Research Article

Correlation between Nurse Practice and Pre-hospital Ambulance Service Satisfaction in Bali

Korelasi Ketrampilan Perawat dengan Kepuasan Layanan Ambulans Pra-Rumah Sakit di Bali

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ABSTRACT

The pre-hospital emergency service was the first guard of nursing and treatment delivery. The pre-hospital ambulance service could be used to offer first aid to the patient or victim who experienced trauma or non-trauma with unpredictable condition. The improvement of service quality on emergency sector was required to assure that the health service was given and performed well. This research was aimed to analyze the correlation between nurse practice and pre-hospital ambulance service satisfaction in Bali. The correlative analytic research method and cross sectional approach were exerted to accomplish this research. The total sample was 271 respondents which were consisted of 144 patients and 127 nurses. The result of Spearman-rank referred p value 0.024; r 0.189 which it was indicated a significant relation between nurse practice and pre-hospital ambulance service satisfaction in Bali. The nurse practice was instituted through educational degree and training experience. The improvement of nurse practice value was in line with the pre-hospital ambulance service satisfaction value in Bali.

Keywords: Ambulance, nurse practice, patient satisfactions

ABSTRAK

Penanganan gawat darurat pra-rumah sakit merupakan garda pertama dalam pemberian perawatan. Layanan ambulans pra-rumah sakit dapat digunakan untuk memberikan pertolongan pertama pada pasien atau korban yang mengalami trauma atau non trauma dengan kondisi yang tidak dapat diprediksi. Peningkatan kualitas layanan pada sektor gawat darurat diperlukan untuk memastikan bahwa layanan kesehatan sudah diberikan dengan baik. Penelitian ini bertujuan untuk menganalisis korelasi keterampilan perawat dengan kepuasan layanan ambulans pra-rumah sakit di Bali. Metode penelitian analitik korelatif dengan pendekatan *cross sectional* digunakan dalam penelitian ini. Sampel berjumlah 271 yang terdiri dari 144 pasien dan 127 perawat. Hasil *Spearman-rank* menunjukkan nilai p 0,024; r 0,189 yang bermakna terdapat hubungan bermakna keterampilan perawat dengan kepuasan layanan ambulans pra-rumah sakit di Bali. Keterampilan perawat dibentuk oleh tingkat pendidikan, pengalaman pelatihan. Peningkatan nilai keterampilan perawat sejalan dengan nilai kepuasan layanan ambulans pra-rumah sakit di Bali.

Kata Kunci: Ambulans, kepuasan pasien, keterampilan perawat

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INTRODUCTION

The pre-hospital emergency service is the first guard of treatment service (1). The ambulance service is an element of pre-hospital emergency aid, which especially in Indonesia; the ambulance use has been regulated in the Health Minister's Regulation 47th on emergency service (2). The pre-hospital ambulance service can be used to offer first aid to the patient or victim who gets trauma or non-trauma with different unpredictable conditions (3). The government of Republic of Indonesia through Health Minister (2016) has established Public Safety Center 119 which is functioned to offer and provide ambulance service with emergency service standard.

Bali is a province in Indonesia which has a relatively high number of deaths due to traffic accidents. There are about 1.827 accident cases in Bali during last 2018 and have increased up to 3.341 cases in 2019 which has impacted an average of 485 victims each year (4). The pre-hospital death due to emergency condition will be more increasing, since it has lack of effective first aid performed by the ambulance nurse or Emergency Medical Service (EMS) (5). The fast and precise patient stabilization can prevent patient disability and death (6).

Bali district and city which already have ambulance service under the authority of local health department are Klungkung District, Badung District, and Denpasar City. At least, there are a nurse and other health workers who have duty of pre-hospital ambulance service in Bali. The nurse practice on pre-hospital emergency service is a significant aspect to deliver an optimal ambulance service (7). The inadequate nurse practice in emergency service can affect negatively on the patient (8). The previous research finding on ambulance nurse in Indonesia has revealed that the ambulance nurse does not get formal training yet about emergency service (9). This finding indicates the need to assess pre-hospital ambulance service quality performed by the nurse in Bali.

The patient satisfaction is the most frequent metric or indicator which is used to examine the quality of health service '(10). The patient satisfaction on a service is the purpose of health service system. Moreover, the improvement of service quality on emergency sector is required to make sure that the health service has been given and performed well (1). Hence, this research is aimed to analyze the correlation between nurse practice on emergency service and pre-hospital ambulance service satisfaction in Bali.

METHODS

Research Desain

This research was categorized into a correlative analysis research which exerted cross-sectional research approach. This research would analyze the relation between nurse practice and pre-hospital ambulance service satisfaction in Bali. This research was conducted in three districts/cities in Bali: Klungkung District, Badung District, and Denpasar City. This research was done during March-May 2021. The population of this research is amount 306 respondent consisting of 162 nurses and 144 patients. The sample was obtained by calculation using the Slovin formula and was selected using the cluster sampling technique. The research sample was taken from 271 respondents which were consisted of 144 patients

and 127 nurses. This research exerted questionnaire as the technique of data collection. The questionnaire in this research was adopted from the previous research done in Malang, East Java, Indonesia (9). The questionnaire on nurse practice was contained of 8 question items in likert scale "highly disagree" until "highly agree" scale which would be filled directly by the nurses as the research sample. The validity and reliability test have been done with alpha cronbach value 0.932. Meanwhile, the ambulance service satisfaction was assessed by using Consumer Emergency Service Scale (CESS) questionnaire which was adopted from the previous research done by Larsson, et al. and has been translated by the researcher (11). CESS was contained of 16 question items in likert scale "highly disagree" until "highly agree" which were aimed to assess the patient perception on ambulance service satisfaction. Moreover, CESS has passed validity and reliability test by the researcher with alpha cronbach value 0.882. There is no observations were made through a checklist related to nurse performance. This research has been stated as an ethical research by Research Ethics Committee of Medicine Faculty of Udayana University with registration No. 888/UN14.2.2.0414 on March 22, 2021. The research data was analyzed through IBM SPSS 21 software. Next, Spearman-rank test was used to analyze the relation between nurse practice and pre-hospital ambulance service quality in Bali. Therefore, based on the normality test in Kolmogorov-Smirnov, the data was not normally distributed.

RESULT

The Prehospital Ambulance's Nurse Characteristic

According to the table 1 below, the average age of pre-hospital nurse in Bali is 28 years old, the youngest nurse is 23 years old and the older is 40 years old. The prehospital nurse in Bali have experiennce working in ambulance service three years and wourking as a nurse in four years. The Kruskal-Willis test showed than p-value at age of the nurse, experience as a nurse, experience as ambulance's nurse were 0.766 (p>0.05), 0.542 (p>0.05), 0.263 (p>0.05). These results mean that there are differences in the characteristics of nurses' age, experience as a nurse and experience as an ambulance nurse in each district providing pre-hospital ambulance services in Bali.

Table 1. The nurse characteristictrough age, and working experience

Variable	Med (Min-Max)	pValue
Age	28 (23-24)	0.766
Experince as nurse	4 (1-20)	0.542
Experience ans ambulance nurse	3 (1-9)	0.263

*Kruskall Wallis test

The Table 2 showed that all of the prehospital ambulance nurse in Bali have passed higher education with the majority have a bachelor of nurse degree as much as 57.5%. The majority of pre-hospital ambulance nurses in Bali have Basic Cardiac Life Support and Basic Trauma Life Support training (87.4%) and 57.5 % of them still have a

valid certificate.

Table 2. The nurse characteristic trough genre, education and couse experience

Variable		n	%	pValue
Sex	Male	61	48	0.766
	Female	66	52	
Education	Diploma 3	50	39.4	
	Diploma 4	4	3.1	0.832
	Bachelor of Nurse	73	57.5	
Course Experience	BCLS			
	Yes, Valid	73	57.5	
	Yes, expired	38	29.9	0.799
	No	16	12.6	
	ACLS			
	No	127	100	1.000
	BTLS			
	Yes, Valid	73	57.5	
	Yes, Expired	38	29.9	0.910
	No	16	12.6	
	ATLS			
	No	127	100	1.000
	Basic Emergency Ambulance Protocol			
	No	127	100	1.000
	Triage Officer Course	1	0.8	
	Yes, Valid	1	0.8	0.013*
	Yes, expired	125	98.4	
	No			
	Trauma Nursing Care	3	2,4	
	Yes, Expired	124	97.6	0.001**
	No			
	ECG			
	No	127	100	1.000
	General Emergency Life Support	7	5,5	
	Yes, Valid	6	4.7	0.000**
	Yes, expired	114	89.8	
	No			

*Kruskall-Wallis test

The Nurse Practice on Pre-hospital Emergency Service

The mean value of practice owned by pre-hospital ambulance nurse in Bali was about 27.1±1.68 with median value of 27, minimum value of 24, and maximum value of 31. The result of Kruskall-Wallis test showed the value 0.583 (p>0.05) which was referred that the difference of pre-hospital ambulance nurse practice value in each Bali district was not found.

The Relation between Nurse Practice and Pre-hospital Ambulance Service Satisfaction

According to the Table 3 below, this research found a very weak relation with positive direction between nurse practice and pre-hospital ambulance service satisfaction in Bali (p=0,05; r=0,189). This result referred that the higher value of pre-hospital ambulance nurse practice would determine the higher pre-hospital ambulance service satisfaction in Bali.

Table 3. The relation between nurse practice and pre-hospital ambulance service satisfaction

Independent Variable	Dependent Variable	N	*pValue**	*Coeficient Correlation (r)**
Performance	Satisfaction	144	0.024	0.189

Spearman-rank test

DISCUSSION

The result of correlation test between nurse practice and pre-hospital ambulance service satisfaction in Bali showed a very weak relation with positive direction between nurse practice and pre-hospital ambulance service satisfaction in Bali (p=0.024; r=0.189). This result referred that the higher level of pre-hospital emergency practice owned by the nurse, the higher value of patient satisfaction on pre-hospital ambulance service performed by the nurse in Bali.

The research result was in line with the previous research done by Farhadloo *et al.,* which has found that the nurse professional practice relating to emergency service could affect the patient satisfaction to receive pre-hospital emergency service (1). In line with these results, Lim *et al.,* stated that patient satisfaction is directly affected by the nurse's performance in providing services received by patients (12). Further, the previous research done by Larsson *et al.,* has also added that a good nurse practice within emergency service delivery would indicate a high level of patient satisfaction to get pre-hospital emergency service (11).

The prehospital ambulance nurse have three years working experience as ambulance nurse. Working experience can showed how long is the nurse performance when delivered health service in prehospital patient. In the same line, Khaya *et al.,* provide that education and experience can build nurse performance in delivering a health service (13). The quality of nurse performance when giving health service will show the nurse experiencing delivering the services (14). The nurse skill to deliver pre-hospital emergency service could be formed through formal nurse trainings (8). According to the observation result, the pre-hospital ambulance nurse in Bali, approximately 87.4% (n=127) of nurses have attended basic life training for cardiac arrest and basic training in handling patient with trauma and 57.5% of nurses still have a valid certificate. Besides those trainings, the material refresh was also given by ambulance service in each district in order to maintained and up dated the knowledge and the skill of the nurse practice on pre-hospital ambulance service. Previous research done by Suryanto *et al.,* has said that the training experience or training program has effects on nurse practice to deliver and perform pre-hospital emergency service (9). Moreover, the high level of education could also affect the nurse practice. The pre-hospital ambulance nurse in Bali who have taken bachelor education and attended trainings on emergency aid could contribute forming a good practice in pre-hospital emergency service. Furthermore, this factor was able to increase pre-hospital ambulance service satisfaction in Bali.

There is a positive significant correlation between nurse performance and ambulance service satisfaction of pre-hospital care in Bali. The nurse practice on pre-hospital emergency service was acquired through educational

degree and training experience. This factor would directly improve the nurse practice to deliver pre-hospital emergency service which was in line with the value of pre-hospital ambulance service satisfaction.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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