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### **Abstract**

The advanced nurse practitioner (ANP) role in Haematology is a new nursing role in Ireland. Because of the role's infancy, a postal survey was undertaken to ascertain patients' satisfaction with the service provided by an ANP, including bone marrow examination. Responding patients (n = 142) were very satisfied with the care given by the ANP. There was a statistically significant relationship between older age groups and their satisfaction overall with all aspects of care ( $\chi^2(6) = 5.532$ ,  $p = 0.017$ ), indicating that the older age groups were significantly more satisfied overall than other age groups.

**Key words:** advanced nurse practitioner (ANP); bone marrow examination; haematology; patient satisfaction; survey.

## **Introduction**

There is great variety in the descriptions of advanced practice nursing roles internationally. However, this variety hinders advanced practice role development.<sup>1</sup> In Ireland, while advanced practice roles developed much later than in the US, the delay has resulted in a transparent regulatory process with a clear clinical pathway for advanced nurse and midwife practitioners. The first Irish advanced nurse practitioner (ANP) was in Emergency nursing in 2002. A variety of other ANP roles now exist, for example, oncology, diabetes, and primary care. However, there are currently only three ANPs in haematology in Ireland.

The ANP in haematology has an expanded role which includes nurse-led review of patients, prescribing and undertaking bone marrow examinations.<sup>2</sup> Determining patient satisfaction with newly established nurse-led roles is considered important.<sup>3</sup> Also, patient satisfaction is a fundamental requirement for a hospital's success<sup>4</sup> and patient satisfaction surveys provide useful information on patients' views and improvements needed to a service.<sup>5</sup>

## **Research Questions**

The aim of the study was to ascertain patients' satisfaction with the service provided by the ANP in haematology at a regional specialist centre. This study also aimed to capture the unique 'added value' of the ANP's contribution, including the ANP's role in bone marrow examination. The term 'added value' is used to describe the unique contribution nurse practitioners bring by blending nursing skills with medical knowledge.<sup>6</sup>

## **Methods**

### ***Design and Setting***

The study was undertaken at a regional haematology centre in Ireland. Using a cross-sectional design, a random sample (every second patient) of patients from the population reviewed by the ANP in haematology in 2009 (n=300) were selected. The sample size was derived using the raosoft sample size calculator.<sup>7</sup> The selected patients were sent the study questionnaire, with a cover letter outlining the study's

aims. Each questionnaire was accompanied by a stamped addressed envelope addressed to the second author, a nurse lecturer based at a local university and not known to the patients. A total of 142 randomly selected patients returned the questionnaires (response rate of 47.3% with no reminder letters sent). The study received ethical approval from the regional health ethics committee.

### ***Instrument***

The 30-item questionnaire used in the study was based on two previously developed questionnaires;<sup>8,9</sup> the latter <sup>9</sup> being an adaption of the former <sup>8</sup> and renamed the Nurse Practitioner Satisfaction Instrument (NPSI). The NPSI has content validity, and reliability was ascertained through Cronbach's alpha testing.<sup>9</sup> The NPSI was further tested in 2000.<sup>10</sup>

The questionnaire consisted of 24-likert type questions specifically asking patients to rate their satisfaction with the service provided by the ANP. The remaining questions identified demographic and patient characteristics, with one open ended asking participants to offer a comment on the service provided by the ANP if they so wished.

Data were analysed using the data analysis software package SPSS IBM Version 20 (SPSS Inc., Chicago, IL, USA). The third and fourth authors were involved in data input and analysis.

## **Results**

### ***Demographic Characteristics***

Table 1 displays the demographic profile of participants who responded to the survey. Almost half the participants (49.7%, 72) were not on treatment but attended for review and monitoring. A further 42.9% (n=61) were on supportive, active or maintenance treatment and the remainder 8.3% (n=12) were undergoing investigations.

### ***Quality of Information participants received***

Participants were asked to rate the quality of information given to them on four aspects: information about their condition, their condition in relation to health outcomes, tests and investigations and their overall understanding of the information given to them. Participants consistently indicated (96.7%, 145) that information on all aspects overall were very good or good. Further analysis revealed that there was a statistically significant relationship between older age groups 68-77 and 78+ and their satisfaction with the quality of information received ( $\chi^2(4)= 16.1, p= 0.003$ ), the explanations given about their condition ( $\chi^2(4)= 14.2, p= 0.01$ ) and their overall understanding of information ( $\chi^2(4)= 17.8, p= 0.001$ ). This suggests that the older age groups were significantly more satisfied with these aspects than other age groups.

### ***Explanations about role of the ANP***

Participants were asked to indicate whether the role of the ANP was explained to them, with over 83% of participants (n=143) agreeing that the role had been explained. Patients were generally reviewed in the outpatients department (54%, n=81) or the day unit 22% (n=33). Most (81.3%, 122) agreed that they could see a haematology doctor any time they wanted. However, 10.6% (n=15) felt strongly that they had little choice in this regard.

### ***Satisfaction levels with care***

Patients were asked to indicate their satisfaction level with various aspects of care in relation to the ANP services. Table 2 presents participants' level of satisfaction with items in relation to ANP characteristics and their own involvement in care. Results indicated that the majority of participants were very satisfied with all aspects of care in these areas. Moreover, a 25<sup>th</sup> centile of 4 or over in all of the items confirms that 75% of participants rated themselves as satisfied. Satisfaction with overall care rated a 5 on the 25<sup>th</sup> centile and is evidence that 75% or more of participants were very satisfied with overall care. Statistical analysis did not highlight any significant relationship between the variables and their distribution across gender, educational levels or age groups.

Over 96% of participants (96.5%, n=137) reported that they would recommend the ANP to others. Participants were asked to rate their experience of the haematology ANP service overall on a visual analogue scale (VAS) from 1-10 with 1 very unsatisfied and 10 very satisfied. The median score was 8.5, with 75% of participants scoring 7.4 or over, and over 35% of participants (n= 49) scoring 9 or over. There was a statistically significant relationship between older age groups 68-77 and 78+ and their satisfaction overall with all aspects of care ( $\chi^2(6)= 5.5, p= 0.017$ ), indicating that the older age groups were significantly more satisfied overall than other age groups.

### ***Satisfaction with bone marrow examination by ANP***

Participants were asked to indicate if they had undergone a bone marrow procedure performed by the ANP. Over 58% of participants (58.2%, n=82) had undergone this procedure and these participants were asked to complete a further four items relating to their experience of the procedure (Table 3). Statistically older patients had undergone the procedure particularly from the 68-77 and 78+ age groups ( $\chi^2(6)= 18.9, p= 0.004$ ). Satisfaction levels overall were very high with the majority of participants (97.6%, n=80) satisfied with the explanation before the procedure. Similar results were evident in relation to the performance of the procedure with 97.8% (n=80) indicating that they were satisfied and a similar pattern with information post procedure (96.4%, n=79). Over 97% of participants (97.5%, n=79) would recommend to others the ANP carrying out the procedure. Median and 25<sup>th</sup> centile score for all items was 5 (very satisfied), further evidence of the high level of satisfaction with the ANP carrying out the bone marrow procedure. Finally, there was a statistically significant relationship between older age groups 68-77 and 78+ and their willingness to recommend the ANP to carry out the procedure ( $\chi^2(8)= 16.3, p= 0.03$ ).

### **Discussion**

The results of this study illustrate the high level of satisfaction with a new ANP role in haematology. The study revealed a statistically significant difference between older

age groups and satisfaction with information given to them by the ANP when compared to other age groups. Furthermore, older age groups were statistically more likely to have a bone marrow examination by the ANP and satisfaction levels for the procedure were very high. The majority of patients in the study were aged between 68 and 77 years, and this age group value being included in decisions regarding their treatment which they find “supporting and affirming”<sup>11</sup>. Moreover, some limited evidence suggests increased satisfaction with care with increasing age.<sup>12</sup> However further research is needed to determine if age is a determinant of patient satisfaction.<sup>13</sup>

The ANP role in haematology at the centre where this study took place was carefully planned before its introduction and involved consultation with all of the interdisciplinary team, and the new role was welcomed by management. This planning prior to the role’s introduction may have contributed to the high level of patient satisfaction with the ANP role. Moreover, it has been found that when hospital management create a care climate that focuses on service, patient satisfaction with care improves.<sup>14</sup>

However, the inability of patient satisfaction surveys to capture patients’ satisfaction with nursing care has been criticised based on the argument that patients encounter many different nurses during an episode in hospital.<sup>15</sup> This study however, because it focuses on patients’ satisfaction with the service provided by one nurse, does not fit with this criticism. Nevertheless, another criticism is that patient satisfaction surveys reflect the ‘social organization of a generalized knowledge about patient satisfaction’ is worthy of examination.<sup>15</sup> It is concluded that patient satisfaction surveys offer an ‘objectified account’ that ...’may not match anybody’s experience, let alone offer any useful insight into how that experience happens and what should be done about it’.<sup>15</sup> The inclusion of an open ended question at the end of the questionnaire used in this study was an attempt to capture any patient views not addressed in the closed questions of the questionnaire. However, there were few responses written in this open-ended questionnaire and all were positive comments about the ANP.

## **Conclusions**

This study demonstrates the high level of patient satisfaction with a new service provided by an ANP in haematology, including the undertaking of bone marrow examinations. The expanded role of the ANP in haematology is one welcomed by the patients surveyed, and adds further evidence to the benefits of expanded roles among nurse practitioners. The study findings also concur with similar studies elsewhere.<sup>16</sup>

Going forward, the ANP in haematology role now includes a telephone support clinic for stable patients, and it is planned to survey general practitioners and allied health care professionals for their views and satisfaction with the ANP role.

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Table 1

**Table 1:** Profile of participants (n=142)

	No	%
Total survey population	n=300	
<b>Response Rate</b>	n=142	47.3%
<b>Gender</b>		
Male	81	55.1
Female	66	44.9
<b>Age</b>		
18-27	2	1.3
28-37	6	4.1
38-47	8	5.3
48-57	13	8.6
58-67	36	24.3
68-77	43	29.2
78+	40	27.2
<b>Highest educational qualification</b>		
Completed primary school	51	34.7
Some secondary school	33	22.4
Completed secondary school	33	22.4
Completed third level	16	10.9
Other	14	9.6
<b>Current treatment regime</b>		
Undergoing investigation	12	8.3
On active treatment	28	19.3
On supportive treatment	5	3.4
On maintenance treatment	28	19.3
Attend for review /monitoring	72	49.7

**Table 2: Patient satisfaction with ANP service (ANP characteristics) (n=140)**

(5 = very satisfied, 4= satisfied, 3= uncertain, 2= dissatisfied, 1=very dissatisfied)

<b>How satisfied are you with:</b>	<b>5 (%)</b>	<b>4 (%)</b>	<b>3 (%)</b>	<b>2 (%)</b>	<b>1 (%)</b>	<b>Median</b>	<b>25th centile</b>
<b>Interest shown by ANP</b>	72.9	25.0	2.1	0	0	4.9	4
<b>Courtesy shown by ANP</b>	85.2	12.7	2	0	0	5	5
<b>Information received from ANP</b>	70.9	26.9	2.2	0	0	4.0	4
<b>ANPs knowledge of health problems</b>	70.4	25.4	4.2	0	0	5	4
<b>Opportunity to ask questions</b>	70.2	27	2.1	0.7	0	5.0	4
<b>Involvement in decisions</b>	60	33.6	5.7	0	0.7	5.0	4
<b>Overall with all aspects of care</b>	74.5	22	3.5	0	0	5.0	5

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**Table 3: Patient satisfaction with ANP service (Bone marrow procedure)****(n=82)****(5 = very satisfied, 4= satisfied, 3= uncertain, 2= dissatisfied, 1=very dissatisfied)**

<b>How satisfied are you with:</b>	<b>5 (%)</b>	<b>4 (%)</b>	<b>3 (%)</b>	<b>2 (%)</b>	<b>1 (%)</b>	<b>Median</b>	<b>25th centile</b>
<b>Explanation about procedure</b>	75.6	22	1.2	1.2	0	5	5
<b>Performance of procedure</b>	74.5	23.3	0	0	1.2	5	5
<b>Information post procedure</b>	72	24.4	2.4	1.2	0	5	5
<b>Recommend ANP to carry out procedure</b>	79	18.5	2.5	0	0	5	5