AUSTRALIAN TRIAGE NURSES' DECISION-MAKING AND SCOPE OF PRACTICE

Marie Gerdtz, BN, AandECert, GradDip Adult Ed and Training, is a PhD candidate at the School of Postgraduate Nursing, University of Melbourne, and a Clinical Nurse Educator, Emergency Care Centre, St Vincent's Public Hospital, Melbourne, Australia

Tracey Bucknall, BN, IntCareCert, GradDip Advanced Nursing, PhD is a Senior Lecturer at the School of Postgraduate Nursing, University of Melbourne, Australia

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ABSTRACT

A survey of 172 Australian triage nurses was undertaken to describe their scope of practice, educational background and to explore the self-reported influences perceived to impact on their decision-making.

The survey results reveal variability in the educational requirements for nurses to triage. Indeed, over half of the nurses who participated in the study worked in emergency departments that provided no specified unit-based triage education. Additionally, substantial inter-respondent variations in nurses' self-reported participation in a range of decisions to expedite emergency care were identified. Analysis revealed significant associations between demographic characteristics of the triage service, levels of nurse autonomy and the nurses' self-reported participation in a number of triage decisions.

The findings of this study have implications for emergency nurse education and the development and evaluation of triage practice guidelines.

INTRODUCTION

Triage is a process of prioritising patients who attend an emergency department (Handysides 1996). In Australia, registered nurses assign a triage code using the National Triage Scale (NTS). This scale requires the nurse to allocate the patient into one of five categories according to how long they should wait for medical care. Two types of triage decisions have been described in the literature (Australian Commonwealth Department of Health and Family Services 1997; Geraci and Geraci 1994; Purnell 1991; Purnell 1995). Primary triage decisions relate to initial patient assessment, determining patient acuity, administering first aid and deciding patient dispositions. Secondary triage decisions are concerned with the initiation of nursing interventions in order to expedite emergency management (Australian Commonwealth Department of Health and Family Services 1997).

The qualities of decisions made by nurses with regard to the primary triage role have important implications for patient outcomes (Manchester Triage Group 1997). For the patient, a poor triage decision may result in a delay in life or limb-saving interventions and/or permanent disability. However, a number of authors have suggested that triage nurses frequently make secondary decisions to initiate nursing interventions aimed at expediting emergency care (Gerdtz and Bucknall 1999; Purnell 1995). Indeed, interventions provided by triage nurses while the patient is waiting for medical assessment may impact upon patient outcomes (Parris et al 1997; Purnell 1995).

Triage: Primary roles and secondary roles

The triage nurses' primary role is to allocate a triage code. The triage code reflects the patient's clinical need, and precedes medical diagnosis (Commonwealth Department of Health and Family Services 1997). While

the complexity of the decision to allocate a triage code is well recognised (Cioffi 1998; Corcoran et al 1988; Gerdtz and Bucknall 1999), there remains a paucity of research in the published literature regarding other decisions related to the primary triage role. These include nurses' decisions on patient dispositions, and referring non-urgent patients to other health providers.

Secondary decisions made by triage nurses' have been described in terms of individual tasks such as; ordering X-rays for patients with limb injuries (Lee et al 1996; Macleod and Freeland 1992; Parris et al 1997), or the collection of blood for laboratory tests (Purnell 1991). In Purnell's (1991) survey of 185 emergency departments in the United States twelve tasks frequently performed by triage nurses were identified.

Building on the work of Purnell (1991), Geraci and Geraci (1994) conducted a 72-hour observational study of the triage nurses' role in one emergency department. They identified a list of tasks performed by triage nurses for 466 patients. In addition to the scope of tasks performed by triage nurses, both North American authors discuss a number of factors that may influence nurses' participation in performing these tasks. These factors include the physical facilities provided at triage, the level of autonomy triage nurses have to make decisions, and, the characteristics of triage nurses including their educational background and level of experience.

In Australia, Standen and Dilley (1998) have reported variability in both the educational preparation of triage nurses and various aspects of the triage role. However, little has been discovered about the complex patient, nurse and organisational variables that influence triage nurses' decision-making in practice. These issues represent a serious gap in the knowledge required for the development of practice-based triage education.

The task environment

Clinical reasoning comprises a psycho-dynamic relationship between the human problem-solver and the task environment (Fonteyn 1995). In their seminal work, Elstein et al (1978) described the hypothetico-deductive model of decision-making used by physicians from an information-processing standpoint. The hypothetico-deductive model describes decision-making as an interactive process of data collection, hypothesis generation, cue interpretation and hypothesis evaluation (Elstein and Bordage 1988). Within the information-processing paradigm, clinical decisions are studied in context of practice (Dowie and Elstein 1998). Lyneham (1998) researched emergency nurses' decision-making using a modified grounded theory approach and concluded that the hypothetico-deductive model was used by nurses when conducting initial patient assessments.

Indeed, a commonly used method applied to the study of triage nurses' decision-making involves the use of simulated patient scenarios (for example see, Dilley and Standen 1998; Jelinek and Little 1996). Simulated patient scenarios however, fail to take into account that as with all decisions, the triage decision is socially constructed (Edwards 1998). It is argued that contextual factors within the task environment such as time limitations; stress and social interactions cannot be replicated when simulated decisions are made (Thomas et al 1989). For these reasons, several authors (Bucknall 1996; Watson 1994) have advocated a triangulation approach to the design of decision research in nursing combining multiple methods to address a range of questions (Greenwood 1998).

This paper reports on one part of a major research program aimed at developing a comprehensive description of triage nurses' decision-making. The purpose of this exploratory study was three-fold: first, to describe the scope of clinical decisions made by triage nurses; second, to describe levels of experience, education and special training required for nurses to perform the triage role; and third, to examine the self reported influences which are perceived to impact upon triage nurses' decision-making in practice.

RESEARCH AIMS

The aims of this study were to:

- Describe the level of appointment, experience and educational background of triage nurses in the state of Victoria, Australia.
- Describe the incidence of decision-making reported by the triage nurses surveyed with regard to eighteen clinical decisions drawn from triage practice.
- Describe the level of autonomy triage nurses' report to have in relation to eighteen clinical decisions drawn from practice.
- Explore the relationship between demographic characteristics of the triage services and triage nurses' participation in decision-making.
- Explore the relationship between triage nurses' levels of autonomy and their reported participation in decision-making.

METHOD

A descriptive exploratory method was chosen to address the research aims. This method was selected to facilitate both an initial description of the task environment and an exploration of the scope and frequency of decision tasks undertaken in practice. Beanland et al (1999) identify descriptive/exploratory

survey studies as an effective research method in searching for information about the characteristics of subjects, groups or organisations and the frequency of a phenomenon's occurrence.

Sample

Following ethics approval, the Council of the Emergency Nurses Association of Victoria Incorporated (ENA Vic Inc.) approved the study and provided access to its membership database. All ENA members (285) received a letter of explanation and an invitation to participate in the study, the questionnaire, and a reply paid envelope.

Questionnaire

A self-reporting questionnaire was developed to collect information regarding the nurses' clinical decision-making at triage and their demographic characteristics. This approach was selected as the most suitable method of data collection, as a large sample was necessary in order to describe the nurses' scope of practice in a variety of settings. The survey approach also avoided the difficult task of accessing multiple sites that may have only small numbers of nurses performing the triage role.

Validity

The content validity of the instrument was supported by a literature review and pilot study. The pilot questionnaire was administered to ten triage nurses. Feedback was obtained regarding the scope of responses offered and the clarity of questions asked. A number of revisions were made prior to the questionnaire being distributed. The questionnaire was divided into two sections:

Section one comprised of questions on demographic characteristics which were informed by the work of Purnell (1991) and included the type of emergency facility (generalist or specialist), the number of hours worked, and the nurses' qualifications.

Section two comprised of questions concerning eighteen skilled tasks performed by the triage nurse. The approach to questioning was based on a recent study of critical care nurses' clinical decisions (Bucknall and Thomas 1995). The skilled triage tasks chosen for inclusion in this study were identified in the work of Purnell (1991, 1995) and Geraci and Geraci (1994) and were selected to represent a range of triage activities of varying complexity. For each of the eighteen tasks expressed as a triage decision, participants were required to answer three questions. The first question required participants to indicate the level of autonomy they have in their work place to make the decision. A five-point Likert-type scale was employed to grade the response. The response categories were represented along the scale points as, 'guided by the triage assessment of each individual', 'directed by departmental protocol or guidelines', 'requires a doctors' order' (neutral category) 'not performed due to resource limitations' and 'not permitted'. The second question asked the participant to state the frequency with which they made the decisions identified. A six-point Likert-type scale was employed with the points of the scale

1. 'never'
2. 'at least once per year'
3. 'at least once per month'
4. 'at least once per week'
5. 'at least once per triage shift'
6. 'several times per triage shift'.

In order to determine the scope of triage decision-making, the final question required participants to identify 'any triage decisions they made on a regular basis without medical supervision' that had not been listed.

Analysis

Descriptive and inferential statistics were utilised to examine the nurses' responses to each of the eighteen listed decisions. Content analysis was used to explore other decisions the nurses' reported to have made in the triage area without medical supervision.

Data analysis was performed using Statistical Package for Social Sciences. For the purpose of analysis, the decision data cells were collapsed to yield three categories to describe frequency; *frequent* decisions included those made several times per shift, daily or weekly, *infrequent* decisions were those reported to be made monthly or yearly and, *never* were those decisions never made. Pearson's Chi-square test was used to examine the relationship between the frequency with which the nurses reported making each of the listed decisions and the independent variables identified. Fishers Exact Test was utilised when the expected frequency within cells of the contingency table was small.

In analysing associations between nurses' levels of autonomy and their participation in decision-making, the decision data cells were collapsed to yield two nominal categories; *independent*, nurses' able to make the decisions based upon their own assessment and/or by using protocols or guidelines and, *contingent*, nurses' able to make the decision by obtaining a doctors order. Nurses who reported being unable to make the decision either due to resource limitations or who were not permitted to make the decision at triage were excluded from this section of analysis.

RESULTS

Demographics

The convenience sample of 285 emergency nurses accessed for this study represents 22.7% of Victorian emergency nurses (Victorian Government Department of Human Services and Division, 1999). A response rate of 68.07% (n=194) was achieved. A small number of respondents were excluded from the study because they were not currently practicing triage (n=23). A total of 172 returned questionnaires were subject to analysis.

Thirty-seven separate emergency departments were represented in the sample identified by cross checking postcodes with the Victorian Department of Health and Community Services listing public and private hospitals (Victorian Department of Human Services 1999). The demographic characteristics of the sample are outlined in Table 1.

Table 1. Demographic characteristics of the study sample (n=172)

Variable	n	%	Mean	SD
Location				
Rural/remote	48	27.9		
designated triage nurse	29	60.4		
no designated triage nurse	19	29.6		
Metropolitan	124	72.1		
designated triage nurse	116	93.5		
no designated triage nurse	8	6.5		
Patient presentations				
<10,000	15	8.7		
10,000-30,000	61	35.5		
>30,000	86	50.0		
Type of emergency service				
Generalist	128	74.4		
Adult only	34	19.8		
Specialist	10	5.8		
Hospital type				
Public	160	93.0		
Private	12	7.0		
Appointment level				
Registered Nurse	40	23.3		
Clinical Nurse Specialist	59	34.3		
Associate Charge Nurse ChargeNurse/other	73	42.4		
Education Level				
Registered Nurse without emergencyor critical care qualification	73	42.4		
Registered Nurse with certificate or Graduate Diploma in critical care or emergency nursing.	99	57.6		
Educational requirements specific to triage				
Triage orientation (< 1 week)	65	37.8		
Triage preceptorship (> 1 week)	23	13.4		
No unit-based education specified to triage	84	55.2		
Experience				
Years as a Registered Nurse			13.63	7.87
Years as an Emergency Nurse			8.58	5.69
Hours worked per fortnight in emergency area			58.72	19.60
Hours worked per fortnight at triage			18.51	12.94

Incidence of decision-making

The self-reported incidence of decision-making for the primary triage role revealed high percentages of decision-making in all of the decisions listed. In particular, decisions to evaluate vital signs and to splint an injured limb were frequently made by the majority of nurses. Table 2. shows a detailed presentation of the reported frequency of decision-making for each of the primary triage decisions listed. The nurses' reported frequency of decision-making for the secondary triage role revealed a greater degree of inter-respondent variation than the decisions related to the primary triage role.

Table 3. summarises the overall incidence of decision-making with regard to the secondary triage role. Over half of the nurses reported frequent participation in decisions to perform a urinalysis, utilise pulse oximetry, perform blood glucose monitoring and order an X-ray for an isolated limb injury.

The results of the content analysis provide a description of decisions other than the eighteen listed in the survey that the nurses' reported to be making in the triage area without medical supervision. The data was examined and coded according to seven themes that emerged from the nurses' comments. The main theme was triage referral (32%), which involved a number of subcategories, these were; accessing psychiatric liaison services (11.6%), drug and alcohol detoxification services (3.4%), and facilitating access to specialist medical services (5.2%). Other major themes included; administering analgesia (4.7%), administering first aid (15.6%), activating emergency responses (4.7%), conducting focused physical assessments (8.1%) and, directing ongoing nursing management (12.2%).

Table 2. Nurses' self-reported frequency of decision-making regarding the primary triage role (n=172)

	Reported frequency of decision-making			
Decisions	**Frequently**	**Infrequently**	**Never**	**No resource Not permitted**
	%	%	%	%
To evaluate vital signs (complete set or single parameter)	95.9	1.2	0.6	2.4
To splint an injured limb	91.8	7.6	0	0.6
To re-evaluate a patient in the waiting area	81.2	15.3	1.8	1.8
To refer a non-urgent (NTS 5) patient to a general practitioner	74.9	5.3	0.6	19.3
To consult with an inpatient unit	77.6	9.3	5.6	7.5

Key

Frequent = several times per shift, once per shift, once per week

Infrequent = once per month, once per year

Never = the decision is never made

No resource/not permitted = decision cannot be made due to resource limitations or nurses are not permitted to make the decision.

Table 3. Nurses' self-reported frequency of decision-making regarding the secondary triage role (n=172)

	Reported frequency of decision-making			
Decisions	**Frequent**	**Infrequent**	**Never**	**No resource Not permitted**
	%	%	%	%
To perform a urinalysis	92.4	4.1	0.6	3.0
To utilise pulse oximetry	81.9	4.7	2.9	10.5
To perform a blood glucose measurement	73.1	17.5	0.6	8.8
To administer paracetamol to a febrile child	71.4	13.6	7.9	12
To order an X-ray (for an isolated limb injury)	54.6	5.5	11.7	28.3
To perform a Plaster of Paris check	46.7	13.2	7.2	32.9
To administer oxygen therapy at triage	43.8	10.7	4.1	41.4
To initiate oral re-hydration therapy in a child	54.1	22.6	11.3	12
To administer nebulised medication	33.9	10.9	7.3	47.9
To initiate an electrocardiograph	30.2	13.6	4.7	51.4
To collect venous blood for laboratory studies	27.6	19.2	12.2	41.0
To initiate intravenous cannulation	24.3	7.0	8.9	59.7

Key

Frequent = several times per shift, once per shift, once per week

Infrequent = once per month, once per year

Never = the decision is never made

No resource/not permitted = decision cannot be made due to resource limitations or nurses are not permitted to make the decision.

Levels of autonomy

Of the nurses surveyed, 47.3% made the mandatory decision to allocate a triage code based on their own assessment in all cases, 7% were directed by protocols or guidelines in all cases, and 45.6% made the decision to allocate a triage code based upon a combination of their own assessment, with some specified chief complaints directed by protocols or guidelines. In Table 4 the level of autonomy for decisions linked with the primary triage role are presented.

Analysis of nurses' reported levels of autonomy for the secondary triage role revealed a greater degree of inter-respondent variability than the primary role. Table 5. outlines the level of autonomy for decisions linked with the secondary triage role.

Triage nurses' self-reported levels of autonomy were found to be significantly linked to increased frequency of decision-making in six of the decisions listed. The decisions shown in Table 6. are those which were significantly more likely to be made by nurses in the

Table 4. Triage nurses self-reported levels of autonomy for primary triage decisions (n=172)

Decision	Level of Autonomy			
	Own assessment %	Protocol Guideline %	Doctors' order %	No resource Not permitted %
To evaluate vital signs (either a complete set or a single parameter)	92.9	4.1	0	2.9
To splint an injured limb	91.7	7.1	0	1.2
To re-evaluate a patient in the waiting area	90.6	5.8	0.6	2.9
To refer a non-urgent (NTS 5) patient to a General Practitioner	61.0	14.0	1.2	23.8
To consult with an inpatient unit	63.9	13.9	15.0	7.2

Table 5. Triage nurses self-reported incidence of autonomy for secondary triage decisions (n=172)

Decision	Level of Autonomy			
	Own assessment %	Protocol Guideline %	Doctors' order %	No resource Not permitted %
To perform a urinalysis	90.1	4.7	0	5.3
To utilise pulse oximetry	87.1	2.4	0	10.5
To perform a blood glucose measurement	84.3	4.7	1.2	9.9
To administer paracetamol to a febrile child	34.8	25.5	32.6	8.1
To order an X-ray (for an isolated limb injury	7.0	20.5	39.2	33.2
To perform a Plaster of Paris check	19.4	27.6	20.0	32.9
To administer oxygen therapy at triage	54.1	3.5	0.6	41.7
To initiate oral re-hydration therapy in a child	47.4	10.9	29.9	11.7
To administer nebulised medication	23.6	12.4	17.6	56.7
To initiate an electrocardiograph	41.3	3.6	3.0	52.0
To collect venous blood for labratory studies	17.8	5.9	33.3	42.8
To initiate intravenous cannulation	27.9	5.3	4.8	61.9

Table 6. Triage nurses self-reported decision-making frequency significantly linked to level of autonomy

Decision Frequency	Level of Autonomy				
	Independent	Contingent	Totals	χ_2	p
To perform an electrocardiograph (n=79)					
Frequent	49	1	50	7.70	0.02*
Infrequent	20	2	22		
Never	5	2	7		
To perform a Plaster of Paris check (n=110)					
Frequent	65	12	77	30.78	<0.01*
Infrequent	14	7	21		
Never	1	11	12		
To collect venous blood for laboratory studies (n=70)					
Frequent	26	14	40	10.08	<0.01*
Infrequent	8	22	30		
To consult with an inpatient unit (n=149)					
Frequent	115	10	125	45.85	<0.01*
Infrequent	12	3	15		
Never	1	8	9		
To administer nebulised medication (n=86)					
Frequent	44	12	56	14.27	0.01*
Infrequent	14	4	18		
Never	3	9	12		
To administer paracetamol to a febrile child (n=130)					
Frequent	77	23	100	28.20	<0.01*
Infrequent	7	12	19		
Never	1	10	11		
To commence oral rehydration therapy for a child (n=102)					
Frequent	60	12	72	6.41	0.01*
Infrequent	18	12	30		

Note
*p<0.05 Chi Square
n=Nurses able to make the decision without direct medical supervision in the triange area guided by their own assessment, directed by protocol or guidelines or by obtaining a Doctors' order.
independant=decision made guided by own assessment or decision assisted by protocol or guideline
contingent=decision requires a Doctors order

independent group (able to make the decisions based upon their own assessment and/or by using protocols or guidelines), than those in the contingent group (able to make the decision by obtaining a doctor's order).

Frequency of triage nurses' decision-making and demographic characteristics

The decision to perform vital signs, perform a urinalysis and refer a non-urgent (NTS 5) patient to a general practitioner could not be subject to chi square analysis due to the skewed distribution of frequencies within the contingency table.

Nurses who worked in rural or remote areas reported increased participation in decision-making compared with nurses' working in metropolitan settings in three of the decisions listed. These included the decision to; collect blood for laboratory studies ($\chi 2=6.86$, $p=0.032$), insert an intravenous cannula ($\chi 2=9.31$, $p= 0.009$) and perform an electrocardiograph ($\chi 2=8.58$, $p=0.003$).

Nurses' who worked in emergency departments which treated more than 30,000 patients annually reported increased participation in decision-making when compared with nurses working in departments treating 10,000-30,000 patients annually and those working in departments treating less than 10,000 patients annually for

two of the decisions listed. These included the decision to; administer paracetamol to a febrile child ($\chi 2=7.62$, p=0.02), and to splint an injured limb ($\chi 2=12.75$, p=0.002).

Four decisions were found to be significantly more likely to be made by nurses working in general emergency settings, than adult settings, and by nurses working in adult settings than in specialist emergency settings. These decisions included; the decision to perform a Plaster of Paris check ($\chi 2=12.65$, p=0.013), the decision to perform a blood glucose measurement ($\chi 2=13.75$, p=0.001), the decision to perform an electrocardiograph ($\chi 2=12.91$, p=0.012) and the decision to collect blood for laboratory studies ($\chi 2=9.33$, p=0.009).

Due to the small number of nurses working in private emergency departments (6.9%) no comparisons were made regarding these nurses' participation in decision-making compared to public sector nurses.

DISCUSSION

The most important feature of the survey results is the degree of variability identified in the level of education and training required for nurses to perform the triage role. Over half of the nurses who participated in this study worked in emergency departments that provided no specific unit-based triage education (Table 1). This research builds upon the work of Standen and Dilley (1998) who also identified inconsistency in the training of triage nurses working in Victorian public hospitals.

Notwithstanding this result, an important finding of the study was the number of triage nurses who reported frequent and independent participation in a range of complex diagnostic and management decisions. For example, decisions to commence oral rehydration therapy in a child (Table 2) and to order diagnostic tests such as x-rays (Table 3). Both of these decisions involve a considerable degree of risk at triage because they are made in the face of an undifferentiated illness or injury and are not informed by extensive physiological data. For example the triage nurses' decision to commence oral rehydration therapy in a child requires the nurse to not only diagnose dehydration, but to rule out surgical causes of gastrointestinal symptoms. Despite its complexity, this decision was reported to be independently made by over half of the nurses in the study (Table 5). A further example is the triage nurses' decision to order an X-ray for an isolated limb injury. Of the nurses surveyed, over one quarter reported independently making this decision in practice (Table 5). This diagnostic decision requires the nurse to; first, establish the provisional diagnosis of fracture, second, screen the patient regarding the potentially harmful effects of radiation and third, use radiological terminology to specify the nature and extent of x-rays required.

A further notable finding from this study was the frequency with which many of the nurses reported making the decision to refer a non-urgent patient to a general practitioner (Table 2). Of the nurses surveyed, over two thirds reported independently making this decision in practice (Table 4). In addition to the risks already discussed, this decision poses some specific legal risks for the triage nurse. George (1983) has suggested that an examination conducted in the triage environment may fall below acceptable nursing standards in terms of obtaining adequate clinical data on which to base a referral decision. Additionally, Gerdtz and Bucknall (1999) have identified no established convention within Australia regarding how information is communicated from the referring nurse to the receiving health care provider.

The risks taken by nurses in making these decisions is further compounded because they are made in an environment of limited resource, where time and available data regarding the patients condition may be limited or ambiguous (Gerdtz and Bucknall 1999). Phillips (1987) described such decisions in the context of critical care nursing as 'hot', because they frequently involve time constraints and often place the nurses' professional reputation and self-esteem 'on the line' (Bucknall 1996; Phillips 1987)

A further noteworthy finding of this study was the high level of conformity regarding nurses' participation in primary triage decisions and the considerable degree of variability regarding their participation in secondary decision-making. Primary triage decisions were uniformly reported by participants to be frequently made in practice (Table 2). This is possibly because primary decisions are largely diagnostic in nature and culminate in the mandatory allocation of a triage code. Similarly, nurses' decisions to refer a non-urgent patient to a general practitioner or conduct a reassessment also involved making a judgement regarding patient acuity. Importantly, primary decisions made by triage nurses appeared to require little in the way of equipment and resource. As a result, nurses' participation in these decisions was not found to be influenced by the environmental variables explored.

In contrast to the uniform participation reported for primary triage decision-making, this study identified a considerable level of variability in nurses' reported participation in secondary triage decisions (Table 3). Many secondary triage decisions require time, space and specific equipment. Indeed, a number of demographic, resource and organisational factors identified in this study appear to influence nurses' participation in the secondary triage role.

First, the significant associations identified between nurses' participation in decision-making related to secondary triage decisions and hospital location are likely to be the result of differences in the triage role in rural and

metropolitan locations. It is interesting to note that nearly one third of nurses working in rural or remote locations worked in departments without a designated triage nurse. The combination of decisions significantly more likely to be made by nurses working in rural and remote areas than those working in metropolitan emergency departments supports this argument. Decisions to perform an electrocardiograph, insert an intravenous cannula and collect blood for laboratory studies are usually related in combination with the assessment of chest pain. It is possible that nurses in rural and remote areas may be working as sole practitioners. These nurses may not only perform the triage role, but also provide ongoing emergency care. In metropolitan locations, the interface between the triage nurses' decision-making and further nursing assessment is likely to be structured to minimise the duration of time spent with the designated triage nurse. If a patient is judged to be of high acuity, rapid transfer into the emergency treatment area usually occurs.

Second, the significant associations identified in this study between increased participation in decision-making and the type of emergency service are likely to be due to a combination of resource factors, and differences relating to illness and injury patterns in children as well as the obvious behaviour differences. Decisions to collect blood for laboratory studies or glucose measurement, or to perform an electrocardiograph are less likely to be made on a child in the triage area because children generally require more time for procedures and usually involve the assistance of another nurse.

The significant association between nurses' self-reported levels of autonomy and increased participation in decision-making for six of the ten secondary decisions examined is not a surprising result (Table 6). The presence of protocols or guidelines may increase nurses' participation in decision-making because they provide organisational endorsement for nurses to initiate certain interventions.

Limitations

Participants may have under or over-estimated their participation in decision-making. Additionally, some of the issues raised around autonomy in this paper may relate to the nurses' view of what constitutes a triage decision. This may have influenced nurses' reports of their participation.

CONCLUSION

The findings of this research reveal that many triage nurses' work in organisations that provide no specific triage education. Despite this result, many of the nurses who took part in the current study reported frequent participation in a range of complex diagnostic, management and referral decisions. These findings highlight the need for evaluation of existing practice guidelines and education programs.

The current study identified high levels of conformity related to nurses self-reported participation in the primary triage role. This result implies first, that primary triage decisions are closely linked to and/or inform mandatory code allocation and second, that the demographic and organisational characteristics of the task environment have little impact on the frequency with which nurses make primary triage decisions. These findings highlight the need for observational research into triage nurses' decision-making. Future studies should seek to explore contextual influences on nurses' decision-making in the natural environment.

The variability reported by the nurses in performing secondary triage decisions and, the significant associations identified between decision frequency, demographic characteristics of the triage service and levels of nurse autonomy, suggest that nurses' participation in the secondary triage role is influenced by both the physical and organisational structure of the task environment. In light of this finding, future research must also involve exploration of the effect of nurse-initiated interventions at triage and the impact of these interventions on patient outcomes.

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