



## Phenomenological Study: Nurses' Experiences in Treating And Referring Penetrating Trauma Patients At The Arjasa Public Health Center, Sumenep Regency

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### ABSTRACT

Arjasa Health Center is a health center in a remote area in the Kangean Islands, Sumenep Regency. The distance from the Arjasa health center to the referral hospital is 88 miles (142 km). The only access to the referral hospital is by sea. The length of the sea journey to the referral hospital from the Arjasa health center is 9-10 hours. Cases of penetrating trauma at the Arjasa Health Center in 2021 were eight patients. All the penetrating trauma patients after the primary and secondary surveys at the Arjasa Public Health Center were then referred to a referral hospital in Sumenep Regency. This study aims to explain nurses' experience in treating and referring penetrating trauma patients at the Arjasa Public Health Center. The method in this study uses qualitative research with a hermeneutic phenomenological study approach which is analyzed using interpretative phenomenological analysis. The results of the study found nine themes: 1) feeling afraid that the patient's condition would worsen when referred, 2) limited advice and infrastructure at the puskesmas, 3) the situation and condition of the patient who had to be referred, 4) weather conditions when referring, 5) the distance from the referring hospital, 6) the presence of surgeon specialists at the puskesmas, 7) the completeness of supporting facilities and infrastructure, 8) improving the status of the puskesmas and 9) increasing the skills of nurses. The theme explains the feelings, challenges and hopes of nurses working at the Arjasa Public Health Center.

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### Kata kunci:

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### ABSTRAK

Puskesmas Arjasa merupakan puskesmas di wilayah terpencil yang berada di Kepulauan Kangean, Kabupaten Sumenep. Jarak dari puskesmas Arjasa menuju rumah sakit rujukan adalah 88 mill (142 km). Satu-satunya akses menuju rumah sakit rujukan adalah dengan melewati lautan. Lama perjalanan laut menuju rumah sakit rujukan dari puskesmas Arjasa adalah 9-10 jam. Kasus trauma tembus di puskesmas Arjasa pada tahun 2021 sebanyak delapan pasien. Semua pasien trauma tembus tersebut setelah dilakukan tindakan primary survey dan secondary survey di puskesmas Arjasa kemudian dirujuk ke rumah sakit rujukan yang berada di Kabupaten Sumenep. Penelitian ini bertujuan untuk menjelaskan pengalaman perawat dalam merawat dan merujuk pasien trauma tembus di puskesmas Arjasa. Metode dalam penelitian ini menggunakan kualitative research dengan pendekatan hermeneutic phenomenological study yang dianalisis menggunakan interpretative phenomenological analysis. Hasil penelitian menemukan Sembilan tema: 1) merasa takut kondisi pasien memburuk

saat dirujuk, 2) keterbatasan saran dan prasarana di puskesmas, 3) situasi dan kondisi pasien yang harus dirujuk, 4) keadaan cuaca saat merujuk, 5) jauhnya rumah sakit tempat merujuk, 6) adanya dokter spesialis bedah di puskesmas, 7) kelengkapan sarana dan prasarana penunjang, 8) Peningkatan status puskesmas dan 9) peningkatan skill perawat. Tema tersebut menjelaskan perasaan, tantangan dan harapan perawat yang bekerja di puskesmas Arjasa.



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## INTRODUCTION

Penetrating trauma is a type of open injury that simultaneously causes damage to the outer and inner tissues (Zhang et al., 2019). In the United States, data on deaths due to violence with firearms (51.3%) were reported, which were penetrating trauma, hanging (22.1%) and poisoning (18.4%) (Surveillance for Violent Deaths, 2006). In Indonesia in 2013 there were cases of penetrating trauma (23.3%) with stab wounds and (0.3%) with severed limb injuries (KEMENKES, 2013). At the hospital dr. Soetomo in 2016 stated that data from the Medical Forensic and Medicolegal Installations contained (5%) cases involving murder using sharp objects (Putri, 2017).

Sumenep Regency is the most eastern district on the island of Madura. (Profile of Sumenep Regency, 2017). Kangean Island is one of the islands in the government area of Sumenep Regency (Bustami, 2001). Arjasa Health Center is a health service located on Kangean Island, Arjasa Health Center has nineteen villages as its working area (Data Primer Puskesmas Arjasa, 2020). The distance from Kangean to Sumenep is 88 miles which can be reached in 12-14 hours while to Bali Island is only about 4-6 hours by sea (Bustami, 2001). According to *Nasser et al* (2020) the time spent before reaching trauma center services affects the mortality rate in cases of penetrating trauma. *Harmsen et al in Nasser & Khouli* (2020), stated that rapid transport is beneficial in unstable patients with penetrating wounds. Other modes of transportation (police and private vehicles) have a shorter response time to the scene than an ambulance.

The incidence of penetrating trauma in Sumenep Regency as a whole is not available, but there are data on the incidence of penetrating trauma at the Arjasa Health Center, Sumenep Regency in 2021 (June - November) there are 8 patients who experienced penetrating trauma. The distance from the scene to the Arjasa Health Center varies from 2 to > 6 km, penetrating trauma patients are usually brought from the scene to the Arjasa Health Center by family or people close to the scene, the means of transportation used are usually motorbikes or pick-ups. up (Data Primer Puskesmas Arjasa, 2021).

Interviews that resulted from two nurses who served in the ER of the Arjasa Health Center said that when they received a patient with a stab wound to the head area that was quite long, they did help by performing temporary stitches to stop massive bleeding to prevent the patient's condition from worsening. when referring penetrating trauma patients from the Arjasa Health Center to a referral hospital on a ship or boat they only carry available tools such as oxygen transport. The nurse also felt anxiety when referring to the length of the 9-hour sea journey. The nurse said she was afraid the patient would die in the middle of the trip. The physical condition of the nurse who referred the patient was also very tired due to the condition of the sea

waves during the trip. Morgan & Calleja (2020) said that the challenges for nurses in remote areas are delays in providing definitive treatment to patients due to limited pre-hospital resources and the skill level of doctors, long distances, long patient delivery times.

## METHODS

This research is qualitative research with a hermeneutic phenomenological study approach. The participants in this study consisted of six emergency room nurses at the Arjasa Public Health Center who were selected using a purposive sampling technique with several inclusion criteria; 1) Nurse in the ER at Arjasa Public Health Center, 2) Has treated and referred a penetrating trauma patient for at least the last six months. Data collection was carried out by in-depth interviews with the help of semi-structured interview guidelines. The results of the interviews were recorded using a recording device in the form of a smartphone. The recordings were transcribed verbatim and analyzed using interpretative phenomenological analysis techniques. The research was conducted at the Arjasa Public Health Center, Sumenep Regency in August – September 2022.

## RESULTS AND DISCUSSION

### The Theme of Feeling Afraid of The Patient's Condition Worsening When Referred

The theme of feeling afraid that the patient's condition will worsen when referred is composed of three sub-themes: feeling worried, feeling afraid and feeling burdened. The first sub-theme is feeling worried, this is in accordance with what the participants stated below:

*"...so with various kinds of equipment limitations, we are worried about the patient's condition which is quite severe. Moreover, the psychological condition of the patient's family also affects our mentality when helping..."* (P1)

*"...I feel a little worried when I see the condition of the patient who is injured and the hole is caused by a sharp object that pierces the patient's chest..."* (P3)

*"...If you really refer to a patient, what is the position, right, I'm in the islands, so I'm a bit worried because of the long journey when referring..."* (P6)

The second sub-theme is feeling afraid, according to what the following participants said:

*"... The ones who referred must have been 2 people, for fear that the boat journey would take 12 hours, especially*

*when they arrive at Sumenep, they will be handed over to the Sumenep hospital...*" (P1)

*"...because of the poor condition of the patient, afraid of not being saved..."*(P2)

*"...Yeah.. how's it going.. aaa there's anxiety, so at that time we immediately contacted the x-ray officer to find out where the bullet went and the doctor in charge..."*(P5)

The third sub-theme is feeling burdened, as stated by the following participants:

*"...When we refer to it, we usually feel a little burdened because we have been traveling for a long time..."*(P4)

This feeling arose because the condition of the penetrating trauma patient who entered the ER at the Arjasa Public Health Center was quite severe. The feeling of fear of the patient's condition worsening when referred was also due to the long travel time when referring patients from the Arjasa puskesmas to the referral hospital. Fear refers to a variety of circumstances where the initial feeling is normal/neutral then the stimulus comes and elicits a fear response after an unpleasant event (Cushman & Fanselow, 2010). Fear is usually conceptualized as an adaptive but visceral (temporary) state evoked through confrontation with a threatening stimulus. Anxiety is a state related to prediction and readiness, the difference is similar to the difference between emotions and moods (Adolphs, 2013).

Participants' feelings of fear also occurred when participants made referrals to the hospital caused by the length of time on the way to refer patients with the condition of patients who experienced penetrating trauma. The feeling of fear felt by participants can affect the participants' confidence in providing care while in the ER at the puskesmas to the referral hospital. Kidd *et al* (2012) said that nurses who work in rural areas said about the lack of confidence in working in the emergency department which was associated with a fear of helping patients in the emergency department.

### Limited Facilities and Infrastructure at The Puskesmas

The theme of limited facilities and infrastructure at the Arjasa puskesmas was a challenge experienced by participants. The theme comprises three sub-themes: equipment limitations, equipment readiness and emergency transportation limitations. The first sub-theme is the limitations of tools, as stated by the following participants:

*"...Yes, our handling here is minimal, but in accordance with the AAA SOP, so with various limitations of tools, we treat the patient..."*(P1)

*"...due to lack of oxygen on the way..."* (P2)

*"...The problem is the equipment that is brought, at least it brings oxygen, yes medicine if there are no other tools here..."*(P3)

The second sub-theme is equipment readiness, as stated by the following participants:

*"...Yes.. the readiness of tools in a short time that must be provided to see the bullet in this child's head..."*(P5)

The third sub-theme is the limitations of emergency transportation, as stated by the following participants:

*"...But if it's urgent to be referred, we rent a boat. It often happens that we rent an alternative boat. Because we wait for the ship for two days, we are automatically sorry here. So we have to rent a small wooden boat, assuming the size is 1.5 meters x 12 meters..."* (P1)

*"...It's like a boat sometimes if for example there is no ship..."*(P2)

*"...No, the ship's schedule is every 2 days. If you don't have what you need, we rent a boat. When we arrived at Kalianget port, it took us about 1-2 hours to arrive at the hospital..."* (P4)

Medical devices are instruments, machines or implants that do not contain drugs that are used to prevent, diagnose or relieve patient disease, restore human health or form structures and improve body functions (Permenkes, 2018). Facilities and infrastructure are everything (physical and financial) that can facilitate and expedite a business. The implementation of the puskesmas requires facilities and infrastructure to support and improve the health services of the puskesmas. One indicator of the success of puskesmas services is customer satisfaction (Kurniasari, 2019).

According to the Ministry of Health of the Republic of Indonesia (2019), water ambulances used as a means of transportation at sea or rivers can be in the form of passenger ships. Water ambulances can also be equipped with medical equipment and special specifications to deal with special circumstances such as penetrating trauma. Landudjama *et al* (2021) said that the challenges for nurses in providing assistance were limited equipment and difficult terrain. Difficult circumstances force innovation and modification of services and tools. Zulkifli *et al* (2019) said that nurses who work in remote health services try to provide actions according to patient needs even though with various limited facilities, this allows nurses who work to modify actions according to patient needs. Fleet *et al* (2020) said the challenge in providing emergency services at primary health centers is the limited facilities in the emergency unit.

### Situation and Condition of The Patient Who Must Be Referred

The theme of the situation and condition of the patient who must be referred was a challenge experienced by the participants when referring penetrating trauma patients. The theme is composed of two sub-themes, namely; patient's wound and condition of the patient. The first sub-theme is patient injuries, as presented by the participants below:

*"...the wound that we wrapped because we got hit by the knife sometimes we don't remove it, it's a hassle if it's pulled out due to bleeding, if it's not removed it's safe for us, but we can't shake the key..."*(P1)

*"...The condition of the wound, at that time where the wound was leading, if there was no assistance from the doctor, he was also confused..."*(P5)

The second sub-theme is the patient's condition, as presented by the participants below:

*"...Yeah.. when it's like a shock, that's all for us. If one person isn't so and so, it's not possible to take care of it. If this is the case, there must be 2 patients..."* (P1)

*"...So we collaborate with doctors to handle this case. So that the doctor's action recommended for this patient to be referred. Because it is not possible to carry out this act of removing bullets at the puskesmas, so the follow-up action is referred to the hospital..."* (P4)

*"...If you refer a patient, what is the position, I'm actually in the islands, so I'm a little worried because of the long journey when referring. And the condition of an emergency patient that requires immediate treatment..."* (P6)

Injuries to patients who enter the ER at the Arjasa Public Health Center due to sharp objects usually occur on the head, chest, abdomen, thighs and arms of the patient. The types of wounds in the patient were stab wounds, slashes, stab wounds and gunshot wounds. *Rikken et al (2022)* Most penetrating trauma in urban and rural health services in the Netherlands was caused by stabbings (51.1%) followed by shootings (26.3%). Types of penetrating trauma in patients who enter the ER at the Arjasa Public Health Center can be categorized as a type of injury that often occurs in urban and rural health services in the Netherlands.

In penetrating trauma patients, the participants performed a primary survey nursing action in the ER at the puskesmas. *Planas et al (2022)* said that advance trauma life support has been developed to standardize the evaluation and management of trauma patients, because time is very important in the evaluation of trauma patients. The golden period begins at the time of injury, it is the period in which prompt and appropriate intervention saves the patient's life. A practitioner conducts a primary survey to quickly assess, identify, and treat life-threatening injuries.

Patients with stab wounds in the abdomen that resulted in the intestinal organs in the patient's stomach coming out. Participants provided care by wrapping them in sterile gauze by the participants while they were in the ER at the Arjasa Public Health Center. *Lotfollahzadeh & Burns (2022)* said patients with stab wounds with obvious signs of peritonitis also required laparotomy. Stable patients with stab wounds can be explored locally or undergo a triple-contrast CT scan.

### Weather Conditions When Referring

The theme of weather conditions when referring is a challenge faced by participants when referring penetrating trauma patients from the Arjasa health center to a referral hospital. The theme is composed of two sub-themes, namely ocean waves and weather conditions. The sub-theme of ocean waves is in accordance with what was conveyed by the following participants:

*"...the problem is the equipment that is brought, at least it brings oxygen, yes medicine if there are no other tools here. Waves are also usually a challenge when referring..." (P3)*

*"... usually the challenges are the weather and the waves, if the wind doesn't sail the boat will eventually rent a boat. Even though the waves are big with the condition of an emergency patient, we have to leave, to help the patient..." (P6)*

The second sub theme is weather conditions. This was conveyed by the participants below:

*"...because we are on a sea trip, we don't know what will happen, right here, the observations are good.. then we arrive at the trip, the weather is not good, the sea waves are high automatically the patient is nervous..." (P1)*

*"...Usually boats, at that time of the wind season there is no ship the patient has to be referred, finally using a boat..." (P5)*

Participants When referring patients with penetrating trauma, which coincided with August, at that time the wind was strong with sea wave heights between 2.5 – 3.00 meters, passenger ships were not allowed to sail. However, participants must still refer penetrating trauma patients using wooden boats whose size is about 1.5 – 2 meters wide and about 12 – 15 meters long. *PERMENKES (2019)* Water ambulance service will not be optimal in case of sea waves.

*Zulkifli (2020)* said that the difficulties experienced by nurses when carrying out their duties in remote places were tidal waves, taking patients by rowboat and difficulty in getting transportation to remote places. The patient's emergency condition, the limitations of emergency transportation equipment and weather conditions that affect the trip while referring the patient can cause the patient to feel uneasy during the trip.

Changes that occur during sea voyages referring patients and high waves that usually occur in the waters of the Kangean Islands to the referral place will slow down the time to refer patients to the referral hospital. *Morgan & Calleja (2020)* said health services in rural and remote areas face unique challenges in providing emergency services such as long distances, delays in transferring patients to definitive care, limited resources in rural settings. As a result, rural and remote populations often experience higher mortality rates than urban populations.

### The Distance To The Referring Hospital

The theme of the distance from the referring hospital was one of the challenges experienced by participants in referring penetrating trauma patients. The theme is composed of two sub-themes, namely the length of time to refer and the distance. The first sub-theme is the length of time to refer, this was conveyed by the participants below:

*"...because it's a 9 hour trip, what's the length of time, what's the fear, the ABCD condition is afraid of being unstable because it's been on the road for a long time. So during the trip we monitored TTV..." (P2)*

*"...the journey if we take the fastest boat is 4-5 hours, if we take the slow ship it is 10-12 hours..." (P4)*

The second sub-theme is distance. This was conveyed by the participants below:

*"...before referring, there is already a little feeling of worry, especially when referring, because of the long distances we have to use makeshift transportation to refer. So this feeling is already a bit worried. But because this is for the sake of helping patients, we have to live..." (P3)*

*"...well, I'm worried, because a gunshot wound to the head has to be referred to a distant referral hospital..." (P5)*

The distance of the referral hospital is a challenge faced by participants in making patient referrals. *de Oliveira et al (2019)* said that infrastructure, the form of access to the workplace and the distance from the trauma center (referral hospital) were prominent factors as work difficulties. *Morgan & Calleja (2020)* revealed that rural and remote populations face unique challenges in the provision of emergency services such as long distances, delays in transferring patients to definitive care, limited resources in rural areas, weather, seasonal factors, availability of trained nurses. As a result, rural and remote populations often experience higher mortality rates than urban populations. The solution in the development of health services is telemedicine, it holds promise for increasing access to care and preventing unnecessary hospitalization and a number of countries are investing efforts to develop this (*Rechel et al., 2016*).

The distance from Kangean Islands to the referral hospital in Sumenep Regency is 88 miles (142 km), the only access is by sea. Penetrating trauma patients at the Arjasa health center on a referral journey takes 20 minutes from the puskesmas to the port. If it coincides with the departure schedule, it is immediately referred to a 9-10 hour trip. There is a fast boat transportation that can be used to refer patients



with a 4 hour journey. According to *Nasser et al (2020)* the time spent before reaching trauma center services affects the mortality rate in cases of penetrating trauma. *Landudjama et al (2021)* said that difficult geographical distance is a challenge for nurses working in remote areas. *Adams et al (2018)* in their research said that the challenges for rural professional nurses regarding the implementation of the trauma system in rural Scotland are decision making, transfer and referral processes.

### The Presence of Surgeon At The Puskesmas

The theme of having a surgeon at the Arjasa Public Health Center is the expectation expressed by the participants in improving the emergency services of the puskesmas, especially for penetrating trauma patients. The theme is composed of two sub-themes, namely the need for specialists and the addition of doctors. The first sub-theme is the need for specialists. This was expressed by the participants as follows:

*"...well, if our hope is in this puskesmas class, the only puskesmas that is probably the largest in East Java, I say, is in the islands. The problem with medical equipment facilities actually already exists, only the puskesmas class in the islands needs specialist doctors..." (P1)*

The second sub theme is the addition of doctors. The sub-themes are as presented by the participants below:

*"...My hope as a nurse in the islands is that the expectations are not grandiose, I just want the services at the island level to be upgraded to a hospital, and the doctors are also added, so that emergency medical treatment can be carried out on the island. No need to be referred to the mainland, and we put patient safety first. So that patients can be treated on the islands..." (P4)*

The presence of a surgeon at the Arjasa Public Health Center can help improve services, especially in cases of penetrating trauma at the Arjasa Public Health Center. The hope for a surgeon specializing in surgery is also supported by the existence of a level 2 basic laboratory and radiology owned by the Arjasa Public Health Center. PERMENKES number 90 of 2015 states that implementing health services in remote areas uses a mobile health service team with one of its members being a specialist. *McCullough et al (2021)* said that inadequate physical resources, limited specialist health personnel had an impact on the ability of remote area nurses to provide holistic primary health care.

The role of specialists in primary care as stated by *Gaede (2020)* specialist doctors as: clinical work, helping to connect clinics with the community (referral and follow-up on patients in the community), linking clinical work and community work into a multidisciplinary team, governance clinical care at all levels of care (evaluating clinical care at all levels of care, including at home), providing feedback to all levels of care, linking clinical governance and auditing to service plan guidelines, serving as resource for telephone consultations, organization of learning at all levels system (a continuing medical education for doctors focusing on local needs such as: guidance, palliative care, community health, traditional medicine etc.), learning process and joint training in collaboration with nurses.

### Completeness of Supporting Facilities and Infrastructure

The theme of completeness of facilities and infrastructure is the expectation of participants who work in the ER at the

Arjasa Public Health Center. The theme comprises two sub-themes: supporting examination tools and adequate tools. The first sub-theme is supporting examination tools. This was conveyed by the participants as follows:

*"... aaa because of my 21 years experience in the emergency room at the Arjasa health center, which is often a large case that often increases related to this trauma, penetrating wounds, gunshot wounds. We hope that in the future, hopefully, like radiology, we can get help which is already level 4, it's still level 2 here now..." (P1)*

*"...maybe hope in the future, hopefully what... are there tools for what it is... To diagnose disease..." (P3)*

The second sub-theme is an adequate tool. The sub-themes are as presented by the participants below:

*"...I hope there will be adequate tools according to the standard..." (P2)*

The completeness of the facilities and infrastructure in question is in accordance with the standards and types of puskesmas. In carrying out nursing care at the puskesmas, there is no shortage of tools such as clamps, the use of oxygen cylinders is not considered good by nurses because patients who are congested when oxygen is supplied with 2 lpm still feel short of breath, but when they arrive at the referral hospital, patients with congested conditions are given oxygen 2 lpm already feel the tightness is reduced. Ambulances are used as a means of transporting patients to refer only to transport ambulances, not to emergency ambulances. When referring penetrating trauma patients there, there is no longer a lack of oxygen during referral, when the need for transportation well available. PERMENKES number 90 of 2015 states that remote health centers must have supporting facilities and infrastructure; an inpatient puskesmas for a place to provide health services, then a hospital as a reference, a means of communication, transportation for supporting services and health supplies in accordance with the many cases faced.

*Scholz et al (2015)* say that the initial assessment of facilities and infrastructure will provide improved services: to improve the health care system's performance by detecting and eliminating shortages of infrastructure funds (by ensuring that medical devices are available and can function properly). Expectations for the completeness of facilities and infrastructure at the Arjasa puskesmas as an effort to improve services at the puskesmas, especially in cases of penetrating trauma. *Kurniasari (2019)* said there was a relationship between complete facilities and infrastructure and patient satisfaction. *Byre (2021)* also said that the completeness of facilities significantly affects patient satisfaction at the puskesmas and the quality of service also significantly affects patient satisfaction at the puskesmas.

### Improved Health Center Status

The theme of improving the status of the puskesmas is one of the themes that the participants hope for in the development of services at the ER at the Arjasa puskesmas. The theme is composed of two sub-themes, namely improving services at the puskesmas and adding services at the puskesmas. The first sub-theme is service improvement in puskesmas, as stated by participants as follows:

*"... yes, we hope that in the future, the puskesmas will become a hospital because the only one in this archipelago is the largest puskesmas. And there are many nurses, many midwives, many general doctors, just waiting for a specialist..." (P1)*

*"... my hope as a nurse in the islands is not grandiose, I just want the service at the island level to be upgraded to a hospital..." (P4)*

The second sub-theme is the addition of services at the puskesmas, this was conveyed by the participants below:

*"...emmmm.. I hope that there will be surgical facilities as soon as possible. In cases of major injuries due to carok that often occur, we do not need to refer far to the mainland hospital. Poor patient, yes, if the weather conditions are not bad, the ship doesn't exist, right..." (P5)*

Based on the PERMENKES number 24 of 2014 concerning the requirements for type D hospitals, the Arjasa puskesmas can improve the service status of the puskesmas by fulfilling several basic needs in type D hospital services such as pediatricians, internal medicine and surgery. Hensher et al (2006) said that primary-level hospitals have several specializations; especially internal medicine, obstetrics and gynecology, pediatrics, and general surgery. Limited laboratory services are available to the public but not specific pathological analysis. The World Health Organization et al (2018) say that the quality of care is assessed by how well health services are provided to individuals, groups or populations to improve the desired outcomes of nursing actions and are consistent with professional knowledge. There are seven elements of quality of care; effectiveness, safety, people-centredness, timeliness, equity, integration and efficiency.

### Improved Nurse Skills

The theme of improving the skills of nurses is the hope of nurses in developing the skills and knowledge of participants, especially in handling cases of penetrating trauma in the ER at the Arjasa Public Health Center. The theme comprises two sub-themes, namely holding training and scheduled training. The sub-theme is conducting training as presented by the participants below:

*"...I hope that there will be adequate equipment according to standards, in skill development, BTCLS and ACLS training can be conducted for emergency ER nurses who have never..." (P2)*

*"...so at least hold training or seminars to improve the skills and knowledge of aaa nurses specifically for this case..." (P6)*

The second sub-theme is scheduled training. Scheduled training sub-themes as presented by the following participants:

*"...as for our skills, we ask the head of the puskesmas as the person in charge of the puskesmas to frequently conduct special training. Both emergency personnel and other personnel are therefore more focused on being carried out at the island level to treat patients in an emergency..." (P4)*

The theme of improving nurse skills is participants' hope in providing care to patients with penetrating trauma at the Arjasa Public Health Center. The existence of focus group discussions or in-house training can be carried out by experienced nurses in collaboration with the doctor in charge of the ER to improve the skills of nurses in treating penetrating trauma patients in the ER at the Arjasa Public Health Center. Kidd et al (2012) said that there is an urgent need for nurses in remote areas to be given education and training about cases that often occur in their area. Nurses show a strong motivation for the professional development

of their nursing. Jaeger et al (2018) said that the main workload for nurses working in rural areas is the lack of training and no support to develop skills.

All participants who work in the ER at the Arjasa Public Health Center have been registered and attended BTCLS training when they just graduated from college. They said they needed an update or reminder on the management of penetrating trauma cases. Leng et al (2022) said that nurses working in remote areas had difficulty attending training. McElroy et al (2022) said that the obstacle in developing nurses' knowledge is geographical distance. Smith et al (2019) say the experience of nurses working in rural health services requires the support of nurses working in rural hospitals or decision makers, by providing adequate professional development opportunities and personalized staff.

Skills and expertise development can be accessed from various sources; conferences, workshops, mentoring or shared learning from internal or external colleagues. With limited funds and limited access to professional development locally, it is also possible to access information online from trusted sources. Many strategies can be implemented through organizational plans and systems, ensuring that primary care health workers can maintain their skills (McFarlane et al., 2018).

### Limitations of the Study

Access to remote research sites and bad weather when conducting research makes the research time longer. The difficulty in collecting data during the study was because the time of conducting the research coincided with the celebration of the independence of the Republic of Indonesia, namely in August, so that participants were difficult to find.

### CONCLUSIONS AND SUGGESTIONS

The theme of feeling afraid that the patient's condition will worsen when referred explains the feelings of nurses when caring for and referring penetrating trauma patients at the Arjasa Public Health Center, Sumenep Regency. The theme of limited facilities and infrastructure at the puskesmas, the theme of the situation and condition of patients who must be referred, the theme of weather conditions when referring, the theme of the distance from the hospital to which they refer, explains the challenges experienced by nurses in treating and referring penetrating trauma patients at the Arjasa district health center. Sumenep. The theme of having surgeon specialists at the puskesmas, the theme of completeness of supporting facilities and infrastructure, the theme of increasing the status of the puskesmas, the theme of increasing the skills of nurses explained the expectations of nurses who treated and referred penetrating trauma patients at the Arjasa puskesmas, Sumenep Regency. The results of this study can serve as basic data or additional references for future researchers and can conduct mixed methods research related to the readiness of remote health centers for emergency events.

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## ETHICAL CONSIDERATIONS

This research has passed the research ethics test conducted at the Faculty of Health, Universitas Brawijaya, Malang. Ethical approval certificate number 3752/UN10.F17.10/TU/2022

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None

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