

CONSUMER SATISFACTION WITH EMERGENCY
DEPARTMENT NURSING:
A DESCRIPTIVE CORRELATIONAL STUDY

by

Clare Alison Buckley

A thesis submitted to the Victoria University of Wellington
in fulfilment of the requirements
for the degree of
Master of Nursing

Victoria University of Wellington
2009

Abstract

This descriptive, correlational study was designed to describe levels of consumer satisfaction with emergency department (ED) nursing and to identify the key determinants of satisfaction with ED nursing in a regional New Zealand hospital. The relationship between satisfaction with ED nursing and with overall satisfaction with the ED visit was also explored. Satisfaction is an important indicator of the quality of healthcare and an understanding of satisfaction and its determinants has the potential to improve healthcare services and consumer health outcomes. The study employed a survey design using the Consumer Emergency Care Satisfaction Scale (CECSS) which is an internationally recognised tool that has demonstrable reliability and validity. It consists of 19 items divided between two subscales – Caring and Teaching. Respondents indicate on a five point Likert scale the extent to which they agree or disagree with each item. In addition to the 19 items in the scale, respondents were also asked to provide some consumer characteristic data and to answer two open-ended questions. The survey was posted to a convenience sample of 410 ED attendees within 24-48 hours of their visit to the emergency department. The final sample comprised 100 completed or partially completed surveys. The majority ($n = 65$, 88%) were either satisfied or very satisfied with ED nursing. There were no statistically significant relationships between any consumer characteristics and satisfaction; however the following visit characteristics were demonstrated to affect levels of satisfaction – triage category, self-rated acuity, the times consumers arrived at and were discharged from the ED, being able to differentiate between health professionals, being kept informed about the visit and any delays, length of stay (LOS), and number of previous visits to the emergency department. There was a strong positive correlation ($r = 0.571$, $p = 0.000$) between consumer satisfaction with ED nursing and with overall satisfaction with the visit. Thematic analysis of the data from the question about what consumers liked about ED nursing revealed four themes – personal qualities of the nurse, professional qualities of the nurse, interpersonal qualities of the nurse, and miscellaneous comments. Thematic analysis of the data from the question about what the nurse could have done to make the visit better also revealed four themes – nothing, staffing/service, information giving, and the environment. The study concludes that ED consumers want to know who their nurses are and to have nurses who communicate well with them and keep them informed about their visit. The most significant implications and challenges for researchers are in exploring the area around the consumer health journey as it is these visit characteristics that this study has demonstrated affect levels of satisfaction with ED nursing.

Key words: Patient satisfaction, consumer satisfaction, nursing, emergency department (ED), Consumer Emergency Care Satisfaction Scale (CECSS).

Acknowledgements

To my Victoria University supervisors – Dr Kathy Nelson who stepped into the breach, who supported me academically, professionally and emotionally through a tough time, and whose words of wisdom shaped this thesis; and Dr Joan Skinner with whom I started this journey and who resurrected the project when I thought neither it nor I could go on. Thank you both.

To the people of the ED who took the time to respond to my survey and so make this thesis possible I offer my heartfelt thanks.

To the managers and staff of the ED/DHB who permitted the research to proceed at their site and who also offered their help and expertise to facilitate it. I cannot name you, but that does not diminish my gratitude to you.

To Dr Barbara A. Davis who gave permission for me to use her Consumer Emergency Care Satisfaction Scale (CECSS) in this research.

To the people and organisations who helped me financially – The Nursing Education Research Fund of the New Zealand Nursing Organisation, the Hawke's Bay DHB Nurses' Professional Development Fund, Faculty of Humanities and Social Sciences Victoria University of Wellington, and of course Paul who put his dreams of a track bike on hold.....when do I tell you how much PhD study costs....

To my New Zealand family, Gordy and Margie, for being there and because I know that you would do anything for me – thanks particularly for the help with the research packs, address labels, and the all important printing and binding of this thesis – I couldn't have done it without you.

To my England family, Pops, Fanj, Dom, Renee, and the girls, for being half a world away but still being interested – thank you.

Lastly to Paul – you never complained about the time I spent on this thesis and not with you, or on the money I spent doing this and not on motorbikes. You always believed that it was worth it and that I could do it. Looks like you were right. Thank you.

Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
Table of contents.....	iv
List of figures.....	vii
List of tables.....	vii
Chapter 1 – Introduction.....	1
Consumer satisfaction: The active involvement of consumers	1
Consumer satisfaction: A measure of the quality of healthcare	3
Consumer satisfaction: A contributor to good health.....	4
Consumer satisfaction: Impact on healthcare providers.....	5
Consumer satisfaction with ED nursing.....	5
Chapter 2 – Literature	8
The ED satisfaction literature	8
Evaluation empirical research	9
Descriptive empirical research	9
Research studies reviewed – ED consumer satisfaction	10
Results of the research studies.....	21
Consumer characteristics.....	21
Visit characteristics... ..	22
Knowledge and research gaps identified.....	25
The Consumer Emergency Care Satisfaction Scale	27
Development of the CECSS	27
Conceptual framework of the CECSS.....	27
Psychometric testing of the CECSS	28
Content validity	29
Construct validity	29
Reliability	31
The CECSS – Current version.....	32
Studies using the CECSS	33
Summary	41
Chapter 3 - Research Design.....	42
The aims of the research and the research questions.....	42
Replication studies.	43
CECSS - Methodological considerations.....	44
Administration.....	44
Postal administration – Advantages and disadvantages	45
Researcher administration – Advantages and disadvantages	46
On-line administration - Advantages and disadvantages.....	46
Administration used in CECSS studies.....	47
Postal administration – The administration of choice	47
Language.. ..	48
Validity.....	49
Planning the research.....	49
Ethical approval.....	49
Locality Assessment.....	49
The Research process.....	51
Defining the research population	51
Sample size.....	52
Participant recruitment.. ..	53

Data collection tools.....	53
Researcher developed template..	53
Research pack.....	54
Cover letter	54
Instruction sheet	55
The survey	55
Section1.....	55
Section 2.....	56
Section 3.....	57
Summary of results for participants	58
Identifier	58
Conducting the research.....	58
Data collection.....	58
Handling the data.....	59
Data coding.....	59
Data cleaning	59
Data re-coding	60
Ethnicity	60
Arrival transport	60
Highest educational qualification	60
Data analysis.....	61
Phase 1	61
Phase 2.....	61
Phase 3.....	61
Phase 4.....	61
Phase 5.....	62
Chapter 4 - The Findings.....	64
The sample and the research population.....	64
Missing data and data quality	64
Population and sample descriptions	65
The research population	66
The sample	67
Comparison of the sample and non-respondents.....	68
Section One: Further descriptors	69
Section Two: The Consumer Emergency Care Satisfaction Survey	71
Missing and unusable data.....	71
The CECSS findings	73
Assessing normality	74
The CECSS scores.....	75
The Caring subscale	76
The Teaching subscale	77
CECSS – Caring and Teaching subscales combined	78
Reliability	79
Correlations and tests for differences	79
The Caring subscale	83
The Teaching subscale	84
The CECSS.....	84
Qualitative analysis of the open-ended format questions.....	87

Chapter 5 - Discussion and Implications.....	92
The quality of the research	92
A description of the levels of satisfaction with ED nursing.....	97
The key determinants of consumer satisfaction with ED nursing.....	101
Satisfaction with ED nursing as a determinant of overall satisfaction with the ED visit.....	107
Summary.....	107
Chapter 6 - Conclusions.....	109
Appendices.....	113
Appendix 1 - Researcher collected patient demographic data.....	113
Appendix 2 - Cover letter to participants.....	114
Appendix 3 - How to complete the questionnaire.....	117
Appendix 4 - Section 1 - General information.....	118
Appendix 5 - Section 3 - Additional questions.....	119
Appendix 6 - Request for summary of results.....	120
Appendix 7 - Data analysis coding sheet.....	121
References.....	124

List of figures

Figure 1. Frequencies of total scores – Caring subscale.....	76
Figure 2. Frequencies of total scores – Teaching subscale.....	77
Figure 3. Frequencies of total scores – CECSS (Caring and Teaching subscales combined).....	78

List of tables

Table 1. ED consumer satisfaction studies – Tools used, administration, aims and conclusions.....	13
Table 2. Reliability, validity, and data analyses of consumer satisfaction studies.....	18
Table 3. CECSS items by subscale.....	32
Table 4. CECSS research – Sample size, administration, aims, and conclusions.....	34
Table 5. CECSS research – Inclusion, exclusion criteria, and consumer and visit characteristics.....	35
Table 6. CECSS research – Reliability and validity of tool and data analysis.....	36
Table 7. Method of administration of the CECSS in eight published studies.....	47
Table 8. Consumer and visit characteristics of the research population and sample.....	66
Table 9. Results of Chi-square tests to assess differences between sample and non-respondents.....	68
Table 10. Results of Mann Whitney U tests to assess differences between sample and non-respondents.....	68
Table 11. Consumer and visit characteristics of the sample.....	70
Table 12. Section 2 – Missing and unusable data by CECSS item.....	72
Table 13. Descriptive statistics for CECSS items.....	74
Table 14. CECSS items with the highest and lowest mean scores.....	75
Table 15. Correlations between consumer and visit characteristics and CECSS.....	80
Table 16. Differences between consumer and visit characteristics and satisfaction levels as measured by the CECSS and its subscales.....	81
Table 17. Differences between gender, mode of arrival, disposition and satisfaction with Caring subscale.....	86
Table 18. Differences between gender, mode of arrival, disposition and satisfaction with Teaching subscale.....	86
Table 19. Differences between gender, mode of arrival, disposition and satisfaction measured by the CECSS.....	86
Table 20. Words and themes used by respondents to describe what they liked about nurses/nursing in the emergency department.....	89
Table 21. Words and themes used by respondents to identify what nurses could do to make the visit better.....	90
Table 22. Mean scores for the CECSS items with the highest and lowest mean scores.....	98
Table 23. Mean scores for the CECSS and two subscales.....	100

Chapter 1 - Introduction

Healthcare professionals must meet the needs of the healthcare consumer and healthcare providers must deliver a service that consumers both need and want. In order to achieve this, healthcare professionals need to elicit consumers' views and incorporate these views into all aspects of healthcare. This thesis presents the results of a research study that was designed to measure satisfaction with emergency department (ED) nursing in a New Zealand hospital and to explore the determinants of satisfaction with ED nursing.

This first chapter presents the rationale for the study through a discussion of the importance of consumer satisfaction as firstly, indicating the active involvement of consumers in the healthcare system; and secondly as being an outcome measure of healthcare that serves as a measure of the quality of healthcare. The importance of measuring consumer satisfaction is discussed within the context of New Zealand Government directives and strategies for healthcare, and also as an important consideration in achieving good health outcomes for healthcare consumers. The impact of satisfied consumers on healthcare organisations is also discussed. The rationale for measuring satisfaction with one facet of healthcare – namely nursing – in one area of healthcare delivery – namely the ED – is then discussed in terms of nursing representing a significant interface between consumers and healthcare and the ED being the point of entry to tertiary healthcare. The chapter finishes with an overview of the content of the remaining chapters of the thesis.

Consumer satisfaction: The active involvement of consumers

The model of healthcare delivery that has its focus on the consumer as an active participant in healthcare has its origins in the United States of America and the United Kingdom (Sitzia & Wood, 1997). This model has however also been influential in developing the New Zealand healthcare system. The *New Zealand Health Strategy* (Ministry of Health, 2000) is a Government publication that serves to inform and guide the delivery of healthcare services throughout New Zealand. The strategy details seven principles which guide the planning and delivery of healthcare. The seventh principle refers to the 'active involvement of consumers and communities at all levels' (p. vii). It is therefore clear that Government directives require healthcare professionals to ensure that healthcare is consumer focused, and that this can be partly achieved through the active involvement of consumers.

Healthcare that is consumer focused means that consumer views on healthcare are sought so that the consumer perspective is acknowledged (Carr-Hill, 1992; Sitzia & Wood, 1997; Uzun, 2001). This recognises that to define healthcare solely from a nursing or medical perspective has the potential to limit its relevance to consumers (Price, 1993; Tran, Schutte, Muelleman, & Wadman, 2002). Consumer satisfaction represents one measure that healthcare providers can use to understand consumers' perspectives. It is a unique measure as it is sensitive to consumers' values, opinions, expectations, and needs and is thus a consumer-focused measure of healthcare (Sun, 2004). Measurement of consumer satisfaction with healthcare thus represents a way of enabling consumers' views, needs and expectations to be sought, and thence incorporated into the delivery of healthcare (Carr-Hill, 1992). The emphasis on consumer focused healthcare and the recognised importance of delivering high quality healthcare services means that measures of consumer satisfaction should play a significant role in the healthcare system because it has the potential to influence the way that healthcare is planned, implemented, delivered, and evaluated (Aharony & Strasser, 1993; Campanella, 2000; Han, Connolly, & Canham, 2003; Sitzia & Wood, 1997).

It is also noteworthy that some research (Hostutler, Taft, & Snyder, 1999; Lynn & McMillen, 1999; Patistea & Siamanta, 1999) has demonstrated that healthcare professionals and healthcare consumers may have different views about what constitutes good or high quality healthcare. For example, whilst healthcare professionals may focus on the delivery of technically competent healthcare, healthcare consumers may not be able to appropriately judge what is technically competent (Sitzia & Wood, 1997). In addition, consumers may also not rate this aspect of healthcare as important as other aspects such as the provision of information, and short waiting times. In light of this, the importance of measures of satisfaction that identify those aspects of the healthcare journey that affect consumers' levels of satisfaction become increasingly germane as they may reflect what consumers want from healthcare.

Measuring consumers' satisfaction with healthcare can thus be regarded as a legitimate approach to elicit consumers' perspectives and thus ensure their active involvement in healthcare planning and delivery. However, in addition to enabling an active involvement in healthcare, measurements of consumer satisfaction can also contribute to an assessment of the overall quality of the healthcare. Consumer satisfaction can thus be regarded as an outcome measure of healthcare.

Consumer satisfaction: A measure of the quality of healthcare

In most industries consumer satisfaction is regarded as an important measure of the overall quality of the service (Gonzalez-Valentin, Padin-Lopez, & de Ramon-Garrido, 2005; Persse, Jarvis, Corpening, & Harris, 2004). In the mid 1960s Avis Donabedian (1988) proposed that this same principle should be applied to healthcare such that consumer satisfaction should be used to assess the quality of healthcare. Consumer satisfaction, as a measure of the quality of healthcare should not replace more traditional measures such as rates of infection, mortality statistics, and lengths of stay, which are undeniably important in assessing quality. However, these outcome measures may do little to reflect the overall quality of healthcare, especially from consumers' perspective (Grief, 2003). There are thus two measurable outcomes of healthcare: the consumer's good health and also their satisfaction (Aharony & Strasser, 1993; Davis & Duffy, 1999). Therefore, to garner a complete understanding of the quality of healthcare, consumer satisfaction must be assessed alongside traditional outcome measures (Brown, Sandoval, Levinton, & Blackstein-Hirsch, 2005; Davis & Duffy, 1999; Han et al., 2003; Mahon, 1996; Rhee & Bird, 1996; Rydman et al., 1997; Tran et al., 2002).

Consumer satisfaction as a measure of the quality of healthcare is also recognised in the *New Zealand Health Strategy* (Ministry of Health, 2000), which states 'High quality care is about performance and patient and consumer satisfaction' (p. 25). Healthcare providers thus need to recognise that consumer satisfaction is a measurable outcome of the quality of healthcare that should be embedded in the assessment of the quality of health services.

In today's society governments and people are concerned with healthcare issues including access to healthcare, the availability of services, and the performance and competence of health professionals (Newdick & Derrett, 2006). For many, access to this information in New Zealand is via the news media and it is noteworthy that stories appearing in these forums frequently draw attention to problems in the system – most often with lurid headlines about mistakes, incompetence, and death. Stories about emergency departments (ED) are no exception and frequently have a negative focus. Headlines such as 'Patient woes in overhauled emergency department' (The Press, 2008) and 'Apology for 'tragic' suicide at hospital' (McKenzie-McLean, 2009) do little to paint ED healthcare in a positive light. A systematic analysis of the content of articles to evaluate emergency medicine in Australian hospitals found that 45% of the articles had a negative focus with only 18% portraying

emergency medicine in a positive light (Kennedy, Trethewy, & Anderson, 2006). This sort of portrayal can be frustrating for healthcare workers in the emergency setting who are in the majority committed, hard working, and skilled professionals doing their best in trying, and often under resourced circumstances (Christey, 2008). These negative images can contribute to the already considerable stress of working in a busy emergency department. Given the predominance of negative images in the media, to attempt to understand the consumer perspective and so work to increase satisfaction could serve as a positive and affirming exercise that could benefit ED healthcare consumers and professionals.

Consumer satisfaction has thus far been presented, firstly as representing consumer-driven healthcare that recognises consumers as active participants in their healthcare, and secondly as an outcome measure of the quality of healthcare. In addition, consumer satisfaction has the potential to impact positively on health outcomes.

Consumer satisfaction: A contributor to good health

There is a body of evidence that suggests that satisfied consumers are more likely to interact meaningfully with healthcare providers and to actively participate in their prescribed treatment regimens on discharge thus contributing to improved clinical outcomes (Aharony & Strasser, 1993; Aragon, 2003; Aragon & Gesell, 2003; Bruce, Bowman, & Brown, 1998; Davis et al., 2005; Donabedian, 1988; Linder-Pelz, 1982; Mayer & Cates, 1997; McMillan, Younger, & DeWine, 1986; Murray & LeBlanc, 1996; Taylor & Bengner, 2004; Thompson, Yarnold, Williams, & Adams, 1996). Research also has suggested that dissatisfied consumers are less likely to follow discharge advice which can result in a poorer clinical outcome for the consumer (Hostutler et al., 1999).

In addition to having a positive effect on consumers' health outcomes, there is some evidence to suggest that consumer satisfaction can have a significant, positive effect on organisations.

Consumer satisfaction: Impact on healthcare providers

Consumers of healthcare are not the only ones who benefit from improved levels of satisfaction, which also impacts on organisation-wide issues. For example, the financial and personnel implications of managing complaints from unsatisfied or dissatisfied consumers must also be recognised as important considerations in measuring and promoting consumer satisfaction. Research has demonstrated that higher levels of satisfaction result in fewer complaints and this in turn reduces the financial burden on organisations of managing the complaints process (Hostutler et al., 1999; Mayer & Cates, 1997; Taylor & Benger, 2004; Thompson, Yarnold, Williams et al., 1996). In addition, higher levels of consumer satisfaction have been found to impact directly and positively on levels of staff satisfaction with reduced staff turnover and lower levels of sick leave (Mayer & Cates, 1997; Taylor & Benger, 2004; Thompson, Yarnold, Williams et al., 1996).

The first part of this chapter has presented the rationale for exploring and measuring consumer satisfaction with healthcare. The second section explores the rationale for measuring one specific area of healthcare – ED nursing.

Consumer satisfaction with ED nursing

The rationale for measuring satisfaction in the ED is that the ED of most New Zealand hospitals represents the interface between community healthcare, and hospital services. In addition, the ED is frequently consumers' first contact with healthcare services (Working Group for Achieving Quality in Emergency Departments, 2009). The ED thus plays a significant role for consumers of healthcare and therefore represents a legitimate focus for consumer satisfaction research.

The need to measure consumer satisfaction with nursing in the ED is linked to a number of considerations. First, the researcher is a nurse working in the ED of a New Zealand hospital. Second, nursing is integral to the quality of healthcare because healthcare is dominated by nursing (Mahon, 1996). Third, research findings suggest that nursing is the key determinant of consumers' overall satisfaction with healthcare in hospital (Abramowitz, Cote, & Berry, 1987; Beck & Larrabee, 1996; Boudreaux, d'Autremont, Wood, & Jones, 2004; Bruce et al., 1998; Clark, Pokorny, & Brown, 1996; Evans, Martin, & Winslow, 1998; Johansson, Oleni, & Fridlund, 2002; Uzun, 2001; Wolf et al., 1998; Yellen, Davis, & Ricard, 2002). Therefore,

research that explores satisfaction with ED nursing has the potential to impact on consumers' satisfaction with both the ED and also with the whole healthcare episode. Finally, attempts to measure satisfaction that combine all aspects of the ED visit risk failing to provide useful guidance for any remedial or quality improvement actions by being unable to identify the specific health professional or behaviour that impacted on satisfaction.

The first part of this chapter has presented the rationale for this study to explore consumer satisfaction with ED nursing in a New Zealand hospital. The second section presents an overview of the remaining chapters of the thesis.

Chapter 2 explores the literature on consumer satisfaction in the emergency department. The majority of ED satisfaction literature is empirical which aims either to evaluate healthcare, or to identify those factors – related to the consumer or to the visit – that affect or determine levels of satisfaction. In line with the descriptive nature of this research, the literature review explores the descriptive empirical research and offers a critique of the research. The gaps identified in the research and the resulting gaps in the satisfaction knowledge are highlighted and discussed. In this chapter the tool used to measure satisfaction in this research – the Consumer Emergency Care Satisfaction Scale (CECSS) is introduced and its development and the conceptual framework that underpins it are explored. Finally the published research studies that have used the CECSS are introduced and discussed.

Chapter 3 presents the research design which was informed by the literature reviewed in Chapter 2. First the advantages of conducting replication studies are presented and discussed. The methodological considerations in using the CECSS are then explored. The remainder of the chapter presents the minutiae of the research design and covers both planning and conducting the research. The chapter closes with a discussion of how the data were handled and the data analysis plan.

Chapter 4 presents the findings from the research. The chapter begins by presenting a description of the research population and the sample. The sample is then assessed for representativeness compared with the research population. The findings from the CECSS are then presented alongside correlational analyses between variables. The chapter closes with the qualitative data from the open-ended questions in the survey.

Chapter 5 is a discussion of the findings that draws on the satisfaction literature to establish how the findings relate to the previous research and to the New Zealand setting. The quality of the research is discussed including how this impacts on the limitations of the research. The discussion includes considerations about how the findings could impact on nursing practice and on future research.

Finally Chapter 6 presents the conclusions drawn from the research. The conclusions are presented in three areas: future satisfaction research; ED nursing practice; and policies that operate within the emergency department.

Chapter 2 - Literature

This chapter explores the consumer satisfaction literature. First, issues around the importance of measuring satisfaction are briefly revisited. The three main categories of research within the satisfaction literature – being empirical evaluation or descriptive research, and theory testing – are presented. The descriptive empirical research as it relates to satisfaction with the emergency department (ED) is then presented and discussed. The Consumer Emergency Care Satisfaction Scale (CECSS) is introduced and the published literature exploring the development and testing of the CECSS is discussed. Included in this is an exploration of the conceptual framework that underpins the scale. Finally, the published research that has utilised the CECSS to measure satisfaction with ED nursing is presented and critiqued.

The ED satisfaction literature

The measurement of consumer satisfaction with healthcare has been a research endeavour for nursing and other health professionals since the mid 1950s (Calnan, 1988; Davis, Bush, & Thomas, 1997; Hall & Dornan, 1988; Lin & Kelly, 1995). The continuing significance of satisfaction research within the fields of medicine and nursing is in part attributable to the increasing importance attached to consumer satisfaction on the three levels discussed in Chapter 1: satisfaction is regarded as an indicator of consumer participation in healthcare; it is a measure of the quality of the healthcare; and it is an outcome measure of healthcare (Aharony & Strasser, 1993; Avis, Bond, & Arthur, 1995). A search of the Cumulative Index of Nursing and Allied Health Literature (CINAHL) database which has been cataloguing health literature since the year 1982, using the words ‘patient’ or ‘consumer’, and ‘satisfaction’ reveals nearly 13,500 journal articles. This alone is evidence of the on-going significance of consumer satisfaction to healthcare researchers.

In light of the conceptualisation of satisfaction as being a measure of quality and an outcome measure in its own right, the majority of the satisfaction literature is in the field of empirical research. This in turn can be broadly divided into two groups – evaluation research that aims to evaluate a range of issues in healthcare and the delivery of healthcare (Fitzpatrick, 1991); and descriptive research that aims to explore, describe, and explicate satisfaction and the processes or factors that influence satisfaction (Aharony & Strasser, 1993; Taylor & Bengner,

2004). There is also a small body of research that looks at testing theories and constructs of consumer satisfaction (Aragon & Gesell, 2003).

Evaluation empirical research

Consumer satisfaction evaluation research has been used to evaluate clinical treatments, the management of clinical conditions (for example diabetes), healthcare organisations, clinics, and services, and health delivery systems (Sitzia & Wood, 1997). Measures of consumer satisfaction have also been used to evaluate the quality of care delivery, the effectiveness of educational interventions for nurses and for consumers, performance of nurse practitioners, and the effectiveness of organisational interventions (Bond & Thomas, 1992). Finally, measures of consumer satisfaction have been reported as being used to assess a number of programmes and issues around nursing and organisations – for example, the effectiveness of nursing care, the efficacy of consumer controlled analgesia, the performance of a counselling programme for consumers suffering myocardial infarction, primary nursing, and changes in the organisation of health services (Avis et al., 1995).

Descriptive empirical research

In addition to evaluating healthcare, empirical research has also been used to describe, explore and explicate those factors or processes that influence satisfaction. The aim of this type of research is to understand what factors influence satisfaction by identifying the determinants of satisfaction and to then use the knowledge to improve the healthcare experiences and outcome for the consumer (Aharony & Strasser, 1993). Knowledge gleaned about what influences satisfaction is used to target identified areas of the healthcare experience that have the most significant impact on consumer satisfaction (or dissatisfaction) and so can be used to increase overall levels of satisfaction. The advantages of increased satisfaction to consumers and health organisations alike have already been discussed in Chapter 1.

The aim of this study was to describe and explore consumer satisfaction with ED nursing – the following section therefore looks at the empirical descriptive research within the satisfaction literature that is specific to the emergency department.

Research studies reviewed – ED consumer satisfaction

The empirical ED consumer satisfaction research identified from the literature is in the majority conducted by health professionals working in the field of emergency medicine, and is concerned with identifying the determinants of consumer satisfaction with various aspects of the ED experience. There is also limited research concerned with both evaluation and theory testing however this is not explored extensively here as this study was a descriptive one.

The majority of the descriptive empirical research employs a survey design and has been undertaken in the United States of America (USA), with two studies identified from Canada (Brown et al., 2005; Lewis & Woodside, 1992), and one from England (Richards, Richell-Herren, & Mackway-Jones, 2002). The survey tools used are designed to collect quantitative data which focus on the modelling of consumers' self-reported satisfaction ratings with a range of pre-ordered issues related to the healthcare episode. In all the research reviewed, the quantitative data were collected by way of Likert-type scales with differences between studies being in the length of the scale used – for example three-point scales (Bruce et al., 1998; Lewis & Woodside, 1992); and five-point scales (Aragon & Gesell, 2003; Boudreaux, Mandry, & McCabe, 2000; Hall & Press, 1996; Yarnold, Michelson, Thompson, & Adams, 1998). Two survey tools also included some qualitative data collection questions (Lewis & Woodside, 1992; Richards et al., 2002). One study was designed to measure satisfaction levels in parents or guardians and their children who attended the ED (Magaret, Clark, Warden, Magnusson, & Hedges, 2002), however the remainder excluded children from the research population.

The quantitative data from these studies were analysed using either descriptive or inferential statistics, or both descriptive and inferential statistics. The specific statistical analyses used by the researchers were clearly explained. Where qualitative data were collected, thematic analysis was used. No ED consumer satisfaction studies were found that used an exclusive qualitative methodology.

Researchers have administered their surveys retrospectively by phone (Boudreaux et al., 2000; Boudreaux, Mandry, & Wood, 2003; Bursch, Beezy, & Shaw, 1993; Mayer, Cates, Mastorovich, & Royalty, 1998; Rhee & Bird, 1996; Thompson, Yarnold, Williams et al.,

1996); retrospectively by post (Aragon & Gesell, 2003; Brown et al., 2005; Bruce et al., 1998; Campanella, 2000); and at the time of the visit (Boudreaux, Friedman, Chansky, & Baumann, 2004; Clark et al., 1996; Hedges, Trout, & Magnusson, 2002; Krishel & Baraff, 1993; Messner, Reck, & Curci, 2005). One study utilised both postal and telephone surveys to collect data (Yarnold et al., 1998).

In addition to the different methods of administration of the surveys, a wide range of time elapsed between the ED presentations and conducting the research for postal or telephone surveys. The minimum time reported was within two to four days of discharge (Thompson, Yarnold, Williams et al., 1996), and the maximum was within 60 days post visit (Rhee & Bird, 1996).

Over 20 different tools have been used by researchers to collect satisfaction data. Some researchers used existing pre-tested surveys, some used surveys they had designed specifically for the study, and, particularly in the USA, surveys developed by consumer satisfaction marketing and consultancy firms¹ were used. Some researchers report on the validity and reliability of the instruments used (Boudreaux, d'Autremont et al., 2004; Boudreaux, Friedman et al., 2004; Boudreaux et al., 2000; Boudreaux et al., 2003; Hall & Press, 1996; Mayer et al., 1998; Messner et al., 2005; Rhee & Bird, 1996; Sun, 2004; Sun et al., 2000; Thompson, Yarnold, Adams, & Spacone, 1996; Thompson, Yarnold, Williams et al., 1996). In some cases where the instrument has been used previously, the researchers refer the reader back to the earlier research or to the tool's development (Aragon & Gesell, 2003; Brown et al., 2005; Sun, Adams, & Burstin, 2001; Tran et al., 2002); and some do not report reliability or validity of the tool at all (Bruce et al., 1998; Bursch et al., 1993; Hedges et al., 2002; Krishel & Baraff, 1993; Lewis & Woodside, 1992; Magaret et al., 2002; Nerney et al., 2001; Richards et al., 2002).

Whether or not the research was based on a conceptual framework, or whether the research explored the concept of satisfaction was found to differ among the studies. One study reviewed was conducted to test and explore a theory of consumer satisfaction proposed by the authors (Aragon & Gesell, 2003). Two further papers were found that presented and tested a model of consumer satisfaction based on a survey of ED care (Sun et al., 2000; Sun et al.,

¹ The most frequently reported American consultancy firm is Press Ganey (see www.pressganey.com).

2001); and one paper included a discussion of the authors' description of consumer satisfaction and what can influence it (Thompson, Yarnold, Williams et al., 1996). However, the majority of the studies did not include any discussion of the construct of satisfaction or the conceptual framework, if any, that underpinned the research (Boudreaux, d'Autremont et al., 2004; Boudreaux, Friedman et al., 2004; Boudreaux et al., 2000; Boudreaux et al., 2003; Brown et al., 2005; Bruce et al., 1998; Bursch et al., 1993; Campanella, 2000; Hall & Press, 1996; Hedges et al., 2002; Krishel & Baraff, 1993; Lewis & Woodside, 1992; Magaret et al., 2002; Mayer et al., 1998; Messner et al., 2005; Nerney et al., 2001; Rhee & Bird, 1996; Richards et al., 2002; Sun, 2004; Thompson, Yarnold, Adams et al., 1996; Tran et al., 2002; Yarnold et al., 1998).

As the majority of the research aims to explore the determinants of satisfaction, researchers also incorporated tools to collect data to assess what aspects of the consumer or visit characteristics were related to consumer satisfaction. Consumer characteristics such as age, gender, and ethnicity were routinely collected by researchers and some also included questions about respondents' income and education. Variables around visit characteristics and the consumer health journey included length of stay (LOS), acuity, mode of arrival, disposition, number of previous ED visits, and quality and quantity of information giving.

In addition to the satisfaction surveys and consumer and visit characteristics, the majority of the research also measured overall satisfaction. Measures of overall satisfaction included a rating of the overall quality of the care or treatment received, and also a simple overall satisfaction rating. In the USA however, overall satisfaction measures were often either the consumer's likelihood to recommend the ED to others or their willingness to return to the emergency department. This reflects the model of healthcare delivery in the USA in which the majority of healthcare is privately funded through insurance and is a profit-driven service. The importance of repeat visits to emergency healthcare providers cannot therefore be overstated.

This reviewed research is summarised in table form below. Table 1 presents brief details of the methodology employed by each piece of research, the sample size and response rate, the aims of the research, and the main results and conclusions drawn by the authors. Table 2 presents the same research studies and gives details of the overall satisfaction measures used, the reliability and validity of the tool used, and how the data were analysed for each study.

Table 1. ED consumer satisfaction studies – Tools used, administration, aims and conclusions

Author (Year)	Tool	Administration /site	Sample /Response Rate	Aim	Conclusions
Aragon & Gesell (2003)	Press Ganey	Used Press Ganey database of United States of America (USA) emergency department (ED) consumers' returned satisfaction surveys	1,000 surveys selected from existing database	To test the robustness of the Primary Provider Theory of Patient Satisfaction (PPTPS)	Supports the PPTPS with doctor service, waiting time, satisfaction with nursing accounting for 48%, 41%, and 11% of overall satisfaction respectively
Boudreaux, Mandry, & McCabe (2000)	Structured telephone interviews designed for study	Retrospective telephone survey 7-10 days post visit; large, urban USA ED	437 / (38.5%)	To identify determinants of consumer satisfaction with ED care	Weak correlation between overall satisfaction, and length of stay (LOS) and acuity; most powerful predictor of overall satisfaction is being treated as a person; other powerful predictors are feeling safe, discharge instructions, and technical skills of nurses. Concludes that consumers want staff to treat them with respect and dignity and as individuals
Boudreaux, Mandry, & Wood (2003)	Designed for study	Retrospective telephone survey; hospital A-community, America; hospital B-rural, America	Hospital A-300 Hospital B-342	Aims to describe practical strategies to interpret and use consumer satisfaction data obtained in the clinical setting to identify priority areas for improvement and maintenance	Hospital A-priority dissatisfiers were mostly related to information about treatment and delays; the priority satisfier was the privacy of the triage area. Hospital B-priority dissatisfiers were related to information sharing and attitude of the doctors; priority satisfiers related to attitudes and behaviour of staff
Boudreaux, d'Autremont, Wood, & Jones (2004)	Designed for study – input from professional survey company	Prospective, longitudinal observational study of predictors of overall satisfaction. Retrospective telephone survey; metropolitan, community hospital	Calls made until agreed number of respondents surveyed	To examine the stability of predictors of overall satisfaction over a 17month period	Nursing care is the strongest predictor of overall satisfaction over all 4 assessments

Boudreaux, Friedman, Chansky, & Baumann (2004)	Designed for study	Prospective, self-completed survey at point of discharge or transfer; urban USA hospital	1865 / (63%)	To explore the relationships between consumer acuity, perceived and actual LOS, and satisfaction. Hypothesised that high acuity would be most satisfied with the visit and LOS; and overall satisfaction to be more strongly associated with perceived LOS than actual LOS, regardless of acuity	High acuity consumers perceived their LOS more favourably and were more satisfied with the visit than low acuity consumers; overall satisfaction more closely linked to perceived LOS than actual LOS regardless of acuity. Authors' hypotheses supported
Brown, Sandoval, Levinton, & Blackstien-Hirsch (2005)	Press Ganey	123 hospitals in Ontario already surveyed	20,916 surveys from an existing database of satisfaction surveys	To apply optimisation techniques to select predictors of overall satisfaction measures across 4 domains of the service, to help hospitals plan ED improvement strategies within these domains	4 predictors common to all 4 domains – perceived wait time for treatment, courtesy of nurses, courtesy of doctors, and thoroughness of doctors
Bruce, Bowman, & Brown (1998)	ED Patient Satisfaction Survey (3-point Likert)	Prospective survey given on site, mailed return; Rural USA ED	28 / (23%)	Examine consumer satisfaction with 4 domains of ED care – nursing, environment, ancillary services, & information received	Overall high satisfaction in all 4 domains
Bursch, Beezy & Shaw (1993)		Retrospective telephone survey 7 days post visit; non-medical USA ED	258 / (59%)	To determine the relative importance of variables correlated with consumer satisfaction with ED care and service	5 most important variables – time to be seen, organisation of staff, how caring doctors were, info received from nurses
Campanella (2000)	Press Ganey	Retrospective postal survey 4-7 days post visit; USA military ED	178 / (33)	To explore factors (nurses, staff, doctors, waiting/convenience issues, and tests and treatments) and specific interpersonal behaviours affecting consumer satisfaction	Nursing not a predictor of overall satisfaction; Doctors' interpersonal behaviour predictor of satisfaction; satisfaction not influenced by age/gender
Hall & Press (1996)	Press Ganey	Retrospective postal survey 3-4 days post visit; 23 USA hospital EDs. NB used data from existing database	9,106 (sampled from existing database). NB Press Ganey report average RR of 25%	To use a national sample of EDs to identify specific elements that increase the likelihood of consumers recommending the ED	Interpersonal aspects of care are very important in determining satisfaction; perceptions of wait times, delays in receiving attention or treatment, and issues around communication are also important. Conclude that nursing/staff, doctors, and wait times drive satisfaction

Hedges, Trout, & Magnusson (2002)	Designed for study	Prospective, cross-sectional self-completed survey at ED; Urban USA ED	126 / (90.7%)	To address the association of actual versus perceived wait times in ED consumers; and the association of overall satisfaction with perceived and actual wait times	Overall satisfaction more strongly associated with the perceived wait than with the actual waiting time
Krishel & Baraff (1993)	Designed for study	Test intervention; administered survey at point of discharge; USA	100 intervention; 100 control (N/A)	To test the hypothesis that consumer satisfaction with ED care is enhanced by information distributed to consumers on arrival	Supported hypothesis – consumers who received information rated their overall satisfaction significantly higher than the control group
Lewis & Woodside (1992)	Designed for study	Not reported; USA. 3-point Likert scale + open-ended questions	Not reported	Looks at consumer satisfaction with care in the ED – especially nursing, information giving, auxiliary staff, and environment	Results show a general level of satisfaction with care received
Magaret, Clark, Warden, Magnusson & Hedges (2002)	Designed for study; & existing pain rating scale	Prospective, cross-sectional study at ED at completion of ED care; Urban, USA ED	101 child:parent/guardian dyads / (100%)	Aim to assess and compare overall satisfaction in paediatric ED consumers and their accompanying parents and to identify aspects of health care delivery that influence satisfaction	Both parent and child satisfaction is associated with the quality of the provider-consumer interactions and the adequacy of information provided. Parent satisfaction is also associated with shorter waiting room times; and child satisfaction is associated with resolution of pain
Mayer, Cates, Mastorovich, & Royalty (1998)	Designed for study. (50 item)	Intervention study; Control & study groups data comprised consumer complaints & compliments, and post visit telephone satisfaction surveys; Urban, USA ED	400 study group & 400 control group (consumers surveyed until number reached)	To assess the effect of clinically focused customer service training on consumer satisfaction	All areas of satisfaction survey showed increases in the study group. Largest increases were in reported satisfaction with ED doctors' skills, likelihood of returning, skill of ED nurse, and overall quality of medical care. Complaints fell by over 70%
Messner, Reck, & Curci (2005)	Designed for study	Intervention study (no control group); self-completed at point of discharge; Urban, USA ED	Eligible participants approached until required number of 120 reached	To determine whether an emergency department consumer education brochure improved consumer satisfaction with their visit	Use of the brochure not significantly correlated with overall consumer satisfaction with the visit

Nerney et al. (2001)	Pre-existing scales & questions	Prospective cohort study; Telephone within 2/52 of discharge home from ED or 3/7 whilst in-patient; Urban academic USA hospital ED	778 >65 yrs / (43%)	To assess older consumers' satisfaction with ED & to identify factors associated with overall satisfaction with care. Hypothesised that satisfaction is multifactorial (health status, demographic profile, & ED factors)	Following variables correlated with high satisfaction: perceived time spent in ED 'not too long'; clear answers to questions; trusting relationship; & informed about stay
Rhee & Bird (1996)	Designed for study	Retrospective telephone survey – within 60 days post visit; large urban USA ED; consumers or person accompanying	618 / (46%)	To identify consumer and family perceptions contributing to overall satisfaction; and to test validity and reliability of survey	Suggests that perception of the technical quality of care received is more important than perceived bedside manner or timeliness in determining satisfaction
Richards, Richell-Herren, & Mackway-Jones (2002)	Designed for study	Inner city, university hospital, English ED; 1 st survey in unit; 2 nd 1 month later at clinic	1 st survey - 274 / (74%) 2 nd survey: 258 / (72%)	To measure the level of consumer satisfaction with an ED based chest pain assessment unit	White consumers significantly more satisfied than non-whites; age >45 years more satisfied; overall high levels of satisfaction with the process of care
Sun et al. (2000)	Designed for study	5 urban, USA, hospitals; telephone interviews 7-12 days post visit	2,333 / (68%)	To identify ED process of care measures that are significantly associated with satisfaction and willingness to return	Consumer reported problems correlated with satisfaction – help not received when needed, poor explanation of causes of problem and test results, not told about potential wait; Younger and black respondents reported less satisfaction. Interactions with staff form the basis of subjective evaluations of satisfaction
Sun, Adams, & Burstin (2001)	Designed by authors (used in 2000 study)	Postal survey to all ED consumers discharge home from 4 urban USA teaching hospitals; 2-16 days post discharge	2,373 / (22.9%)	To validate a previously developed model of consumer satisfaction	Validates the importance of previously identified determinants of consumer satisfaction – age, help not received when needed, poor explanation of problem and test results, not told about wait time, not told when to resume normal activity, & not told when to return to ED
Sun, Brinkley, Morrissey, Rice, & Stair (2004)	Designed for study (based on previous research)	Quasi-experimental; urban, academic, USA ED; Self-completed survey at point of discharge from ED	840 / (44%)	To determine whether a consumer education intervention increases satisfaction with ED care	There were no significant differences in levels of reported satisfaction between control and intervention groups: a consumer education intervention does not improve satisfaction with ED care

Thompson, Yarnold, Adams, & Spacone (1996)	Designed for study	Retrospective telephone survey within 2-4/52 of ED treatment; Suburban USA hospital	776 / (43%)	To assess the accuracy of the waiting time perceptions of ED consumers	22.3% accurate perception of wait time to see a Dr; 36.6% accurate perception of total waiting time. Conclude that consumers are not accurate in their estimates of waiting times
Thompson, Yarnold, Williams, & Adams (1996)	Designed for study	Retrospective telephone survey 2-4/52 post discharge over 1/365 period; suburban USA community hospital	1,631 / (44.8%)	To determine whether actual waiting times predict consumer satisfaction. To evaluate the influence of consumers' perceptions regarding waiting time, information received, and expressive quality on consumer satisfaction	Perceptions regarding waiting time, information delivery, and the expressive quality of staff predict overall consumer satisfaction. Actual wait times do not predict overall satisfaction
Tran, Schutte, Muelleman, & Wadman (2002)	Previously validated (Rhee & Bird)	Self-completed survey at point of discharge from ED; USA university medical centre (city) ED	619 (307 control & 312 intervention) / (88.6%)	To evaluate whether provision of clinical info to consumers by staff improves perceptions of staff excellence and efficiency of consumer care	Provision of clinical info by research assistant resulted in higher consumer ratings of physician excellence and shorter perceptions of length of stay; but had no effect on consumer ratings of nursing skill
Yarnold, Michelson, Thompson, & Adams (1998)	Press Ganey	Retrospective postal and telephone surveys; 2 USA EDs – city and suburban	2,498 / (49%)	To identify perceptions that predict overall consumer (dis)satisfaction with ED	Overall consumer (dis)satisfaction is nearly perfectly predictable on the basis of consumer-rated expressive qualities of ED doctors and nurses, Need to reinforce positive expressive behaviours to increase consumer satisfaction

Table 2. Reliability, validity, and data analyses of consumer satisfaction studies

Author (Year)	Overall satisfaction measure	Reliability/ validity	Data analysis
Aragon & Gesell (2003)	1) Likelihood to recommend 2) Degree to which service was value for money	Refers to previous research – internal consistency (Cronbach’s alpha)	Multigroup structural equation modelling
Boudreaux, Mandry, & McCabe (2000)	1) Overall rating of satisfaction 2) Likelihood to recommend	Internal consistency (reliability) – Cronbach’s alpha 0.94	Univariate statistics (parametric or nonparametric depending on shape of distribution curve) – t-tests, chi-square, Mann Whitney U; Multivariate analysis - logistic regression to predict overall satisfaction against all variables tested
Boudreaux, Mandry, & Wood (2003)	1) Rating of overall satisfaction 2) Likelihood to recommend 3) Likelihood to return	Internal consistency (reliability) – Cronbach’s alpha supports reliability of survey	Descriptive statistics – individual item means and frequencies; Correlations between independent variables and overall satisfaction measures (dependent variables) – Spearman’s Rho (nonparametric data)
Boudreaux, d’Autremont, Wood, & Jones (2004)	1) Overall rating of satisfaction 2) Likelihood to recommend	Internal consistency (reliability) – Cronbach’s alpha; Factor analysis & confirmatory factor analysis	Logistic regressions (of subscale scores) of all independent variables to predict overall satisfaction (dependent variable)
Boudreaux, Friedman, Chansky, & Baumann (2004)	1) Rating of overall satisfaction	Internal consistency (reliability) – Cronbach’s alpha. Construct validity – correlation matrix; Criterion validity for triage categories – chi-square between triage and disposition	To test hypothesis that more acute consumers perceive throughput times more favourably – ANOVAs with triage as independent variable. To test hypothesis that satisfaction with throughput times is important mediating variable between acuity and overall satisfaction – ANCOVA with triage as independent variable. Pearson product-moment correlations. Repeat with nonparametric equivalent tests – Kruskal-Wallis for ANOVA & Spearman’s Rho or Pearson’s
Brown, Sandoval, Levinton, & Blackstien-Hirsch (2005)	1) Rating of overall quality of care 2) Overall satisfaction with result of treatment 3) Likelihood to recommend; 4) Likelihood to return	Refers back to previous publications	Pearson correlation between survey items and 4 satisfaction measures. Ordinal logistic regression modelling for 4 satisfaction measures incorporated into an optimisation model to select the most efficient combination of predictors to increase 4 overall satisfaction measures by 5%

Bruce, Bowman, & Brown (1998)	None reported	States 'statistical reliability of the survey is not known' (p. 33)	Descriptive statistics (frequencies as percentages). Chi-square to compare groups (males/females)
Bursch, Beezy, & Shaw (1993)	1) Rating of overall satisfaction	Not reported	Descriptive statistics for sample characteristics. Multiple regression analysis of 14 variables correlated with overall satisfaction to show 5 most important variables
Campanella (2000)	1) Likelihood to recommend	Not reported but widely used instrument (modified) originally developed through focus groups	Descriptive statistics (standard deviations, means), correlation matrices, and multiple regression analysis to determine the relationship between dependent (overall satisfaction) and independent variables (survey items)
Hall & Press (1996)	1) Likelihood to recommend	Widely used survey developed using focus groups. Internal consistency (reliability) - Cronbach's alpha	Regression equation to determine key independent variables in determining satisfaction. Factor analysis
Hedges, Trout & Magnusson (2002)	1) Rating of overall satisfaction 2) Likelihood to recommend 3) Visual analogue scale for overall rating of visit (best to worst)	Not reported	Descriptive statistics for sample characteristics. Nonparametric – Spearman's rho (2 tailed) to evaluate association between satisfaction and perceived, estimated, and measured, wait intervals; also the association of the different satisfaction measures. Kruskal-Wallis where variable was dichotomous
Krishel & Baraff (1993)	1) Likelihood to return 2) Overall satisfaction with the level of care received	Not reported	Chi-square to compare categorical variables; Mann-Whitney U to compare satisfaction ratings between the 2 groups (intervention & control)
Lewis & Woodside (1992)	1) Overall satisfaction rating	Not reported	Thematic analysis of qualitative data. No discussion regarding specifics of statistical analysis, but talks about 'comparisons'
Magaret, Clark, Warden, Magnusson, & Hedges (2002)	1) Overall rating of care and treatment received	Not reported. No psychometric properties reported	Group satisfaction scores compared using 2-tailed wilcoxon signed rank test; correlations of satisfaction with independent variables using spearman rank test
Mayer, Cates, Mastorovich, & Royalty (1998)	Not reported	Survey instrument validated on sample >3,000 consumers	Logistic regression on survey data identified 14 areas as key attributes in the ED; survey data also used 2-tailed t-test; data from compliments/complaints used 2-tailed t-test and Fisher Exact test
Messner, Reck, & Curci (2005)	Not reported	Cronbach's alpha for items 10, 11, 12, & 14 = 0.86	Correlational analysis using linear multiple regression to id significant predictors of satisfaction with care; descriptive statistics for all demographic variables

Nerney et al. (2001)	1) Overall rating of satisfaction	Not reported	Bivariate logistic regression to test factors for correlation with satisfaction; Descriptive statistics to describe sample; Bivariate correlates of satisfaction (confidence intervals & odds ratios)
Rhee & Bird (1996)	1) Likelihood to recommend 2) Overall rating of service	Validity: correlation between intention to recommend and satisfaction variables; Reliability: Cronbach's alpha	Multiple regression (overall satisfaction as dependent variable & other satisfaction variables as independent variables); chi-square, students t-test, and ANOVA used to compare different groups' results
Richards, Richell-Herren, & Mackway-Jones (2002)	1) Global outcome measures – problem handled effectively 2) Quality of services 3) Length of time spent in unit/hospital 4) Willingness to re-attend	Not reported	Descriptive statistics; t-test for binomial distribution to assess for proportional differences between dichotomous categorical variables; thematic analysis of qualitative data from open-ended questions
Sun et al. (2000)	1) Overall consumer satisfaction 2) Willingness to return	Internal consistency: Cronbach's alpha. Internal validation of all models: Bootstrap procedure	Overall satisfaction modelled with ordinal logistic regression; willingness to return modelled with logistic regression. Univariate relationship of each predictor to ratings of overall care
Sun, Adams, & Burstin (2001)	1) Overall satisfaction 2) Willingness to return	As per 200 study (above).	Determinants of consumer satisfaction analysed with previously developed multivariate, ordinal, logistic-regression model
Sun, Brinkley, Morrissey, Rice, & Stair (2004)	1) Overall satisfaction 2) Secondary – willingness to return 3) 6 process of care measures	Used focus groups	Multivariate statistics to control for confounding effects of predefined covariates. Fisher Exact test to analyse binary, ordinal, & categorical variables. Univariate relationship of satisfaction (dependent variable) to intervention form assessed by ordinal logistic regression
Thompson, Yarnold, Adams, & Spacone (1996)	N/A – assessing accuracy of consumers perceived waiting times	Not reported	Correspondence between actual and perceived waiting times evaluated by optimal data analysis. Also reports on strength of results in terms of explanation of results by probability alone
Thompson, Yarnold, Williams, & Adams (1996)	1) Overall satisfaction; 2) Likelihood to recommend	Not reported	Univariate associations between objective data, subjective data, & outcome measures assessed using optimal data analysis. Descriptive statistics to describe the consumer sample data
Tran, Schutte, Muelleman, & Wadman (2002)	N/A – evaluate effects of clinical information on ratings of physician/nurse excellence	Reported from original research by Rhee & Bird	Results of 2 groups (control & intervention) compared using t tests and chi-square tests
Yarnold, Michelson, Thompson, & Adams (1998)	1) Overall satisfaction	Not reported, but widely used instrument	Hierarchically optimal classification tree analysis (CTA) to obtain a non-linear model for predicting overall consumer (dis)satisfaction

Results of the research studies

It is clear from the previous discussion and the tables that the research reviewed was exclusively survey methodology although the studies represent a wide range of different survey tools administered by phone, by post, or face-to-face. Overall the studies all reported high levels of satisfaction. The results of the ED satisfaction research reviewed are discussed below – the first part explores the results associated with consumer characteristics and the second part presents the visit characteristics.

Consumer characteristics

Some studies report no significant association between age and satisfaction (Aragon & Gesell, 2003; Boudreaux et al., 2000; Campanella, 2000; Hall & Press, 1996; Thompson, Yarnold, Williams et al., 1996). Nerney et al.'s. (2001) survey of older ED consumers (>65 years of age) found no association between advancing age and reported satisfaction. However Hedges et al. (2002), demonstrated that older consumers reported higher levels of satisfaction than younger consumers.

Boudreaux et al. (2000), Bruce et al. (1998), Campanella (2000), Hedges et al. (2002), Hall and Press (1996), Nerney et al. (2001), Richards et al. (2002), and Thompson et al. (1996) found no statistically significant association between levels of satisfaction and gender. However, Boudreaux et al. (Boudreaux, d'Autremont et al., 2004) reported a weak correlation between gender and satisfaction.

The satisfaction literature is divided about whether ethnicity is a determinant of consumer satisfaction with Richards et al. (2002) and Sun et al. (2000) reporting that consumers' race and age influenced satisfaction with older, non-white consumers reporting the highest levels of satisfaction. However other studies have reported no association between ethnicity and satisfaction (Hedges et al., 2002; Nerney et al., 2001).

Two studies reported on consumers' level of education as a determinant of satisfaction (Nerney et al., 2001; Richards et al., 2002); and one study reported on consumers' income and satisfaction (Krishel & Baraff, 1993). No significant association between either consumers' education or income and their level of satisfaction was reported in any of these studies.

Visit characteristics

Two studies reported on mode of arrival to the ED and neither found a statistically significant association between mode of arrival and satisfaction (Boudreaux, d'Autremont et al., 2004; Thompson, Yarnold, Williams et al., 1996).

Higher levels of acuity (either consumers' perceptions or health professionals' judgement) have been found in some studies to be associated with higher levels of reported satisfaction – that is, the more seriously ill or injured consumers are or perceive they are, the higher their levels of satisfaction are (Boudreaux, Friedman et al., 2004; Boudreaux et al., 2000; Lewis & Woodside, 1992; Sun et al., 2000). However, Hedges et al. (2002) failed to demonstrate any association between levels of satisfaction and the acuity of the consumers.

A qualitative study into consumer expectations of ED healthcare conducted by Watt et al. (2005) highlighted the importance of staff providing on-going, informative communication to consumers about their healthcare. Similarly, in a study to assess the relative importance of different variables to consumer satisfaction with ED healthcare, Bursch et al. (1993) found that the amount of information consumers received from the nurses about what was happening to them was one of the five most important variables in determining satisfaction. Higher levels of satisfaction were also found to be associated with health professionals providing consumers with information in a number of studies (Nerney et al., 2001; Sun et al., 2000; Sun et al., 2001; Thompson, Yarnold, Williams et al., 1996). Krishel and Baraff (1993) conducted a study to evaluate the effects of providing information to consumers regarding the ED experience and found higher levels of satisfaction were reported by consumers who had received information. However, Sun et al. (2004) found no difference in expressed levels of satisfaction between two groups of ED consumers – one group who received a printed sheet with information pertaining to the visit, and a second group who did not receive any information.

Long waiting times in the ED have frequently, albeit often anecdotally, been associated with dissatisfaction (Boudreaux, Friedman et al., 2004; Hedges et al., 2002; Hewett, 2005; James, Bourgeois, & Shannon, 2005; Thompson, Yarnold, Adams et al., 1996). In addition, a qualitative study by Watt et al. (2005) that explored consumer expectations of ED care noted that consumers found long, unexplained wait times a source of great frustration. However research studies have variously concluded that perceived waiting times are more important

than actual waiting times in determining overall satisfaction (Boudreaux et al., 2000; Bursch et al., 1993; Hedges et al., 2002; Sun et al., 2000; Thompson & Yarnold, 1995; Thompson, Yarnold, Williams et al., 1996); that actual wait times or length of stay have no effect or only a weak correlation with overall satisfaction (Boudreaux et al., 2000; Hall & Press, 1996; Krishel & Baraff, 1993; Thompson, Yarnold, Williams et al., 1996); and that perceived waiting times coupled with consumer expectations of waiting times are better predictors of overall satisfaction (Boudreaux, Friedman et al., 2004; Bursch et al., 1993; Hedges et al., 2002; Thompson, Yarnold, Williams et al., 1996).

Nerney et al. (2001) used a telephone survey to assess the levels of satisfaction amongst older users (>65 years of age) of a metropolitan USA emergency department. The authors also collected data on whether the consumers were first time attendees or had attended on previous occasions. They found that new consumers expressed lower levels of satisfaction than did consumers who had previously attended.

Researchers have also looked at the effects of interpersonal relations between health professionals and ED consumers, and also humanitarian qualities of staff on levels of satisfaction. Boudreaux et al. (2000) found that satisfaction with the care and concern shown by nurses was a stronger predictor that consumers would recommend the ED than was the waiting time to see a doctor. In addition, research that compared satisfaction levels before and after a programme of customer service training for ED personnel, found a statistically significant increase in overall levels of satisfaction after the training programme had been implemented (Mayer et al., 1998). This finding was reported as being independent of wait times. In a review of quantitative research into consumer satisfaction with the ED conducted in the USA, Boudreaux et al. (2004) concluded that the strongest predictor of overall satisfaction is the quality of interpersonal interactions with the ED provider. A qualitative study designed to explore expectations of care in the ED found that users and potential users of ED services expected staff to demonstrate high levels of interpersonal and communicative skills – to keep users informed of all aspects of their visit and to treat them with courtesy, respect, and empathy (Watt et al., 2005). Furthermore, Wissow (2002) reported that there is a relationship between the quality of the provider-consumer communication and subsequent levels of overall satisfaction with the service. Attributes such as the humanitarian qualities of staff in the exchange or giving of information (Hall & Press, 1996; Krishel & Baraff, 1993; Magaret et al., 2002; Price, 1993; Thompson, Yarnold, Williams et al., 1996; Yarnold et al.,

1998); staff technical skills (Rhee & Bird, 1996); and the behaviours of medical and nursing staff (Rhee & Bird, 1996; Thompson, Yarnold, Williams et al., 1996) have all been shown to be predictors of satisfaction.

The three studies that reported on analyses between disposition and satisfaction all noted that there was no statistically significant association between these variables (Boudreaux, d'Autremont et al., 2004; Richards et al., 2002; Thompson, Yarnold, Williams et al., 1996).

A number of studies (Aragon & Gesell, 2003; Boudreaux, d'Autremont et al., 2004; Hall & Press, 1996) have demonstrated a significant link between satisfaction with nursing care and overall satisfaction – concluding that nursing care may be the most important determinant of consumer satisfaction with healthcare. However, Campanella (2000) reported no statistically significant association between satisfaction with nursing and overall satisfaction.

This review of the results of the empirical research demonstrates that the primary conflict in the literature appears to be a relative lack of consensus regarding which specific consumer or visit characteristics are most important in contributing to satisfaction with healthcare. Whilst the researchers report high levels of satisfaction amongst the ED consumers, the findings around the determinants of satisfaction are diverse with different studies concluding that different individual consumer and visit characteristics are determinants or predictors of satisfaction. However, as noted in the first part of this chapter, the research reviewed does not represent a homogenous group in terms of geographical areas surveyed, survey tools used, methods of data collection, and analysis of the data. It is therefore possible that the differences in the findings actually represent subtle differences in the methodologies employed by researchers rather than differences in the factors that influence satisfaction (Aharony & Strasser, 1993; Boudreaux, d'Autremont et al., 2004). Whilst consumer satisfaction surveys represent a valid tool with which to measure satisfaction, it is abundantly clear that careful attention needs to be paid to the tools used and methodologies employed in order to generate valid and useful information that will contribute to enabling healthcare providers to recognise and then focus on predictors of satisfaction.

Knowledge and research gaps identified

The literature search failed to locate any New Zealand-based research – either in the general satisfaction research, or in the specific ED research. This observation has highlighted a significant gap in the research, which shows that there is no knowledge within the satisfaction literature that is specific to New Zealand. It is therefore not known whether patterns or levels of satisfaction in New Zealand EDs are similar or comparable with those in the USA where the majority of research originated.

The appraisal of the literature also revealed that the majority of the studies employed a survey design. However, a number of different tools have been used and they demonstrate different levels of rigour in their design and testing, and in their conceptual grounding. Theorists and researchers have argued that to measure a construct such as consumer satisfaction that has not been defined or conceptualised, has the potential to render any measurement and therefore any interpretation of that measurement meaningless (Abramowitz et al., 1987; Linder-Pelz, 1982; Sitzia & Wood, 1997; Williams, 1994). It is thus noteworthy that much of the satisfaction research could be flawed through not being conceptually grounded. This has the potential to impact on the quality of the research which in turn has significant implications for the utilisation of satisfaction research findings.

The majority of the studies comment on a limitation of the design being the lack of generalizability of the findings. There are however two issues of generalizability here. First, it cannot be known if the research population is representative of the ED population. This is because the research population does not comprise the whole ED population due to the researchers' exclusion and inclusion criteria being applied to define the research population. Groups frequently excluded from research populations include children and minors and seriously ill or injured consumers – these groups however make up a significant proportion of ED consumers. Second, it invariably cannot be known whether the sample was even representative of the research population as data are only collected for the sample. An inability to comment on the representativeness of the sample is a severe limitation of research.

Whilst the review of the literature highlighted a lack of consensus around those consumer or visit characteristics that are determinants of satisfaction, the lack of research in New Zealand serves as a powerful justification for including a wide range of variables to assess for

relationships or associations with levels of satisfaction. This would afford the best opportunity to compare levels of satisfaction and determinants of satisfaction in New Zealand with other research and so increase the relevance of New Zealand research to the international literature.

It is thus clear from this appraisal of the literature that New Zealand based research that explores a wide range of consumer and visit characteristics is warranted. The review highlighted that the best studies are those that are grounded within a conceptual framework and that use scales with demonstrable psychometric properties. These issues therefore need to be addressed in considering research in New Zealand. Furthermore, studies need to incorporate in their designs a process whereby the representativeness of the sample can be assessed and commented on. Finally, as a higher quality of research is demonstrable where a clear and well documented methodology is described and the statistical analyses employed are clearly stated, this also needs to be addressed.

Alongside this body of descriptive and exploratory research around the determinants of consumer satisfaction in the ED, the literature review also highlighted a survey tool that had been used in a number of research studies. The CECSS emerged as a tool specifically designed to measure consumer satisfaction with ED nursing. It is conceptually grounded and had been rigorously developed and extensively tested. In addition, the tool was felt to be relevant as the researcher was a nurse working in the emergency department. In light of the observations from the literature review regarding the lack of consensus around the determinants of satisfaction from previous research and the possibility that this could be due to different tools, inadequate psychometric testing, poor conceptual grounding, and inadequately defined methodologies, the discovery of the CECSS was particularly germane.

The following section introduces the Consumer Emergency Care Satisfaction Scale. First, the development and testing of the CECSS is described. Included in this discussion is the conceptual framework that underpins the scale. The published studies that have utilised the CECSS to explore and describe satisfaction with ED nursing are then presented and discussed.

The Consumer Emergency Care Satisfaction Scale

Development of the CECSS

The initial work to develop a scale to measure consumer satisfaction with ED nursing was conducted by Barbara A. Davis (1988) in response to both the need to measure consumer satisfaction with ED nursing, and a recognition of the lack of valid and reliable instruments available for this purpose. In a paper co-authored with Helen Bush (Davis & Bush, 1995), the authors note that the CECSS was generated from a review of the literature around consumer satisfaction with emergency nursing, concept analysis, Nancy Risser's Patient Satisfaction Scale (PSS), and the authors' personal experience of emergency nursing.

Conceptual framework of the CECSS

The initial phases of the development of the CECSS included a consumer satisfaction concept analysis in order to ground the CECSS in a conceptual framework that would allow the process of consumer satisfaction to be understood and reflected in the tool (Davis et al., 1997). First the authors noted that the conceptual framework of the CECSS was influenced by the work of Nancy Risser (1975), on whose PSS the CECSS was based. In her work on developing a scale to measure satisfaction with nursing in primary care settings, Risser noted that satisfaction is conceptualised as the degree of congruency between consumers' expectations of nursing care and their perceptions of the actual care received.

Davis et al. (1997) then defined the antecedents of satisfaction with nursing as consumer consciousness and consumer expectations. These they extrapolated to state that the consumer is both conscious and able to perceive the ED situation and also that the consumer arrives at the ED with an existing set of expectations. The consumer then engages in a cognitive process of perceiving the nurses' actions. After perceiving the nurse's actions, the consumer judges or evaluates those perceptions in terms of whether feelings of psychological and physical safety result such that their needs are being met. If this is the case, then the consumer develops increased levels of trust in the nurse and has concomitantly reduced levels of fear and anxiety. The end result is an attitude of satisfaction. This satisfaction serves as a positive feedback loop which increases the nurse caring actions, and this in turn feeds back into the cognitive process.

Davis et al. (1997) note that there are a number of underlying assumptions about consumer satisfaction in the conceptual framework. These include that individual differences can impact on satisfaction; that consumers have expectations about their care; that consumers both observe and evaluate nurses' actions; that satisfaction is related to nurses' caring actions; and that consumers are able to recognise their own formed attitudes when these are presented as paper evaluations. The authors (Davis et al., 1997) also refer to the influence of Strasser, Arahoney, and Greenberger's (1993) work on a process model to explain how consumer satisfaction attitudes are formed. The model assumes that consumers are rational individuals who follow a prescribed route which allows them to form an attitude of satisfaction or dissatisfaction with the healthcare encounter. In brief, consumers screen and encode the stimuli they are exposed to and then attach value judgements to some of the encoded stimuli. This forms the basis of the development of satisfaction attitudes. However, once consumers have formed an attitude, they can then react behaviourally in two ways – first, they react according to the ways in which the stimuli could affect their physical and emotional wellbeing; and second, they react behaviourally to continue to positively or negatively affect the outcome of the encounter. In this latter reactance, consumers aim to maintain a satisfying outcome (which involves enforcing or repeating the sequence of events or behaviours that brought it about), or conversely, discontinuing events or behaviours that brought about an attitude of dissatisfaction.

The satisfaction model that underpins the CECSS is thus a comprehensive one that addresses the process of consumer satisfaction attitude formation and proposes that when individuals relate to their surroundings, to form an attitude, it involves both cognitive and behavioural elements.

Psychometric Testing of the CECSS

In order to be regarded as a legitimate, scientific tool a survey tool must have undergone psychometric evaluation. Psychometric evaluation refers to an assessment of the quality of a tool which is based primarily on measures of reliability and validity. Reliability refers to the consistency with which a given tool measures the construct it is designed to, and validity refers to the tool's intrinsic merit in terms of if it represents the construct it is purporting to measure. Validity is usually assessed across two dimensions – construct validity and content validity. Construct validity means that the tool measures the concept that it was designed to

measure and content validity means that all the elements of the construct being investigated are included in the items that comprise the tool.

Content Validity

The content validity of a tool represents the degree to which it is able to embody all the elements of the construct being measured (Polit & Hungler, 1997). Tools cannot be judged to be completely valid – rather they can be shown to demonstrate degrees of validity (Polit & Hungler, 1997).

The degree of validity of a tool is initially determined in its developmental stages. In order to demonstrate a degree of content validity, developers rely both on the literature about the construct and the input of recognised experts (Burns & Grove, 1993). The developers of the CECSS report that the survey was initially generated both from a review of the literature around consumer satisfaction and emergency nursing, and the authors' personal experience of emergency nursing (Davis & Bush, 1995). In developing the survey, the authors conducted an extensive review of the literature that included concept analyses of consumer satisfaction and ED nursing, and also an exploration of existing consumer satisfaction surveys, for example Risser's Patient Satisfaction Scale (ibid).

The content validity of a tool can also be supported through its review by a panel of experts who rate the relevance of each item in the tool and then assess the whole tool for inclusion of any additional relevant items as necessary (Dempsey & Dempsey, 1996). To this end, the developers of the CECSS presented the survey to a panel of experts comprising three ED nursing experts and two experts in the field of consumer satisfaction (Davis et al., 2005). Content validity of the CECSS is thus supported through its generation from the relevant literature on consumer satisfaction, the ED nursing literature, concept analysis, and review by a panel of experts.

Construct Validity

Construct validity relates to how well the theory of the research construct is reflected in the operational definition. Measures of construct validity thus ask the question does the tool measure what it purports to (Burns & Grove, 1993)? Whilst there are a number of ways of assessing construct validity, the emphasis of most approaches is on a logical analysis of relationships which are predicted with reference to theoretical considerations (Polit & Hungler, 1995).

Researchers suggest tests of convergent validity as a measure to support the construct validity of a survey (Burns & Grove, 1993). Convergent validity is supported when the results of using more than one method of measuring the same construct, produces a direct correlation (Polit & Hungler, 1995). Thus, a number of tools that measure the same construct as the tool being assessed are administered concurrently to the same sample and the data are then examined using correlational analyses (Burns & Grove, 1993). The construct validity of the survey is supported if there is a high degree of correlation between the different tools.

Tests of convergent validity have contributed to the construct validity of the CECSS (Davis et al., 2005). In this research, the authors administered the CECSS to respondents alongside Risser's PSS and two single item visual analogue scales (VAS) designed to measure the concept that the nurse was caring, and the concept that the nurse taught the consumer what they needed to know. Statistical analysis of the data from the three different measures revealed significant linear relationships between the associated measures, thus indicating convergence between the different measures. The construct validity of the CECSS was therefore supported through measures of convergent validity.

Alongside measures of convergent validity, researchers suggest exploratory factor analysis as one statistical method to measure the construct validity of a tool (Polit & Hungler, 1997). The aim of this statistical analysis is to identify groups of items within a tool that are related and so determine the attributes that comprise the construct. The identified groups of related items are termed factors or subscales. Each subscale represents a relatively homogenous attribute within the given construct. The items within each subscale thus represent different measures of the same attribute within the construct, and all the subscales combined then represent the construct as a whole.

To assess the construct validity for the CECSS, aggregated data collected from several studies utilising the survey were subjected to factor analysis (Davis & Bush, 1995; Davis et al., 1997). Initial factor analysis supported a 20-item, four subscale tool (Davis & Bush, 1995). However, further assessment using additional aggregated data resulted in a 19-item scale that was divided into two subscales – these were titled Caring (12 items) and Teaching (3 items) (Davis et al., 1997). The remaining four items were all negatively worded and failed to load significantly on either of the two subscales. The authors opted to include these items in the scale but to exclude them from the scoring. This was a strategy to minimise acquiescence

response set bias (Davis et al., 1997), which refers to the tendency of some respondents to consistently respond in the same way, regardless of the actual content of the question (Polit & Hungler, 1997). The use of negatively worded items in a survey is a recognised strategy to reduce this form of bias (ibid). Exploratory factor analysis therefore supports the construct validity of the tool.

Reliability

The reliability of a tool, which refers to how dependable it is in terms of how consistently it measures what it is designed to measure (Dempsey & Dempsey, 1996) is also an important consideration. One method of assessing reliability is to assess a tool's internal consistency. This is a measure of the degree to which each item of a tool is measuring the same construct (Polit & Hungler, 1997). One of the most common statistical methods for assessing the internal consistency of a tool is through computing Cronbach's alpha coefficients for the individual items that make up the tool and for the items that comprise the factors within the tool. This statistical test is based on the principle of split-half reliability which aims to test the homogeneity of the items within the tool (Brink & Wood, 2001). The logic is that if the items in the tool were split into two groups and correlation analysis performed between the two groups, a high degree of internal consistency could be concluded if a high degree of correlation between the two groups was demonstrated (Dempsey & Dempsey, 1996). Cronbach's alpha coefficients are calculated according to the same logic such that split half reliabilities are conducted in every possible way, and then all the scores averaged to give a single reliability score (Burns & Grove, 1993). Cronbach's alpha coefficients range in value from 0.00 to 1.00, with a score of 1.00 indicating that each item is measuring exactly the same thing and a score of between 0.80-0.90 indicating both a high degree of reliability and also a fine discrimination between the items (Burns & Grove, 1993).

In order for potential researchers to gain approval from the developer and copyright holder to use the CECSS in a research study, it is a requirement that data from administration of the CECSS is shared with the developers. Data are then used to continually test the CECSS for validity and reliability. The most recent measures of the reliability of the current version of the CECSS based on aggregated data from numerous studies are Cronbach's alpha coefficient of 0.97 for the Caring subscale, and 0.88 for the Teaching subscale (Davis et al., 2005). These values serve to support the internal consistency of the two factors within the tool, and therefore the reliability of the Consumer Emergency Care Satisfaction Scale.

The CECSS – Current version

In light of the results of the extensive psychometric testing of the CECSS, Davis et al. (2005) conclude that the CECSS is a reliable and valid instrument to measure consumer satisfaction with ED nursing which is sensitive both to consumers' expectations and to the constructs of ED nursing. The current version of the CECSS which is licensed for use comprises 19 items, each of which is a statement about ED nurses' behaviours, actions, or attitudes. The items are divided into two subscales – Caring, which comprises 12 items, and Teaching, which comprises three items. The 19 items that comprise the CECSS are reproduced with the permission of the author, in Table 3.

Table 3. CECSS items by subscale

Item No.	Item	Subscale
1	The nurse performed his/her duties with skill	Caring
2	The nurse seemed to know something about my illness/problem	Caring
3	The nurse knew what treatment I needed	Caring
4	The nurse gave me instructions about caring for myself at home	Teaching
5	The nurse should have been more attentive than he/she was	Negatively worded
6	The nurse told me what problems to watch for	Teaching
7	The nurse told me what to expect at home	Teaching
8	The nurse explained all procedures before they were done	Caring
9	The nurse seemed too busy at the nurses station to spend time talking with me	Negatively worded
10	The nurse explained things in terms I could understand	Caring
11	The nurse was understanding when listening to my problem	Caring
12	The nurse seemed genuinely concerned about my pain, fear, and anxiety	Caring
13	The nurse was as gentle as he/she could be when performing painful procedures	Caring
14	The nurse treated me as a number instead of a person	Negatively worded
15	The nurse seemed to understand how I felt	Caring
16	The nurse gave me a chance to ask questions	Caring
17	The nurse was not very friendly	Negatively worded
18	The nurse appeared to take time to meet my needs	Caring
19	The nurse made sure that all my questions were answered	Caring

For each item, respondents indicate, on a five-point Likert-type rating scale the degree to which they agree with each statement. Possible responses range from strongly disagree (1) to strongly agree (5). A higher score represents a higher degree of satisfaction with ED nursing. The tool is designed to be administered by post, by phone, as a face-to-face interview, or it can be given to consumers to complete on site in the emergency department.

Studies using the CECSS

The literature search identified seven published studies that utilised the Consumer Emergency Care Satisfaction Survey. The majority (four) were conducted in the USA (Clark et al., 1996; Elder et al., 2004; Raper, 1996; Raper, Davis, & Scott, 1999), with one each in Australia (Davis & Duffy, 1999), Hong Kong (Chan & Chau, 2005), and Spain (Barrio, Garcia, Cereijo, & Lopez, 2002). The Spanish-based study (Barrio et al., 2002) reported on the processes followed to validate a Spanish translation version of the scale and concluded that the Spanish version of the CECSS represents a valid and reliable tool to measure satisfaction with ED nursing. However the study does not report on the results of the satisfaction survey. The CECSS has not previously been used in New Zealand.

The published research studies that have utilised the CECSS are discussed in the following section. Brief details of the studies are also summarised in Tables 4, 5, and 6. Table 4 presents details of the methodologies employed, the aims of the research, and the main conclusions drawn by the authors. Table 5 details the inclusion and exclusion criteria used to define the research populations and also the consumer and visit characteristics recorded as either researcher-collected data or self-reported data. Table 6 gives details of the validity and reliability of the tool and also the statistical analyses used in the analysis of the data.

Table 4. CECSS research – Sample size, administration, aims, and conclusions

Author (Year)	Sample / RR	Administration	Aim	Conclusions
Chan & Chau (2005)	56 / 61%	Hong Kong; self-completed at ED after triage and before assessment by other health professionals	To examine the relationship between consumer satisfaction and triage nursing	Overall satisfaction with triage nursing; higher levels of satisfaction reported by older consumers; no significant relationships between triage nurse characteristics and consumer satisfaction
Elder et al. ¹ (2004)	65 / Not reported	USA; researcher administered by phone 48-72 hours after visit	To examine relationships between consumer and nurse characteristics and consumer satisfaction with triage nurse and triage nursing	No relationship between consumer and nurse characteristics and consumer satisfaction; consumer perception of high acuity of presentation associated with low levels of satisfaction
Raper, Davis, & Scott ¹ (1999)	378 / Not reported	USA; researcher administered by phone within 48 hours of discharge from ED	To examine relationships between individual consumer and nurse characteristics and satisfaction with triage nurse and triage nursing	Higher levels of satisfaction reported by older, non-white, widowed consumers, and by consumers triaged by a white triage nurse and by triage nurses with graduate education.
Davis & Duffy (1999)	103 / 81%	Australia; given to participants in ED; completed and returned by participant prior to leaving ED	To describe levels of consumer satisfaction; and to explore relationships between demographic variables and consumer satisfaction in two ED consumer populations – rural and urban	Higher levels of satisfaction with nurse teaching reported by urban ED consumers; higher levels of satisfaction with nurse caring behaviours reported by female urban ED consumers
Raper (1996)	200 / 50%	USA; researcher administered either face-face or phone within 48 hours of discharge from ED	To investigate the relationships between individual consumer/visit characteristics and satisfaction	Weak positive relationship between satisfaction with nursing care and consumers' self-perceived improvement, and admission; no individual consumer differences were predictors of consumer satisfaction
Clark, Pokorny, & Brown (1996)	52 / 81%	USA; participant completed prior to discharge from the ED	To assess consumer satisfaction with nursing care	Overall high levels of satisfaction with nursing care; no relationship between gender and education level and satisfaction demonstrated; lower levels of satisfaction with discharge teaching reported by African-Americans

¹ Used the CECSS-Adapted which comprises the Caring subscale of the CECSS, Intent to return scale, and Nurse satisfaction scale

Table 5. CECSS research – Inclusion, exclusion criteria and consumer and visit characteristics

Author (year)	Inclusion Criteria	Exclusion Criteria	Researcher recorded visit or consumer variables	Respondent recorded visit or consumer variables
Chan & Chau (2005)	Consumers who received treatment in the ED, >18 years, able to communicate in English or Chinese, triage category 3, 4, or 5	Diagnosis of acute mental illness, medical diagnosis of abortion or sexual assault, in police or protective custody	Age, gender, ethnicity, presence of pain, past medical/surgical history, category of illness/injury, types of nursing interventions	None detailed
Elder et al. ¹ (2004)	ED consumers who received treatment in the ED	< 18 years, diagnosis of acute mental illness, medical diagnosis of abortion or sexual assault, non-English speaking, in police or protective custody		Age, gender, ethnicity, marital status, healthcare cover, chronic health problems, acuity, presence of pain, type of treatment
Raper, Davis, & Scott ¹ (1999)	ED consumers who received treatment in the ED, >18 years	Emergent consumers, active or historic mental illness, diagnosis of abortion or sexual assault, admitted to critical care, in police or protective custody	Age, gender, ethnicity, marital status, healthcare cover, chronic health problems, acuity, presence of pain, type of treatment	None detailed
Davis & Duffy (1999)	ED consumers seen and treated in the ED	<16 years, diagnosed with acute mental illness, unconscious, in police or protective custody, triage category 1	None detailed	Gender, country of origin, healthcare cover, previous ED visits, chronic health problems
Raper (1996)	>17 years, no current or historical mental illness, diagnosis not abortion	None detailed	Time of arrival, time of discharge, length of stay (LOS), acuity	Age, gender, ethnicity, healthcare cover, previous ED visits, chronic health problems, presence of pain, treatment type (medical/surgical), perceived improvement in condition, disposition
Clark, Pokorny, & Brown (1996)	Stable consumers discharged home from the ED, >18years, able to read/write English, physically/mentally able to complete questionnaire	None detailed	None detailed	Age, gender, ethnicity, education

¹ Used the CECSS-Adapted which comprises the Caring subscale of the CECSS, Intent to return scale, and Nurse satisfaction scale

Table 6. CECSS research – Reliability and validity of tool and data analysis

Author	Overall satisfaction measure	Reliability / validity	Data analysis
Chan & Chau (2005)	None	Reports on development of original scale; Cronbach's alpha for translated scale; translated scale reviewed by experts to assess content validity	Descriptive statistics (frequencies, means) to describe characteristics of the sample; Pearson's/Spearman's correlations and independent t-tests to assess relationships between consumer/nurse characteristics and satisfaction
Elder et al. ¹ (2004)	1) Intent to return	Reports Cronbach's alpha for original caring subscale and for this study; no reliability information available for intent to return and nurse satisfaction scales	Tests for relationships performed but specific statistical analyses not reported
Raper, Davis, & Scott ¹ (1999)	1) Intent to return	Not reported	Descriptive statistics (frequencies) to describe levels of consumer satisfaction and demographic characteristics; Pearson's correlations to examine relationships among variables; multiple regression to determine predictors of satisfaction
Davis & Duffy (1999)	None	Reports on development and testing of original scale; also reports Cronbach's alpha for this study	Descriptive statistics (means, frequencies) to describe sample and levels of satisfaction; test for relationships performed but specific statistical analyses not reported
Raper (1996)	1) Intent to return	Reports on development and testing of original scale; also reports Cronbach's alpha for this study	Frequencies to describe demographic characteristics; Pearson's correlations to examine relationships among variables; multiple regression to determine predictors of satisfaction
Clark, Pokorny, & Brown (1996)	None	Reports on development of original scale (including Cronbach's alpha) only	Frequencies to describe levels of satisfaction; means and frequencies to describe sample; analyses undertaken to explore relationships but specific statistical tests not reported

¹ Used the CECSS-Adapted which comprises the Caring subscale of the CECSS, Intent to return scale, and Nurse satisfaction scale

Clark et al. (1996) used the original, 20-item, four subscale version of the CECSS to assess levels of consumer satisfaction with nursing in a rural USA emergency department. Participants were given the scale to complete and return prior to their discharge from the emergency department. The research population comprised those consumers discharged home from the ED who were at least 18 years of age, able to read and write English, and physically and mentally able to complete the questionnaire. No variables relating to the visit were recorded and the only consumer variables collected were age, gender, ethnicity, and education. All data collected were self-reported. Researchers have suggested that self-reported data are unreliable and should not be relied on as the only means of data collection (Raper, 1996; Raper et al., 1999). The results revealed overall high levels of satisfaction with over 80% of all respondents recording satisfaction at the highest possible level. The authors found no statistically significant relationship between gender or education and satisfaction. They did however demonstrate that African Americans had significantly lower levels of satisfaction with discharge teaching than non-African Americans. In light of this finding, the authors posit that nurses' teaching may need to be more culturally aware. The types of inferential statistical analyses undertaken are not specified and the authors do not report any reliability statistics for their study. This detracts from the overall quality of the research. A limitation of the study is also its setting – being a small rural hospital which is used as a primary care source meaning that many consumers are familiar with the nursing staff. This could contribute to the positive skew in the satisfaction ratings.

Raper (1996) also used the original 20-item version of the CECSS in his study to determine the factors related to consumer satisfaction with ED nursing and to consumers' intentions to return to the emergency department. The survey was administered by the researcher to participants either over the telephone or face-to-face, within 48 hours of discharge from the emergency department. The only consumers excluded from the research population were those under the age of 17 years, those with either an active or historical mental illness, and those with a medical diagnosis of abortion. Data relating to both consumer and visit characteristic were collected by the researcher and as self-reported data. This was felt to contribute to the reliability of the data. The author reports on the reliability of the tool for the current study and notes that the low Cronbach's alpha coefficient for the information giving and technical competence subscales do not support their internal consistency. Detailed inferential statistical analyses presented by the author revealed a weak positive relationship between satisfaction with nursing and self-perceived improvement in condition and admission

to hospital. No other consumer characteristics were found to be significantly associated with satisfaction and the author concluded that no consumer characteristics were significant predictors of satisfaction. However, the results demonstrated that consumer satisfaction with nursing care was a significant contributor to consumer satisfaction with the ED nurse, and that the nursing dimensions of psychological safety and information giving were also significant predictors of consumer satisfaction with the ED nurse. Raper also demonstrated a positive relationship between consumer satisfaction with ED nursing and intention to return and concluded that not only did nurses hold the key to consumer satisfaction, but that nurses' interpersonal skills were key factors in determining consumer satisfaction.

Davis and Duffy (1999) used the current 19-item, two subscale version of the CECSS to compare levels of satisfaction with ED nursing between a rural and an urban ED in Australia. The survey also included two open-ended questions to collect qualitative data about what consumers liked best about the ED and what could have improved the experience for them. The survey was given to participants to complete and return prior to their discharge from the emergency department. The authors detailed the following exclusion criteria for the research population: less than 16 years of age, diagnosis of mental illness, unconscious, in police or protective custody, and those who were assessed as being critically unwell or injured. In addition, consumers assessed as being in non-urgent need of treatment, were excluded from the rural research population as they are not treated in the ED but referred to an injury and treatment clinic. Data for the study were all self reported and the variables included some consumer and some visit characteristics. The results showed overall high levels of satisfaction in both the rural and the urban emergency departments. However, urban consumers expressed higher levels of satisfaction with nurses' teaching than rural consumers and female, urban consumers had higher levels of satisfaction with nurses' caring behaviours. The authors noted that the lack of data pertaining to consumer and visit characteristics renders interpretation of the results difficult. The exclusion of category 5 consumers from the rural sample could also affect the findings. It may also be significant that the rural ED may be a more intimate setting that is frequently used as the primary site for healthcare as noted by Clark et al. (1996) in their study.

A study by Raper et al. (1999) used the 12-item Caring subscale of the CECSS in a USA ED to examine the relationships between individual consumer and nurse characteristics, and satisfaction with triage nursing and the triage nurse; and consumers' intention to return to the emergency department. Reliability of the scale is not reported here or for this study, however the authors refer back to previous published evidence of reliability and validity. The researchers recruited a convenience sample of consumers who had been seen and treated in the ED, using the following exclusion criteria: less than 18 years of age, active or historical mental illness, medical diagnosis related to abortion or sexual assault, admitted to critical care, or in police or protective custody. The researchers administered the surveys by telephone to participants within 48 hours of their discharge from the emergency department. Data related to the consumer and the visit were also collected with some data recorded by the researchers from the ED logs to increase the reliability of the data. The authors present detailed statistical analyses of the results. Weak positive relationships between satisfaction with triage nursing and consumer age, race, and type of hospital providing the service were demonstrated, with older, non-white consumers reporting significantly higher levels of satisfaction. In addition, higher levels of satisfaction were reported by consumers at the academic medical centre than consumers at either the private public or the private Catholic hospitals. The authors report that consumer race, level of the triage nurses' secondary education, and consumer satisfaction with the triage nurse were all demonstrated to be significant predictors of consumer satisfaction with triage nursing. The age of the consumer, the race of the triage nurse, and consumer satisfaction with triage nursing were also seen to be significant predictors of consumer satisfaction with the triage nurse.

Elder et al. (2004) replicated Raper et al.'s study (1999) to assess the relationships or differences that exist between consumer and nurse characteristics, consumer satisfaction with triage nurse caring behaviours, satisfaction with the triage nurse, and intent to return to the emergency department. As a replication study, the authors used the CECSS-adapted (the Caring subscale only). The authors reported the reliability of the adapted scale for this survey by way of Cronbach's alpha coefficients. The setting for the study was a rural ED in the USA and the survey was administered to participants by telephone interview within 24-48 hours of discharge from the emergency department. A convenience sample was recruited from all consumers who presented to the ED for treatment and who were assessed as being in moderate or non-urgent need of treatment. Critically injured consumers were excluded from the research population. The following exclusion criteria were also applied to define the

research population: less than 18 years of age, diagnosis of acute mental illness, abortion, or sexual assault, unable to speak English, or in police or protective custody. Data were all self reported and included consumer and visit characteristics. The authors found no significant differences in consumer characteristics and triage nurse characteristics with regard to consumer satisfaction, satisfaction with nurse caring, and intent to return. Consumers who perceived themselves as seriously injured were less likely to return to the ED, less likely to be satisfied with the triage nurse, and less likely to see the triage nurse as caring. Consumers and nurses agreed on the acuity level at the time of triage. The more satisfied the consumer was with triage nurse caring and with the triage nurse, the more likely the consumer was to return to the emergency department.

Chan and Chau (2005) used a Chinese translation of the current version of the CECSS to examine the relationship between consumer satisfaction and triage nursing in an urban Hong Kong emergency department. The authors translated the survey into Chinese for this study and report on the validation of the translation and also the reliability of the Chinese version of the scale. The convenience sample included consumers receiving treatment in the ED who were over 18 years of age, could communicate and read and write in either English or Chinese, and who were assessed as being in moderately urgent and non-urgent need of treatment. The specific exclusion criteria applied to the research population were: consumers in police or protective custody, and a diagnosis of acute or historical mental illness, abortion, or sexual assault. Consumers completed the survey whilst still in the emergency department. Data on consumer and visit characteristics were collected by the researchers from consumers' records in order to ensure accuracy of the data. The authors hypothesised that they would find no significant associations between consumer satisfaction with triage nursing and individual consumer characteristics; and that there would be no significant associations between consumer satisfaction with triage nursing and nurse characteristics. The inferential statistical analyses used were detailed by the authors. The findings showed that older consumers tended to report a higher level of satisfaction on the Teaching subscale, and that consumers who had received a specific nursing intervention also reported higher levels of satisfaction with the Teaching subscale. There were no statistically significant relationships demonstrated between consumer satisfaction with triage nursing and individual nurse characteristics. The authors note the difficulty of using a tool developed in another country and the possible cultural differences in perceptions and concepts of satisfaction. The authors recommend using or including qualitative data in future research to address this.

Summary

This appraisal of the CECSS literature has demonstrated that the rigorous development and testing of the scale has resulted in a tool that is conceptually grounded and that demonstrates validity and reliability in measuring satisfaction with ED nursing. The published studies that have used the CECSS are methodologically sound and detail clear and appropriate statistical analyses. Whilst all the studies reported high levels of satisfaction with ED nursing, there was no consensus around which consumer characteristics contributed to levels of satisfaction. It was noteworthy that visit characteristics around the consumer healthcare journey were not routinely recorded.

In light of this CECSS literature and in consideration of the review of the literature in the first part of this chapter a clear rationale has been established to conduct a study in New Zealand to describe satisfaction with ED nursing using the Consumer Emergency Care Satisfaction Scale. The gap in the knowledge highlighted in the literature review and in the CECSS literature around being unable to position the findings in terms of how representative the samples were of the populations will be addressed in the design of the study. In addition, because there is no consensus on which consumer and visit characteristics affect satisfaction a range of consumer and visit characteristics will be explored to ensure that the New Zealand study is relevant to the international research.

The following chapter presents the methodology that was used in the research and explores the factors that contributed to the decision to conduct a replication study.

Chapter 3 – Research Design

This chapter presents details of the research design that underpinned the study. First, the research questions are revisited so the design can be meaningfully explored within the context of the aims of the research. The decision to do a replication study is then explored and a discussion of the methodological issues around using the Consumer Emergency Care Satisfaction Scale (CECSS) is presented. The first steps of planning the research – being the processes involved in gaining ethical approval to conduct the research and Locality Assessment to gain approval for the research site, are then discussed. The research design is then presented with reference to the literature that informed the design, including the definition of the research population, the sample size and process of participant recruitment. The tools that comprised the survey that were used to collect the data are then introduced and included in this discussion is the decision making process, informed by the literature, around which consumer and visit characteristic variables were included. The chapter finishes with the details of how the returned surveys were handled, data coding and cleaning, and finally the five phase data analysis plan.

The aims of the research and the research questions

The justification for the research presented as part of Chapter 1 established the importance of measuring consumer satisfaction with emergency department (ED) nursing. The literature review presented in Chapter 2 then highlighted both the existence of a wealth of international research on consumer satisfaction with ED nursing and a concomitant dearth of research pertaining specifically to New Zealand. In light of this it was decided to conduct a replication study using the CECSS to measure satisfaction in a New Zealand hospital emergency department. The aims of the research were as follows:

- To describe levels of consumer satisfaction with ED nursing
- To identify the key determinants of consumer satisfaction and dissatisfaction with ED nursing
- To explore the relationships between consumer and visit characteristics, and consumer satisfaction with ED nursing
- To explore the relationships between consumer and visit characteristics, and overall consumer satisfaction.

In addition, as a replication study using an existing tool, the aims of the research also included:

- To test the internal consistency (reliability) of the CECSS in a regional New Zealand hospital ED
- To test the construct validity of the CECSS in a regional New Zealand emergency department.

The specific questions addressed by the research were thus as follows:

- What are the key determinants of consumer satisfaction with ED nursing?
- What are the effects of consumer and visit characteristics on levels of satisfaction with ED nursing?
- How do levels of satisfaction with ED nursing relate to the level of overall satisfaction with the visit?
- What do consumers find satisfying and dissatisfying about ED nursing?

Replication studies

Replication studies reproduce research to determine whether the results of the original study are reproducible under the same, or different conditions (Burns & Grove, 1993; Haller & Reynolds, 1986). If the results of a replication study do replicate those from the original study, the replication study contributes to the generalizability of the original research findings. They therefore have the potential to comment and impact on the validity of the original study's results. This renders replication studies important in practical nursing applications because a significant barrier to utilising research findings in practice is that many original research studies do not have their findings validated. In these studies, the findings have an academic interest but ultimately, without being validated in subsequent studies, can have little impact on nursing practice (Polit & Hungler, 1997).

Replication studies also have the potential to allow researchers to discriminate between research findings and to explore contextual issues around the research in light of the findings. Contextual issues include both the language utilised and the research setting. First, issues around language include the very real possibility that words or phrases have alternative meanings between cultures. This can mean that differences in findings can be meaningfully explored and explained within the context of language rather than the differences detracting

from the validity of the research. Second, the research setting encompasses the social, environmental, and political issues that impact on the construct being researched. Differences in findings can be explored and explained in light of these different contexts – for example staff ratios, or the structure of health provider systems. The advantages of replication studies thus lie in both the potential to validate research findings and also the potential to explore findings within the context of different cultures and settings.

In spite of these recognised advantages of replication studies, it is not a common approach in nursing research. Burns and Grove (1993) posit that the limited number of replication studies may be attributable to the view that these studies have less scholarly merit than original research. In contrast to this view however, Dempsey and Dempsey (1996) argue that, far from lacking in academic merit, replication studies have the potential to develop a scientific research base for nursing to support and enhance nursing practice. A compelling position is similarly advanced by Polit and Hungler (Polit & Hungler, 1995, 1997) who contend that replication studies represent a valid and appropriate research pathway for Masters' students.

Replication studies play a pivotal role in expanding nursing's scientific knowledge base, through the potential to validate original research findings. They are instrumental in narrowing the theory-practice gap in nursing by rendering research findings utilisable in practice. The major advantage of conducting replication studies therefore lies in the possibility that research results can be reproduced, validated, generalised, and thence applied to practice.

The following section looks at the methodological considerations which emerged as a consequence of the decision to conduct a replication study using the Consumer Emergency Care Satisfaction Scale.

CECSS - Methodological considerations

Administration

The CECSS is a survey which has been designed to be administered in a number of different ways. These include by researchers by way of a telephone interview after the ED visit, or face-to-face interviews at the time of the ED visit; or posted to consumers after discharge from the ED for consumers to complete and return. The CECSS can also be given to

consumers in the ED for consumers to complete and return prior to their discharge from the emergency department. In addition to these traditional methods of survey administration it is feasible that the CECSS could be administered and completed electronically by consumers after the ED visit. The following section explores the advantages and disadvantages of alternative methods of survey administration and also presents details of these methods used in the CECSS published studies.

Postal Administration – Advantages and disadvantages

The postal administration of tools presents many advantages to researchers. First, both a wide geographic area and a large sample can be captured (Brink & Wood, 2001). Postal survey tools are also cost effective because posting requires very little researcher time in the data collection phase of the research (Polit & Hungler, 1995, 1997). A further advantage lies in participants being able to control when to complete the survey (Cooper & Schindler, 2001). Postal surveys also do not involve any direct contact with researchers thus there is no possibility of interviewer contamination or researcher bias affecting the data (Polit & Hungler, 1997). The lack of direct researcher involvement in the data collection phase also means that the participants can be guaranteed complete anonymity (Polit & Hungler, 1997). Postal surveys represent a completely standardised format of administration which in turn increases the possibility that the results could be generalised (Burns & Grove, 1993).

There are however some disadvantages associated with administering surveys by post, the most significant of which lies in the poor response rates usually achieved with this method of administration with rates as low as 25-30% reported in the literature (Burns & Grove, 1993). A low response rate has the potential to negatively impact on the representativeness of the sample rendering it impossible to generalise the research findings to the population (Polit & Hungler, 1995).

In addition to the problematic low response rates, postal surveys do not afford participants the opportunity to seek clarification with any items or wording that are not clear to them (Brink & Wood, 2001), and it is not possible to guarantee that the identified participant is in actuality the person who completed the survey (Polit & Hungler, 1997). Also, participants may not complete all of the survey items and this can be problematic as failure to complete all of the items can lead to issues with the analysis of the data (Brink & Wood, 2001).

Finally, postal surveys cannot be completed by all possible participants as some respondents will require help from a third party. These include those who are illiterate or semi-literate, and blind or partially-sighted participants (Brink & Wood, 2001).

Researcher administration – Advantages and disadvantages

The major advantage of researchers administering surveys over the telephone or in face-to-face interviews, lies in the greater response rate achievable compared with postal surveys. This is also true of surveys given to consumers to complete on site. Table 5 shows that the lowest response rate for researcher-administered surveys was approximately 50% (Raper, 1996) and the highest was 83.7% (Davis & Duffy, 1999). Higher response rates have the advantage of increasing the likelihood that the sample is representative of the population. There is thus potentially more scope to generalise the results of the research. Surveys which are administered by a researcher – either over the telephone or face to face – also afford participants the opportunity to seek clarification of any items or words that are not clear.

Alongside these advantages, there are some disadvantages with researcher-administered surveys. First, there are issues around training and cost. Whilst any researcher is capable of posting surveys, there are skills associated with administering surveys over the phone or face-to-face that require specialist training. Research-administered surveys also have the potential to include interviewer bias which could taint the data (Polit & Hungler, 1995). Whilst this can be mitigated with training it remains a very real risk to the quality of the data.

In addition to the potential expense of training researchers, research-administered surveys are also associated with higher costs in terms of researcher time to conduct the surveys. Finally, Dempsey and Dempsey (1996) note that there is a resistance to telephone surveys which they attribute to an ever increasing number of telephone surveys; participants' resentment around feelings of intrusion into their private lives; and the purpose of surveys being misrepresented where the aim is to sell or market a product rather than collect data for research purposes.

On-Line administration – Advantages and disadvantages

The on-line distribution and completion of surveys is a relatively new method for administering surveys. Whilst this represents a cost effective method of administration, a drawback lies in the observation that attendees' e-mail addresses are not routinely recorded when they register for treatment at emergency departments. This is in direct contrast to addresses and telephone contact details which are routinely collected at the point of ED

registration. There also exists a technological age gap which, whilst partially bridged by community education groups such as SeniorNet, does however see only a minority of individuals in the older generations being technically equipped to complete on-line surveys. In addition to being computer and internet literate, participants would also have to have access to an internet capable computer and this would also exclude a number of potential participants.

Administration used in CECSS studies

The eight published studies that have utilised the CECSS administered the survey either in the ED, or via telephone interviews after discharge from the emergency department (Table 7).

Table 7. Method of administration of the CECSS in eight published studies

Author (Year)	Sample / Response Rate	Administration and return of survey
Chan & Chau (2005)	56 / 61%	Given to participants in ED after triage & completed/returned prior to assessment
Davis et al. (2005)	143 / 79%	Given to participants in ED & completed/returned prior to discharge
Elder et al. (2004)	65 / Not reported	Telephone interviews 48-72hrs post discharge
Barrio et al. (2002)	96 / Not reported	Given to participants at point of discharge from ED & completed/returned prior to discharge
Davis & Duffy (1999)	127 / 83.7%	Given to participants in ED & completed/returned prior to discharge
Raper, Davis, & Scott (1999)	378 / Not reported	Telephone interviews within 48hrs of discharge from ED
Clark, Pokorny, & Brown (1996)	52 / Not reported	Given to participants at point of discharge & completed/returned prior to discharge
Raper (1996)	397 / approx 50%	Telephone (62%) or face-to-face interviews (38%) within 48hrs of discharge from ED

Table 7 demonstrates that the majority (n = 5, 62.5%) administered the tool directly to consumers in the ED for completion and return prior to leaving the emergency department. Of the remaining studies, two administered the survey by way of telephone interviews, and the final study used a combination of both telephone and face-to-face interviews to administer the survey after discharge from the emergency department.

Postal administration – The administration of choice

In spite of the observation that postal administration had not been used previously with the CECSS, the decision to administer the survey by post was made. There were a number of considerations in making this decision. First, the researcher recognised that she lacked the requisite skills to administer the survey over the phone and the financial cost of specialist

training was prohibitive. The researcher is also not New Zealand-born and does not have a New Zealand accent. It was felt that this would have the potential to lead to problems of comprehension. A further consideration was the cost of telephone calls. This was compounded by the observation that many ED attendees register a mobile phone number and not a land line and this would represent a significant cost.

Administering the survey to consumers whilst still in the ED was not felt to be suitable as it would be impossible to control for possible confounding factors such as differences in responses according to when consumers were approached. For example, a consumer who had just received some treatment or contact with the nurse may be feeling more satisfied at that point in time than a consumer who had just been advised that they required a further blood test as the laboratory had lost their first test. In addition, it was felt to be too much of an imposition on already stressed individuals and families to approach them in the already stressful environment of the emergency department.

The major disadvantage of postal administration was the potentially low response rate, especially in light of a stated aim of the research being to assess the representativeness of the sample compared with the population. However, a number of strategies were incorporated into the research design to militate against this. These included using a cover letter and including a stamped addressed envelope to return the surveys. In addressing issues of representativeness of the sample, this was addressed by collecting consumer and visit characteristic data for the research population. These strategies are discussed in greater depth in the appropriate sections.

Language

The CECSS was developed in the United States of America. In light of the comments by Chan and Chau (2005) regarding possible cultural differences encountered with using a tool developed in another country, prior to using the tool the scale items were carefully read to determine whether any transcultural adaptations were needed to the language used. No words or phrases that could cause confusion or create ambiguity in meanings were found.

Validity

The decision to utilise a pre-existing tool was made in part as a result of the observation from the literature that a flaw in much of the satisfaction research lies in the perceived lack of validity in many of the surveys used. As discussed in Chapter 2, the CECSS has demonstrable validity across both dimensions of content and construct. This meant that a disadvantage of replication studies – namely the potential to replicate a study that lacks rigour – was minimised and would in turn contribute to the quality of the research and potential generalizability of the findings. The following section details the stages in the planning of the research.

Planning the research

Ethical approval

The research involved healthcare consumers and also required that the researcher was able to access consumers' computerised ED presentation records. Ethical approval was therefore required to proceed with the research. The application for ethical approval required a detailed account of the proposed research and the study design. Provisional ethical approval was granted by the Central Regional Ethics Committee in August 2007. The provisional nature of the approval hinged, in part on providing Locality Assessment from the research site, and this process is discussed below. However, once Locality Assessment was granted, full ethical approval from the Central Regional Ethics Committee was given in March 2008. Whilst refinement and formatting of the survey and related documents required an on-going dialogue with the Central Regional Ethics Committee, the aim of the research and the substance of the research documents remained unchanged from the date that ethics approval was granted.

Locality Assessment

Locality Assessment is an integral part of the process of applying for ethical approval to conduct research in New Zealand. It constitutes an assessment of two factors. First, it addresses the question of whether the person applying to be the researcher is considered by those in the proposed research setting to be duly competent to conduct the proposed research. Second it assesses whether it is appropriate for the researcher to conduct the research at the nominated site.

The original research proposal named the ED where the researcher is employed as the setting at which to conduct the research so a Locality Assessment application was made to the Ethics Committee of the District Health Board (DHB) concerned. Locality Assessment was however declined on three grounds. First, the Committee expressed concern that the researcher was a registered nurse working in the ED where the research was to be conducted. The Committee felt that consumers who had been attended to by the researcher in her capacity as a registered nurse, should be excluded from the research population and that the research design did not allow for this. Second, the Committee expressed concern regarding possible negative comments by survey respondents, pertaining to either the researcher's colleagues, or the researcher herself. Finally, the Committee expressed concern about the then current problems regarding staffing levels and low morale which could impact negatively on levels of satisfaction. The Committee were however supportive of the research and encouraged the researcher to approach an alternative District Health Board.

Dr Joan Skinner (research supervisor) approached the Director of Nursing at another DHB and following a period of negotiations with interested parties – including the Acute Services Manager, the Service Manager (Quality), and the Clinical Head of Department (ED), Locality Assessment was approved by the Acute Services Manager. This gave the researcher permission to conduct the research at the ED of their local hospital. In respect of the DHB's request to remain anonymous, the site where the research was conducted is referred to as the research emergency department.

To gain authorised access to the hospital site and also to the computer systems to access the ED presentation records an application for Special Staff Member Status was made to the Acute Services Manager. The application for Special Staff Member Status, which is valid for a period of up to two years, necessitated a Senior Manager to act as Sponsor for the research. This role was filled by the Clinical Head of the emergency department.

The following section details the study design and guides the reader through the research process that was undertaken to describe and measure consumer satisfaction with ED nursing using the Consumer Emergency Care Satisfaction Scale.

The research process

Defining the research population

The decisions around sample inclusion and exclusion criteria were informed by the satisfaction literature presented in Chapter 2. First, the research population comprised those consumers who presented to the ED and requested treatment for an illness or injury related problem. However, to be eligible to be included in the research consumers had to receive treatment in the ED and then be discharged home or to another facility within the hospital. This excluded consumers who self discharged prior to receiving treatment. Inclusion criteria were as follows: 18 years of age or older, mentally competent and able to give consent to participate (not suffering from dementia, confusion, psychosis or other acute psychiatric disorder, or excessively under the influence of alcohol or drugs), and having a postal address detailed in their registration notes.

A number of presentations and conditions that rendered consumers ineligible for inclusion in the sample were also incorporated in the research design. These exclusion criteria were consumers who were admitted directly to an inpatient unit who did not receive treatment in the ED; consumers triaged as Category 1 (discussed below); those who were unconscious or who had a significant alteration in their level of consciousness (Glasgow Coma Scale ≤ 13 ²); and consumers who were transferred from the ED to another hospital or healthcare facility (not including Aged Residential Care which is considered home).

The research ED utilises the Australasian Triage Scale which is a five point priority scale used primarily by nurses to assess consumers and categorise them according to the severity of their illness or injury (Australasian College of Emergency Medicine, 2000). This priority coding system ensures that presentations are seen in order of need and not in order of arrival. Triage category one represents critically ill or injured people who could die if they do not receive immediate resuscitation, medical treatment or intervention. Triage categories two and three are assigned to seriously ill or injured people who are in urgent need of medical intervention – with category two being a higher priority of need than category three. Triage categories four

² The Glasgow Coma Scale (GCS) is a measure of level of consciousness with a possible range of 3-15 with a score of ≤ 13 indicating some degree of head injury (Fuller & Schaller-Ayers, 2000)

and five represent the non-urgent presentations who could wait one hour, or up to two hours for medical intervention or treatment without suffering adverse physiological effects.

There were a number of exclusion criteria from previous studies that were not included in this research design. These included diagnoses of abortion and sexual assault, in police or protective custody, and a history of mental illness. The decision to include consumers with a diagnosis of abortion or sexual assault was made in recognition that the former make up a significant number of ED presentations and it is important that their views are included. It was noted that excluding consumers who were in police or protective custody would be difficult as this information was unlikely to be included in the ED presentation records. It was also felt that these individuals were consumers and as such had a right to be given the opportunity to participate in the research. A history of mental illness was too vague a diagnosis to be an exclusion criterion and would need its own inclusion/exclusion criteria to be meaningfully applied. In addition, a history of mental illness would not impact on consumers' ability to complete the survey, would exclude a potentially large number of consumers, and would require access to all health records to check each consumer's full medical and mental health history. A final consideration here is that medical health and mental health are kept as separate records in some DHBs and this would create issues in terms of accessing consumers' records.

Sample size

The developers of the CECSS recommend that between five and 10 participants per item of the survey need to be recruited in order that factor analysis can be performed on the data (Davis & Bush, 1995). The CECSS comprises 19 statements, which means that the sample needed to comprise a minimum of 95 completed and returned surveys.

The anticipated response rate to a postal survey was then considered in order to estimate the total number of consumers who would need to be approached in order to achieve a sample size of 95 completed surveys. As discussed earlier, postal surveys tend to have low response rates. A review of the consumer satisfaction literature demonstrated response rates of between 21% (Hostutler et al., 1999) and 50% (Davis, 1995). Twenty-five percent was considered to be an achievable response rate. Therefore, to achieve a sample size of 95, a minimum of 380 surveys would need to be posted.

Participant recruitment

The process of identifying eligible consumers was a retrospective one which required the researcher to access the ED presentation logs using the DHB's computer system. The details of all the consumers who presented to the ED were reviewed to assess for eligibility according to the inclusion and exclusion criteria and surveys were posted to all identified eligible consumers until the minimum number of surveys had been posted. The sample was thus based on non-probability, convenience sampling.

Data collection

The data collection tools included both researcher-collected and self-report data. The researcher-collected data tool is discussed first and then the self-report tools that constituted the survey are presented. The self-report tools are presented and discussed as the research pack that was posted to consumers.

Researcher developed template

This template was developed by the researcher to uplift data relating to consumer and visit characteristics directly from consumers' records. It is reproduced in Appendix 1. Researcher collected data were included as a strategy to improve the reliability of the data and therefore the quality of the research (Raper, 1996; Raper et al., 1999). The consumer characteristics data collected was limited to date of birth (in order to calculate age), ethnicity, and gender. The visit characteristics collected to describe the consumer health journey were arrival transport, acuity (as triage category), arrival time, discharge time, and the total time spent in the emergency department. A template was completed for each consumer in the research population however the template was retained by the researcher and was not posted to participants.

A significant issue in the design of previous satisfaction studies highlighted in the literature review was the inability of researchers to comment on the representativeness of their samples. This issue was addressed in this research design through the development of this template to collect data on consumer and visit characteristic variables for the whole research population. This data was retained for both those who returned the survey (the sample) and those who did not return it (the non-respondents). This meant that the sample could then be compared with the non-respondents to assess representativeness. This would enable a full discussion around

representativeness of the sample compared with the research population and therefore generalizability of the findings. This would also enhance the quality of the research and perhaps impact on the usability of the findings.

The template also included information about where the consumer had been triaged and the referring specialist (if applicable). These questions had been designed to accommodate the researcher's home DHB where ED presentations are triaged in different areas depending on their arrival transport and information is routinely collected about referring specialists. However, this information was not collected as there is only one point of triage at the research hospital and referring specialists are not routinely recorded.

Research pack

The research pack comprised the self-report data collection tools that were posted to participants. The pack comprised a three page cover letter with the first page printed on Victoria University of Wellington letter headed paper (Appendix 2); an instruction sheet explaining how to complete the survey (Appendix 3); the survey in three sections – section 1 general information (Appendix 4), section 2 the CECSS, and section 3 additional questions (Appendix 5); a sheet for participants to complete to receive a summary of the results (Appendix 6); and a postage paid envelope addressed to the researcher for the return of the completed surveys and form requesting a results summary. The following section details the data collection tools and these are discussed in the order in which they were placed in the envelope addressed to the participant.

Cover letter

The composition of the cover letter was crucial for gaining ethical approval to conduct the research as it is the vehicle by which participants are advised of the purpose of the research and their rights and responsibilities in becoming research participants. In addition, the letter explained to participants that the completion and return of the survey constituted consent on the part of the respondent to participate in the research – this was also essential to gain Ethical approval.

The letter was written to highlight the importance of the research to the participants as consumers of an ED nursing service, such that by understanding what it is that satisfies consumers, nurses are better equipped to provide an appropriate and satisfying service. The

letter included a large amount of information about the research, the researcher, and the participants' rights. In order to provide this in a way that could be readily understood it was written in a question and answer format to highlight the important issues for participants who are unfamiliar with the research process. The cover letter is reproduced in full in Appendix 2.

A well written, personalised cover letter is also considered to be a strategy to improve response rates in postal surveys (Polit & Hungler, 1995, 1997). To this end, the cover letter was individually addressed to each participant and personally signed by the researcher. This was a personal touch that it was felt had the potential to impact positively on the response rate.

Instruction sheet

A single sheet after the cover letter titled 'How to complete the questionnaire' provided the participants with the information they needed to correctly complete each section of the survey. This is reproduced in full in Appendix 3. Brief instructions to participants were also included at the beginning of each section of the survey.

The instructions for completing section 2 (the CECSS) were provided by the developer of the scale. Neither the wording nor the format of these instructions was changed from that provided by the developer. This was to ensure that issues of comparability and generalizability around the results would not be compromised by issues with the methodology.

The survey

The self-report postal survey comprised three sections:

Section one was a researcher developed tool to collect details about consumer and visit characteristics and this is appended in Appendix 4. This information was collected to allow correlational analyses to explore relationships between consumer characteristics, visit characteristics, the consumer healthcare journey, and satisfaction. The literature reviewed in Chapter 2 presented those characteristics that were commonly explored in satisfaction research and this has informed the inclusion of these variables in this research. Participants were asked to provide the details of their annual income, and their highest level of education. Further consumer characteristics were collected but these were recorded by the researcher and are discussed in a separate section.

The literature review also highlighted the importance of some aspects of the consumer visit to satisfaction. In recognition of this, consumers were asked to respond to the following questions in order that details of the consumer healthcare journey could be more fully explored: how they rated the severity of their illness or injury; whether they could tell the difference between nurses, doctors, and health assistants; if the nurse had kept them informed during their visit about the treatment they were receiving; whether a nurse kept them informed about any delays; and the number of previous visits they had made to the ED in the last two years.

The question about the highest level of education was an open format that required the respondent to write, in their own words, their highest level of education. The remaining five questions had a fixed response set that required respondents to circle the answer that best described them or their visit.

In addition, a question asking respondents if they could tell the difference between nurses, doctors, and health assistants was included in this section of the survey. This was in response to a study that found that 22% of respondents indicated that they had difficulty distinguishing between nurses and medical technicians (Campanella, 2000). As the CECSS attempts to establish satisfaction specifically with nursing in the ED it was decided to include a question asking consumers if they could differentiate between the different health professionals involved in their healthcare. This was to ensure that the responses could be attributed to nursing and not to the overall ED experience. This question had a fixed response set that required respondents to circle the answer that best described their experience.

Section two comprised the 19 item Consumer Emergency Care Satisfaction Survey. This section of the survey required respondents to indicate their level of agreement with each of the 19 items relating to a nursing behaviour or attitude, on a five-point Likert scale. Permission to use the CECSS was granted by the scale's developer and copyright holder, Dr Barbara A. Davis. However, the author does not give permission for the CECSS to be reproduced in its entirety due to copyright issues so it is not included here.

Section three contained three researcher-developed questions and these are reproduced in Appendix 5. The first asked respondents to indicate their overall satisfaction with their ED visit. Responses were recorded in a fixed response set which ranged from very satisfied to very dissatisfied. The final two questions were in open ended format to allow respondents to write, in their own words, their comments in response to the following:

- What did you like best about the nursing in the emergency department?
- What do you consider nurses could have done to have made your ED experience better?

Incorporating a question to measure overall satisfaction with the ED visit was informed by the previous research. Nineteen of the 26 published research studies in the satisfaction literature included a question designed to collect data on consumers' overall satisfaction. In addition, of the studies that have used the CECSS, three incorporated questions around overall satisfaction (Elder et al., 2004; Raper, 1996; Raper et al., 1999). Some of the overall satisfaction measures popular in the USA studies are questions about value for money and likelihood of returning to or recommending the emergency department. These were not considered to be appropriate for the New Zealand setting as tertiary care provided by publically funded hospital EDs is free. Furthermore, the research hospital is the only hospital providing emergency healthcare in the locality surveyed so there is no choice of emergency department. Almost three quarters of studies that included a global satisfaction measure, asked consumers to rate their overall satisfaction with the visit. The question included as an overall measure of satisfaction therefore asked consumers to rate their overall satisfaction with the ED visit. This question had a fixed response-set format.

The decision to include the open ended format questions to collect qualitative data was made in light of a number of considerations. First, the importance of the emic perspective (DeSantis & Ugarriza, 2000) in satisfaction research was recognised. Second, as a first New Zealand study it was important to include a consumer perspective and this could be satisfactorily achieved through the use of open ended format questions (Burns & Grove, 1993). This also acknowledges Chan and Chau's (2005) contention that using a tool developed in another country can have implications in interpreting the findings and that these could be minimised through the use of qualitative data. Third, responses to open-ended questions can help researchers with the interpretation of responses to forced response questions (Lin & Kelly,

1995). Finally, open-ended questions have previously been utilised in CECSS published research (Davis & Duffy, 1999).

Summary of results for participants

In line with the requirements of the Central Regional Ethics Committee, participants were afforded the opportunity to receive a summary of the results. Participants could indicate that they would like to receive this by completing the separate sheet detailing their name and contact details as either an email or a postal address. This form is appended in Appendix 6.

Finally, a postage paid envelope addressed to the researcher was included for respondents to return their completed surveys and request for results. This is a recognised strategy to improve response rates in postal surveys (Polit & Hungler, 1995, 1997). The researcher however did not want to use her own home address and also felt that using her work address would burden her DHB with unsolicited work. A local Post Office Box was therefore leased for the duration of the research. The use of the box afforded a degree of privacy to the researcher and also ensured that the returned surveys would be held securely and handled by appropriate personnel.

Identifier

Each research pack was assigned a unique research identifier comprising a number and a letter. This identifier was noted on each of the three sections that comprised the survey and also on the researcher-developed template. To ensure anonymity, the form requesting a summary of the results did not have the research number noted on it. The identifier meant that whilst respondents' anonymity was guaranteed, the researcher would still be able to pair the returned surveys with the appropriate researcher template.

Conducting the research

Data collection

On arrival at the research ED, the researcher spent the first day becoming familiar with the computer software, organising the data collection tools, and signing the cover letters. The data collection tools that comprised the research pack were organised so that the researcher-developed template was the first sheet in the pack and the cover letter was the second. This allowed the researcher to complete the template with the relevant information from the ED

log, put the template aside, and then address the cover letter and envelope to the participant using the details recorded in the computer log. The completed research packs, minus the researcher-developed template were posted in a street post box at the end of the day. In total, 410 surveys were posted over a seven day period.

Handling the data

The returned surveys were delivered to the researcher's Post Office Box and to maintain participants' anonymity, were collected by a research assistant who opened the envelopes and separated the completed surveys from the requests for results where these had been included. Apart from the initial opening of the returned envelopes the assistant was not connected to the research in any other way, and had agreed to abide by guidelines relating to the confidentiality of the data. The researcher then paired each returned survey with the corresponding researcher-collected template according to the unique research number. The researcher-collected data for those from the research population who had not returned completed surveys (referred to as non-respondents) were retained for analyses to assess the representativeness of the sample of those who returned surveys compared with those who received surveys.

Data coding

The data from returned surveys (questions 1-27) and all the researcher-collected data (questions A-F) were entered into Statistical Package for Social Science (SPSS version 16.0) for analysis. Prior to entering the data, a coding sheet was developed to ensure consistency of data entry and this is appended in Appendix 7. The responses to the open-ended questions from section 3 of the survey and any other comments written on the survey were transcribed verbatim into a Word document by the researcher.

Data cleaning

After entering the data in SPSS according to the coding sheet, the data were screened for errors. This was achieved by calculating and reviewing frequencies and maximum and minimum values for each variable. This initial screening revealed two data input errors. The first error related to the variable Triage Category. This variable has a maximum score of five and a minimum score of two. However when frequencies were calculated, a maximum score of 330 was highlighted. The survey this came from was identified from the data set and the error corrected.

The second variable containing a data input error was Overall Satisfaction. This variable has a maximum score of four and a minimum score of one. When frequencies were calculated a maximum score of nine was revealed as outside the possible range. The survey containing this error was identified and the error corrected. No further errors were identified.

Data re-coding

Ethnicity

In light of the data collected and in accordance with Statistics New Zealand Statistics (New Zealand, 2006) the variable Ethnicity was re-coded. New Zealand European and Other European were combined to give European; Samoan, Niuean, Tokelauan, Tongan, Cook Island Maori, and Fijian were re-coded as Pacific People; and Chinese and Indian were re-coded as Asian. Where respondents had provided descriptions in the Other response option, these were re-coded according to the available categories or as Other, as appropriate – Other European were re-coded as European; Cambodian, Filipino, Sri Lankan, Vietnamese, and other Asian were all re-coded as Asian.

Arrival transport

All the identified eligible participants arrived at the ED either as self presentations or by ambulance. There were no presentations arriving by air. The Arrival Transport variable was therefore reduced to two categories – Self and Ambulance.

Highest educational qualification

The variable Highest Educational Qualification was re-coded as follows: University education – comprising Master's degree, Bachelor's degree, and Diploma; Secondary school – comprising University Entrance and School Certificate; Trade or professional qualification – comprising trade qualifications National Certificate, and professional qualifications; and No qualification.

Data analysis

Preliminary analyses were performed to check for normal distribution of the data. These indicated that the data were not normally distributed. Non parametric statistical tests were therefore employed to test the relationships between variables. Data analyses comprised five distinct phases:

Phase 1

This analysis was designed to establish the characteristics of the population surveyed using the data collected on all eligible participants by the researcher using the researcher developed template. The data were statistically analysed using descriptive statistics (means, standard deviations, and frequencies).

Phase 2

This involved a comparative analysis of those who returned the survey (the sample) and non-respondents to establish how representative the sample was of the research population. Data from the researcher developed template were analysed using inferential statistics including chi-square for categorical variables such as gender and ethnicity, and Mann-Whitney U tests for continuous data such as age.

Phase 3

This phase of the analysis aimed to establish the internal consistency (reliability) of the instrument. This was achieved by computing Cronbach's alpha coefficients for the CECSS and its two subscales. The construct validity of the instrument was also assessed by subjecting the data to factor analysis. This phase of the analysis was informed by and is in line with previous CECSS research.

Phase 4

In order to assess the relationships between the variables the data were subjected to further inferential statistical analyses. This phase of the analysis was informed by previous CECSS research. The statistical tests used comprised:

- Spearman's correlation coefficients to test relationships between the continuous independent variables of age, length of stay, number of previous visits, and overall satisfaction; and the dependent satisfaction variables;
- Kruskal-Wallis tests to examine the relationships between the categorical independent variables of ethnic group, triage category, shift arrival, shift discharge, self rated

acuity, whether respondents could tell the difference between different health professionals, whether respondents were kept informed about treatment, whether respondents were kept informed about delays, income, and educational qualification; and the dependent satisfaction variables;

- Mann-Whitney U tests to examine the relationships between the dichotomous categorical independent variables of gender, arrival transport, and disposition; and the dependent satisfaction variables; and
- Multiple regression (step-wise) to determine which variables statistically predicted overall satisfaction with ED nursing.

Phase 5

This final phase of the analysis related to the two open-ended questions. It consisted of a content and thematic analysis of respondents' comments. Initially each comment was coded for its content and theme – using key words from the statement. Then the content areas and themes were examined for patterns regarding what was satisfying and dissatisfying about the nursing service provided in the emergency department. Finally the respondents' comments were reread to see if they all fitted with the descriptions provided.

This chapter has presented details of the research design that was informed by the satisfaction literature, the CECSS literature, and the identified gaps in research and knowledge that the review of literature highlighted. The chapter began by revisiting the aims of the research and detailing the actual questions the research was addressing. The advantages of conducting replication studies in terms of offering a valid contribution to nursing knowledge and practice, and as a legitimate methodology for post graduate research were then presented and discussed. Methodological issues around using Barbara A. Davis's CECSS were then explored. These included the decision making process around opting to administer the survey by post, a review of the language and terms used in the survey to assess the need for transcultural adaptations, and a brief discussion of the validity of the tool. The planning phase of the research involving submitting applications for ethical approval and Locality Assessment were discussed. Details around the research design including defining the research population, computing the minimum sample size required to enable appropriate statistical analyses to be performed, and the process of recruiting the convenience sample were presented. The data collection tools comprising the research pack and the researcher-developed template were then introduced and explained. With the exception of section 2 of

the survey, all the data collection tools are appended as appendices. Finally the process of conducting the research was presented and this included explanations of how data were collected, handled, coded, and cleaned. The final part of this chapter presented the five phase statistical data analysis plan.

The following chapter presents the findings from the study.

Chapter 4 – The Findings

This chapter presents the findings from the study. The first section presents the descriptions of the research population and sample. The second section presents details of the tests of the representativeness of the sample compared with the research population. The findings from the survey are then presented. This includes a presentation of the additional consumer and visit characteristics and of the Consumer Emergency Care Satisfaction Scale (CECSS) results. The results of the correlations and tests of difference between variables and levels of satisfaction are then presented. The final section presents the results from the open-ended format questions from Section 3 of the survey. Statistical significance is set at $p < 0.05$ (Pallant, 2007).

The Research population the sample

During the seven-day data collection period 707 people presented to the emergency department (ED). Of the 707 presentations, 410 (58%) met the criteria for inclusion in the study and were sent a research pack. In total, 102 packs were received back, and of those, 100 contained completed surveys, one was “return to sender – unknown address”, and one was returned, opened and with a note explaining that the person to whom it was addressed was unable to complete the survey due to poor vision. One further reply came by way of e-mail and comprised an apology from the addressee’s daughter on behalf of her mother for not completing the survey due to her mother’s on-going ill health. The 100 returned, completed surveys represented a response rate of 24.4% of the research population. This represented 14% of the total ED population.

Missing data and data quality

The 100 returned surveys were all legibly completed and were all used in the data analysis. In the majority the returned surveys appeared to have been thoughtfully filled out. However one respondent selected ‘strongly disagree’ for all the CECSS items (including the negatively worded items) and in Section 3 penned a number of comments in reply to questions 28 and 29 detailing dissatisfaction with the ED service. It would appear that this respondent may not have fully read the CECSS items – merely responding in the negative to all the items in an attempt to express dissatisfaction. The respondent appeared to have been the consumer’s wife rather than the consumer himself as the comments in response to questions 28 and 29 referred

to ‘my husband’ as the consumer. A further survey also appeared not to have been completed by the ED consumer to whom it was addressed as the comment ‘the patient suffered a stroke’ was written. However, in spite of these observations, both of the surveys were included in the analysis as the covering letter to participants and instructions for use encouraged participants to seek help in completing the survey should they need it. The assumption was therefore made that the participants to whom the surveys were addressed had availed themselves of required help.

There were a number of missing data in many of the surveys such that only 62 were fully completed. Twelve surveys had at least one item of missing consumer or visit characteristics data, 17 had missing CECSS data, and nine had items missing from both the CECSS, and the consumer and visit characteristics variables. In terms of survey items with missing data, of the seven consumer and visit characteristics variables in Section 1 (general information), four were not completed by all 100 respondents; and in Section 2 (the CECSS) only three out of the total of 19 CECSS items were completed by all 100 respondents. The remaining 16 CECSS items had at least one item missing. Further details pertaining to missing data are presented in the relevant sections of the findings.

In line with the data analysis detailed in the study design, the researcher collected data were collated and descriptive statistics were performed in order to describe the research population and sample. Inferential statistical analyses were then carried out to establish if the two samples differed.

Population and sample descriptions

Consumer and visit characteristics data of the 410 consumers who were sent surveys (referred to as the research population) – comprising those who responded to the survey ($n = 100$) (referred to as the sample) and those who did not respond ($n = 310$) (referred to as non-respondents) – are summarised in Table 8.

Table 8. Consumer and visit characteristics of the research population and sample

Characteristic	Value	Sample n = 100 (100%)	Non-respondents n = 310 (100%)	Total surveyed n = 410 (100%)
Gender	Male	54 (54.0%)	164 (52.9%)	218 (53.2%)
	Female	46 (46.0%)	146 (47.1%)	192 (46.8%)
Ethnicity	European	76 (76.0%)	197 (63.5%)	273 (66.6%)
	Maori	14 (14.0%)	54 (17.4%)	68 (16.6%)
	Pacific Peoples	3 (3.0%)	23 (7.4%)	26 (6.3%)
	Asian	2 (2.0%)	21 (6.8%)	23 (5.6%)
	Other	2 (2.0%)	11 (3.5%)	13 (3.2%)
	Missing	3 (3.0%)	4 (1.3%)	7 (1.7%)
Age (in years)	18-24	3 (3.0%)	55 (17.7%)	58 (14.1%)
	25-34	10 (10.0%)	55 (17.7%)	65 (15.9%)
	35-44	14 (14.0%)	74 (23.9%)	88 (21.5%)
	45-54	16 (16.0%)	45 (14.5%)	61 (14.9%)
	55-64	22 (22.0%)	33 (10.6%)	55 (13.4%)
	65-74	17 (17.0%)	21 (6.8%)	38 (9.3%)
	75-84	13 (13.0%)	20 (6.5%)	33 (8.0%)
	85+	5 (5.0%)	7 (2.3%)	12 (2.9%)
Arrival Transport	Car/Self	73 (73.0%)	235 (75.8%)	308 (75.1%)
	Ambulance	27 (27.0%)	75 (24.2%)	102 (24.9%)
Triage Category	2	12 (12.0%)	33 (10.6%)	45 (11.0%)
	3	42 (42.0%)	96 (31.0%)	138 (33.7%)
	4	36 (36.0%)	135 (43.5%)	171 (41.7%)
	5	10 (10.0%)	46 (14.8%)	56 (13.7%)
Shift Arrived	Morning	45 (45.0%)	115 (37.1%)	160 (39.0%)
	Afternoon	43 (43.0%)	133 (42.9%)	176 (42.9%)
	Night	12 (12.0%)	62 (20.0%)	74 (18.0%)
Shift Discharged	Morning	26 (26.0%)	86 (27.7%)	112 (27.3%)
	Afternoon	56 (56.0%)	153 (49.4%)	209 (51.0%)
	Night	18 (18.0%)	71 (22.9%)	89 (21.7%)
Disposition	Discharged	67 (67.0%)	227 (73.2%)	294 (71.7%)
	Admitted	33 (33.0%)	83 (26.8%)	116 (28.3%)
Length of Stay (Minutes)	Mean \pm SD	223.71 \pm 123.17	207.76 \pm 126.30	211.65 \pm 125.58
	Range	30 - 624	31 - 693	30 - 693

The research population

There were slightly more males (53.2%) than females (46.8%) and the majority (66.6%) identified themselves as European, with one sixth (16.6%) identifying as Maori, and small numbers identifying as Pacific Peoples and Asians. The mean age of the research population was 46.7 years (standard deviation (SD), \pm 19.19, range 18-95 years). Two thirds of the population were aged between 18 and 54 with approximately one fifth aged between 35 and 44 years. Less than 3% were in the oldest age group (over 85 years), and 14% were in the youngest group (18-24 years).

Three quarters of the population self presented to the ED and the majority (n = 336, 81.9%) of the presentations were between 0700 hours (the start of the morning shift) and 2300hrs (the end of the afternoon shift).

As discussed in Chapter 3, The Australasian Triage Scale in use at the research ED has a possible range of triage categories ranging from one through to five. Only consumers allocated a triage code of two, three, four, or five were included in the research population. A small majority (n = 227, 55.4%) were triaged as category four or five (being in non-urgent need for treatment) with consequently fewer (n = 183, 44.7%) being triaged as category two or three (seriously ill or injured requiring urgent or semi-urgent medical intervention).

Almost three quarters of the research population were discharged home from the ED with the remainder being admitted to the hospital as in-patients. The majority of discharges (51.0%) occurred during the afternoon shift and there were slightly more discharges during the morning shift (27.3%) than during the night shift (21.7%).

The average length of stay in the department for the research population was slightly over three and a half hours, with the shortest stay being half an hour, and the longest stay being just over 11 and a half hours. Just over one quarter (26.8%) of consumers spent a total of two hours or less in the ED, and just over one tenth spent over six hours in the emergency department.

The sample

As with the research population, the sample comprised slightly more males (54.0%) and the majority of the sample (76.0%) identified as European, with a similar percentage (14%) to the research population, identifying as Maori. The mean age was $56.92 \pm \text{SD}, 17.54$ years. Almost three quarters were over 45 years of age and only 3% were in the youngest age group (18-24 years).

Almost three quarters self presented to the ED and most (n = 88) presentations were between 0700 hours (the start of the morning shift) and 2300hrs (the end of the afternoon shift). The majority (54.0%) were triaged as being in urgent or semi-urgent need of medical intervention (categories 2 or 3), with the remainder being non-urgent (categories 4 and 5).

Two thirds were discharged home and the remainder were admitted to hospital as in-patients. The majority of discharges (56.0%) occurred during the afternoon shift, with just over one quarter happening during the morning shift, and the fewest during the night shift (18.0%). The average length of stay in the ED was just over two hours and 43 minutes with the shortest stay being 30 minutes and the longest stay stretching to almost 10 and a half hours. Just over one fifth remained in the ED for a period of up to two hours, and just over one tenth remained in the ED for over six hours.

Comparison of the sample and non-respondents

Chi square analyses and Mann Whitney U tests were undertaken to establish the similarities and differences between the sample and the non respondents, and to thus establish whether those who responded were representative of the research population. The findings of these analyses are presented in Tables 9 and 10.

Table 9. Results of Chi-square tests to assess differences between sample and non respondents

Characteristic	Chi-Square			
	N	χ^2	DF	p
Gender	410	0.006	1	0.940
Ethnicity	403	8.318	4	0.081
Mode Of Arrival	410	0.186	1	0.666
Triage Category	410	5.190	3	0.158
Shift Arrival	410	3.891	2	0.143
Shift Discharge	410	1.576	2	0.455
Disposition	410	1.154	1	0.283

Table 10. Results of Mann Whitney U tests to assess differences between sample and non respondents

Characteristic	Mann-Whitney U					
	Median respondents	Median non respondents	N	U	Z	p
Age (Years)	59.0	40.0	410	9045	-6.266	0.000
LOS (Minutes)	202.5	180.5	410	13979	-1.476	0.14

From these tables, it is apparent that the only variable that demonstrated a statistically significant difference between the two groups was age ($z = -6.266$, $p = 0.000$); those who returned the survey were on average 10.22 years older than those who did not return the survey.

It can therefore be concluded that the sample was representative of the research population based on measures of gender, ethnicity, mode of arrival to the ED, triage category, when consumers arrived and when they were discharged, disposition, and length of stay. However, on measures of age, the sample was not representative of the research population with increasing age being associated with responding to the survey.

The following sections present the findings from each of the three sections of the returned surveys.

Section One: Further descriptors

In addition to the general data collected from the ED presentation logs, survey respondents were asked to provide further consumer details and to answer questions about their visit.

Twenty one surveys had at least one item of data missing from the self-completed section pertaining to consumer and visit data. The questions with the most missing data were annual income with 12 respondents opting to not provide this information; and highest educational qualification, with 13 respondents not answering. Seven respondents did not reply to the item about whether the nurse kept them informed about delays in their treatment. Of these seven, two left the question blank and five respondents annotated 'not applicable' next to the question. It was not clear if the question was not applicable because there were no delays in the treatment, or it was not applicable for another, unspecified reason. Lastly, there were two missing responses for the question asking respondents to rate the severity of their illness or injury.

In the following results, unless otherwise stated, the denominator for percentage calculations is 100. However, in cases where there were missing or unusable data, the reader is alerted to the denominator used. The findings for consumer and visit characteristics are summarised in Table 11.

Table 11. Consumer and visit characteristics of the sample

Variable	Range	Sample n = 100 (100%)	Cumulative %
Income	\$1 - 15,00	18 (18.0%)	18.0%
	\$15,001 – 30,000	13 (13.0%)	31.0%
	\$30,001 – 40,000	18 (18.0%)	49.0%
	\$40,001 – 50,000	14 (14.0%)	63.0%
	\$50,001 – 70,000	12 (12.0%)	75.0%
	\$70,001+	13 (13.0%)	88.0%
	Missing	12 (12.0%)	100.0%
Highest educational qualification	University	25 (25.0%)	25.0%
	Trade/Professional	10 (10.0%)	44.0%
	Secondary School	19 (19.0%)	54.0%
	Nil	33 (33.0%)	87.0%
	Missing	13 (13.0%)	100.0%
Number of previous visits	0	34 (34.0%)	34.0%
	1	22 (22.0%)	56.0%
	2	19 (19.0%)	75.0%
	3	11 (11.0%)	86.0%
	4	0 (0.0%)	86.0%
	5	7 (7.0%)	93.0%
	6	2 (2.0%)	95.0%
	7	1 (1.0%)	96.0%
	8	1 (1.0%)	97.0%
	≥ 10	3 (3.0%)	100.0%
Self rated acuity	Mild	16 (16.0%)	16.0
	Moderate	50 (50.0%)	66.0
	Moderate-Serious	6 (6.0%)	73.0
	Serious	26 (26.0%)	98.0
	Missing	2 (2.0%)	100.0
Ability to differentiate between the different health professionals	Always	59 (59.0%)	59.0%
	Sometimes	34 (34.0%)	93.0%
	Never	7 (7.0%)	100.0%
Kept informed about treatment by nurse	Always	70 (70.0%)	70.0%
	Sometimes	20 (20.0%)	90.0%
	Never	10 (10.0%)	100.0%
Kept informed about delays by nurse	Always	47 (47.0%)	47.0%
	Sometimes	31 (31.0%)	78.0%
	Never	15 (15.0%)	93.0%
	Not Applicable	5 (5.0%)	98.0%
	Missing	2 (2.0%)	100.0%
Overall satisfaction	Very satisfied	61 (61%)	61.0%
	Satisfied	31 (31%)	92.0%
	Not Satisfied	6 (6%)	98.0%
	Very Dissatisfied	2 (2%)	100.0%

Of the 88 respondents who provided information about their annual income, over 50% (n = 49) reported an income of between \$5,000 and \$40,000 per annum.

Of the 87 respondents who provided information regarding their highest educational qualification over one quarter (n = 25) had a university education (Master's degree, Bachelor's degree, or Diploma), and a further 12% had a professional or trade qualification. The largest group (n = 33, 38%), reported no formal educational qualification.

The majority (n = 56, 56%) were making their first or second visit to the ED during the previous two years. Nineteen respondents (19%) were on their third visit, and 11 (11%) had presented for the fourth time. The remaining 14 (14%) had all made five or more visits to during the previous two years.

Of the 98 respondents who rated the severity of their illness or injury, half rated it as moderately severe while one eighth rated themselves as suffering only a minor illness or injury.

Responses to questions about activities in the ED showed a range of patterns. Fifty six (56%) reported that they could always tell which health professionals were looking after them, with 34 (34%) sometimes being able to tell, and 7 (7%) never being able to tell the difference between doctors, nurses, and other health professionals. The majority (n = 70, 70%) of respondents reported that the nurse always kept them informed, with 10 (10%) responding that the nurse never kept them informed about their treatment. Ninety three respondents replied to the question about whether the nurse kept them informed about delays. Of these, half reported that they were always kept informed, and 15 (16%) were never told about any delays.

Finally, the responses on a Likert scale regarding overall satisfaction with the ED visit indicated that the majority (92%) were satisfied or very satisfied and only eight (8%) were dissatisfied or very dissatisfied.

Section Two: The Consumer Emergency Care Satisfaction Survey

Section 2 of the survey comprised the 19 item Consumer Emergency Care Satisfaction Scale (CECSS). Items 12, 16, 21, and 24 are the negatively worded statements that are included in the scale to reduce response set bias but are not included in the scoring of the scale (Davis & Duffy, 1999). The results from these items are however presented alongside the other CECSS items in the findings.

Missing and unusable data

Of the 100 returned surveys only three questions were answered by all 100 respondents. These were CECSS items 1, 14, and 17. Items 14 and 17 are two of the four negatively worded items. The remaining 16 items of the CECSS did not elicit a Likert scale response

from all 100 respondents. In some cases the items were simply left blank and this constituted true missing data. However, a number of respondents annotated comments beside the item indicating that the item was not applicable and in some cases, respondents went on to extrapolate as to the reason why the item was not applicable to them or their visit – these data are considered unusable. Table 12 details the missing and unusable data and includes reasons (where known) given by respondents for the response.

Table 12. Section 2 – Missing and unusable data by CECSS item

CECSS item	Number of surveys with item missing or unusable	Reason stated by respondent (N)
2	1	Blank (1)
3	4	Blank (1) “N/A - Dealt with Doctor” (2) “I don’t know what she knew” (1)
4	16	“N/A – Admitted” (8) “N/A - Dealt with Doctor” (4) “N/A” – no reason (4)
5	4	Blank (1) “N/A – Dealt with Doctor” (1) “N/A” – no reason stated (2)
6	11	Blank (2) “N/A – Admitted” (4) “N/A – Dealt with Doctor” (2) “N/A” – no reason (3)
7	19	Blank (3) “N/A – Admitted” (8) “N/A – Dealt with Doctor” (2) “N/A” – no reason (6)
8	4	“N/A – Dealt with Doctor” (3) “N/A” – no reason (1)
9	1	Blank (1)
10	2	“N/A – Admitted” (1) “N/A – Dealt with Doctor” (1)
11	3	“N/A – Admitted” (1) “N/A – Dealt with Doctor” (1) “N/A” – no reason (1)
12	4	Blank (1) “N/A – Admitted” (1) “N/A – Dealt with Doctor” (1) “N/A – Didn’t have any of these” (1)
13	5	“N/A – Dealt with Doctor” (1) “N/A” – no reason (3) “Don’t remember” (1)
15	1	“N/A – Admitted” (1)
16	1	Blank (1)
18	2	“N/A – Admitted” (1) “Ambiguous” (1)
19	1	“N/A” – no reason (1)

From the table, it is apparent that three CECSS items (4, 6, 7) had considerably more unusable data than any of the other items with each having more than 10 instances of unusable data. The next cluster of items with unusable data is represented by items 3, 5, 8, 11, 12, 13 which had unusable data in between three and five surveys. The remaining items (2, 9, 10, 15, 16, 18, 19) had just one or two items of unusable data.

The table also shows that only 10 of the 79 missing data items were due to non-responses with the item being left blank by the respondent. The overwhelming majority ($n = 65$, 82%) of unusable data was where respondents had noted 'not applicable' next to the item. There were two main reasons given for the item being not applicable. These were either because the respondent was admitted ($n = 25$, 39%), or because the respondent dealt with a doctor and not a nurse ($n = 18$, 28%). There were also a significant ($n = 21$, 32%) number of respondents who annotated 'not applicable' but did not give a reason why the item was not applicable to them. All not applicable and non-responses were removed from the statistical analyses.

In total, there were 26 surveys that contained unusable or missing data. The amount of missing or unusable data ranged from just one item in eight of the surveys, to a maximum of nine items in two of the surveys. Of the remaining 16 surveys six had two items missing, eight had three items missing, one had five items missing, and one had seven items missing. The mean number of missing items was 2.85. The following section presents the remainder of the findings from Section 2 of the survey – the CECSS data.

The CECSS findings

The possible responses on the Likert scale for all the CECSS items ranged from 1 (strongly disagree) to 5 (strongly agree). Descriptive statistics (frequencies of responses, mean scores, and standard deviations) for the 19 CECSS items were calculated and are shown in Table 13.

Table 13. Descriptive statistics for CECSS items

CECS S item	N	Completely agree			Completely disagree		Mean (SD)
		5	4	3	2	1	
		N (%)	N (%)	N (%)	N (%)	N (%)	
1	100	78 (78.0)	15 (15.0)	5 (5.0)	1 (1.0)	1 (1.0)	4.68 (0.71)
2	99	57 (57.6)	18 (18.2)	11 (11.1)	6 (6.1)	7 (7.1)	4.13 (1.25)
3	96	50 (52.1)	16 (16.7)	17 (17.7)	5 (5.2)	8 (8.3)	3.99 (1.29)
4	84	34 (40.5)	14 (16.7)	7 (8.3)	5 (6.0)	24 (28.6)	3.35 (1.70)
5	96	9 (9.4)	5 (5.2)	10 (10.4)	15 (15.6)	57 (59.4)	1.90 (1.33)
6	89	40 (44.9)	16 (18.0)	7 (7.9)	3 (3.4)	23 (25.8)	3.53 (1.67)
7	81	31 (38.3)	11 (13.6)	8 (9.9)	5 (6.2)	26 (32.1)	3.20 (1.74)
8	96	57 (59.4)	15 (15.6)	9 (9.4)	3 (3.1)	12 (12.5)	4.06 (1.40)
9	99	12 (12.1)	2 (2.0)	15 (15.2)	16 (16.2)	54 (54.5)	2.01 (1.37)
10	98	69 (70.4)	12 (12.2)	8 (8.2)	1 (1.0)	8 (8.2)	4.36 (1.20)
11	97	60 (61.9)	22 (22.7)	8 (8.2)	1 (1.0)	6 (6.2)	4.33 (1.10)
12	96	57 (59.4)	17 (17.7)	9 (9.4)	5 (5.2)	8 (8.3)	4.15 (1.28)
13	95	71 (74.7)	14 (14.7)	3 (3.2)	2 (2.1)	5 (5.3)	4.52 (1.04)
14	100	71 (71.0)	14 (14.0)	3 (3.0)	2 (2.0)	5 (5.0)	1.64 (1.28)
15	99	54 (54.5)	16 (16.2)	16 (16.2)	6 (6.1)	7 (7.1)	4.05 (1.27)
16	99	66 (66.7)	8 (8.1)	11 (11.1)	6 (6.1)	8 (8.1)	4.19 (1.32)
17	100	4 (4.0)	2 (2.0)	7 (7.0)	7 (7.0)	80 (80.0)	1.43 (1.00)
18	98	58 (59.2)	16 (16.3)	6 (6.1)	6 (6.1)	12 (12.2)	4.04 (1.42)
19	99	61 (61.6)	16 (16.2)	12 (12.1)	4 (4.0)	6 (6.1)	4.23 (1.19)

Assessing normality

Assessment of the data for normal distribution was undertaken using two measures. First the mean and median values for each of the CECSS items were compared. Peat and Barton (2005) note that the difference between the two values is calculated as the mean value minus the median value, and then expressed as a percentage of the mean. Small values indicate a normal distribution, and large values indicate a non normal distribution. Comparisons between the mean and median values for each CECSS item revealed percentages between -6.8 and 50.3 which indicated that the data were not normally distributed.

Second, measures of dispersion using standard deviation were assessed. Pallant (2007) notes that if data are normally distributed then 95% of the data values lie between -1.96 and +1.96 standard deviations from the mean. An estimate of the range of where 95% of the values should lie can therefore be calculated by multiplying the standard deviation by two and then adding and subtracting the mean. If this calculation gives a range that reflects the actual range, then this indicates that the data are normally distributed. In the case of the CECSS data, a calculation of $2 \times \text{SD} \pm \text{mean}$ for each of the items gave a possible range that lay outside the actual possible range.

Using both of these measures of normal distribution it was concluded that the CECSS data were not normally distributed.

The CECSS scores

Scores for the CECSS are computed using 15 of the 19 CECSS items. The 15 items are divided according to two subscales – Caring and Teaching. The Caring subscale comprises 12 items (1, 2, 3, 8, 10, 11, 12, 13, 15, 16, 18, 19) and the Teaching subscale contains the remaining three CECSS items (4, 6, 7). The Likert scale on which respondents indicate their agreement with each item in the scale ranges from 1 (least agreement) to 5 (most agreement). A higher score indicates a higher degree of satisfaction.

The CECSS item with the highest mean score ($4.68 \pm \text{SD } 0.71$) was item one which asks respondents about the skilfulness of the nurse. The next four items with the highest means were item 13 ($4.52 \pm \text{SD } 1.04$) referring to the gentleness of the nurse; item 10 ($4.36 \pm \text{SD } 1.20$) about the nurse explaining in understandable terms; item 11 ($4.33 \pm \text{SD } 1.10$) about the nurse being understanding when listening; and item 19 ($4.23 \pm \text{SD } 1.19$) about the nurse ensuring questions were answered. All of the five items with the highest mean score are in the Caring subscale. These results are presented in Table 14.

Table 14. CECSS items with the highest and lowest mean scores

CECSS item	Mean (SD)
5 Items With Highest Mean Scores	
1. Performed duties with skill	4.68 (0.71)
13. Gentle when performing painful procedures	4.52 (1.04)
10. Explained things in terms I could understand	4.36 (1.20)
11. Understanding when listening to my problem	4.33 (1.10)
19. Made sure that all my questions were answered	4.23 (1.19)
5 Items With Lowest Mean Scores	
7. Told me what to expect at home	3.20 (1.74)
4. Gave me instructions about caring for myself at home	3.35 (1.70)
6. Told me what problems to watch for	3.53 (1.67)
3. Knew what treatment I needed	3.99 (1.29)
18. Appeared to take time to meet my needs	4.04 (1.42)

With the exception of the negatively worded items which are not included in the scoring, the CECSS item with the lowest mean score ($3.20 \pm \text{SD } 1.74$) was item 7 which referred to the nurse advising respondents what to expect at home. The four next lowest mean scores were item 4 ($3.35 \pm \text{SD } 1.70$) about the nurse giving instructions to care for self at home; item 6 ($3.53 \pm \text{SD } 1.67$) about the nurse telling the patient what problems to watch for at home; item

3 ($3.99 \pm \text{SD } 1.29$) about whether the nurse appeared to know what treatment the respondent needed; and item 18 ($4.04 \pm \text{SD } 1.42$) about the nurse taking the time to meet the respondent's needs. The items with the three lowest means are in the Teaching subscale. These results are presented in Table 14.

The Caring subscale

The scoring instructions for the Caring subscale indicate that a possible range of scores from 12 to 60 (Davis, Personal Communication, 21 July 2008). A score between 12 and 32 indicates dissatisfaction, between 33 and 43 is a neutral response showing neither satisfaction nor dissatisfaction, and between 44 and 60 indicates satisfaction (ibid). The frequencies of total scores for the Caring subscale are shown in Figure 1.

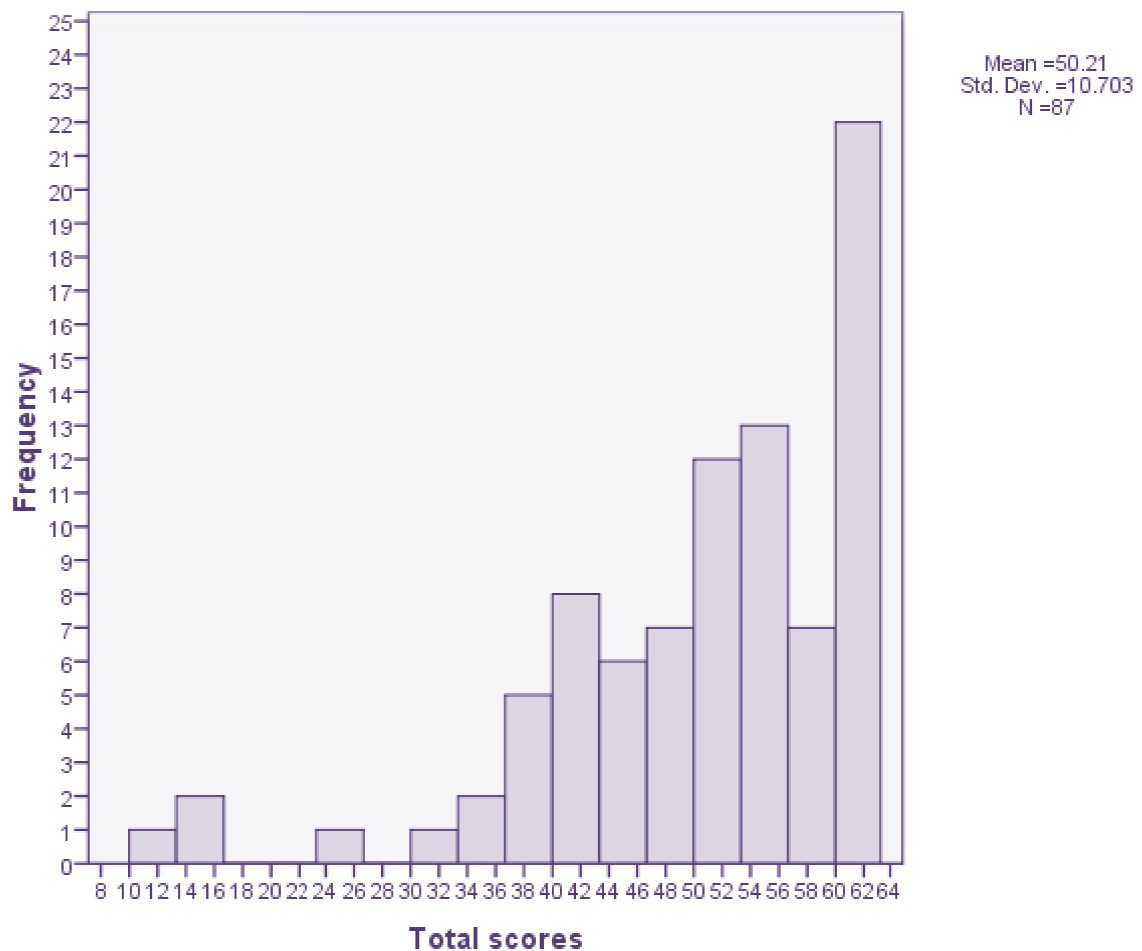


Figure 1. Frequencies of total scores – Caring subscale

Figure 1 illustrates that the majority (n = 70, 81%) rated their experience as satisfying with only 4 rating their experience as dissatisfying, and 13 rating their experience as neutral. One quarter of the 87 respondents rated their satisfaction at the maximum level and just one respondent rated their experience at the minimum level of satisfaction.

The mean score on the Caring subscale was $50.21 \pm \text{SD } 10.703$, and the median score was 53.00 with an IQR of 45 to 60. The mean score of 50.21 falls within the satisfied band.

The Teaching subscale

The scoring instructions for the Teaching subscale indicate that the scores can range from three to 15 (Davis, Personal Communication, 21 July 2008). A score between three and seven indicates dissatisfaction, between eight and 10 is a neutral response showing neither satisfaction nor dissatisfaction, and between 11 and 15 indicates satisfaction (ibid). The frequencies of scores for the Teaching subscale are shown in Figure 2.

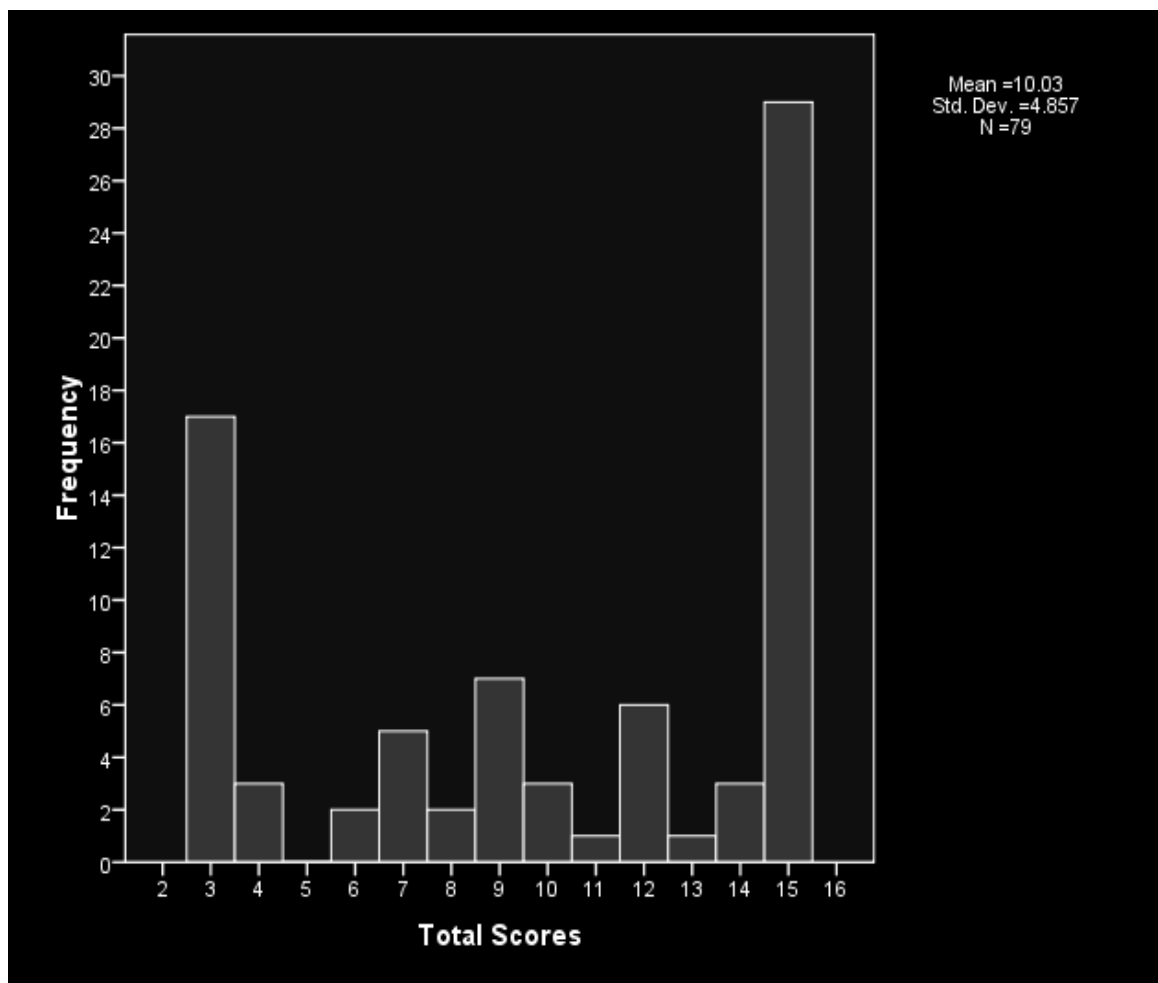


Figure 2. Frequencies of total scores – Teaching subscale

The figure indicates that of the 79 respondents who replied to all three of the Teaching items, a third were dissatisfied, an eighth were neutral in their rating and the majority (n = 40, 51%) were satisfied. Over 50% rated their experience at the two extreme ends of the scale with 22% rating their experience at the maximum level of dissatisfaction, and 37% rating their experience at the maximum level of satisfaction.

The mean score for the Teaching subscale was $10.03 \pm \text{SD } 4.857$, with a median of 11.00, and an inter quartile range (IQR) of 4 to 15. The mean score of 10.03 is just above the cut off point for the score expressing neutrality and is therefore just inside the satisfied band.

CECSS – Caring and Teaching subscales combined

The CECSS (Caring and Teaching subscales combined) has a possible range of scores between 15 and 75 (Davis, Personal Communication, 21 July 2008). The scoring criteria indicate that satisfaction commences at a score of 45 (ibid.). Frequencies of total scores for the CECSS are shown in Figure 3.

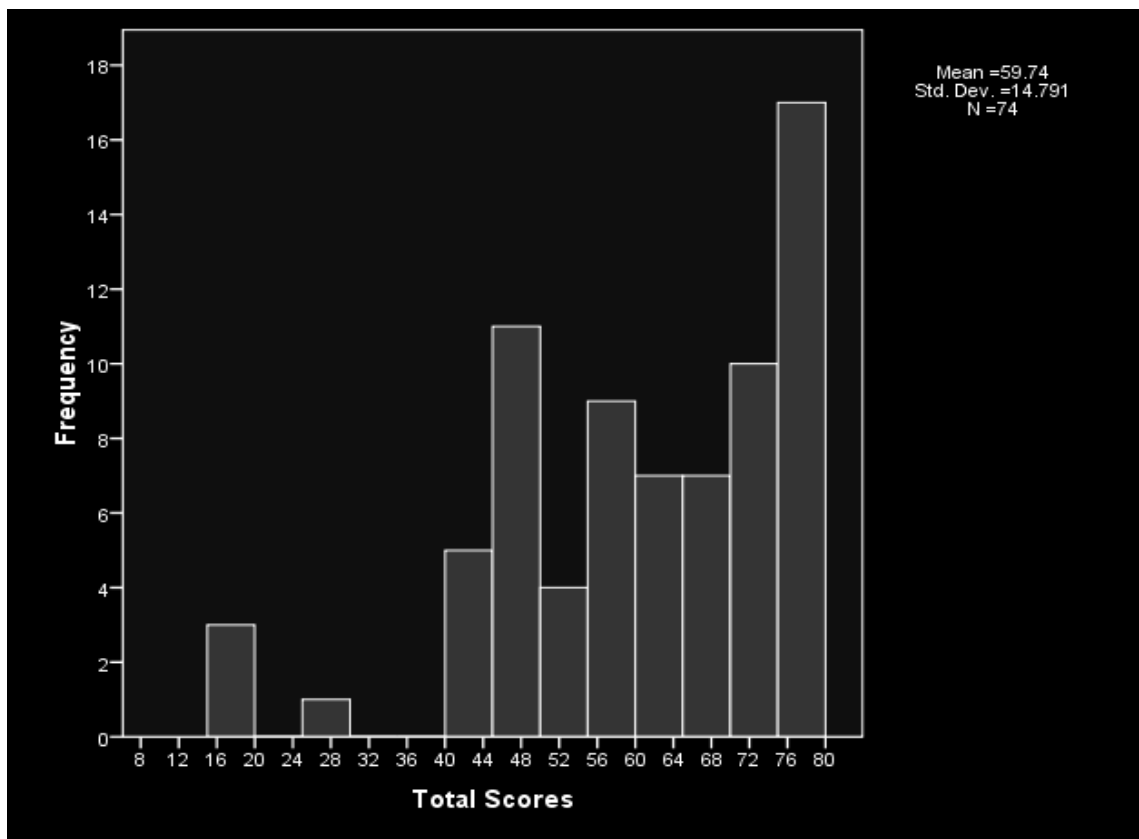


Figure 3. Frequencies of total scores – CECSS (Caring and Teaching subscales combined)

A total of 74 respondents replied to all 15 scored items of the Consumer Emergency Care Satisfaction Survey. Figure 3 illustrates that the overwhelming majority ($n = 65$, 90%) rated their experience as satisfying, with just over one tenth ($n = 9$, 12%) rating their experience as dissatisfying. Almost one quarter rated their experience at the maximum level of satisfaction and only one respondent rated their experience at the lowest level of dissatisfaction.

The mean score for the CECSS was $59.74 \pm \text{SD } 14.791$, and the median score was 61.00 with an IQR of 49 to 73.25. The mean score of 59.74 is greater than 45, and therefore falls within the band indicating satisfaction.

Reliability of the CECSS and the subscales

For the current study, reliability in terms of the internal consistency of the CECSS and the two subscales was demonstrated with Cronbach's alpha coefficients calculated as 0.916 for the Caring subscale, 0.934 for the Teaching subscale, and 0.932 for the total scale. Alpha coefficients of 0.7 or greater are considered acceptable in demonstrating internal consistency, with values greater than 0.8 being preferable (Pallant, 2007).

Correlations and tests for differences

In order to establish whether there were statistically significant correlations or differences between consumer and visit characteristics, and levels of satisfaction, correlations and inferential statistical testing was undertaken.

The findings from the Spearman's correlational coefficients are reported in Table 15 and reveal three significant correlations. These correlations all related to the variable 'overall satisfaction'. There were two strong positive correlations between overall satisfaction and levels of satisfaction with the Caring subscale ($r = 0.616$, $p = 0.000$); and between overall satisfaction and satisfaction as measured by the CECSS ($r = 0.571$, $p = 0.000$). In both cases, increasing levels of satisfaction with the Caring subscale were associated with increasing levels of overall satisfaction with the ED visit. A moderate positive correlation was also demonstrated between overall satisfaction with the visit and satisfaction with the Teaching subscale ($r = 0.301$, $p = 0.007$). Increasing levels of satisfaction with Teaching were also associated with higher levels of overall satisfaction with the visit.

Table 15. Correlations between consumer and visit characteristics and CECSS

Variable	Caring subscale		Teaching subscale		CECSS	
	r^a	p	r^a	p	r^a	p
Age	0.125	0.250	-0.053	0.643	0.084	0.479
LOS	-0.033	0.763	-0.152	0.181	-0.078	0.511
Previous Visits	-0.152	0.161	0.020	0.861	-0.085	0.469
Overall Satisfaction	0.616	0.000	0.301	0.007	0.571	0.000

^a Weak correlation 0.10-0.29, moderate correlation 0.30-0.49, strong correlation 0.50-1.00 (Pallant, 2007).

Table 15 also shows that while there were some *r* values that indicate weak correlations for age and number of previous visits with satisfaction with the Caring subscale; and LOS and satisfaction with the Teaching subscale, these were not statistically significant.

There were no further statistically significant associations demonstrated between the variables age, LOS, and number of previous visits; with any of the measures of levels of satisfaction (Caring subscale, Teaching subscale, and the CECSS).

Kruskal-Wallis tests were conducted to assess for differences between levels of satisfaction, and respondent and visit characteristics. The results are presented in Table 16. Results that attained statistical significance are highlighted.

Table 16. Differences between consumer and visit characteristics and satisfaction levels as measured by the CECSS and its subscales

Variable	Caring subscale					Teaching subscale					CECSS				
	N	Med	H	DF	P	N	Med	H	DF	P	N	Med	H	DF	P
Ethnicity															
European	63	53.00	2.955	4	0.565	56	11.50	3.528	4	0.474	51	61.00	3.735	4	0.443
Maori	14	54.00				14	15.00				14	68.00			
Pacific	3	38.00				3	7.00				3	45.00			
Asian	2	52.50				2	9.00				2	61.50			
Other	2	53.50				2	10.50				2	64.00			
Income															
1. \$1 – 15,000	16	52.50	4.721	5	0.451	17	15.00	9.884	5	0.079	16	65.00	5.655	5	0.341
2. \$15,001 – 30,000	12	55.00				11	14.00				11	71.00			
3. \$30,001 – 40,000	16	51.00				14	8.00				14	60.00			
4. \$40,001 – 50,000	12	55.50				10	8.50				10	63.00			
5. \$50,001 – 70,000	10	57.00				8	14.50				7	71.00			
\$70,001+	11	49.00				11	8.00				10	54.50			
Qualification															
University	24	53.00	1.148	3	0.765	17	11.00	1.201	3	0.753	17	59.00	0.981	3	0.806
Secondary School	14	52.00				15	9.00				14	59.50			
Trade/ Professional	7	56.00				8	9.00				6	63.00			
Nil	31	53.00				29	12.00				28	60.50			
Self-rated Acuity															
Mild	11	54.00	6.800	3	0.079	11	11.00	5.416	3	0.144	10	63.00	8.312	3	<u>0.040</u>
Moderate	47	51.00				43	9.00				41	58.00			
Moderate-Serious	6	50.50				4	12.00				4	58.50			
Serious	21	57.00				19	15.00				17	75.00			
Triage Category															
2	12	59.00	9.219	3	<u>0.027</u>	10	15.00	2.843	3	0.416	10	73.00	7.531	3	0.057
3	33	53.00				29	10.00				25	63.00			
4	35	53.00				32	11.00				32	59.50			
5	7	40.00				8	9.50				7	51.00			
When arrived in ED															
Morning Shift	35	50.00	3.770	2	0.152	36	9.00	6.682	2	<u>0.035</u>	31	56.00	4.086	2	0.130
Afternoon Shift	41	54.00				32	12.00				32	67.50			
Night Shift	11	58.00				11	15.00				11	73.00			

When Discharged															
Morning Shift	22	48.00	4.414	2	0.110	22	9.00	8.751	2	<u>0.013</u>	22	54.50	6.201	2	<u>0.045</u>
Afternoon Shift	49	54.00				45	9.00				40	61.00			
Night Shift	16	55.50				12	15.00				12	71.00			
Ability to differentiate between different health professionals															
Always	48	54.50	7.616	2	<u>0.022</u>	43	12.00	4.487	2	0.106	39	65.00	7.052	2	<u>0.029</u>
Sometimes	32	49.50				29	12.00				28	58.50			
Never	7	41.00				7	7.00				7	47.00			
Kept informed about treatment by nurse															
Always	59	56.00	26.040	2	<u>0.000</u>	53	15.00	15.000	2	<u>0.001</u>	50	70.50	25.988	2	<u>0.000</u>
Sometimes	18	48.00				16	9.00				14	54.00			
Never	10	36.50				10	3.00				10	42.50			
Kept informed about delays by nurse															
Always	40	58.50	31.989	2	<u>0.000</u>	36	14.50	5.682	2	0.058	34	72.00	23.035	2	<u>0.000</u>
Sometimes	26	51.50				23	10.00				20	60.00			
Never	15	39.00				15	7.00				15	45.00			

As Table 16 shows, a number of statistically significant differences between variables, and levels of satisfaction with the Caring subscale, satisfaction with the Teaching subscale, and the CECSS were revealed.

First, whether the nurse kept respondents informed about their treatment impacted on respondents' reported levels of satisfaction across all three satisfaction measures with Kruskal-Wallis tests revealing higher levels of satisfaction with Caring ($H = 26.040$, $df = 2$, $p = 0.000$), satisfaction with Teaching ($H = 15.00$, $df = 2$, $p = 0.001$), and satisfaction as measured by the CECSS ($H = 25.988$, $df = 2$, $p = 0.000$) when respondents were kept informed about their treatment. The lowest levels of satisfaction were reported by respondents who were not kept well informed about their treatment.

The remainder of the results of the Kruskal-Wallis tests for differences did not demonstrate statistical significance across all three satisfaction measures and are therefore presented below for each satisfaction measure in turn – the Caring subscale, the Teaching subscale, and the Consumer Emergency Care Satisfaction Scale.

The Caring Subscale

Kruskal-Wallis tests for difference between triage category and levels of satisfaction with the Caring subscale ($H = 9.219$, $df = 3$, $p = 0.027$) demonstrated that the lowest levels of satisfaction were associated with the lowest acuity triage presentations (triage category five); and the highest levels of satisfaction were associated with the most acute triage presentations (triage category 2).

Kruskal-Wallis tests also revealed statistically significant differences between satisfaction with the Caring subscale ($H = 7.616$, $df = 2$, $p = 0.022$) and whether or not respondents could differentiate between the different health professionals who were looking after them. The results showed that respondents who could differentiate between the different health professionals involved in their care, rated their satisfaction higher than those respondents who did not know who was looking after them.

In addition, Kruskal-Wallis tests also showed a statistically significant difference in levels of satisfaction with caring ($H = 31.989$, $df = 2$, $p = 0.000$) between groups based on whether respondents were kept informed about any delays in their treatment. The results reveal that respondents who were kept informed had higher levels of satisfaction than those respondents who were not kept informed.

Kruskal-Wallis tests for difference between the variables ethnicity, annual income, highest educational qualification, self-rated acuity, when the respondent arrived and when they were discharged; and satisfaction with the Caring subscale did not reach statistical significance.

The Teaching subscale

Statistically significant results were found between levels of satisfaction with the Teaching subscale and when respondents arrived in the emergency department ($H = 6.682$, $df = 2$, $p = 0.035$). Respondents who arrived during the night shift had significantly higher levels of satisfaction with teaching than respondents who arrived during the afternoon shift. Those who arrived during the morning shift had the lowest levels of satisfaction with teaching.

Kruskal-Wallis tests also revealed a statistically significant difference between satisfaction and when respondents were discharged from the ED ($H = 8.751$, $df = 2$, $p = 0.045$), with the highest levels of satisfaction being associated with respondents who were discharged during the night shift, and the lowest levels of satisfaction in respondents who were discharged during the morning shift.

The results of the remainder of the Kruskal-Wallis tests for difference between ethnicity, annual income, highest educational qualification, triage category, self rated acuity, if respondents could tell who was looking after them, and if respondents were kept informed about delays; and satisfaction with the Teaching subscale did not reach statistical significance.

The CECSS

Kruskal-Wallis tests revealed a statistically significant difference between satisfaction measured on the CECSS and respondents' self-rated acuity ($H = 8.312$, $df = 3$, $p = 0.040$) with higher levels of satisfaction being associated with higher levels of self-rated acuity.

A statistically significant difference between satisfaction as measured by the CECSS and when respondents were discharged from the ED was also found ($H = 6.201$, $df = 2$, $p = 0.045$). The highest levels of satisfaction were associated with respondents who were discharged during the night shift, and the lowest levels of satisfaction were observed in respondents who were discharged during the morning shift. This result was also demonstrated with the Teaching subscale.

Kruskal-Wallis tests also showed statistically significant differences between satisfaction as measured by the CECSS ($H = 7.052$, $df = 2$, $p = 0.029$), and whether or not respondents could differentiate between the different health professionals who were looking after them. Results showed that respondents' who could differentiate between the different health professionals involved in their care, demonstrated higher levels of satisfaction than those respondents who did not know who was looking after them.

A statistically significant difference was also shown between levels of satisfaction as measured by the CECSS, and whether respondents were kept informed about any delays in their treatment ($H = 23.035$, $df = 2$, $p = 0.000$). The results revealed that respondents who were kept informed had higher levels of satisfaction with the CECSS than those respondents who were not kept informed.

The remainder of the Kruskal-Wallis tests for difference between ethnicity, annual income, highest educational qualification, triage category, and when respondents arrived in the ED; and satisfaction as measured by the CECSS did not demonstrate statistical significance. It is noteworthy that, although the results of the Kruskal-Wallis tests for difference in the variable ethnicity did not reach statistical significance, a trend was revealed with respondents identifying as Maori demonstrating the highest median satisfaction scores and Pacific People demonstrating the lowest median satisfaction scores. These results were reflected across all three measures of satisfaction.

Mann Whitney U tests were conducted but did not reveal any statistically significant differences between groups on measures of gender, mode of arrival to the ED, and disposition and levels of satisfaction with the Caring subscale (Table 17); satisfaction with the Teaching subscale (Table 18); and satisfaction as measured by the CECSS (Table 19). It is noteworthy however that although none of the results attained statistical significance, the mean

satisfaction scores for women were consistently higher than the mean satisfaction scores for men across all three satisfaction measures.

Table 17. Differences between gender, mode of arrival, and disposition and satisfaction with Caring subscale

Variable	Caring subscale				
	N	Mean	U	P	Z
Gender	87		-1.608	0.11	755.50
Male	46	48.57			
Female	41	52.05			
Arrival Transport	87		-0.132	0.90	657.00
Car/Self	67	50.13			
Ambulance	20	50.45			
Disposition	87		-1.328	0.18	666.50
Discharged	60	48.98			
Admitted	27	52.93			

Table 18. Differences between gender, mode of arrival, and disposition and satisfaction with Teaching subscale

Variable	Teaching subscale				
	N	Mean	Z	U	P
Gender	79		620.50	-1.587	0.11
Male	42	9.29			
Female	37	10.86			
Arrival Transport	79		587.00	-0.035	0.97
Car/Self	59	10.12			
Ambulance	20	9.75			
Disposition	79		634.00	-0.111	0.91
Discharged	56	10.13			
Admitted	23	9.78			

Table 19. Differences between gender, mode of arrival, and disposition and satisfaction measured by the CECSS

Variable	CECSS				
	N	Mean	Z	U	P
Gender	74		521.00	-1.760	0.08
Male	39	56.77			
Female	35	63.06			
Arrival Transport	74		418.00	-0.860	0.39
Car/Self	57	59.21			
Ambulance	17	61.53			
Disposition	74		470.00	-0.858	0.39
Discharged	54	58.74			
Admitted	20	62.45			

The aims of the research included using multiple regression to determine which variables statistically predicted overall satisfaction with ED nursing, and conducting tests of construct validity of the CECSS using exploratory factor analysis. Neither of these aims could be

investigated as fewer than 100 completed surveys were available for analysis, rendering it not possible to conduct the requisite statistical tests.

Qualitative analysis of open-ended format questions

The final two questions afforded respondents the opportunity to write, in their own words about two aspects of their ED visit.

The question asking respondents what they liked best about the nursing in the ED elicited written comments from 89 of the 100 respondents. Thematic analysis revealed four broad themes which were titled personal qualities of the nurse, professional qualities of the nurse, interpersonal qualities of the nurse, and miscellaneous and general comments.

The first theme identified was labelled ‘personal qualities of the nurse’, and comprised those attitudes and demeanours that consumers’ regarded as contributing to a positive experience. Respondents used words including caring, helpful, calm, genuine, empathetic, kind, confident, considerate, gentle, and relaxed to describe the nurse. Specific comments from respondents included ‘the nurse appeared very empathetic, caring and kind’ (respondent 1T); ‘genuine caring attitude’ (respondent 2Z); ‘calm demeanour imbued confidence in her skills’ (respondent 7D); ‘caring attitude genuinely interested in my concerns’ (respondent 7E); ‘seemed to really care’ (respondent 8L).

In the second theme labelled ‘professional qualities of the nurse’ words such as capable, efficient, and skilful were used. This theme represented the behaviours of the nurse that fell within the professional realm of nursing and the carrying out of professional nursing tasks that respondents’ identified as contributing to a positive and satisfying experience.

The third theme was labelled ‘interpersonal skills of the nurse’ and was defined by words such as chatty, friendly, polite, and understanding. This theme identified those attributes of the nurses’ interpersonal skills that respondents liked. Comments about the friendliness of the nurse were made by 26 respondents and these included ‘friendly and professional at all times’ (respondent 1F); ‘friendly manner’ (respondent 3B); ‘friendly approach reducing some stress at the time’ (respondent 4G); and ‘they were welcoming, courteous and friendly’ (respondent 7O).

The second most frequently used word in relation to nurses' attitude and demeanour was 'caring'. This appeared a total of 11 times in response to what consumers' liked about the nursing in the emergency department. Comments included 'they are caring even though they are rushed off their feet' (respondent 8C).

It also appeared that respondents appreciated nurses' calm demeanour in spite of an obviously busy and stressful environment with a number of respondents making positive comments about how well the nurses operated in what appeared to be a challenging, busy, and stressful environment. Respondent 14E commented 'caring and helpful attitude with a sense of humour in a stressful environment'; and Respondent 7Y noted 'they are caring but looked rushed off their feet'. In addition, a number of respondents specifically noted that in spite of the busy environment the nurses remained friendly and welcoming – 'although the department was very busy I wasn't made to feel hurried or a nuisance' (respondent 15P); 'time taken to reassure me even when it was busy with no one sounding like a grump or under pressure' (respondent 5X); their attitude was friendly, considerate and personal in spite of being very busy' (respondent 7Y).

A final, fourth theme was labelled miscellaneous and included non-specific comments such as good or very good, and hard working. This theme also included comments about the timeliness of the service with nearly one fifth of respondents who made comments about what they liked, highlighting the prompt and timely service that they received.

Table 20 details the four themes identified and lists the words used and the frequency of their use by respondents.

Table 20. Words and themes used by respondents to describe what they liked about nurses/nursing in the emergency department

Theme	Words	No.
Personal Qualities of Nurse	Caring	11
	Helpful	9
	Calm	4
	Genuine	3
	Empathetic, Kind	2
	Confident, Considerate, Gentle, Relaxed	1
Professional Qualities of Nurse	Efficient, Professional	7
	Concerns taken seriously	5
	Knowledgeable	4
	Privacy respected	3
	Competent, Skilful	2
	Capable, Treated everyone equally	1
Interpersonal Qualities of Nurse	Friendly	27
	Kept informed/checked on	11
	Understanding	5
	Polite, Sense of humour	3
	Chatty	2
	Courteous, Welcoming	1
Miscellaneous / Non Specific	Prompt/timely	17
	Hard working	16
	Good, Very good	12
	Nothing was too much trouble	2

The majority of the comments to this question were positive. However, there were a few negative responses with three respondents noting that they at no stage had any contact with any nurses; one respondent stating that s/he did not experience any nursing; one respondent replying that there was nothing s/he liked about the first hour of their visit; and one respondent also noted that the experience would have been enhanced had the nurse been more friendly.

The final question about what the nurses could have done to have made their ED visit better was completed by 86 respondents. Of these, the majority (n = 44, 51.2%) wrote that there was nothing the nurses could have done to have made the visit better. In addition to this theme of 'Nothing', three further themes were identified. These were titled 'Staffing/ Service', 'Information giving', and 'Environment'. Five respondents noted that they did not see any nurses during their visit.

The theme 'Staffing / Service' related to the timeliness of the service, length of waits, and the need for more and identifiable staff. The majority (n = 12, 40%) of comments made by consumers within this theme related to providing shorter wait times. A further third of the

comments made by respondents related to the need for more staff. The remainder of comments were about the need for staff to be identifiable.

The second identified theme was ‘Information giving’ and included comments about being kept up to date about delays and tests, being regularly checked on, and receiving discharge information.

The fourth and final theme identified in response to comments about what nurses could have done to make the visit better was the environment. This theme included comments addressing the need for comfortable chairs, the availability of reading material that was more universally appealing, and being offered victuals.

Table 21 details the four themes identified and lists the words used and the frequency of their use by respondents.

Table 21. Words and themes used by respondents to identify what nurses could do to make the ED visit better

Theme	Words/phrases	No.
Nothing	Nothing	44
Staffing/service	Provided a faster service, Shorter stay,	12
	Fewer delays	
	Need more staff	10
	Staff should introduce themselves	2
	Wear uniforms so staff can be identified	1
Information giving	Kept better informed about reasons for tests, delays, etc	7
	Better discharge information	5
	Be checked on/asked after	3
Environment	Offered something to eat or drink	3
	More reading material	2
	More comfortable chairs	1

The majority of comments drew attention to the service being good; however the overwhelming issue for many respondents, with comments under both questions was around information giving about the process, delays, and tests with 26 respondents writing specific comments which were both positive and negative. Seven respondents commented that whilst they would like to have experienced fewer delays or a quicker service, they felt that the reasons for the delay were outside the control of the nurses. Rather it was an issue of inadequate staffing levels and therefore the remit of the District Health Board (DHB) to

address. The overcrowding, the busyness of the ED, and the pressure under which the nurses work was also commented on by 15 respondents.

In addition to specific comments in response to the two open-ended questions, three respondents wished the researcher good luck with her studies, and one respondent sent a card with a note wishing good luck and acknowledging the hard work involved in conducting research and writing a thesis. Three respondents also requested that their thanks for a good service be passed on to the staff of the ED, and two further respondents supplied their contact details should further information be required. A spelling mistake in the original text supplied by the author of the CECSS was corrected by four respondents – question 12 read ‘The nurse should have been more attentive then he/she was’. The statement should have read ‘The nurse should have been more attentive than he/she was’. This feedback has been passed on to the author and copyright holder of the scale and the original text corrected for future use.

This chapter has presented the findings from the study. The following chapter discusses these findings with reference to the satisfaction literature.

Chapter 5 – Discussion and Implications

This chapter presents a discussion of the results of the research which draws on the research process and the findings in comparison with the satisfaction literature. The discussion begins with an analysis of the quality and the limitations of the research, which includes an extensive discussion about missing data. The research findings are then discussed in line with the original aims of the research – first, to describe levels of satisfaction with emergency department (ED) nursing; second, to identify the key determinants of satisfaction with ED nursing; and finally, to assess satisfaction with ED nursing as a determinant of overall satisfaction. The meaning of the findings and how these relate to previous research in general and to the New Zealand setting in particular, how the findings can impact on nursing practice in the ED, and on the planning and conducting of future research studies into satisfaction with ED nursing services are considered throughout this discussion. The chapter finishes with a summary of the results.

The quality of the research

The robustness of the Consumer Emergency Care Satisfaction Scale (CECSS), as indicated by psychometric testing demonstrating reliability and validity of the tool, was discussed in Chapter 2. This testing has resulted in strong evidence that the CECSS is an apposite tool with which to measure consumers' satisfaction with ED nursing. The current study also contributes to supporting the reliability of the scale through statistical analysis by way of Cronbach's alpha coefficients which demonstrate that the total scale and its two subscales have internal consistency.

In addition to using a robust tool, the quality of this research is further enhanced through the use of researcher collected consumer and visit data. Raper (1996) and Raper et al. (1999) note that self report data are notoriously unreliable and so stress the importance of utilising researcher collected data in order to avoid poor quality and unreliable data that could impact negatively on research findings. In recognition of this, the methodology of this study included a researcher-developed data collection tool to record data for consumer and visit characteristics. This enabled the researcher to uplift relevant information from the respondents' hospital records and so potentially avoid inaccuracies in the data.

However, whilst the tool and the research methodology can be described as robust, there were a number of issues encountered that have impacted negatively on the overall high quality of the research. One significant issue is the low response rate which resulted in only a small convenience sample of 100 returned surveys. The 100 returned surveys represented a response rate of 24.4% of the research population, and 14% of the ED population. However, of the 100 returned surveys only 62 were complete with no items of missing or unusable data, and only 74 contained a complete data set for the CECSS items. This represents a response rate for the CECSS of 18.0% of the research population and 10.5% of the ED population.

Low response rates are a recognised disadvantage of postal surveys, with Burns and Grove (1993) reporting that a response rate of 25-30% is usual for postal surveys. Whilst this study recorded a response rate of nearly 25% based on the research population, the rate of 14% calculated as a percentage of the ED population represents a very low percentage that falls short of the expected 25-30% response rate. Low response rates and convenience sampling have the potential to impact negatively on the usefulness of findings as it can be impossible to generalise the findings to the research population, the research ED, or to other ED populations. This thus has the potential to limit the applicability of the findings to ED nursing practice.

However, during the research planning, a low response rate was recognised as a very real possibility as a direct consequence of using a postal survey to recruit research participants and collect data. Thus, in order to mitigate the negative impact of convenience sampling and a low response rate, data for consumer and visit characteristics were collected for the research population. This meant that the sample could be assessed for representativeness against the research population. If the sample were shown to be representative of the research population, then this would partially negate the negative impact of a small, convenience sample.

The statistical analyses of the research population compared with the sample did demonstrate that the sample were representative of the research population based on measures of gender, ethnicity, mode of arrival to the ED, triage category, when consumers arrived and when they were discharged from the ED, disposition from the ED, and length of stay (LOS) in the emergency department. However, on age, the sample was not representative of the research population with increasing age being associated with responding to the survey (the mean age

of the research population was 46.7 years, compared with a mean age of 56.9 years for the sample). The sample was therefore biased towards older consumers.

Whilst it is disappointing that the sample were not representative of the research population for age, the finding is however significant as almost one quarter of the research population were aged 30 years or younger, yet less than one tenth of the sample were in that age group. It is thus clear that whilst this younger age group constitutes a significant proportion of the research population, they are not represented in the sample. The voice of the younger ED consumer is therefore not being heard through the medium of this postal survey yet their significant numbers means that capturing their voice is germane to fully understanding satisfaction. Satisfaction in this younger age group therefore warrants further exploration. Whilst it may simply be that participant recruitment and data collection by way of postal surveys is inappropriate for this age group, future research needs to consider this finding and look at alternative methodologies. One method to consider that could potentially improve the response rate in this age group is an on-line administration of the survey.

In spite of the apparent representativeness of the sample, the meaningfulness of this is however compromised as it is impossible to compare the sample with the ED population. This stems from the research methodology that excluded significant consumer groups from the research population and therefore the eventual sample. Data for consumer and visit characteristics were not collected for the consumers who presented to the ED but did not meet the study inclusion criteria. Thus, although the sample is representative of the research population, it is unknown if it is representative of the ED population which means that the findings cannot be generalised to the ED population. Future studies could consider incorporating the collection of consumer and visit characteristic data for all consumers in order to assess the representativeness of the sample compared with the ED population.

In light of this comment, it is clear that some consumers were specifically excluded from the research population. Excluded groups included those aged under 18 years, those with active psychiatric disorders, and severely ill or injured individuals (all triage category 1, and some triage category 2). However, these people represent significant groups of emergency healthcare consumers. Future research that addressed satisfaction in these groups would be invaluable and would contribute to the overall picture of satisfaction with ED nursing and emergency healthcare services.

It is thus clear that the low response rate and the small, convenience sample drawn from one New Zealand ED, have an impact on the generalizability of findings of the research. However, this study also encountered significant problems with missing data which also impact on the findings. In total, just over one quarter of the returned surveys had some data missing in Section 2 (the Consumer Emergency Care Satisfaction Scale). The fact that data were missing throughout this section is significant because mean scores for the whole CECSS and the two subscales can only be computed where respondents have replied to all the items in the scale. Missing data therefore meant that, from a total of 100 returned surveys, the Caring subscale was complete in 87 surveys, the Teaching subscale in 79, and the whole scale in just 74 surveys. This in turn limits the robustness of the findings in terms of both the reliability and the generalizability.

The observation that over one quarter of the returned surveys had at least one CECSS item of missing data was intriguing, as missing data did not appear to be an issue for the previously published studies. Five of the eight published studies made no mention of missing data (Chan & Chau, 2005; Davis et al., 2005; Elder et al., 2004; Raper, 1996; Raper et al., 1999); and the remaining three commented on a limited number of the returned surveys being unusable. For Barrio et al. (2002), six (5.9%) of the 102 returned surveys were not used in the analyses as over half of the CECSS items had missing data; Clark, Pokorny, and Brown (1996) reported that from a total of 58, 'six (10.3%) were not acceptable for use because of incomplete consumer and visit data or incomplete response to questions' (p. 54); and Davis and Duffy (1999) noted, with no reasons specified, that of the 103 returned surveys, three (2.9%) were unusable. Whilst Barrio et al. (2002) commented that the six surveys were unusable because 50% of the data were missing, neither of the other two studies gave parameters for the percentages of missing data that rendered the surveys unusable. It is however noteworthy that by applying the 50% missing data criteria of Barrio et al.'s study, all of the returned surveys from the current study would be included in the analyses as none had over 50% of the data missing. It is also noteworthy that none of the studies that mentioned missing data gave any indication of how missing data were ultimately managed – as Barrio et al. included surveys with up to 50% of data missing, the missing data must have been managed somehow. The two most commonly used strategies for managing missing data involve imputing mean scores – either the mean score for each missing item based on the completed score from the total scale, or the mean score for each of the subscales into the relevant scale item (Duffy, 2006; Pallant,

2007). In the current study however as no protocol could be found, surveys with missing data were excluded from analyses involving either the subscales or the total scale.

Whilst it is not clear why missing data were an issue for this study and perhaps not the other studies, one reason to be considered is the method of administration of the survey. The published studies administered the survey by way of phone or face-to-face interviews (Elder et al., 2004; Raper, 1996; Raper et al., 1999), or the survey was given to respondents to complete in the ED and returned prior to discharge (Barrio et al., 2002; Chan & Chau, 2005; Clark et al., 1996; Davis & Duffy, 1999; Davis et al., 2005). None of these studies utilised a postal survey which is in contrast to this study which utilised this methodology to collect data.

Surveys completed over the phone or face-to-face tend to have the lowest incidents of missed responses (Polit & Hungler, 1997). This would account for the studies by Elder et al. (2004), Raper (1996), and Raper et al. (1999) not reporting missing data as they administered the survey by way of interviews. In addition, missing data could also be minimised by administrators offering respondents help in completing the survey when the survey is given to respondents on site as Davis and Duffy (1999) did in their study. It is thus possible that issues associated with missing data were avoided in the previously published studies because the methods of administration did not include postal administration. It is therefore posited that missing data are linked to the method of survey administration and this needs to be considered in future studies. In addition, strategies to consistently manage missing data also need to be developed.

In terms of the specific issues associated with missing data, the CECSS items with the most missing data were items four, six, and seven with 16, 11, and 19 pieces of missing data respectively. These three items comprise the Teaching subscale and relate to nurses' discharge teaching. It is noteworthy that a significant percentage of the missing data in each of these three items were from respondents who were not discharged home from the ED – rather, they were admitted to hospital as in-patients. It is possible therefore that a significant percentage of respondents did not respond to the Teaching items because they were admitted to hospital and not discharged home which would have rendered any discharge teaching on the part of the ED nurse futile.

That the other CECSS research did not have missing data in these items could be due to the exclusion of admitted consumers from the research population which would mean that discharge teaching would be valid for all survey respondents. This is true of the studies by Clark et al. (1996) and Davis et al. (2005) which specifically excluded consumers who were admitted to hospital. In addition, the studies by Elder et al. (2004) and Raper et al. (1999) only utilised the Caring subscale and not the Teaching subscale so it would not matter if the consumers were admitted or discharged as no items related to discharge teaching were included. However, neither Chan and Chau (2005) nor Davis and Duffy (1999) referred to admission as either an inclusion or exclusion criteria and neither study reported missing data in the Teaching subscale as being an issue.

Whilst it still remains unclear why missing data were a problem in this study and apparently not in other studies, it is perhaps reasonable to suggest that the CECSS is most useful for those consumers who are discharged home from the ED and not admitted to hospital. In order to generate more reliable results however, future studies need to carefully consider whether to include or exclude consumers who are admitted to hospital. It may also be worth considering modifying the scale to allow respondents to indicate that any given item in the scale is not applicable to them.

In line with the aims of the study, the following section presents a discussion about the levels of consumer satisfaction with ED nursing.

A description of the levels of satisfaction with ED nursing

This first study of satisfaction with ED nursing services utilising the CECSS (Davis et al., 1997) in a New Zealand public hospital replicates, or partially replicates studies conducted in several other countries (Barrio et al., 2002; Chan & Chau, 2005; Clark et al., 1996; Davis & Duffy, 1999; Elder et al., 2004; Raper, 1996; Raper et al., 1999). In line with the findings from these studies, the results from this study show that the overwhelming majority (n = 65, 88%) of survey respondents reported satisfaction with the ED nursing service. The majority (n = 70, 80%) also expressed satisfaction with ED nurses' caring, however, only a very small majority (n = 40, 51%) were satisfied with ED nurses' teaching.

The CECSS item with the highest mean score and the lowest variability ($4.86 \pm \text{SD } 0.71$) in the survey was item one – ‘the nurse performed his/her duties with skill’. This item was also reported as having the highest mean score in studies by Chan and Chau (2005); Davis and Duffy (1999); and Raper et al.¹ (1999). Davis and Duffy conjectured that the reason for the high score could be that consumers had difficulty in assessing nurses’ professional competence, or even that they were unwilling to assess or judge nurses’ competence. On the contrary however, the finding could reflect that nurses’ technical skills are the visible, outward, and measurable tasks of nursing that are relatively straightforward for consumers to observe and to assess. In addition to being the visible sign of nursing, nursing technical skills and competence are governed by a statutory authority that, in line with the Health Practitioners Competence Assurance Act (2003), requires nurses to prove their competence to nurse in order to be granted an annual practising certificate (APC). Alongside this, hospitals and District Health Boards (DHB) also operate internal quality control systems to ensure that nurses perform their tasks competently. A skilful, competent nurse should therefore be a given. Previous research has even demonstrated that this is the case with healthcare consumers taking skilful, competent nurses for granted (Williams, 1994). An alternative explanation for the CECSS item ‘the nurse performed his/her duties with skill’ recording the highest mean score, rather than reflecting that consumers are unwilling or unable to assess this, could in fact be a reflection of the adequacy of the systems that monitor and govern nurses’ professional practice. That is to say, the nurses were skilful and consumers recognised this.

Table 22 details the highest and lowest mean CECSS item scores reported in this study and the other published studies.

Table 22. Mean scores for the CECSS items with the highest and lowest mean scores

Author	Item 1 – highest mean (SD)	Item 7 – lowest mean (SD)
Buckley, 2009	4.86 (0.71)	3.20 (1.74)
Chan & Chau, 2005	4.25 (0.61)	3.34 (1.07)
Davis & Duffy, 1999	4.81 (0.50)	3.48 (1.18)
Raper et al., 1999 ¹	4.30 ²	

¹Used caring subscale of CECSS only

² No standard deviation reported

Table 22 also shows that the CECSS item with the lowest mean score ($3.20 \pm \text{SD } 1.74$) in this study was item seven – ‘the nurse told me what to expect at home’, and that this result was also noted in the studies by Chan and Chau (2005), and Davis and Duffy (1999). This finding may reflect that nurses are not keeping consumers informed about what they could expect on being discharged home. However, it could also be that the item is not worded to reflect the plethora of different ED presentations and as such how different types of discharge information are managed. For example, if a consumer is discharged home from the ED having been treated with a plaster cast for a broken bone, they will be advised about what to expect at home in terms of the healing process, how to manage pain and daily ablutions, and also their follow up care. They could therefore expect to be told what to expect at home after discharge. However if a consumer presents with atypical chest pain and is discharged home, their discharge instructions would not include what to expect at home as there should be no expectations about what might happen as nothing should happen. Rather, these consumers would be discharged home with simple analgesia, reassurance, and advice to seek medical help if the pain returns. As such, these consumers would not be told what to expect at home.

It is a recognised disadvantage of postal surveys that there is no opportunity to seek clarification on the meaning of items, and that items can therefore be differently interpreted by respondents (Brink & Wood, 2001). Whilst this problem should have been minimised through the rigorous development of the CECSS including pre-testing and testing, it is noteworthy that this is the first use of the scale in a New Zealand setting. It could thus be that healthcare in general, and EDs in particular in New Zealand operate differently from EDs in the United States of America (USA), and that they may cater for a different range of presentations. It is also reasonable to expect that there may be different social and cultural expectations between the two countries that could lead to some consumers not anticipating or expecting to be told what to expect at home. It may thus be that the item ‘the nurse told me what to expect at home’ is inappropriate both for some of the New Zealand ED presentations and some of the ED consumers. It is thus apparent that there is a web of complex issues around this item that make drawing meaningful conclusions very difficult. It is however clear that further investigations are needed to attempt to clarify some of the issues and to learn more about the social and cultural mores of New Zealand EDs and ED consumers.

The current study found that the mean scores for the CECSS and its two subscales lay within the satisfaction bands indicating that consumers were satisfied. This finding was also reported by Barrio et al. (2002), Chan and Chau (2005), Davis and Duffy (1999), and Raper et al. (1999). The mean scores for the two subscales and the total scale are detailed in Table 23.

Table 23. Mean scores for the CECSS and two subscales

Study	Caring subscale	Teaching subscale	CECSS
	Mean (SD)	Mean (SD)	Mean (SD)
Buckley, 2009	50.21 (10.70)	10.03 (4.86)	59.74 (14.79)
Chan & Chau, 2005	43.93 (6.09)	10.37 (2.81)	54.30 (7.38)
Barrio, et al., 2002	50.50 (7.80)	10.20 (3.50)	Not reported
Davis & Duffy, 1999	55.00 (6.49)	10.82 (2.99)	Not reported
Raper et al., 1999 ¹	48.80 ²		

¹Used caring subscale of CECSS only

² No standard deviation reported

It is perhaps noteworthy that in the current study the mean score for the Teaching subscale denoted satisfaction by only a very small margin (0.03) for the total group. In addition, a greater degree of variability in the scores on the Teaching subscale from this study was noted in comparison with the other studies, indicating a greater range of scores. Whilst this result may indicate that Teaching in the research ED may be falling short of consumer expectation, it could also reflect a growing awareness amongst consumers of their position both as active consumers of healthcare and active participants in their own healthcare. Modern day healthcare consumers are an informed people who have access to a wealth of information. These consumers may thus have a higher expectation of receiving relevant, useful, and informative teaching that they can use to facilitate their own recovery, and improve their own health and healthcare. Healthcare consumers' expectations have raised the teaching bar and the provision of information in the ED needs to reflect this.

The range of the satisfaction scores from this study was greater (as indicated by the standard deviation scores) than the other studies for both of the CECSS subscales and for the total Consumer Emergency Care Satisfaction Survey. Although the reason for this is not abundantly clear, it may reflect the lack of homogeneity within the sample which was diverse in representing a wide range of incomes, educations, ages, and ethnicity. More research is warranted to explore this finding further.

The second stated aim of the study was to identify the key determinants of satisfaction with ED nursing. The following section presents a discussion of the consumer and visit characteristics that were found to impact significantly on satisfaction with ED nursing.

The key determinants of consumer satisfaction with ED nursing

In order to identify the determinants of satisfaction, it was necessary to explore the relationships between consumer and visit characteristics and levels of satisfaction. This was achieved through inferential statistical analyses of the results of the satisfaction survey, and consumer and visit characteristics data.

No consumer characteristic variables were found to have a statistically significant association with satisfaction. There were therefore no consumer characteristic variables that can be identified as determinants of satisfaction with ED nursing. This finding is in line with the conclusion drawn by Hall and Dornan (1990) following a meta-analysis of 107 consumer satisfaction studies that consumer characteristics represent at best only minor predictors of satisfaction.

There was however a weak correlation demonstrated between age and satisfaction with the Caring subscale such that older consumers recorded higher levels of satisfaction with nurses' caring. In the CECSS literature, a significant association between age and satisfaction was reported by Raper et al. (1999). Two studies from the ED satisfaction literature also supported an association between age and satisfaction with older consumers reporting the highest levels of satisfaction (Sun et al., 2000; Sun et al., 2001). However, the majority of studies that presented data on the relationship between age and satisfaction reported no significant association (Davis & Duffy, 1999; Elder et al., 2004; Hedges et al., 2002; Raper, 1996; Thompson, Yarnold, Adams et al., 1996).

Statistical analyses of the remainder of the consumer characteristic variables (gender, ethnicity, annual income, and highest educational qualification), did not reveal any significant differences. This study therefore failed to support any as being determinants of satisfaction with ED nursing. However, it was noted that women reported higher levels of satisfaction than men across all three satisfaction measures. Although the results did not reach statistical significance, the trend is in line with findings from the study by Davis and Duffy (1999)

which reported that female consumers of an urban ED reported higher levels of satisfaction with nurses' caring than male urban ED consumers did. Gender has however not been shown to be a determinant of health in any of the other reviewed published satisfaction literature.

A trend was also noted between ethnicity and satisfaction with people identifying as Maori recording the highest levels of satisfaction across all satisfaction measures, and those identifying as Pacific Peoples recording the lowest levels of satisfaction. Whilst the findings did not reach statistical significance, the trend was noteworthy in light two observations. First, the population profile that the research ED serves sees 8% of the population identifying as Pacific People. Second, the *New Zealand Health Strategy* (Ministry of Health, 2000) states that a priority objective is to 'ensure accessible and appropriate services for Pacific Peoples' (2000, p. viii). This finding relating to lower levels of satisfaction amongst Pacific Peoples is therefore significant and warrants further investigation in order to maximise Pacific Peoples experiences with ED nursing.

Whilst the only consumer characteristic variable in this study demonstrated to have a weak association with consumer satisfaction, and therefore be considered to be a weak determinant of satisfaction was age, there were a number of visit characteristics that emerged as determinants of satisfaction. These included triage category, self-rated acuity, the times consumers arrived at and were discharged from the ED, being able to differentiate between different health professionals, being kept informed about the visit, being kept informed about any delays, LOS, and number of previous visits to the emergency department. These visit characteristics represent the consumers' health journey through the emergency department.

This study found that triage category and self-rated acuity were determinants of satisfaction with higher acuity triage categories being associated with higher levels of satisfaction with the Caring subscale, and higher self-rated acuity being associated with higher levels of satisfaction with the Consumer Emergency Care Satisfaction Scale. High triage categories were also found to be associated with higher levels of satisfaction in some of the published ED satisfaction literature (Boudreaux, Friedman et al., 2004; Boudreaux et al., 2000; Lewis & Woodside, 1992). There is however no report of triage category data or self-reported acuity data being collected or reported on in the CECSS published literature. This finding that higher acuity is associated with higher levels of satisfaction may reflect the reality of the ED model of care in which seriously unwell or injured consumers are triaged as high acuity and are

therefore promptly attended to by nurses and doctors to receive the treatment or interventions they need. In addition, being unwell or injured may result in the nurses keeping a closer eye on the consumer and being more vigilant to their needs and condition, thus leading consumers to conclude that they had received a 'good' service and that the nurses were indeed 'caring', thus resulting in feelings of greater satisfaction.

Results of analysis between triage category and self-reported acuity using the Kappa measure of agreement ($k = 0.208$, $p = 0.000$), demonstrated a strong agreement between consumers' self-reported acuity and triage category. Thus high acuity (both self-reported and as the triage category) would appear to be a determinant of satisfaction with ED nursing in this study.

The findings from this study also indicated that when a consumer arrived or was discharged was a determinant of their satisfaction with ED nursing. Specifically, consumers who arrived during the night shift expressed significantly higher levels of satisfaction with teaching, than those consumers who arrived during the afternoon shift; and consumers who arrived during the morning shift had the lowest levels of satisfaction with teaching. In addition, consumers discharged from the ED during the night shift also expressed higher levels of satisfaction on both the CECSS and on the Teaching subscale, than consumers who were discharged during the afternoon shift. Those discharged during the morning shift had the lowest levels of satisfaction. Timing of arriving or leaving the ED has not been reported on in any of the previously published satisfaction literature reviewed which makes these findings particularly difficult to discuss in relation to the literature. This should not however detract from the possible importance of this finding and the need to understand it.

A finding discussed earlier was that consumers who were allocated a higher triage category expressed higher levels of satisfaction than those who were assigned a lower category. It was therefore possible that the higher levels of satisfaction observed in consumers who arrived during the night shift could be partly attributable to those consumers being assigned higher triage categories – that is to say, consumers who presented during the night shift were likely to be sicker than consumers who presented during any other time. In light of this, further statistical analyses were performed. These analyses showed that there were no statistically significant associations between triage categories and either the time consumers arrived at or the time that they were discharged from the emergency department. The higher satisfaction expressed by consumers who were discharged during the night shift was therefore not

attributable to higher acuity presentations. It is speculated that nurses recognise that during the night shift, consumers who are discharged home have fewer opportunities to seek help and may be less supported than consumers discharged during the day. This means that discharge instructions assume an even higher degree of importance. In addition, ED health professionals are perhaps less likely to discharge consumers home if there are any concerns about their health. This may mean that the only consumers discharged are those who are able to self manage. This in turn means that discharge instructions are likely to be uncomplicated, easy for nursing staff to impart and thus easy for consumers to follow and understand. This clear communication could contribute to higher levels of satisfaction with the nurses' teaching.

In addition, the findings may reflect changing staffing levels and therefore different nurse-consumer ratios during the different shifts which could impact on the levels of teaching offered by nurses. Higher numbers of presentations during specific times could be responsible for creating increased pressures on nurses' time such that teaching may not receive adequate attention with nurses concentrating on assessing and treating new presentations. Without further research this is speculative at best. However, the significance of the findings should not be overlooked and would warrant further investigation.

A further determinant of satisfaction with ED nursing in this study was found to be consumers being able to tell which health professionals were looking after them. The finding demonstrated that consumers who could tell the difference were more satisfied with ED nursing and ED nurse caring, than those who could not tell the difference. It was also interesting to note that in the open-ended items of the survey, a number of comments were made about the importance of staff being easily identified, introducing themselves, and wearing name badges to facilitate identification. This finding indicates that it is important to ED consumers that they know who is looking after them. This may be because knowing a person's name and being able to interact and communicate with them on a more personal level contributes to consumers feeling to be a part of, and involved in their healthcare. This is supported by a study by Boudreaux et al. (2000) who found that the most powerful predictor of an ED consumer's satisfaction was being treated as a person. In addition, it could be that knowing a person's name removes the stigma that many consumers feel of being just a number or a diagnosis. The finding that consumers' satisfaction can be positively influenced through knowing who their caregivers'' are is an important one as it represents an intervention to improve satisfaction that has the potential to be easily and cheaply

implemented. Thus just by encouraging nurses to introduce themselves to the consumers could result in higher levels of satisfaction.

Two further determinants of satisfaction that this study found concerned how well nurses kept consumers informed about their visit. Whilst there was only one published study that utilised the CECSS that reported on this variable (Raper, 1996), the results also supported information giving as a significant contributor to satisfaction. The importance of information giving is however, extensively supported by studies reported in the ED satisfaction literature (Boudreaux et al., 2003; Bursch et al., 1993; Davis, 1995; Hall & Press, 1996; Krishel & Baraff, 1993; Magaret et al., 2002; Nerney et al., 2001; Sun et al., 2000; Sun et al., 2001; Thompson, Yarnold, Williams et al., 1996; Watson, Marshall, & Fosbinder, 1999).

In this study, higher levels of satisfaction with ED nurses' caring and with ED nursing were reported by consumers who felt that they were kept well informed about their treatment and any delays in their treatment. In addition, when consumers were kept informed about their treatment, they also expressed higher levels of satisfaction with nurses' teaching. The importance of keeping consumers informed was also reflected in the comments that were made in response to the open-ended survey items. A total of 12 consumers commented that being kept better informed and receiving better discharge information would have made their visit better; and a further 11 respondents commented that what they particularly liked about the nursing in the ED was being kept informed. It is therefore fair to conclude that a significant contributor to satisfaction with ED nursing is communicating with consumers.

Anecdotal evidence suggests that a major source of dissatisfaction with ED visits is a protracted LOS in the emergency department (Boudreaux, Friedman et al., 2004; Hedges et al., 2002; Thompson, Yarnold, Adams et al., 1996). Current Government policy is tending towards prioritising reducing ED LOS in a drive to improve the quality of emergency healthcare and improve consumer health outcomes (Working Group for Achieving Quality in Emergency Departments, 2009). However, protracted LOS was not found to be associated with dissatisfaction in this study which found only a weak association between LOS and satisfaction, with a shorter LOS being associated with higher levels of satisfaction with nurses' teaching. This finding may only be partially attributable to the actual LOS; rather it may be that a shorter LOS is associated with a less complex presentation. This in turn may require only simple teaching that is easier for consumers to understand and it is this that

contributes to higher levels of satisfaction. However, without further evidence, this is speculative at best.

Whilst only one statistically significant correlation was demonstrated between satisfaction and LOS, over one quarter of those who replied to the question about what nurses could have done to have made the visit better, made comments about reducing the length of the ED stay. It would thus appear that whilst LOS is not a direct determinant of satisfaction with ED nursing, it is nonetheless important to ED consumers.

The final determinant of satisfaction that emerged from the data was a consumer's number of previous ED visits with an increasing number of visits being associated with lower levels of satisfaction with nurses' caring. The reason for this result is not clear. However it could be explicable in terms of consumers who have presented on many occasions having seen a greater range of possible nursing behaviours and attitudes that results in their having a higher expectation of nurses' caring. They are thus dissatisfied with anything less than the displays of the most caring behaviours and attitudes that they have ever experienced. The result could also be partly explicable in relation to a satiety experienced by consumers who have had multiple visits to the emergency department. That is to say frequent users of the ED may be far more difficult to satisfy because they present with a deep weariness at being in the ED for the nth time. It is also possible that the lower levels of satisfaction expressed by frequent attendees are partly attributable to a possible lower level of service delivered by healthcare professionals. This is in recognition of findings from research that indicates that ED health professionals treat frequent attendees differently and with a lower level of care (Malone, 1996). This finding certainly warrants further investigation as the majority ($n = 66$, 66%) of consumers in the research population had presented to the ED previously in two years. Multiple previous attendees therefore constitute a significant proportion of the ED population.

The third aim of the study was to explore the relationship between satisfaction with ED nursing and overall satisfaction with the ED visit. The following section presents a discussion around these findings.

Satisfaction with ED nursing as a determinant of overall satisfaction with the ED visit

The findings indicated that satisfaction with ED nursing is a good predictor of overall satisfaction with the ED visit with a strong positive correlation demonstrated between overall satisfaction with the visit, and satisfaction with ED nursing. In addition, satisfaction with ED nurses' caring and with ED nurses' teaching also proved to be good predictors of overall satisfaction with the visit.

Whilst this result is not entirely unexpected with a number of studies reporting that satisfaction with nursing is strongly associated with overall satisfaction (Aragon & Gesell, 2003; Boudreaux, d'Autremont et al., 2004; Hall & Press, 1996), this significant, positive association has only been reported in one other CECSS study (Raper, 1996). In spite of this, the finding has important implications for nursing in the ED in terms of providing powerful evidence of the importance of nursing resources. This evidence thus has the potential to be used in support of the need for adequate consumer to nurse ratios, on-going nurse education and training, and recognition of the importance of nursing to ED consumer satisfaction.

Summary

This chapter has discussed the research findings with reference to both the ED satisfaction literature in general, and the CECSS literature in particular. Aspects of the design that contributed to the high quality of the research included the use of the CECSS which is a robust survey tool with demonstrable validity and reliability. The combination of self-report and researcher collected data was also significant as was the ability to comment on the representativeness of the sample compared with the research population. This was possible because data were collected and analysed for the research population and not just the sample. Whilst the low response rate was a disappointment, the observation that the sample was demonstrably representative of the research population on all measures except age served to militate against this possible weakness. The results of the survey revealed an overwhelming

majority (n = 65, 88%) of consumers were satisfied with ED nursing. The nurses' behaviour that ED consumers were most satisfied with was their skill in performing tasks. A possible explanation of this was that the ED nurses showed a high level of skill and that this in turn could be attributable to the rigorous processes that govern nurses' professional practice. Whilst no consumer characteristics were demonstrated to be determinants of consumer satisfaction with ED nursing, a number of visit characteristics were. These characteristics included triage category, self-rated acuity, the times consumers arrived at and were discharged from the ED, being able to differentiate between different health professionals, being kept informed about the visit, being kept informed about any delays, LOS, and number of previous visits to the emergency department and as a group, they represent the consumer healthcare journey through the emergency department. Finally, satisfaction with ED nursing was shown to be a determinant of overall satisfaction with the ED visit.

The following chapter presents the conclusions drawn from this study with regard to nursing practice, future research, and ED operational policies.

Chapter 6 – Conclusions

This small study on consumer satisfaction with emergency department (ED) nursing in a New Zealand regional hospital provides important information about satisfaction with ED nursing. The specific areas highlighted concern future satisfaction research, ED nursing practice, and the policies that drive ED operations.

This is the first study of its kind in New Zealand and it is also the first study utilising the Consumer Emergency Care Satisfaction Scale (CECSS) that looks at visit characteristics that represent the consumers' health journey through the ED in relation to their satisfaction. It is this area – the health journey – that is the one area that most other studies have not addressed. Earlier research has tended to concentrate on recording consumer characteristic variables and assessing for associations between these and levels of satisfaction. However, few studies have reported any consistent, significant correlations between any consumer characteristics and satisfaction and there is thus no consensus regarding the determinants of satisfaction. This research also failed to note any significant associations between any consumer characteristics and satisfaction. However a number of visit characteristics that had significant associations with satisfaction were revealed. It is therefore this area around the consumer health journey that presents the most significant implications and challenges for researchers. A recommendation for future research is therefore to address consumer and visit characteristics and to explore their associations with satisfaction with a view to establishing the determinants of satisfaction. In this way, the satisfaction research can aim to increase levels of satisfaction and so contribute to better health outcomes for the consumer.

A further observation that is significant for future research is in relation to the research methodology concerning the Consumer Emergency Care Satisfaction Scale. The issue is around missing data from the CECSS as no strategy appears to exist for handling this. Future research needs to ensure that a clear strategy exists that advises researchers on how to manage all missing data. It is therefore recommended that the author of the CECSS devises a clear protocol to guide researchers. This strategy would contribute to the robustness of the tool and therefore any future research findings. The need for a protocol will be highlighted in correspondence with the author of the CECSS with a recommendation to develop a protocol that can be implemented for all future CECSS research.

A positive outcome from the research methodology was the decision to include open-ended questions in the survey. Whilst Naumann and Giel (1995) report that between 90 and 95% of survey respondents do not reply to open-ended questions, 87-89% of respondents in this survey wrote replies to the open-ended questions. The data generated from these questions yielded a wealth of in-depth information that provided invaluable insights into consumer satisfaction with ED nursing. The qualitative data complemented the CECSS data and so revealed different facets to the satisfaction data. The importance of the qualitative data cannot be over stated, and it is therefore strongly recommended that future research incorporates open-ended questions in the survey.

The final observation in relation to the research methodology is around the importance of capturing and describing the research population to impact on the possible generalizability of the research findings. Survey research does not generally allow findings to be extrapolated from the sample to whole populations as it is usually not known if the sample is representative of the population from which it was drawn. This is certainly true of the CECSS studies reviewed as none described the population, only the sample. However the sample from the current study can be said to have captured the research population as the sample was demonstrably representative of the research population on every measure except age. A recommendation for future research that would impact on the generalizability of any findings is thus that consumer and visit characteristics data should ideally be collected for the ED population, or if this is not possible, then for the research population such that the findings can be more meaningfully discussed in the context of the population.

In terms of the significance to ED nursing practice, the findings highlight the importance of the quality of communication between nurses and consumers, and also the nature of the relationship between consumers and nurses, to consumer satisfaction. The importance of communication is highlighted at the start of the therapeutic relationship between nurse and consumer with consumers wanting the nurses to introduce themselves and to be easily identifiable. Consumers also want their nurses to keep them informed about their visit – for example, why they need tests, and what are the delays in their treatment. In addition, consumers are clear that they want to receive good discharge information. In all their dealings with nurses, consumers also want their nurses to be friendly, understanding, and polite. Nurses therefore need to concentrate on their communication and interpersonal skills when dealing with consumers. A recommendation for ED nursing practice is thus that issues around

nurses introducing themselves, communicating in a friendly, polite fashion with consumers, and sharing information with consumers be included in nurses' orientation. Assigned preceptors thus need to be encouraged to role model good interpersonal skills and excellent, regular communication with consumers.

A further observation in light of the recognised importance of good communication to consumer satisfaction is that ED nursing practice would benefit from having access to on-going education that reflects the importance of communication. It would benefit both nurses and consumers if nurses had access to courses, workshops, and other continuous quality improvement initiatives. These need to be developed to contribute to the on-going improvement and monitoring of nurses' communication skills and so maintain high levels of satisfaction in ED healthcare consumers.

The significance of good communication skills also has implications for ED healthcare delivery and so needs to be reflected in the priority policies that guide the delivery of healthcare. Currently, reducing ED length of stay (LOS) has been identified by the Ministry of Health as a priority for all District Health Board (DHB) emergency healthcare providers (Working Group for Achieving Quality in Emergency Departments, 2009). Whilst this is recognised as an important aspect of the quality of emergency healthcare delivery, this research has raised the importance of communication to consumer satisfaction and this also needs to be reflected in DHB quality improvement initiatives. Levels of consumer satisfaction can be increased through improving communication between nurses and consumers and ensuring that nurses keep consumers informed about their ED health journey. A recommendation is therefore that communication and consumer information initiatives also be explored, alongside reducing wait times as integral parts of ED and DHB quality improvement initiatives.

It has long been thought that two of the major influences on consumer satisfaction with ED healthcare were wait times and lengths of stay. This study has demonstrated that whilst these issues are important to consumers, a greater influence on satisfaction with the ED visit is satisfaction with ED nursing. Furthermore, this study has shown that the major influences on consumer satisfaction with ED nursing concern consumers being clear who their nurse is and the quality and content of nurses' communication. It is clear that nurses hold the key to improving consumer satisfaction with the ED visit and that key requires nurses to improve

how and what they communicate with consumers. It is vital that both nurses and hospital management recognise this as the potential contribution of nursing to positively influence consumer satisfaction and thence improve consumer health outcomes cannot be over stated and resources and training need to reflect this.

Study Title: Patient Satisfaction with Emergency Department Nursing
Researcher: Clare Buckley QN: _____

Template for collecting consumer data from hospital records

a. Gender

Male Female

b. Age

.....

c. Ethnicity

New Zealand European	Niuean	Cook Island Maori
New Zealand Maori	Tokelauan	Chinese
Samoan	Tongan	Fijian
Other (specify):		

d. Arrival Transport

Car/Self	Ambulance (GP)	Ambulance (code 1)	Air	Other
----------	-------------------	-----------------------	-----	-------

e. Place of Triage

Waiting room Department/Treatment Area

f. Triage Category (Acuity)

1 2 3 4 5

g. Total Time in ED (mins)

.....

h. Disposition

Discharged Home	Admitted to Hospital
--------------------	-------------------------

Note: First page of cover letter will be on Victoria University letter-head paper

Study Title: Patient Satisfaction with Emergency Department Nursing

Dear [person's name],

[Date:]

Thank you for taking the time to read this. My name is Clare Buckley. I am a Registered Nurse at the Hawke's Bay Regional Hospital in Hastings and I am also a student at Victoria University of Wellington enrolled on the Master of Nursing programme. As part of the programme, I am conducting a study to establish how satisfied patients are with nursing in the Emergency Department of a New Zealand hospital. This research is important as it will help nurses to understand what patients like about nursing in the Emergency Department, and what areas of nursing could be better. Please find below some questions and answers which will provide you with all the information you need about the study to allow you to decide whether or not to be a participant.

Where is the study based?

The study is based in the Emergency Department of ... Hospital.

What is the study about?

The study is going to find out what patients find satisfying and dissatisfying about nursing in the Emergency Department, and what they like about nursing in the Emergency Department.

How will this be done?

In order to do this, a questionnaire that was designed in the United States of America will be used. This questionnaire is called the Consumer Emergency Care Satisfaction Scale (CECSS) and has been used by different researchers in countries around the world to understand the things that make patients satisfied or dissatisfied with Emergency Department nursing. In addition to the CECSS you will be asked to provide some information about yourself and your visit to the Emergency Department.

Who can take part in the study?

All people who attended the Emergency Department between [x and y dates] and were seen and treated by doctors and nurses can take part in this study as voluntary participants – this means that the choice to take part is yours (it is up to you). According to the hospital records, you came to the Emergency Department during these dates and were treated there – this means that you can participate in the research. I hope that you are now feeling better and would like to invite you to take part in this study. The only people who are not being invited to take part are those people who were either critically ill/injured or who were under the age of 18 when they visited the Emergency Department.

What if I came to the Emergency Department more than once during the study period?

I am sorry that you had to come to the Emergency Department on more than one occasion, and again hope that you now feel better. However, because you visited the Emergency Department more than once, you will receive one copy of this letter for each visit. If possible I would like you to reply for each visit.

Will there be any disadvantage to me if I choose not to be a participant?

The decision to become a participant is completely voluntary (up to you) and you will not be disadvantaged in any way if you choose not to take part.

Note: First page of cover letter will be on Victoria University letter-head paper

Will it cost me anything to be a participant?

If you do choose to take part, there will be no cost to you apart from your time to complete the questionnaire (about 15-20 minutes).

What do I do if I do decide to be a participant?

If you do decide to take part please complete the questionnaire - there is a sheet included in this envelope 'How to complete the questionnaire' that explains exactly what you need to do. You do not have to answer all the questions if you do not want to. Once you have answered the questions you can return the completed questionnaire to me in the reply paid envelope provided. Returning the completed questionnaire to me means that you have consented to participate in the study.

Will any other information about me or my visit to the Emergency Department be used in the study?

In order to establish who could participate in the study I have recorded some information about you from the hospital record of your visit to the Emergency Department. This information included your age, gender, and ethnicity; how you came to the Emergency Department; the nurse's assessment of the urgency of your condition; how much time you spent in the Emergency Department; and if you were discharged home or admitted to hospital. This information will be analysed as group data to establish how representative the sample of people who complete the questionnaire is. Your name will not appear anywhere on this information – only a questionnaire number so that when you return your questionnaire I will be able to match it with this information that I have collected.

If I choose to be a participant in the study, will my identity be protected?

Yes it will. The design of the study guarantees that when you return the completed questionnaire you cannot be identified. The questionnaires do not have your name on them – only a questionnaire number that allows me to match your questionnaire with the other information I collected from your records (this will not have your name on it either). In this way, anonymity in this study is ensured. No information that could personally identify you will be used in any reports on this study.

Will anyone else see the information?

The study will be written up as a thesis for my Master of Nursing qualification and this thesis will be available in the library of Victoria University of Wellington. The results of the study may also be published in nursing journals and on the District Health Board web site. In addition, the results from questions 8-26 of the questionnaire will be shared with Dr Barbara Davis who developed and wrote the original questionnaire. She uses the information to inform ongoing development of the questionnaire and may use the information in published reports about the questionnaire.

In addition to being able to access the results of the study on the District Health Board web site, you can opt to receive a copy of a summary of the results of the study. If you would like to receive a copy of the results, please complete the attached form with your name and postal address (if you would like to receive the results by post), or your e-mail address, and a copy will be sent to you as soon as the results are available. In order to guarantee your anonymity another researcher will open the returned envelopes and separate the form with your details on it from the completed questionnaire.

All the information collected for this study will be stored either by the ... District Health Board, or by Victoria University of Wellington in a secure place, for a period of 10 years. The information will then be destroyed.

Note: First page of cover letter will be on Victoria University letter-head paper

I hope that this has given you all the information you need to make a decision to be a participant in this study. However, if you do have any questions or would like any more information then you can contact either me, the principle researcher – Clare Buckley, or my research supervisors at Victoria University – Joan Skinner or Kathy Nelson. Our details are listed below. You may like to discuss this study with a friend, or ask family or whanau support for help in understanding it. You may also like to contact the Health and Disability advocate at the Advocacy Services Network Trust (ADNET) by phone on 0800 423638 / 06-3480074, or by email at advocacy@hdc.org.nz if you have any questions regarding your rights as a participant in this study or if you have any issues regarding the healthcare you received. In addition, if you have any concerns about the healthcare you received, you can contact at the Customer Services Department of ... Hospital on

Ethical approval for this study and the sharing of information with Dr Davis has been granted by the Central Regional Ethics Committee.

Best regards

Clare Buckley, RCpN, BN, PGDip(Nursing)

Principal Researcher – Clare Buckley

PO Box 4303

Marewa

Napier

Phone: 06-878 8109 x2661

E-Mail: Clare.Buckley@HawkesBaydhb.govt.nz

Supervisor – Dr Joan Skinner

Senior Lecturer

Graduate School of Nursing, Midwifery, and Health

Victoria University of Wellington

PO Box 600

Wellington

Phone: 04-463 6654

Fax: 04-463 5442

E-Mail: Joan.Skinner@vuw.ac.nz

Supervisor – Dr Kathy Nelson

Senior Lecturer

Graduate School of Nursing, Midwifery, and Health

Victoria University of Wellington

PO Box 600

Wellington

Phone: 04-463 6138

Fax: 04-463 5442

E-Mail: Kathy.Nelson@vuw.ac.nz

Study Title: Patient Satisfaction with Emergency Department Nursing
 Researcher: Clare Buckley

How to complete the questionnaire

The enclosed questionnaire is in three sections:

Section 1: General Information

- This section is made up of 7 questions about you and your visit to the Emergency Department.
- Please answer the questions 1-6 by circling the response that best applies to you or your visit.
- For question 7, please write your highest educational qualification.

Section 2: Consumer Emergency Care Satisfaction Scale (CECSS)

- This section is made up of 19 statements.
- For each statement indicate how much you agree or disagree with the statement by putting an X in the appropriate space.
- You can ask a friend or family/whanau for help with this but please answer with your opinion.
- When you are answering each question, think of the nurse who spent the most time with you.

Example:

A. The nurse thought I understood more than I really did.

Completely		Completely
Agree		Disagree
: <u> X </u> :	: :	: :

The answer to question A indicates that you are quite certain that the nurse understood more than you really did.

Section 3: Additional Questions

- This section is made up of three questions.
- The first question is for you to show how satisfied you were, overall, with your visit to the Emergency Department.
- Please show this by circling the response that best applies to your visit.
- The final two questions ask that you write, in your own words about the nursing you received in the emergency department. Please do not name any of the health professionals who looked after you.
- If you have any concerns at all with the healthcare you received please contact the hospital and speak with someone from the Quality and Risk Department who will help you with your concerns. The contact details are as follows:
 - ...Name
 - Quality and Risk Manager
 - ...Contact number

Patient Satisfaction with Emergency Department Nursing

Section 1: General Information

For each of the following questions (1-6), please circle the response that best describes you and/or your visit to the Emergency Department

1. How would you rate the severity of your illness or injury at the time you went to the Emergency Department?

Mild

Moderate

Serious

2. When Emergency Department health professionals were looking after you, could you tell who was a health assistant, who was a nurse, and who was a doctor?

Always

Sometimes

Never

3. Did a nurse keep you informed during your visit about the treatment you were receiving?

Always

Sometimes

Never

4. Did a nurse keep you informed during your visit about any delays?

Always

Sometimes

Never

5. How many previous visits for your health have you had to any Emergency Department in the previous 2 years?

First visit 1 2 3 4 5 6 7 8 9 10+

6. What is your yearly income (NZ\$)?

Loss or no income

\$ 1 - \$ 5,000

\$ 5,001 - \$10,000

\$10,001 - \$15,000

\$15,001 - \$20,000

\$20,001 - \$30,000

\$30,001 - \$40,000

\$40,001 - \$50,000

\$50,001 - \$70,000

\$70,001+

7. What is your highest educational qualification?

Now, please go to Section 2 of the questionnaire

Section 3: Additional Questions

Please answer the following general questions about your time in the emergency department

27. Please circle the statement that represents how satisfied you were overall with your visit to the Emergency Department.

Very Satisfied	Satisfied	Not Satisfied	Very Dissatisfied
---------------------------	------------------	--------------------------	------------------------------

28. What did you like best about the nursing in the Emergency Department?

29. What do you think nurses could have done to have made your Emergency Department experience better?

Thank you for completing the questionnaire. Please now put the completed sheets in the stamped addressed envelope provided to:

Clare Buckley, PO Box 4303, Marewa, Napier.

Study Title: Patient Satisfaction with Emergency Department Nursing
Researcher: Clare Buckley

Results Summary

If you are interested in receiving a copy of the summary of the results of this questionnaire study, please complete your details below:

NAME: _____

ADDRESS: _____

E-MAIL: _____

Please note that this information will be kept separately from the questionnaire that you have returned. This is to ensure that your questionnaire remains anonymous and you cannot be identified.

Researcher Collected Data

Q No.	VARIABLE	SPSS VARIABLE NAME	VARIABLE VALUES	VARIABLE TYPE
	ID	ID	Unique - as per questionnaire	Ordinal
A	Gender	Gender	1. Male 2. Female	Nominal
B	Age	Age		Scale
C	Ethnicity	Ethnicity	1. NZ European 2. NZ Maori 3. Samoan 4. Niuean 5. Tokelauan 6. Tongan 7. Cook Island Maori 8. Chinese 9. Fijian 10. Other 11. Other - description 99. Missing	Nominal
D	Arrival Transport	ArrTrans	1. Car/Self 2. Ambulance (GP) 3. Ambulance 4. Air 5. Other	Nominal
E	Triage Category	TC	1. 1 2. 2 3. 3 4. 4 5. 5	Ordinal
F	Length of Stay in ED in minutes	LOS		Scale
G	Disposition	Disposition	1. Discharged home 2. Admitted ¹	Nominal
H	Shift - arrival	ShiftArr	1. Morning ¹ 2. Afternoon ² 3. Night ³	Nominal
I	Shift - discharge	ShiftDx	1. Morning 2. Afternoon 3. Night	Nominal

¹ Morning shift – 0700 – 1530 hrs² Afternoon shift – 1430 – 2300hrs³ Night shift – 2245 – 0715 hrs

Section 1 – General Information

Q No.	VARIABLE	SPSS VARIABLE NAME	VARIABLE VALUES	VARIABLE TYPE
S1-1	Self rated acuity	Acuity	1. Mild 2. Moderate 3. Moderate-Serious 4. Serious 9. Missing	Ordinal
S1/2-4		DrRNCA RNInfTx RNInfDly	1. Always 2. Sometimes 3. Never 9. Missing	Ordinal
S1-5	Previous visits	Visits	1. First visit 2. 1 3. 2 4. 3 5. 4 6. 5 7. 6 8. 7 9. 8 10. 9 11. 10+ 99. Missing	Nominal
S1-6	Annual income	Income	1. Loss/no income 2. \$1 – 5,000 3. \$5,001 – 10,000 4. \$10,001 – 15,000 5. \$15,001 – 20,000 6. \$20,001 – 30,000 7. \$30,001 – 40,000 8. \$40,001 – 50,000 9. \$50,001 – 70,000 10. \$70,001+ 99. Missing	Ordinal
S1-7	Highest educational qualification	Qualification	1. Master's Degree 2. Bachelor's Degree 3. Diploma 4. UE 5. School Certificate 6. Professional Qualification 7. Trade Qualification 8. Nil 9. Missing	Nominal

Section 2 – CECSS

Q. No.	VARIABLE	VARIABLE VALUES	VARIABLE TYPE
S2/8-26	Sat8-26 / CECSS1-19	1. Completely Disagree 2. 3. 4. 5. Completely Agree	Scale as analysed by mean; otherwise ordinal

N.B. S2/Q12, 16, 21, 24 – negatively worded and NOT included in the scoring

Section 3 – Additional Questions

Q. No.	VARIABLE	VARIABLE VALUES	VARIABLE TYPE
S3/27	ovsat27	1. Very Dissatisfied 2. Not Satisfied 3. Satisfied 4. Very Satisfied	Ordinal
S3/28-28		Write in Word Document File	

Additional /Recoded Variables

VARIABLE NUMBER	VARIABLE LABEL	VARIABLE VALUES	VARIABLE TYPE
40	GroupQuals	1. University 2. Secondary School 3. Trade/Professional 4. Nil 9. Missing	Nominal
41	GrpsArrTrans	1. Car/self 2. Ambulance	Nominal
44	TCECSSCaring		Scale
45	TCECSSDxTeach		Scale
46	TCECSS		Scale
47	GrpsEthnicity1	1. European 2. NZ Maori 3. Pacific People 4. Asian 5. Other 9. Missing	Nominal

References

- Abramowitz, S., Cote, A. A., & Berry, E. (1987). Analysing patient satisfaction: A multianalytic approach. *Quality Review Bulletin*, 13(4), 122-130.
- Aharony, L., & Strasser, S. (1993). Patient satisfaction: What we know about and what we still need to explore. *Medical Care Review*, 50(1), 49-79.
- Aragon, S. J. (2003). Commentary: A patient-centered theory of satisfaction. *American Journal of Medical Quality*, 18(6), 225-228.
- Aragon, S. J., & Gesell, S. B. (2003). A patient satisfaction theory and its robustness across gender in emergency departments: A multigroup structural equation modelling investigation. *American Journal of Medical Quality*, 18(6), 229-241.
- Australasian College of Emergency Medicine. (2000). *The Australasian triage scale*. Carlton, Victoria: Australasian College of Emergency Medicine.
- Avis, M., Bond, M., & Arthur, A. (1995). Satisfying solutions? A review of some unresolved issues in the measurement of patient satisfaction. *Journal of Advanced Nursing*, 22, 316-322.
- Barrio, A. C., Garcia, C. B., Cereijo, C. R., & Lopez, F. G. (2002). Spanish validation of an instrument to measure the quality of nursing care in hospital emergency units. *Journal of Nursing Care Quality*, 16(3), 13-23.
- Beck, K. L., & Larrabee, J. H. (1996). Measuring patients' perception of nursing care. *Nursing Management*, 27(9), 32B-D.
- Bond, S., & Thomas, L. H. (1992). Measuring patients' satisfaction with nursing care. *Journal of Advanced Nursing*, 17, 52-63.
- Boudreaux, E. D., d'Autremont, S., Wood, K., & Jones, G. (2004). Predictors of emergency department patient satisfaction: Stability over 17 months. *Academic Emergency Medicine*, 11(1), 51-58.
- Boudreaux, E. D., Friedman, J., Chansky, M. E., & Baumann, B. M. (2004). Emergency department patient satisfaction: Examining the role of acuity. *Academic Emergency Medicine*, 11(2), 162-168.
- Boudreaux, E. D., Mandry, C. V., & McCabe, B. (2000). Determinants of patient satisfaction in a large municipal ED: The role of demographic variables, visit characteristics, and patient perceptions. *American Journal of Emergency Medicine*, 18, 394-400.
- Boudreaux, E. D., Mandry, C. V., & Wood, K. (2003). Patient satisfaction data as a quality indicator: A tale of two emergency departments. *Academic Emergency Medicine*, 10(3), 261-268.
- Boudreaux, E. D., & O'Hea, E. L. (2004). Patient satisfaction in the emergency department: A review of the literature and implications for practice. *The Journal of Emergency Medicine*, 26(1), 13-26.
- Brink, P. J., & Wood, M. J. (2001). *Basic steps in planning nursing research: From question to proposal* (5th ed.). Sudbury, Massachusetts: Jones and Bartlett Publishers.
- Brown, A. D., Sandoval, G. S., Levinton, C., & Blackstein-Hirsch, P. (2005). Developing an efficient model to select emergency department patient satisfaction improvement strategies. *Annals of Emergency Medicine*, 46(1), 3-10.
- Bruce, T. A., Bowman, J. M., & Brown, S. T. (1998). Factors that influence patient satisfaction in the emergency department. *Journal of Nursing Care Quality*, 13(2), 31-37.
- Burns, N., & Grove, S. K. (1993). *The practice of nursing research: Conduct, critique & utilization*. (2nd ed.). Philadelphia: W. B. Sanders Company.

- Bursch, B., Beezy, J., & Shaw, R. (1993). Emergency department satisfaction: What matters most? *Annals of Emergency Medicine*, 22(3), 586-591.
- Calnan, M. (1988). Towards a conceptual framework of lay evaluation of health care. *Social Science and Medicine*, 27(9), 927-933.
- Campanella, H. C. (2000). Factors affecting Department of Defense patient satisfaction in a military emergency department. *Military Medicine*, 165(5), 396-402.
- Carr-Hill, R. A. (1992). The measurement of patient satisfaction. *Journal of Public Health Medicine*, 14(3), 236-249.
- Chan, J. N. H., & Chau, J. (2005). Patient satisfaction with triage nursing care in Hong Kong. *Journal of Advanced Nursing*, 50(5), 498-507.
- Christey, G. R. (2008). Trauma care in New Zealand: It's time to move ahead. *World Journal of Surgery*, 32, 1618-1621.
- Clark, C. A., Pokorny, M. E., & Brown, S. T. (1996). Consumer satisfaction with nursing care in a rural community hospital emergency department. *Journal of Nursing Care Quality*, 10(2), 49-57.
- Cooper, D. R., & Schindler, P. S. (2001). *Business research methods*. Singapore: McGraw-Hill.
- Davis, B. A. (1988). *Consumer satisfaction with emergency department nursing care: Instrument development*. Unpublished Ph.D., Texas Woman's University.
- Davis, B. A., & Bush, H. A. (1995). Developing effective measurement tools: A case study of the consumer emergency care satisfaction scale. *Journal of Nursing Care Quality*, 9(2), 26-35.
- Davis, B. A., Bush, H. A., & Thomas, S. W., Jr. (1997). Measuring consumer satisfaction with emergency department nursing care. *Journal of Nursing Science*, 2(1-2), 35-47.
- Davis, B. A., & Duffy, E. (1999). Patient satisfaction with nursing care in a rural and an urban emergency department. *Australian Journal of Rural Health*, 7, 97-103.
- Davis, B. A., Kiesel, C. K., McFarland, J., Collard, A., Coston, K., & Keeton, A. (2005). Evaluating instruments for quality: Testing convergent validity of the consumer emergency care satisfaction scale. *Journal of Nursing Care Quality*, 20(4), 364-369.
- Davis, J. E. (1995). Children in accident and emergency: Parental perceptions of the quality of care: Part I. *Accident and Emergency Nursing*, 3(1), 14-18.
- Dempsey, P. A., & Dempsey, A. D. (1996). *Nursing research: Text and workbook* (4th ed.). Boston: Little, Brown and Company.
- DeSantis, L., & Ugarriza, D. N. (2000). The concept of theme as used in qualitative nursing research. *Western Journal of Nursing Research*, 22(3), 351-372.
- Donabedian, A. (1988). The quality of care: How can it be assessed? *Journal of the American Medical Association*, 260(12), 1743-1748.
- Duffy, M. E. (2006). Handling missing data: A commonly encountered problem in quantitative research. *Clinical Nurse Specialist*, 20(6), 273-276.
- Elder, R., Neal, C., Davis, B. A., Almes, E., Whitledge, L., & Littlepage, N. (2004). Patient satisfaction with triage nursing in a rural hospital emergency department. *Journal of Nursing Care Quality*, 19(3), 263-268.
- Evans, M. L., Martin, M. L., & Winslow, E. H. (1998). Nursing care and patient satisfaction. *American Journal of Nursing*, 98(12), 57, 59.
- Fitzpatrick, R. (1991). Surveys of patient satisfaction: I - Important general considerations. *British Medical Journal*, 301(6781), 887-889.
- Fuller, J., & Schaller-Ayers, J. (2000). *Health assessment: A nursing approach* (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.

- Gonzalez-Valentin, A., Padin-Lopez, S., & de Ramon-Garrido, E. (2005). Patient satisfaction with nursing care in a regional university hospital in southern Spain. *Journal of Nursing Care Quality*, 20(1), 63-72.
- Grief, C. L. (2003). Patterns of ED use and perceptions of the elderly regarding their emergency care: A synthesis of recent research. *Journal of Emergency Nursing*, 29(2), 122-126.
- Hall, J. A., & Dornan, M. C. (1988). What patients like about their medical care and how often they are asked: A meta-analysis of the satisfaction literature. *Social Science and Medicine*, 27(9), 935-939.
- Hall, J. A., & Dornan, M. C. (1990). Patient sociodemographic characteristics as predictors of satisfaction with medical care: A meta-analysis. *Social Science and Medicine*, 30(7), 811-818.
- Hall, M., & Press, I. (1996). Keys to patient satisfaction in the emergency department: Results of a multiple facility study. *Hospital and Health Services Administration*, 41(4), 515-532.
- Haller, K. B., & Reynolds, M. A. (1986). Using research in practice - Part 2. *Western Journal of Nursing Research*, 8(2), 249-252.
- Han, C.-H., Connolly, P., & Canham, D. (2003). Measuring patient satisfaction as an outcome of nursing care at a teaching hospital of southern Taiwan. *Journal of Nursing Care Quality*, 18(2), 143-150.
- Hedges, J. R., Trout, A., & Magnusson, A. R. (2002). Satisfied patients exiting the emergency department (SPEED) study. *Academic Emergency Medicine*, 9(1), 15-21.
- Hewett, D. (2005). Patient throughput issues. *Topics in Emergency Medicine*, 27(4), 281-283.
- Hostutler, J. L., Taft, S. H., & Snyder, C. (1999). Patient needs in the emergency department: Nurses' and patients perceptions. *Journal of Nursing Administration*, 29(1), 43-50.
- James, C. A., Bourgeois, F. T., & Shannon, M. W. (2005). Association of race/ethnicity with emergency department wait times. *Pediatrics*, 115(3), e310-e315.
- Johansson, P., Oleni, M., & Fridlund, B. (2002). Patient satisfaction with nursing care in the context of health care: A literature study. *Scandinavian Journal of Caring Sciences*, 16, 337-344.
- Kennedy, J. F., Trethewy, C., & Anderson, K. (2006). Content analysis of Australian newspaper portrayals of emergency medicine. *Emergency Medicine Australasia*, 18, 118-124.
- Krishel, S., & Baraff, L. J. (1993). Effect of emergency department information on patient satisfaction. *Annals of Emergency Medicine*, 22(3), 70/568-574/572.
- Lewis, K. E., & Woodside, R. E. (1992). Patient satisfaction with care in the emergency department. *Journal of Advanced Nursing*, 17(8), 959-964.
- Lin, B., & Kelly, E. (1995). Methodological issues in patient satisfaction surveys. *International Journal of Health Care Quality Assurance*, 8(6), 32-37.
- Linder-Pelz, S. (1982). Toward a theory of patient satisfaction. *Social Science and Medicine*, 16(5), 577-582.
- Lynn, M. R., & McMillen, B. J. (1999). Do nurses know what patients think is important in nursing care? *Journal of Nursing Care Quality*, 13(5), 65-74.
- Magaret, N. D., Clark, T. A., Warden, C. R., Magnusson, A. R., & Hedges, J. R. (2002). Patient satisfaction in the emergency department: A survey of pediatric patients and their parents. *Academic Emergency Medicine*, 9(12), 1379-1388.
- Mahon, P. Y. (1996). An analysis of the concept of 'patient satisfaction' as it relates to contemporary nursing care. *Journal of Advanced Nursing*, 24(6), 1241-1248.
- Malone, R. E. (1996). Almost 'like family': Emergency nurses and 'frequent fliers'. *Journal of Emergency Nursing*, 22(3), 176-183.

- Mayer, T. A., & Cates, R. J. (1997). Customer service and triage. *Topics in Emergency Medicine*, 19(2), 28-39.
- Mayer, T. A., Cates, R. J., Mastorovich, M. J., & Royalty, D. L. (1998). Emergency department patient satisfaction: Customer service training improves patients satisfaction and ratings of physician and nurse skill: Practitioner response. *Journal of Healthcare Management*, 43(5), 427-442.
- McKenzie-McLean, J. (2009, 18 June). Apology for 'tragic' suicide at hospital. *The Press*.
- McMillan, J. R., Younger, M., & DeWine, L. (1986). Satisfaction with hospital emergency department as a function of patient triage. *Health Care Management Review*, 11(3), 21-27.
- Messner, E. R., Reck, D. L., & Curci, K. M. (2005). Effectiveness of a patient education brochure in the emergency department. *Topics in Emergency Medicine*, 27(4), 251-255.
- Ministry of Health. (2000). *The New Zealand Health Strategy*. Wellington, New Zealand: Ministry of Health.
- Murray, M. J., & LeBlanc, C. H. (1996). Clinic follow-up from the emergency department: Do patients show up? *Annals of Emergency Medicine*, 27, 56-58.
- Naumann, E., & Giel, K. (1995). *Customer satisfaction: Measurement and management*. Ohio: Thomson Executive Press.
- Neerney, M. P., Chin, M. H., Lei, J., Karrison, T. G., Walter, J., Muliken, R., et al. (2001). Factors associated with older patients' satisfaction with care in an inner-city emergency department. *Annals of Emergency Medicine*, 38(2), 140-145.
- Newdick, C., & Derrett, S. (2006). Access, equity and the role of rights in health care. *Health Care Anal*, 14, 157-168.
- Pallant, J. (2007). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (version 15)* (3rd ed.). Crows Nest, New South Wales: Allen & Unwin.
- Patistea, E., & Siamanta, H. (1999). A literature review of patients' compared with nurses' perceptions of caring: Implications for practice and research. *Journal of Professional Nursing*, 15(5), 302-312.
- Peat, J., & Barton, B. (2005). *Medical statistics: A guide to data analysis and critical appraisal*. Massachusetts: Blackwell Publishing.
- Persse, D. E., Jarvis, J. L., Corpening, J., & Harris, B. (2004). Customer satisfaction in a large urban fire department emergency medical services system. *Academic Emergency Medicine*, 11(1), 106-110.
- Polit, D. F., & Hungler, B. P. (1995). *Nursing research: Principles and methods* (5th ed.). Philadelphia: J. B. Lippincott Company.
- Polit, D. F., & Hungler, B. P. (1997). *Nursing research: Methods, appraisal, and utilisation*. (4th ed.). Philadelphia: Lippincott-Raven Publishers.
- Price, P. J. (1993). Patients' perceptions of the meaning of quality nursing care. *Advances in Nursing Science*, 16(1), 33-41.
- Raper, J. L. (1996). A cognitive approach to patient satisfaction with emergency department nursing care. *Journal of Nursing Care Quality*, 10(4), 48-58.
- Raper, J. L., Davis, B. A., & Scott, L. (1999). Patient satisfaction with emergency department triage nursing care: A multicenter study. *Journal of Nursing Care Quality*, 13(6), 11-24.
- Rhee, K., & Bird, J. (1996). Perceptions and satisfaction with emergency department care. *Journal of Emergency Medicine*, 14(6), 679-683.
- Richards, C. R., Richell-Herren, K., & Mackway-Jones, K. (2002). Emergency management of chest pain: Patient satisfaction with an emergency department based six hour rule out myocardial infarction protocol. *Emergency Medicine Journal*, 19(2), 122-125.

- Risser, N. (1975). Development of an instrument to measure patient satisfaction with nurses and nursing care in a primary care setting. *Nursing Research*, 24, 45-52.
- Rydman, R. J., Zalenski, R. J., Roberts, R. R., Albrecht, G. A., Misiewicz, V. M., Kampe, L. M., et al. (1997). Patient satisfaction with an emergency department chest pain observation unit. *Annals of Emergency Medicine*, 29(1), 109-115.
- Sitzia, J., & Wood, N. (1997). Patient satisfaction: A review of issues and concepts. *Social Science and Medicine*, 45(12), 1829-1843.
- Strasser, S., Aharony, L., & Greenberger, D. (1993). The patient satisfaction process: Moving toward a comprehensive model. *Medical Care Review*, 50(2), 219-248.
- Sun, B. C. (2004). A patient education intervention does not improve satisfaction with emergency care. *Annals of Emergency Medicine*, 44(4), 378-383.
- Sun, B. C., Adams, J., Orav, E. J., Rucker, D. W., Brennan, T. A., & Burstin, H. R. (2000). Determinants of patient satisfaction and willingness to return with emergency care. *Annals of Emergency Medicine*, 35(5), 426-434.
- Sun, B. C., Adams, J. G., & Burstin, H. R. (2001). Validating a model of patient satisfaction with emergency care. *Annals of Emergency Medicine*, 38(5), 527-532.
- Taylor, C., & Bengner, J. R. (2004). Patient satisfaction in emergency medicine. *Emergency Medicine Journal*, 21(5), 528-532.
- The Press. (2008, 28 August). Patient woes in overhauled emergency department. *The Press*.
- Thompson, D. A., & Yarnold, P. R. (1995). Relating patient satisfaction to waiting time perceptions and expectations: The disconfirmation paradigm. *Academic Emergency Medicine*, 2, 1057-1062.
- Thompson, D. A., Yarnold, P. R., Adams, S. L., & Spacone, A. B. (1996). How accurate are waiting time perceptions of patients in the emergency department? *Annals of Emergency Medicine*, 28(6), 652-656.
- Thompson, D. A., Yarnold, P. R., Williams, D. R., & Adams, S. L. (1996). Effects of actual waiting time, perceived waiting time, information delivery, and expressive quality on patient satisfaction in the emergency department. *Annals of Emergency Medicine*, 28(6), 657-665.
- Tran, T. P., Schutte, W. P., Muelleman, R. L., & Wadman, M. C. (2002). Provision of clinically based information improves patients' perceived length of stay and satisfaction with EP. *American Journal of Emergency Medicine*, 20(6), 506-509.
- Uzun, O. (2001). Patient satisfaction with nursing care at a university hospital in Turkey. *Journal of Nursing Care Quality*, 6(1), 24-33.
- Watson, W. T., Marshall, E. S., & Fosbinder, D. (1999). Elderly patients' perceptions of care in the emergency department. *Journal of Emergency Nursing*, 25(2), 88-92.
- Watt, D., Wertzler, W., & Brannan, G. (2005). Patient expectations of emergency department care: Phase I - a focus group study. *Canadian Journal of Emergency Medicine*, 7(1), 12-16.
- Williams, B. (1994). Patient satisfaction: A valid concept? *Social Science and Medicine*, 38(4), 509-516.
- Wissow, L. S., & Kimel, M. B.-D. (2002). Assessing provider-patient-parent communication in the pediatric emergency department. *Ambulatory Pediatrics*, 2(4 Supplement), 323-329.
- Wolf, Z. R., Colahan, M., Costello, A., Warwick, F., Ambrose, M. S., & Giardino, E. R. (1998). Relationship between nurse caring and patient satisfaction. *MedSurg Nursing*, 7(2), 99-105.
- Working Group for Achieving Quality in Emergency Departments. (2009). *Recommendations to improve quality and the measurement of quality in New Zealand emergency*

- departments: A report from the working group for achieving quality in emergency departments to the Minister of Health.* Wellington, New Zealand: Ministry of Health.
- Yarnold, P. R., Michelson, E. A., Thompson, D. A., & Adams, S. L. (1998). Predicting patient satisfaction: A study of two emergency departments. *Journal of Behavioural Medicine*, 21(6), 545-563.
- Yellen, E., Davis, G. C., & Ricard, R. (2002). The measurement of patient satisfaction. *Journal of Nursing Care Quality*, 16(4), 23-29.