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Direct patient contacts of dietetic students during their final clinical placement

Susan Torres, Jane Winter, Helen Matters and Caryl Nowson

Abstract Direct student-patient contacts, during the professional clinical placement of a Master of Nutrition and Dietetics course, were collected and analysed for the first time using a computerised method. In the final eight-week hospital placement, 26 dietetic students submitted data on direct patient contacts which included: dietetic activities (e.g. assessing, counselling and reviewing); the primary nutritional condition of the patient (e.g. type 2 diabetes and liver disease); and the time spent in contact with patients. The most common dietetic activities were reviews, followed by collection of dietary information and counselling. The most common nutritional condition encountered by students was an inadequate nutrient intake, followed by patients receiving enteral nutrition. Contact time with patients increased over the placement, with proportionately more time spent by students seeing patients independently than when being observed by supervising dietitians. The data collected provided valuable information on the amount of time spent by students in direct patient contacts, the range of dietetic activities undertaken and the amount of time student activities were directly observed. This information will be useful in the development of benchmarks for clinical skill development, hospital and university staff planning and the assessment of the impact of any changes to the format of student placement experience in the clinical setting. (Nutr Diet 2002;59:18–22)

Key words: clinical placement, dietetics, education, students, computerised

Introduction

An essential component for the development of clinical skills for students of the Master of Nutrition and Dietetics course (two-year program) at Deakin University, Australia, is the hospital-based practical placement. During this placement, dietetic students develop skills in the assessment and nutritional management of patients with a wide range of clinical conditions. As students proceed through their clinical placement, they become proficient in collecting relevant patient data, conducting counselling sessions and managing a patient workload. Dietetic students learn to work independently, requiring less direct supervision from the hospital dietitians by the end of their placement, although this has never been measured quantitatively by Deakin University. Institutions involved in the training of medical students have collected data on patient contacts with a view to studying the allocation of time spent in patient-related activities (1–4) and as a tool for both supervisors and students to monitor the achievement of placement objectives (5). Without a computerised method of data collection and analysis, it has been difficult to assess the exposure of dietetic students to different nutritional conditions, or to obtain information on the number of diet histories or counselling sessions conducted throughout the placement. Moreover, it has been difficult to make a comparison of students' experiences at different hospital sites. To date, no tertiary institution in Australia involved in the training of dietetic students has formally published data on student contacts with patients in a hospital setting.

This paper summarises data of student-patient contacts collected during 1999 from last year Master of Nutrition and Dietetics students throughout the last eight-week hospital placement, and discusses the future use of this computerised method of data collection for the hospital-based clinical program.

Methods

Seventeen hospitals participated in the final eight-week hospital placement conducted during August and September 1999. Ten of these hospitals were defined as major teaching hospitals, based on the criteria of the hospital employing at least three effective full-time dietetic staff and having specialist units such as renal, gastroenterology and intensive care. The remaining seven hospitals, which did not meet both of these criteria, were defined as regional hospitals. Students attended the hospitals for four days per week for the first five weeks with one day per week at university, and then five days per week for the remaining three weeks. The eight-week placement also incorporated a one-week paediatric placement that was held either at a children's hospital, one of the major teaching hospitals or a community health centre. Students were placed individually, as pairs or in groups of three.

Students were provided with an electronic Microsoft Excel (Microsoft Corporation, Redmond, WA, USA, Microsoft Excel, version 97, 1996) spreadsheet template for data entry and an education session to demonstrate data entry techniques. To monitor progress and to ensure correct data entry, students submitted an electronic record of their direct, or face-to-face, student-patient contacts to the university on a weekly basis either from home or from their placement site. The information collected is listed below.

Type of dietetic activity. Students were supplied with a list of dietetic activities and descriptions to ensure accurate recording of data. The activities included:

- assessment, i.e. collection of biochemical, medical, anthropometric and social data from the patient;
- abbreviated diet history that focused on the collection of information relevant to the dietary management of a patient, for example, fat and refined carbohydrate intake from an obese patient and any social data related to dietary intake;

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where patients had one or more nutritional conditions: type 2 diabetes, cardiovascular disease and renal disease. The primary nutritional condition for students placed at either a major teaching or regional hospital were compared (Figure 3). Students who were placed at regional hospitals had significantly more contacts with patients who had type 2 diabetes, liver disease, those receiving total parenteral nutrition, and pregnant and lactating women ($P < 0.05$). There were comparable experiences between regional and major teaching hospitals for the remaining disease types. The mean number of contacts with patients was not significantly different for students at regional hospitals ($177 \pm 17.1$, mean $\pm$ SEM) compared with major teaching hospitals ($147 \pm 10.8$, mean $\pm$ SEM), $P = 0.14$.

Table 1 compares the mean time spent in each dietetic activity during weeks one to three and weeks six to eight. Students spent significantly more time counselling, reviewing and assessing in weeks six to eight compared with weeks one to three. In contrast, there was no significant difference observed with time spent collecting dietary information.

From week one to week seven the total amount of time in contact with patients increased (Figure 4). Student assessment was conducted in week eight. Observed time task included lack of access to computer facilities and chronic illness for the duration of the placement.

The most common dietetic activity conducted by students was review, followed by diet histories and counselling sessions (Figure 1). Students had few contacts with patients in a group setting.

The most common nutritional condition encountered by students was an inadequate nutrient intake, followed by enteral nutritional support of patients and type 2 diabetes (Figure 2). Few contacts were made with patients who had liver disease or HIV/AIDS.
reached a peak in week three but then declined to levels similar to weeks one and two. Throughout the placement, proportionately more time was spent by students without the direct observation of a dietitian. Significantly more time was spent in unobserved activities during weeks six to week eight when compared to weeks one to three \( (P < 0.05, \text{Table 2}) \).

Throughout the placement the proportion of an average student's workday engaged in patient activities was determined (Table 2). As the placement progressed a greater percentage of the working days were spent in direct patient-related activities, reaching a peak at week seven and then declining in week eight, which coincided with the student's final clinical assessment.

Figure 2. Mean number of direct student-patient contacts for each primary nutritional condition during the eight-week clinical placement (mean ± SEM, \( n = 26 \))

![Figure 2](image)

Figure 3. Mean number of direct student-patient contacts for each primary nutritional condition during the eight-week placement, according to hospital grouping (mean ± SEM)

![Figure 3](image)
Discussion

Assessment of student-patient contacts by dietetic students during their final professional placement indicated that the most common dietetic activity was performance of reviews. Although data on patient workload were not collected, the high number of reviews was probably due to an individual patient being reviewed a number of times during his or her hospital stay. This would be expected, for example, for patients receiving nutrition via the enteral route who can have lengthy admissions and nutritional management that requires a daily review by a dietitian. In the initial weeks of their placement it was also found that dietetic students focused on nutritional assessment of patients, including the collection of dietary information, whereas time spent counselling patients increased in the latter phase of the placement. Dietetic students in this Master of Nutrition and Dietetics course have a seven-week initial clinical placement, during which there is the expectation that most will start developing skills in nutrition assessment, but most will not reach the stage of dietary counselling. This final eight-week placement sees the consolidation of those nutritional assessment skills in the early weeks with progression to the development of dietetic counselling skills in the latter part of the placement. This pattern of professional development was evident from the student records.

Group education is effective in improving patient outcomes (6), and this has been demonstrated in programs conducted by dietitians (7). Most patient contacts were at the individual level rather than in a group setting, and this may have been due to limited opportunities for students to participate in group education settings. Opportunities for student involvement in group education sessions should be encouraged as dietitians are often required to provide group education.

Students overall had a greater number of contacts with patients receiving enteral nutrition than with those receiving total parenteral nutrition. This may be explained by the general trend observed in hospitals overseas in the reduction in the use of total parenteral nutrition and a greater reliance on enteral nutrition (8,9). This trend is occurring in Australia. This finding has important implications for the future where total parenteral nutrition becomes more of a specialty area of dietetic practice and not available to most students during an entry-level course.

Deakin University has developed professional placement curriculum guidelines to ensure dietetic students obtain entry-level skills, as outlined by the Dietitians Association of Australia (10), in the management of a range of nutritional conditions. The documentation of student-patient contacts has enabled the placement coordinators to assess the breadth of student experiences in this area and to compare experiences between major teaching and regional hospitals. Interestingly, the students who attended the regional hospitals did not experience a reduced range of patients or less contacts with patients

Table 1. Mean time (minutes) per week that students spent on each dietetic activity (mean ± SEM, n = 24) *<sup>a</sup>,<sup>b</sup>

<table>
<thead>
<tr>
<th>Week</th>
<th>Diet history</th>
<th>Counselling</th>
<th>Reviewing</th>
<th>Assessing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34.3 ± 5.0</td>
<td>12.0 ± 4.1</td>
<td>6.1 ± 2.7</td>
<td>13.3 ± 6.9</td>
</tr>
<tr>
<td>2</td>
<td>49.9 ± 7.2</td>
<td>33.9 ± 6.5</td>
<td>28.0 ± 9.7</td>
<td>42.3 ± 15.2</td>
</tr>
<tr>
<td>3</td>
<td>58.9 ± 8.5</td>
<td>42.6 ± 6.0</td>
<td>66.8 ± 12.5</td>
<td>61.7 ± 15.9</td>
</tr>
<tr>
<td>Mean</td>
<td>47.7 ± 7.2</td>
<td>29.5 ± 9.1</td>
<td>33.6 ± 17.7</td>
<td>39.1 ± 14.1</td>
</tr>
</tbody>
</table>

<sup>a</sup> Two students entered insufficient time data and were excluded from this part of the analyses.

<sup>b</sup> Significant difference between the mean for weeks 1 to 3 versus mean for weeks 6 to 8, P < 0.05, unpaired t-test.

Figure 4. Mean time per week spent by students observed versus unobserved by the hospital dietitian, (mean ± SEM, n = 25) *<sup>a</sup>

<table>
<thead>
<tr>
<th>Week</th>
<th>Observed (minutes)</th>
<th>Unobserved (minutes)</th>
<th>Percentage of work day (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>109.4 ± 20.5</td>
<td>153.0 ± 41.7</td>
<td>14.4</td>
</tr>
<tr>
<td>2</td>
<td>236.6 ± 30.5</td>
<td>167.8 ± 37.2</td>
<td>22.2</td>
</tr>
<tr>
<td>3</td>
<td>282.2 ± 36.9</td>
<td>212.2 ± 29.3</td>
<td>27.1</td>
</tr>
<tr>
<td>Mean</td>
<td>209.4 ± 42.2</td>
<td>177.7 ± 14.5</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Significant difference between observed versus unobserved, P < 0.05, unpaired t-test.

Table 2. Mean time (minutes) per week that students spent observed and unobserved, and the percentage of the work day spent in direct patient contact (mean ± SEM, n = 25) *<sup>a</sup>,<sup>b</sup>

<table>
<thead>
<tr>
<th>Week</th>
<th>Observed (minutes)</th>
<th>Unobserved (minutes)</th>
<th>Percentage of work day (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>191.6 ± 27.1</td>
<td>552.0 ± 47.2</td>
<td>32.0</td>
</tr>
<tr>
<td>7</td>
<td>205.6 ± 37.3</td>
<td>589.8 ± 61.2</td>
<td>34.9</td>
</tr>
<tr>
<td>8</td>
<td>145.6 ± 29.6</td>
<td>512.0 ± 58.2</td>
<td>28.8</td>
</tr>
<tr>
<td>Mean</td>
<td>180.9 ± 14.8</td>
<td>551.3 ± 18.4</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> One student entered insufficient data on supervision status and was excluded from this part of the analysis.

<sup>b</sup> Significant difference between observed versus unobserved, P < 0.05, unpaired t-test.

Table 3. Mean time (minutes) per week that students spent observed and unobserved, and the percentage of the work day spent in direct patient contact (mean ± SEM, n = 25) *<sup>a</sup>,<sup>b</sup>

<table>
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<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> One student entered insufficient data on observation and was excluded from this part of the analyses.

<sup>b</sup> Significant difference for the time spent observed versus unobserved, P < 0.05, unpaired t-test.
when compared with students who attended a major teaching hospital. There was a greater number of student-patient contacts in some particular diseases, such as type 2 diabetes and liver disease, in regional hospitals. This may reflect the different patient mix of regional versus metropolitan hospitals or the difference in the dietetic involvement with these medical conditions.

The records indicate that only 14% to 33% of the students' days were accounted for by direct patient contact, and it is assumed that the remainder of the days was devoted to activities related to indirect patient care. Examples of these activities would have included participation in ward meetings, reading and recording in the medical history notes, and communicating with other members of the healthcare team about the nutritional management of patients. Although these are important activities that contribute to the development of students' skills, at this time we only assessed direct, or face-to-face, student-patient contacts.

Students were required to submit their logs electronically on a weekly basis to their university supervisor to monitor the progress of students' contacts with patients during the placement. Patient statistics collected by medical students have been used to inform supervisors during the placement about how well the program goals are being met (5) and to make changes in order to achieve placement objectives (11). Cook et al. (1) assessed the time allocation of medical students and recommended there should be a better balance between time spent in patient contact and in ancillary activities, with more emphasis on patient contacts. The progress of each dietetic student was reviewed formally by a university representative and hospital supervising dietitian midway during the placement, with the logs stimulating discussion regarding the students' achievements. Dolmans et al. (12) have found that if a student log is to be effective it needs to be firmly integrated into the placement supervision activities. The baseline data obtained in this study could be used to establish benchmarks for the number of diet histories or counselling sessions students should aim to achieve during each week at a specific stage of their placement. It could also be used to monitor a student's contact with patients in different nutritional conditions. It will highlight those students who have not had an opportunity to manage a patient with a particular disease state. This information will also be invaluable to hospital dietitians who play a critical role in the clinical skill development of students. A report could be generated on a weekly basis that could be utilised by the hospital dietitian to monitor the progress of students. The amount of time spent in direct observation of students could be used by managers of dietetic departments when allocating and monitoring a dietitian's workload for student supervision.

We have found the implementation of a program of monitoring students' direct patient experience during their clinical placement to be extremely useful. It has allowed us to assess the range and depth of student-patient experience and will provide a method of assessing the impact of changes to the placement program. We find that the documentation of placement activities for the students is not too onerous and similar to the records that dietitians keep for hospital departments. Students are now required to submit their patient records in order to pass the clinical placement and these records are also used to assess individual student progress throughout the clinical placement. The data collection has subsequently been broadened to include indirect patient activities and to obtain information on patient workload.

Therefore, for the first time we have been able to quantitatively measure the experience of our dietetic students on hospital placement. These data will be collected each year to develop benchmarks for student clinical practice experience and assist educators in assessing the impact of any changes to the format of student clinical placements.

Acknowledgment
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References