Evaluating the Knowledge of Health Professionals in Rural and Remote South Australia around Continence Issues

A Descriptive Analysis

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Despite the assistance and support of these people, all interpretations and errors are mine alone.
**Introduction**

The aim of this project was to survey nurses working in the public sector in rural and remote South Australia to evaluate their continence knowledge.

Port Augusta Domiciliary Care Team have been expanding existing continence services. Continence Nurse Advisors (CNAs) based in the Port Augusta Domiciliary Care Team provide education, clinical assessment and care, and manage the regional continence program across three of South Australia’s country Health Regions (Mid North, Eyre and Northern & Far Western Regional Health Services). This area covers some 85% of the geographic area of the state of South Australia.

There has been limited research into the issues specifically affecting nurses working in rural and remote areas. Literature searches have revealed no continence specific research specifically performed in solely rural and remote locations.

Expansion of pre-existing continence programs was supported by state and Australian Government funding via the Home and Community Care (HACC) program. It was considered that research into continence management and educational issues would support Domiciliary Care staff in making appropriate choices for expansion of their continence programs. A survey of public sector nurses was proposed.

The survey was designed to ascertain core knowledge held by these nurses and to identify areas of poor understanding of continence issues. It was expected that research findings could provide some insight into the level of evidence and best practice in continence management that is being applied by nurses in these regional and remote areas.

Current statistical data from the Port Augusta based continence service also indicated low levels of service to aboriginal people. It is however known that the largest populations of aboriginals per capita in South Australia exist in the Northern and Far Western Regional Health Service. It was of interest to identify whether aboriginal people were being seen by public sector health service nurses or whether aboriginal people were not accessing the continence management programs run by the Domiciliary Care Team.

The survey was also intended to identify enabling and inhibiting factors affecting the ability of these nurses to attend education and professional development opportunities and to gain insight into the preferred options for accessing education and professional development programs. Results of the survey could then be used to identify core elements essential when designing education programs to meet the needs of nursing staff in these rural and remote areas.

A survey methodology is dependent on return of surveys. Several methods of circulation of the survey were considered, but the method chosen relied on the support of local Executive Officers and Director’s of Nursing to assist in
the distribution of surveys to all nurses employed in the public sector. Human Resource Managers in each region were supportive in providing head counts of nursing staff employed at each work site. Several follow up letters, phone calls and media releases were undertaken to attempt to improve return rate of surveys in our area. Self-administered survey was seen as a limitation of the research design, but appropriate to the resources available to the researcher.

A statistician assisting the researcher in data collection was shocked to note that two nurses would choose catheterisation as a first line treatment strategy for incontinence. This reinforces the need for support of nurses in this geographical area with education and resources to aid in the management of continence issues.

The research has been completed with assistance from the Australian Government, Department of Health and Ageing, National Continence Management Strategy (NCMS) Grants process. It is Project 29 of this scheme.

**Literature Review Methodology**

The literature review was performed to understand the evidence and best practice principles surrounding continence issues. This aided the development of a self administered survey to establish baseline data from the nurses currently working in this geographical area.

A systematic review of literature pertaining to continence issues was carried out. This included literature published in English on CINAHL and MEDLINE databases between 1993 and 2003 and identified a considerable body of literature. There were significant deficits in the literature related to education, support and knowledge of nurses dealing with continence issues in rural and remote areas.

**Method**

**Study Design**

A descriptive analysis study design was planned to evaluate the continence knowledge of rural and remote nurses working in Northern South Australia. Ethics approval was achieved via the Department of Health’s Human Research Ethics Committee (HREC) and the Aboriginal Human Research Ethics Committee (AHREC).

A survey tool for self administration will be the tool used to make the measurement. The survey tool contained some demographic data questions; some open ended questions and remaining questions used a Likert scale.
Telephone administered survey was considered. This methodology was disregarded due to the time required to administer such a survey and the limited resources available to the researcher.

A semi structured self administered survey tool was chosen as it was seen to be a more reliable method of gaining participation from the target group with a higher completion rate than that of a survey mailed directly to participants. This would have required significant involvement from health units in provision of personal details. The method chosen requested assistance with the distribution of brochures from unit managers who were perceived to have been supportive advocates in a research project designed to be of direct benefit to their staff.

The survey tool was piloted with the staff of nursing and non nursing background from the Port Augusta Domiciliary Care Team. The pilot ensured that questions were easily understood and that the sequence of questions was logical and that there was no duplication of questions. The people who administered the survey were also involved in the pilot.

A group of 20 responses were sought to be able to ascertain some measure of validity from the survey tool.

Continence Nurse Advisers, Marrianne Johnson and Pat Duhring preparing the surveys for distribution.

Participants
The nurses targeted for participation in the research were drawn from remote, rural and regional centres in the geographic area. Approval from the Boards of the three participating Regional Health Services was achieved. To ensure relevance a comprehensive sampling technique was used. The Chief Executive Officer (CEO)/Executive Officer (EO)/Director of Nursing (DON) of each public sector health facility within the target geographical region were invited to distribute the survey to all of their nursing staff.
Procedure
In July 2004 the survey kits (survey, plain language statement and consent forms) were distributed to the health units by post with accompanying explanatory documentation. In total 1263 survey kits were distributed. Dispatch of the surveys was accompanied by media releases to local newspapers and television and radio stations across the three regions. Two reminder letters were then forwarded to the CEO/EO/DONs of each of the health units prompting them to distribute the survey kits to their nurses. Several of the health unit managers sought additional information so that local Boards could provide approval for participation in the Research. One of the DONs expressed their concern re distribution of a large number of survey kits. Assistance was provided in this instance.

Data Collation
As the surveys were received back, each was checked for consent, and filed. Inter-rater reliability was tested by the coding of the same surveys by the three coders to ensure that a high degree of reliability was assured.

Once surveys ceased being returned, arrangements were made to collate the information onto the Statistical Package for Social Sciences Package (SPSS). In early 2005 SPSS entry was complete and data was analysed for trends.

Power Analysis
The survey was designed to establish the proportion of nurses that require further education and support in dealing with continence issues. It is anticipated that the proportion is about 90% and it is required that the 95% confidence interval is within 4% of the point estimate.

The 95% confidence interval is \( p \pm 1.96 \times \text{SE}(p) \)
Thus \( 1.96 \times \text{SE}(p) = 4 \)
And \( \text{SE}(p) = 2.56 \) from students t test

\[
\sqrt{\frac{p(1-p)}{n}} = 2.56
\]
\[
p(100-p) = 2.56^2
\]
\[
n = \frac{p(100-p)}{6.5536}
\]

If \( p = 80\% \)
\[
N = \frac{90 \times 10}{6.5536} = 137.3
\]

Therefore it was required that at least 138 nurses in the three health regions be surveyed.

Given that only 77 surveys out of the 1263 (6.1% response rate) were returned the information gathered can not be considered statistically
significant. It is interesting to note that only 19% were returned from acute sector facilities only, and 75.7% came back from community based practice and mixed acute/residential care facilities. Naturally the largest numbers of nurses are employed in the regional centres, but from Whyalla, Pt Pirie and Pt Lincoln only one survey was returned from each site. Pt Augusta nurses returned 14 surveys, which comprised 18% of the total returned. Jamestown and Hawker had the next best returns respectively with 12% and 10% of the return rate respectively.

**Results**

**Age**
In common with publicised average ages of nurses within the state the average age of respondents was mainly over 36 years of age and 45% of all respondents were 46 years or more. This reinforces common understanding that workforce issues are paramount in rural and remote Australia.

**Length of service**
Of all who returned questionnaires, 34.7% were employed at their current workplace for 11 years or more. Also, 24% were in their first year of service at that workplace, and a further 26% had been with their current employer for 1-5 years.

**Years since graduated**
Incredibly, 46% of all those who returned surveys had been working as nurses for 21 years or more.

**Workplace type**
The majority of responses (54.5%) were gained from nurses working in mixed acute and residential care facilities. In rural and remote areas this type of service is common. Hospitals providing services to small country towns and sparsely settled surrounding areas generally have a number of permanent residential beds. This response reflects that the majority of responses to the survey where gained from areas that did not have a postcode of Pt Augusta, Pt Lincoln, Pt Pirie or Whyalla.

A further 18.2% of responses were from acute sector only facilities and this equalled the percentage of responses from community based health services.

**Postcode of response**
Only 22.1% of responses came from the major regional centres within the distribution area (Pt Augusta, Pt Lincoln, Pt Pirie or Whyalla). This reflects that there could have been a problem with the distribution of the surveys at these locations or that there is “survey exhaustion” or apathy from nurses working at these sites. Despite the backing of local and regional Boards of Health Services and other attempts to improve survey return rates, this phenomenon has been disappointing to the research team.
Other sites returning 9% or more include those with postcodes 5434, 5491, and 5690.

Understanding of the term incontinence

The majority of respondents (70 individuals or 90.9%) could identify that incontinence described that loss of urine. There were only 9 of these that stated loss of urine but failed to mention loss of faeces as an issue described by the term. Half (51.9%) of the respondents commented on the involuntary nature of incontinence.

This question required an open ended response. It is therefore encouraging that the majority of nurses responding to the survey could be identified as having an understanding of the term incontinence.

Further to this a few respondents indicated advanced understanding of the term and such responses are detailed hereafter. Only two respondents (2.6%) noted that incontinence is a symptom of an underlying disease. This is considered important in the literature when defining continence (Clayton, Smith, Qureshi & Ferguson, 1998). Three respondents (3.9%) made reference to the fact that incontinence accompanies other disease processes and cited “dementia”, “multiple sclerosis”, “cerebrovascular accident (CVA)”, and “motor neurone disease (MND)”. Two respondents noted that physical/psychosocial or environmental problems may trigger or result in incontinence.

Types of incontinence

Every respondent could list at least one type of incontinence. That most commonly identified was stress incontinence (72.7%), followed by faecal incontinence (49.4%). The most significant thing about this finding is that it identifies that when people use the term incontinence it is implied that they are describing urinary incontinence unless stated otherwise. This is reinforced by responses to the question requesting a definition of the term incontinence where nearly all responses included “loss of urine” and fewer referred to “loss of faeces”.

Urge incontinence was also identified regularly (44.2%) with overflow (37.7%), reflex (15.6%) and bedwetting (13%) being other terms identified at lesser frequencies.

These proportions of responses correspond with the frequency of occurrence of each of these categories of incontinence according to Roe and Doll (2000).

Causes of incontinence
Medical conditions such as cancer, diabetes (58.4%) and muscle tone weakness (58.4%) were the most commonly identified causes of incontinence in this survey. Specifically disorders of neurological function were cited by 49.4% of respondents. Pregnancy was listed by 44.2% to be a cause of incontinence. Other causes stated but by fewer respondents include infection (36.4%), surgical damage (28.6%), medications (20.8%), constipation (18.2%), and weight gain (15.6%).

Groups of people at risk of incontinence

Elderly people in residential care (75.3%) were identified as the most likely group to suffer with incontinence by these respondents. While this category is not the highest priority identified in the literature, it certainly is ranked in the top four categories of those at risk of incontinence (Thomas, 2000, 44). This discrepancy is possibly explained by the fact that the majority of responses were received from nurses working in aged care residential facilities. Women with multiple pregnancies (67.5%) and those with physical and neurological disabilities (58.4%) were also commonly identified as at risk of continence issues. Children were also listed by 27.3% of respondents as being incontinent as part of their usual growing pattern. It is therefore difficult to assess exactly how many nurses were differentiating between normal development of children and those children with ongoing continence issues such as nocturnal enuresis.

Other risk groups identified were people living in hostels or homeless (3.9%), ethnic minority groups (2.6%), and prisoners, refugees and asylum seekers (1.3%). This is reflective of the priority categories of those at risk of incontinence identified by Thomas (2000).

Estimates of indigenous clients

Respondents were asked to estimate the percentage of their clients that identified as indigenous. While not backed by statistics, it is interesting to note that 59.8% estimated that less than a quarter of their clients were indigenous, and that 17 nurses stated that they had no indigenous clients.

The wording of this question has since been identified as a possible source of confusion for participants of the survey. The local Aboriginal Liaison Officer based at Port Augusta Hospital has highlighted the fact that local aboriginals prefer to identify themselves as aboriginal and would rather that the term indigenous not be used as a descriptive or naming word. The heading for this section has retained the word indigenous to reflect the manner in which the question was asked in the survey. The term aboriginal shall be used hereafter.

Estimates of prevalence of incontinence in clients
Generally respondents reported a wide degree of variation when estimating prevalence of continence issues in their clients. Refer to table below.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>19.5</td>
</tr>
<tr>
<td>21-40%</td>
<td>11.7</td>
</tr>
<tr>
<td>41-60%</td>
<td>18.2</td>
</tr>
<tr>
<td>61-80%</td>
<td>18.2</td>
</tr>
<tr>
<td>81-100%</td>
<td>14.3</td>
</tr>
<tr>
<td>Unsure</td>
<td>16.9</td>
</tr>
</tbody>
</table>

Varying estimates of prevalence of incontinence in the literature also supports this scatter of prevalence estimates. This is mainly due to varying definitions of incontinence being used in different studies (Roe et al, 2000; Button, Roe, Webb, Frith, Colin-Thome & Garner, 1998; O’Brien, 1996, Australian Institute of Health and Welfare, 2006).

**Estimated client approaches re continence issues**

Of all respondents 15.6% stated that they were approached daily and the same proportion reported weekly approaches from clients regarding continence issues. As many as 40% stated that they were rarely or never approached by clients to discuss continence issues.

This seemingly high level of reported approaches may be explained by the type of worksite the nurses were working in at the time of the survey. A high percentage of respondents were working in residential care facilities and it is known that the risk of continence issues is greater for those elderly in residential care facilities (Norton, 1996).

**How often do nurses initiate continence discussions**

Questions about continence issues are asked routinely on assessment or admission by only about a quarter (24.7%) of the respondents. However 35.1% of nurses would question clients about continence management issues as part of regular health review. Reassuringly two thirds (59.7%) of respondents stated that they would initiate discussions regarding continence management with clients when a specific issue was detected or observed.

There exists the opportunity to promote the inclusion of questions regarding continence in all assessments and admission protocols.

**Action taken on detection of a continence issue**

It is clear from the literature that nurses have responsibility to undertake comprehensive assessment of each individual to identify the cause of the incontinence (Thomas, 2000 & Cheater, 1996).

Most commonly nurses identified that they would refer a client with a continence issue to a Continence Nurse Adviser (CNA) (70.1%). This may be
partly explained by the Henderson effect. Given that the survey was issued from the worksite where local CNAs are based a heightened awareness of this service could have provided a false high response to this question. It can also be interpreted as reassuring that a wide number of nurses working in the three Regional Health Services are aware of the CNAs.

Other popular options for management of identified continence issues included performance of an assessment (55.8%), referral to a GP or Urologist (37.7%), discussion of issue with the client and/or carer (24.7%). Less popular options of management included assessment of mental status, maintaining a Fluid Balance Chart (FBC), urinalysis, provision of information and support, checking on availability of local resources including the internet, medication review and referral to physiotherapist. Insertion of an indwelling catheter was a viable option for 5.2% of respondents.

Options not highlighted in responses to this question included assessment of physical mobility, home layout or equipment, or arranging for a bladder scan to be performed. This indicates an opportunity to further promote the range of resources available to the CNAs at Port Augusta and education about appropriate reasons for referral of clients to access these resources.

Resources available locally to help nurses manage continence issues

Another example of the Henderson effect may have been that the most common local resource identified was the CNAs based in Port Augusta (40.3%). A further 39% mentioned CNAs without being location specific. This confirms that of the nurses responding to this research, a majority of nurses are aware of the existence and at least some of the role of CNAs in the management of continence issues.

Other local resources identified but at a reduced level included colleagues and peers, General Practitioners (GPs) and Medical Officers, printed material, Product representatives, the Continence Foundation of South Australia, the National Continence Hotline, and Physiotherapists.

Remarkable omissions from locally available resources included stomal therapists and stomal associations and interstitial cystitis support groups.

How nurses rate their own continence knowledge

Given four options to rate their own continence knowledge (excellent, good, fair and poor) nurses mostly felt that they held fair continence knowledge (59%). Only 1 nurse expressed their knowledge as excellent and a further 33% rated their knowledge as good. Eight percent rated their continence knowledge as poor.

Barriers to provision of assistance to people with continence issues
The single most identified issue associated with treatment of continence issues was nurses' own perceived lack of knowledge or lack of confidence in dealing with continence issues (42%), closely followed by patient non-compliance (40%). Other factors identified by more than 20% of respondents included access to resources, workload and isolation. Less common barriers included lack of support by colleagues and medical officers, and inability to access supplies, aids and appliances.

Nurses that seek advice to assist in continence management

The majority of respondents (87%) stated that they have sought advice to assist in the management of continence issues. Of those nurses that seek advice in the management of continence issues, almost half (46%) contact a continence nurse advisor for assistance and guidance. Others sources of assistance cited included colleagues (18%) and medical officers (10%) and there were two references to ultrasound.

Attendance at continence education in previous 12 months

Of all respondents, sixteen (21%) had attended continence education in the last 12 months. The majority of these had attended an inservice provided at their worksite. Another mentioned education received on orientation to the worksite and three noted that they had attended inservices off site.

Regular continence management information

Sixteen respondents stated that they regularly received information regarding continence management. The majority of these reported written information including journals, books and brochures (7) and access to a library (6). Four others reported information received from Manufacturing company representatives.

Access to information about current continence appliances

More respondents stated that they had access to information about current continence aids and appliances (56%) than those that stated they did not have access to such information.

Access to current continence aids and appliances

The most commonly identified continence aids and appliances were incontinence pads (91%), catheters (39%), penile sheaths or uridomes (34%), and kylie sheets (29%). Less frequent responses included blueys, equipment (commodes, urinals etc.), and stomal appliances.

Budgets for continence products

When asked if the worksite had a budget for continence products, 33% of respondents were unsure and 21% said that they were unaware of such a budget. Of the 32% that stated that their worksite had a budget for continence products, only one was able to provide an estimate of an annual budget specifically for continence products.

What would improve the quality of continence management
A wide variety of responses was gained to this question. Most popular response was provision of staff education at local venues (38%). Next most popular response was provision of community health information nights or sessions (18%). Local availability of printed material, staff education opportunities at a venue not stated, education regarding continence appliance schemes and how to access them, and assistance with early intervention projects for local implementation were also popular responses. Less frequent responses recommended newsletters circulated regionally and provision of extra education about appliances and aids available.

**Most important factors to maintain own professional development**

This question provided some options and encouraged respondents to pick the most important three items. Allowance was made for respondents to add their own item if not included in the list. The table below highlights the most important factors chosen by respondents to assist them in maintaining their own professional development and therefore competence in practice.

<table>
<thead>
<tr>
<th>Important factor for professional development</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to education programs</td>
<td>1</td>
</tr>
<tr>
<td>Support from management</td>
<td>2</td>
</tr>
<tr>
<td>Organisational commitment to professional development</td>
<td>3</td>
</tr>
<tr>
<td>Support from peers and colleagues</td>
<td>4</td>
</tr>
<tr>
<td>Budget issues</td>
<td>5</td>
</tr>
<tr>
<td>Distance of worksite from nearest regional centre</td>
<td>6</td>
</tr>
<tr>
<td>Access to professional library, journals, internet etc.</td>
<td>7</td>
</tr>
<tr>
<td>Access to professional networks</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
</tr>
<tr>
<td>Size of worksite</td>
<td>10</td>
</tr>
<tr>
<td>None of the above</td>
<td>11</td>
</tr>
</tbody>
</table>

**Factors that inhibit your ability to maintain own professional development**

This question sought ranking responses similar to the previous question. The results are summarised below.

<table>
<thead>
<tr>
<th>Inhibiting factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to education programs</td>
<td>1</td>
</tr>
<tr>
<td>Distance of worksite from nearest regional centre</td>
<td>2</td>
</tr>
<tr>
<td>Budget issues</td>
<td>3</td>
</tr>
<tr>
<td>Support from management</td>
<td>4</td>
</tr>
<tr>
<td>Organisational commitment to professional development</td>
<td>5</td>
</tr>
<tr>
<td>Access to professional networks</td>
<td>6</td>
</tr>
<tr>
<td>Size of worksite</td>
<td>7</td>
</tr>
<tr>
<td>None of the above</td>
<td>7</td>
</tr>
<tr>
<td>Access to professional library, journals, internet etc.</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
<tr>
<td>Support from peers</td>
<td>9</td>
</tr>
</tbody>
</table>

**Inability to participate in education programs in past 12 months**
Of the respondents, 40% stated that they had been prevented from attending education programs over the previous 12 months and the reasons stated are detailed in the table below.

<table>
<thead>
<tr>
<th>Inability to attend factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost/budget</td>
<td>1</td>
</tr>
<tr>
<td>Staffing/workload</td>
<td>2</td>
</tr>
<tr>
<td>Accommodation/distance/travel</td>
<td>3</td>
</tr>
<tr>
<td>Support from management</td>
<td>4</td>
</tr>
<tr>
<td>Paid leave</td>
<td>4</td>
</tr>
<tr>
<td>Length of course/timing of course</td>
<td>5</td>
</tr>
<tr>
<td>Childcare</td>
<td>5</td>
</tr>
<tr>
<td>Other study demands</td>
<td>6</td>
</tr>
</tbody>
</table>

Conditions to encourage attendance at Regionally based education programs

Once again respondents were asked to rank their responses as the three highest encouraging factors to enable or encourage their attendance at education programs based within the Region. The results are summarised on the following table.

<table>
<thead>
<tr>
<th>Factors that encourage attendance</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate topic to meet needs/interests</td>
<td>1</td>
</tr>
<tr>
<td>Education available locally</td>
<td>2</td>
</tr>
<tr>
<td>None of the above</td>
<td>3</td>
</tr>
<tr>
<td>Paid leave to attend education</td>
<td>4</td>
</tr>
<tr>
<td>Cost</td>
<td>5</td>
</tr>
<tr>
<td>Accommodation/travel/meals assistance</td>
<td>6</td>
</tr>
<tr>
<td>Length/timing of course</td>
<td>7</td>
</tr>
<tr>
<td>Support from management</td>
<td>8</td>
</tr>
<tr>
<td>Staffing of local worksite</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
<tr>
<td>Distance of worksite from regional centre</td>
<td>11</td>
</tr>
<tr>
<td>Education offered in a variety of formats to meet needs of remote area units</td>
<td>12</td>
</tr>
<tr>
<td>Childcare</td>
<td>13</td>
</tr>
<tr>
<td>Access to professional library, journals, internet etc</td>
<td>14</td>
</tr>
</tbody>
</table>

Educational formats that enhance learning

Respondents were asked to use a Likert scale to remark on a variety of educational formats to provide information about teaching methods that are more effective than others for learning. The results are summarised below.
### Education format

<table>
<thead>
<tr>
<th>Education format</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>1</td>
</tr>
<tr>
<td>Group work</td>
<td>2</td>
</tr>
<tr>
<td>Audiovisuals</td>
<td>2</td>
</tr>
<tr>
<td>Problem solving</td>
<td>3</td>
</tr>
<tr>
<td>Retelling personal experiences</td>
<td>4</td>
</tr>
<tr>
<td>Practice activities (e.g. CPR training on mannequins)</td>
<td>4</td>
</tr>
<tr>
<td>Debates</td>
<td>4</td>
</tr>
<tr>
<td>Role Play</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
</tbody>
</table>

**Other comments**

An open ended question invited comment from respondents. A number of responses were received. Comments that were reinforced by more than one respondent are listed below.

- Information handouts for clients/patients
- Manuals for hospitals or community centres
- Survey should extend to care providers other than nurses

A remarkable comment for inclusion here stated that continence was a community issue and “not an acute sector problem”.

### Evaluation and acceptability

Of the surveys returned this research has gathered vital information regarding the continence knowledge of rural and remote nurses in South Australia. It has also provided insight into professional development requirements for these nurses and ways to improve accessibility and effectiveness of education programs within this region.

Despite the low return rate the responses gained do provide real and relevant information to local Continence Nurse Advisers about ways to promote their services, priorities for advancing the continence knowledge of nurses in the region and also information about how to develop meaningful and accessible professional development programs.

It should also be noted here that the Henderson effect may also have been a contributing factor that may have provided false high responses referring to awareness of the CNAs and their programs provided from their Port Augusta base.


**Discussion**

The qualitative analysis was performed to establish a baseline for:

- Identification of service gaps;
- Education program planning;
- Structuring support services;
- Development of resources;
- Maintaining current service delivery;
- Advocating for service development; and
- Coordination of Outreach programs.

These issues were identified as important by Norton (1996) in her research about best practice for continence services and the roles of specialist Continence Advisors. The survey was able to establish some data that would prove useful in planning for future service expansion and planning for education provision.

Regional Board approval from each of the Area Health Services involved was obtained for the research.

**Return rate**

Low return rate of questionnaires must be discussed with a less than 10% return rate. Every government nurse working in the three regions should have received a Continence Survey Kit. Numbers of nurses employed within the regions were obtained via the Human Resource Managers.

This survey was distributed via Directors of Nursing (DONs) or Executive Officers (EOs) of each Area Health Service facility with the approval of Regional Area Health Service Boards. DONs/EOs were requested by letter to distribute the surveys to their nursing staff, and asked to contact the research team if there were any problems. Follow up letters, some phone calls and media releases coincided with the mailout.

Several DONs/EOs contacted the research team to seek further information about the research and in one case assistance was requested with distribution of the surveys. Despite this distribution technique low return rates resulted.

**Workforce issues**

In May 2001 the average age of nurses in the workforce was 42.2 years of age (Australian Institute of Health and Welfare, 2001). The continence survey found that 36% of respondents were aged 36-45 years of age and 35% were aged 46-55 years of age. The ageing workforce in the area covered by the survey is supported by the fact that 46% of respondents have been qualified as nurses for 21 years or more.

Respondents were also asked to describe the length of time that they had been employed at their current worksite and not surprisingly more than 50% responded to 5 years of less. 11% had worked at the current worksite for
more than 21 years. This supports the view that rural and remote regions have high turnover of staff and invest significant amounts of energy into retention of staff.

As the majority of surveys returned were from experienced nurses, this could allow for several assumptions to be made regarding the low return rate. It may dispel the theory that there exists a phenomenon of “survey exhaustion” in our regions. If experienced and competent nurses are the ones who returned the survey in the majority another interpretation could be drawn. This could mean that responses from experienced nurses were returned because they are aware of the high occurrence of continence issues in their everyday practice and as a result were hopeful that participation in this research could provide outcomes that will help them to ultimately manage the continence issues more confidently and proficiently.

An ageing workforce also has several implications for planning for the future. All acquired knowledge held by these nurses needs to be acknowledged and valued. It also provides opportunity for innovative approaches to knowledge transfer and sharing. Any education programs to be prepared as a result of this survey need to recognise this practice based experiential learning.

Also to be considered are the implications for the lifespan of this workforce and therefore a succession plan for transfer of skills and knowledge should also be paramount to future planning. A reasonable proportion of respondents had been working in their current workplace for less than 5 years so this may also indicate that there are significant transient populations of nurses working within the Area Health Services also. Therefore education programs should be designed to maximise knowledge transfer between professionals on the worksite in an ongoing fashion.

With an ageing workforce, there comes the assumption that there is advanced career long professional knowledge. This advanced knowledge was not assessed in this survey, but more specifically the nurse’s knowledge in the area of continence management.

Worksite and workplace

The majority of responses were received from mixed residential care and acute facilities. This indicates that the majority of responses came from smaller regional settlements within the survey area and poor responses were received from the four larger regional centres.

Three communities showed high response rates in comparison to the number of surveys distributed at those locations and this demands acknowledgement. These worksites are to be commended for their commitment to the research process.
Continence knowledge

Urinary continence is defined as “the involuntary loss of urine which is objectively demonstrable and a social or hygienic problem” (Anderson, 1988 cited in Cheater, 1996). Incontinence may also refer to the involuntary loss of faeces (Clayton et al, 1998; and Rhodes, 1995).

Incontinence is not generally considered a life-threatening disease. It can seriously affect the physical and physiological health of people and can have a devastating effect on people’s social lives (Rhodes, 1995). Incontinence is not a disease process. Incontinence is a symptom of an underlying physical, psychosocial or environmental problem (Clayton et al, 1998). 92% of respondents identified loss of urine as a key component of incontinence. Only 79% identified loss of faeces specifically.

A majority of respondents were able to define incontinence in a satisfactory manner. Three nurses also demonstrated an advanced ability to define incontinence. This is indicative of the Regions having some local nurses with expertise in continence issues. This was reflected by subsequent responses to questions about the management of continence issues.

Causes of incontinence were answered satisfactorily, but there now exists evidence of opportunity to improve nurses knowledge in this area. Not surprisingly the elderly in residential care were identified as a group at high risk of developing continence management issues. This also reflects the large number of nurses that responded from mixed residential/acute care facilities.

Aboriginal clients

It is known that the Northern and Far Western Regional Health Service has the highest percentage of aboriginal population in the state of South Australia. Therefore it is surprising in this survey of public sector nurses that so few identified contact with high numbers of aboriginal clients. This may be partially explained by the fact that there exist aboriginal specific health services established in the geographic area surveyed. Staff at these facilities were not surveyed as part of this survey.

This under presentation of aboriginal clients at Regional Health facilities is a discovery quite remarkable, but the reason for this remains beyond the scope of this research project. It certainly highlights an area for future investigative research to pursue. What is known is that there are a number of aboriginal health services well established within the Regions. Further survey of the staff employed in these facilities may ascertain the knowledge and education requirements of the staff at these facilities. This would also provide opportunity to investigate the numbers of aboriginal people presenting with continence issues at these facilities.
Estimated prevalence of continence issues

Varying estimates of prevalence of incontinence exist in the literature. This is mainly due to varying definitions of incontinence being used in different studies (Roe et al, 2000; Button et al, 1998; O'Brien, 1996, Australian Institute of Health and Welfare, 2006).

There was a wide range of estimates of prevalence of continence issues offered by respondents. This may be partly explained by the three workplace types, being residential/acute care, community based and acute sector facilities. More than two thirds of respondents estimated prevalence of continence issues in more than 40% of their client base. Given that the majority of respondents were not working in the acute sector, the variety of prevalence values provided through the survey indicates higher prevalence than that expected from the literature review.

This is most remarkable because some nurses seem to have overestimated the prevalence of clients with continence issues or that there is an abundance of clients with inappropriate management of their continence issues in our area. This may not simply be overestimation but rather an indication of the number of clients in our area that are not receiving adequate management of their continence issues.

Continence assessments

Nurses were asked to estimate the frequency with which they were approached regarding continence management issues. From the results of this research as many as 40% stated that they were rarely or never approached by clients to discuss continence issues. This phenomenon is supported by Jirovec, Wyman & Wells (1998) who report that the symptoms of incontinence are widely underreported and under diagnosed.

However nurses were also questioned about the frequency with which they question clients about continence issues and these results were low. It seems that three quarters of clients in the public sector are never questioned about continence issues as part of a routine admission assessment. There is scope here for units to review Nursing Assessment processes. This would require all assessments to encourage questioning regarding continence issues and is supported by best practice evidence (Thomas, 2000).

Once identification of a continence issue occurred two thirds of the nurses felt confident enough to perform a more specific continence assessment. Others however felt that their first option would be to contact a Continence Nurse Advisor (CNA). This is considered a satisfactory option only when other attempts at assessment and management have occurred locally.

Furthermore when nurses were asked to rate their own knowledge regarding continence management it became clear that significant proportions of the nurses lacked confidence to deal with continence management issues. It also became apparent that significant numbers of nurses lacked the knowledge of what resources are available to them locally and regionally.
Provision of education and resources to support nurses at each worksite would enhance nurses’ confidence to better assess and manage continence issues.

Resources for continence management
The most common cited resource for support in continence management were Continence Nurse Advisers (CNAs). This is encouraging as it seems that most respondents were aware of the CNAs based in Port Augusta and the programs that they administer. Certainly a majority of the respondents stated that they had accessed the CNAs for support in the management of continence issues. The research was unable to ascertain whether the nurses were fully aware of the range of resources that the CNAs can utilise in the management of continence issues. There were only two references to ultrasound resources. This implies that there is scope for greater promotion of the role of the CNAs and the resources that they have access to. These resources include bladder scan and more recent purchase Neotonus Chair for treatment purposes.

Few respondents stated that they had regular access to information regarding continence management. Few referred to written information including journals, books and brochures or a local health library. Only four respondents reported Manufacturing company representatives as sources of information. This all indicates opportunity to promote ways in which rural and remote nurses can access information via the Department of Health Library over the internet or by phone, National continence foundation and other similar websites, and support networks such as the Interstitial Cystitis Group. Availability of, and access to, the internet was not assessed in this survey.

Access to other physical resources such as continence aids were also investigated. Almost all respondents identified incontinence pads as aids for use in continence management. Only half however stated that they had access to information regarding the range of continence aids and appliances available for use. There was poor knowledge regarding the budget allocations for continence aids and appliances of local facilities. A large proportion of respondents unaware of the budget allowances or implications of the cost of these appliances at their own worksite. This also provides important implications for local facilities to share information about budget implications of continence aids and appliances to gain greater economic efficiencies in the use of continence aids and appliances.

There were a proportion of respondents that noted attendance at continence specific education in the previous 12 months. This is encouraging given the inherent difficulties for rural and remote staff to access education sessions either locally or regionally. Significant also to note is that a small number of respondents received education specifically about continence management as part of their orientation to the worksite. This also provides opportunity for each worksite within the survey area to review their orientation plans to ensure that they include information about continence management and availability of resources.
Respondents provided a variety of responses when asked how continence management could be improved for them as individual nurses. Most preferred responses were provision of local education at the worksite. Other responses embraced a primary health care approach by providing community information sessions as well as education for nurses. A smaller number requested locally available printed material to support nurses in the management of continence issues. These responses provide valuable insights for primary health care and community nurses across the regions, but also provide insight for the CNAs based in Port Augusta when considering program expansion.

**Professional Development**

The final questions in the survey document related to provision of professional development. This was designed to ascertain information about how to encourage attendance at education sessions, preferred learning styles and to identify enabling and inhibiting factors affecting attendance at regionally based education sessions.

The single most important enabling factor for nurses to attend professional development programs was accessibility. This was supported further by other enablers including management support, organisational commitment to professionals development support from peers and colleagues, budget and distance of worksite from nearest regional centre. In short, all of these factors are of high importance when supporting professional development. Rural and regional areas inherently have less opportunity to access professional development simply due to their distance from capital cities. This results in access to professional development being dependent on staffing, budget, access to transport and distance to the venue.

Given that a large proportion of responses came from smaller remote communities, it is not surprising that several factors were identified as inhibiting factors for attending education sessions. These included distance from a regional centre and staffing workload issues. In remote units the staffing replacement can be difficult due the limited number of staff available to backfill roster vacancies should staff wish to travel away to attend education. Then there are the budgetary considerations of the cost of the backfill and cost of travel, accommodation and meals whilst the nurse is away.

More than a third of respondents have been unable to attend professional development in the previous 12 months due to all of the forementioned reasons. Also included in the nurses responses were availability of childcare, the length and timing of the course and other study demands.

It is therefore not surprising that nurses responses included these factors when ranking factors that would encourage them to attend regionally based education programs. Nurses highest priority was that the topic be of interest to them and meet the needs of their worksite. Also of high priority was the availability of the education and nurses responded that local education programs were required.
Nurses were also asked to respond on the educational formats that enhanced their learning. These results are of interest when designing future education programs. The lecture style was ranked highest and closely followed by group work and audio visual formats. Problem solving, retelling personal experiences, debates and practice activities were also highly regarded.
**Conclusion**

This research is important because it is the only survey of rural and remote nurses that has investigated their continence knowledge. It has also investigated enabling and inhibiting factors regarding access to education programs. This research has specifically identified rural and remote public sector nurses working in rural and remote South Australia.

This research has been designed to assist in the service expansion of an existing continence program that currently delivers continence management and education services to individuals and staff in three Regional Health Services in South Australia. A descriptive analysis study design was employed with use of a funding grant from the Australian Government National Continence Management Strategy.

Nurses in this geographic region have been found to have sound continence management knowledge. These nurses however lack the confidence to pursue continence management assessments and treatments individually despite having found that the majority have sound baseline knowledge to do so.

This research indicates that nurses are seeking out support when they lack the confidence to proceed with continence management plans themselves. This is encouraging, but the results also suggest that more could be done to promote the resources available to the nurses locally, regionally and nationally.

The research identifies that significant numbers of public sector nurses report very minimal contact with aboriginal people. It would be beneficial through further investigation to better understand the reasons for this small amount of contact, and how aboriginal people with continence issues are having their needs met.

This research has also identified significant inhibitors to nurses in rural and remote areas accessing education programs. Distance from nearest Regional centre and availability of staff to fill the gaps in rosters when nurses are absent from the worksite for the purposes of attending education are seen to be the most significant factors that inhibit nurses from attending education programs. Nurses in this survey have reported that they have been unable to attend education programs because of these issues. Accommodation, access to vehicles, child care, wages for training and wages for backfill and indeed the cost of the education itself are all factors that are disadvantaging nurses in rural and remote areas. Further research into the true costs and burdens on rural and remote worksites would be beneficial to developing a deeper understanding of these inhibiting factors.

Nurses themselves identified via the survey that other providers of care working within the geographic area would also benefit from survey to ascertain their needs with regard to management of continence issues. While beyond the scope of this research, this would be an interesting topic for future
studies, and would also assist in the planning for service expansion of the current Continence Management service offered via the Continence Nurse Advisers based at Port Augusta Domiciliary Care Team.

While this research has provided encouraging information about nurses in this region with sound continence knowledge and ways that they would like to receive education programs designed to build on this knowledge, it has also identified large gaps in our knowledge of the Region, its staff and its population.

Factors requiring further follow up to support nurses and the general community in managing continence issues include:

- Local review of general nursing assessment forms and procedures to ensure nurses are prompted to assess urinary and bowel status on admission and at review.
- Provision of information and resources locally to enhance nurses ability to perform continence assessments and implement treatment plans with confidence.
- Recognition of nurses locally who are providing continence management and care at a high level of proficiency.
- Promotion of the role of the Continence Nurse Advisors based at Port Augusta and the resources available through their clinics. This also involves promotion of the identity of other continence experts within the Regions surveyed.
- Provision of education programs locally to support and advance nurses knowledge where necessary regarding continence management.
- Recognition of the role of research within the Regions and development of policy, procedures and networks to support further research in continence or any field.
- Investigation of continence issues presenting in rural and remote aboriginal populations.
- Investigation of non public sector and non nursing care providers regarding their continence knowledge.

The poor response rate to this survey has resulted in a narrowing of our understanding of the prevalence of issues identified in this report. Regardless the issues identified and the knowledge gained from those nurses that did participate have provided essential information for service planning and delivery.

The public of rural and remote South Australia can be assured that nurses working in our region have depth of experience, sound continence management knowledge and access to resources that will enable them to gain the support they require to manage their continence issues.

Nurses in rural and remote South Australia will benefit from the expansion of the Continence programs based within the Port Augusta Domiciliary Care Team given that program expansion will be directed by the results provided by this research.
References


