86)
5. To have a private place to wait	2.51	.93	68 (20.12)	64 (18.93)	170 (50.30)	36 (10.65)
37. To have food and refreshments nearby	2.51	.95	66 (19.53)	77 (22.78)	151 (44.67)	44 (13.02)
34. To share emotions with staff	2.49	.94	66 (19.53)	82 (24.26)	150 (44.38)	40 (11.83)
38. To have a telephone in or near the waiting room	2.44	1.01	87 (25.74)	57 (16.86)	152 (44.97)	42 (12.43)
36. To be told about religious services	1.70	.99	208 (61.54)	44 (13.02)	64 (18.93)	22 (6.51)

Table H2

Mean, Standard Deviation, Frequency, and Percentage of Each Item of the ED Life Threatening and Non-Life-Threatening Patients' Family Needs (N = 338)

Items	Families of the ED Life-threatening Patients (n = 169)				Families of ED the Non-life-threatening Patients (n = 169)							
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Communication												
7. To be kept updated frequently	3.50	.53	2 (1.18)	0 (.00)	80 (47.34)	87 (51.48)	3.44	.59	2 (1.18)	2 (1.18)	85 (50.30)	80 (47.34)
6. To have explanations given in understandable terms	3.46	.58	1 (.59)	4 (2.37)	81 (47.93)	83 (49.11)	3.28	.65	4 (2.37)	6 (3.55)	98 (57.99)	61 (36.10)
8. To know all the specific facts concerning your relative's progress	3.42	.57	1 (.59)	4 (2.37)	87 (51.48)	77 (45.56)	3.35	.60	2 (1.18)	5 (2.96)	94 (55.62)	68 (40.24)
15. To have questions answered honestly	3.36	.61	2 (1.18)	6 (3.55)	90 (53.25)	71 (42.01)	3.37	.61	2 (1.18)	6 (3.55)	89 (52.66)	72 (42.60)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)						Families of the ED Non-life-threatening Patients (n = 169)					
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Communication												
30. To feel hospital staff care about your relative	3.36	.59	1 (.59)	7 (4.14)	91 (53.85)	70 (41.42)	3.36	.62	2 (1.18)	7 (4.14)	89 (52.66)	71 (42.01)
11. To talk to a doctor	3.35	.59	1 (.59)	7 (4.14)	93 (55.03)	68 (40.24)	3.20	.55	2 (1.18)	6 (3.55)	117 (69.23)	44 (26.04)
14. To know about the expected outcome	3.35	.57	8 (4.73)	0 (.00)	94 (55.62)	67 (39.64)	3.32	.70	6 (3.55)	5 (2.96)	87 (51.48)	71 (42.01)
31. To be assured of the comfort of your relative	3.30	.61	2 (1.18)	7 (4.14)	98 (57.99)	62 (36.69)	3.25	.66	4 (2.37)	8 (4.73)	98 (57.99)	59 (34.91)
16. To be told about transfer plans while they are made	3.29	.56	9 (5.33)	0 (.00)	102 (60.36)	58 (34.32)	3.24	.70	5 (2.96)	10 (5.92)	93 (55.03)	61 (36.09)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)						Families of the ED Non-life-threatening Patients (n = 169)					
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Communication												
17. To be assured that the best care possible has been given to your relative	3.28	.60	2 (1.18)	7 (4.14)	101 (59.76)	59 (34.91)	3.30	.63	2 (1.18)	9 (5.33)	94 (55.62)	64 (37.87)
Support												
3. To find out the condition of your ill relative before being asked to sign papers	3.49	.54	3 (1.78)	0 (.00)	80 (47.34)	86 (50.89)	3.40	.58	2 (1.18)	2 (1.18)	92 (54.44)	73 (43.20)
1. Have a doctor or nurse meet you on arrival at the hospital	3.42	.53	1 (.59)	0 (.00)	95 (56.21)	73 (43.20)	3.21	.56	1 (.59)	9 (5.33)	113 (66.86)	46 (27.22)
35. To feel there is hope	3.38	.58	8 (4.73)	0 (.00)	89 (52.66)	72 (42.60)	3.27	.67	4 (2.37)	9 (5.33)	94 (55.62)	62 (36.69)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)				Families of the ED Non-life-threatening Patients (n = 169)							
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Support												
2. To have a person to care for the family	3.18	.75	7 (4.14)	13 (7.70)	91 (53.85)	58 (34.32)	2.89	.89	21 (12.43)	14 (8.28)	97 (57.40)	37 (21.89)
4. To have friends and relatives with you while in the emergency department	2.89	.80	14 (8.28)	22 (13.02)	102 (60.36)	31 (18.34)	2.50	.89	30 (17.75)	40 (23.69)	84 (49.70)	15 (8.88)
21. To have a staff member with you while visiting your relative	2.73	.86	18 (10.65)	37 (21.89)	86 (50.89)	28 (16.57)	2.47	1.00	41 (24.26)	30 (17.75)	76 (44.97)	22 (13.01)
Proximity												
9. To know why things were done for your relative	3.22	.68	5 (2.96)	9 (5.33)	98 (57.99)	57 (33.73)	3.22	.71	7 (4.14)	7 (4.14)	97 (57.40)	58 (34.32)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)						Families of the ED Non-life-threatening Patients (n = 169)					
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Proximity												
12. To talk to a nurse	3.21	.65	2 (1.18)	16 (9.47)	96 (56.80)	55 (32.54)	3.07	.61	4 (2.37)	14 (8.28)	118 (69.82)	33 (19.53)
19. To see your relative as soon as possible	3.20	.62	3 (1.78)	10 (5.92)	106 (62.72)	50 (29.59)	3.12	.65	4 (2.37)	15 (8.88)	107 (63.31)	43 (25.44)
22. To see what was happening to your relative	3.19	.60	2 (1.18)	11 (6.51)	109 (64.50)	47 (27.81)	3.14	.68	7 (4.14)	7 (4.14)	110 (65.09)	45 (26.63)
25. To feel helpful to your relative's care	3.17	.59	1 (.59)	15 (8.88)	108 (63.91)	45 (26.63)	3.02	.66	5 (2.96)	20 (11.83)	110 (65.09)	34 (20.12)
26. To be included when decisions were made	3.16	.68	4 (2.37)	15 (8.88)	100 (59.17)	50 (29.59)	3.02	.85	13 (7.69)	19 (11.24)	88 (52.07)	49 (28.99)
24. To be given directions regarding what to do at the bedside	3.15	.67	3 (1.78)	18 (10.65)	99 (58.58)	49 (28.99)	3.15	.70	5 (2.96)	15 (8.88)	98 (57.99)	51 (30.18)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)				Families of the ED Non-life-threatening Patients (n = 169)							
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Proximity												
28. To feel accepted by hospital staff	3.14	.63	5 (2.96)	8 (4.73)	115 (68.05)	41 (24.26)	3.00	.69	8 (4.73)	16 (9.47)	113 (66.86)	32 (18.93)
23. To be with your relative at any time	3.01	.70	5 (2.96)	26 (15.38)	101 (59.76)	37 (21.89)	2.88	.77	10 (5.92)	31 (18.34)	97 (57.40)	31 (18.34)
13. To know about the expertise of staff caring for your relative	2.94	.82	13 (7.69)	23 (13.61)	94 (55.62)	39 (23.08)	2.88	.89	19 (11.24)	22 (13.02)	89 (52.66)	39 (23.08)
27. To have time alone with your relative	2.92	.79	13 (7.69)	21 (12.43)	102 (60.36)	33 (19.53)	2.73	.91	24 (14.20)	26 (15.38)	91 (53.85)	28 (16.57)
20. To have explanations about the treatment area before going in to see your relative for the first time	2.82	.88	18 (10.65)	29 (17.16)	87 (51.48)	35 (20.71)	2.72	.88	22 (13.02)	30 (17.75)	91 (53.85)	26 (15.38)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)						Families of the ED Non-life-threatening Patients (n = 169)					
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Proximity												
10. To be spared distressing details about your relative's illness or injury	2.63	1.00	35 (20.71)	22 (13.02)	83 (49.11)	29 (17.16)	2.56	.99	36 (21.30)	29 (17.16)	78 (46.15)	26 (15.38)
18. To stay out of the way during your relative's care	2.45	1.04	44 (26.04)	30 (17.75)	70 (41.42)	25 (14.79)	2.31	.95	46 (27.22)	37 (21.89)	74 (43.79)	12 (7.10)
Comfort												
40. To be able to contact staff at a later date to ask questions	3.28	.60	1 (.59)	10 (5.92)	98 (57.99)	60 (35.50)	3.28	.67	4 (2.37)	9 (5.33)	91 (53.85)	65 (38.46)
39. To have toilet facilities nearby	3.17	.67	4 (2.37)	44 (26.04)	100 (59.17)	51 (30.18)	3.17	.58	4 (2.37)	5 (2.96)	119 (70.41)	41 (24.26)
29. To be treated as an individual	3.03	.75	10 (5.92)	15 (8.88)	104 (61.54)	40 (23.67)	3.03	.76	10 (5.92)	16 (9.47)	102 (60.36)	41 (24.26)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)						Families of the ED Non-life-threatening Patients (n = 169)					
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Comfort												
33. To be reassured what normal emotional responses are	2.99	.73	7 (4.14)	25 (14.79)	100 (59.17)	37 (21.89)	2.88	.72	8 (4.73)	31 (18.34)	104 (61.54)	26 (15.38)
32. To be encouraged to express emotions	2.91	.83	12 (7.10)	30 (17.75)	89 (52.66)	38 (22.49)	2.77	.76	14 (8.28)	30 (17.75)	106 (62.72)	19 (11.24)
34. To share emotions with staff	2.69	.89	22 (13.02)	35 (20.71)	86 (50.89)	26 (15.38)	2.28	.95	44 (26.04)	47 (27.81)	64 (37.87)	14 (8.28)
37. To have food and refreshments nearby	2.64	.96	28 (16.57)	35 (20.71)	76 (44.97)	30 (17.75)	2.38	.93	38 (22.49)	42 (24.85)	75 (44.38)	14 (8.28)
5. To have a private place to wait	2.62	.91	28 (16.57)	31 (18.34)	88 (52.07)	22 (13.02)	2.41	.94	40 (23.67)	33 (19.53)	82 (48.52)	14 (8.28)

Table H2 (continued)

Items	Families of the ED Life-threatening Patients (n = 169)						Families of the ED Non-life-threatening Patients (n = 169)					
	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)	\bar{X}	SD	1 n (%)	2 n (%)	3 n (%)	4 n (%)
Comfort												
38. To have a telephone in or near the waiting room	2.61	.96	31 (18.34)	30 (17.75)	82 (48.52)	26 (15.38)	2.27	1.03	56 (33.14)	27 (15.98)	70 (41.42)	16 (9.47)
36. To be told about religious services	1.82	1.03	94 (55.62)	24 (14.20)	38 (22.49)	13 (7.69)	1.59	.94	114 (67.46)	20 (11.83)	26 (15.38)	9 (5.33)

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