Structured diabetes education in Sweden

A national inquiry involving 583 nurses working with diabetes patients in hospitals and primary care facilities

M Annersten*, A Frid, G Dahlberg, M Högberg, J Apelqvist

Background
The overall goal for all treatment of diabetes mellitus is to prevent acute and long-term complications. The St Vincent Declaration states that national quality assurance is important in preventive care, aiming to prevent development of late complications,1 and the Swedish National Diabetes Guidelines describe patient education in self-treatment as a main theme and a prerequisite for achieving these goals.2 The patient needs tools to achieve control over his/her life situation and his/her disease. Well-informed patients may show better results of the medical treatment by taking greater responsibility for their own health. Behind the vision of an active patient searching for knowledge lies a respect for the ability of the individual, taking responsibility for his/her treatment, rehabilitation and health. The nurse’s task is, among others, to encourage health, prevent disease and ill health, and restore and maintain health from the patient’s own needs and perspective.3 Thus, the nurse has to undertake a pedagogical role, which has to be considered both in basic and higher education of nurses.

According to guidelines from the Swedish Nurses’ Association and the National Diabetes Guidelines, patient education should take place in a structured form, comprising systematic and pre-planned education at scheduled visits. It must be adjusted to the patient’s individual needs, organised as group teaching or on an individual basis, and be evaluated continuously. Patient education—in contrast to information activities—must be a continuous process aiming to integrate personal experiences and lifestyle with theoretical knowledge in order to achieve the best possible treatment outcome and quality of life. Its optimum is not reached until after a period of time depending on the patient’s willingness or ability to change their behaviour for a best possible life situation. It is also important that the teaching is conducted by teams with suitable formal education, continuous practice and extended education.2,4,5

In Sweden, the majority of people with type 1 diabetes (n≥30 000) meet the diabetes specialist physician and diabetes specialist nurse at the hospital ambulatory ward. The majority of individuals with type 2 diabetes (n≥300 000) are treated by general practitioners and meet the community nurse working together with the physician at the primary care facility. A community nurse has

ABSTRACT
The overall goals for the treatment of diabetes are to prevent acute and long-term complications and maintain a good quality of life. The St Vincent Declaration and the Swedish National Guidelines for the Treatment of Diabetes Mellitus describe patient education in self-treatment as a prerequisite for the achievement of these goals. This survey aimed to evaluate the presence of structured patient education (in advance planned education), its organisation, staffing and goals, and the results in out-patient diabetes care in Sweden.

A questionnaire consisting of 35 open and closed questions was mailed to 1250 diabetes educated nurses working in hospitals and primary health care in the entire country. Responses were received from 583 (47%) nurses. Structured diabetes patient education was performed by 486 nurses. It was usually organised by nurses and performed in co-operation with doctors (55%), dietitians (38%), chiropodists (36%), and social workers (9%). The sessions took place individually at pre-scheduled visits (80%), or as group education (26%). Fifty-one percent described explicit goals for the education, most commonly: general knowledge about diabetes, improved metabolic control and increased safety. The structured education was evaluated by 51% of which the HbA1c level at the next scheduled visit was the most frequently used evaluation method (44%), followed by home monitored blood glucose values (37%) and a structured evaluation form (17%). The goals had been achieved to a great or quite great extent by 67% of the responding nurses.

It was concluded that there is confusion about the content of structured education vs information activity. Copyright © 2006 John Wiley & Sons, Ltd.

Practical Diabetes Int 2006; 23(3): xxx–xxx

KEY WORDS
patient education; health care organisation; nursing; diabetes care; diabetes; self-monitoring of blood glucose; injection technique; nurses’ education

Magdalena Annersten, RN, MNSc
Anders Frid, MD
Mrs Gunnel Dahlberg
Margareta Högberg, MPd
Jan Apelqvist, MD
Department of Endocrinology, Malmö University Hospital, Malmö, Sweden
e-mail: magdalena.annersten@mail.com

Received: 15 July 2004
Accepted in revised form: 4 April 2005
structured diabetes education was per-
e.g. research nurses or nurses teach-
considered themselves as ‘others’,
completing the questionnaire and 19
primary care facilities 466 nurses
representative. Representation from the
cal spread over the country was rep-
graphical spread over the country was rep-
ian extended education of one year
in public health and sometimes in
diabetes care. Patient educational
activities therefore take place both
in hospital-based specialist clinics
and in primary care.

This study set out to find out
whether structured diabetes educa-
takes place, to identify the for-
mulated goals for such education,
and to ascertain how these goals are
achieved and evaluated. The nurse’s
formal education regarding dia-etes care is also described.

Methods
A questionnaire consisting of 35
questions, open and closed, was
mailed to 1250 nurses all over
Sweden. The nurses who were
selected had participated in univer-
sity courses in diabetes care, and dia-etes courses arranged by the phar-
aceutical industry or by the
Swedish Diabetes Federation. They
were therefore assumed to have an
interest in diabetes and to work with
diabetes patients in hospital-based
specialist care or in primary health
care facilities. The questionnaire
had been tested and validated in a
pilot survey by 10 nurses working
with diabetes in south Sweden one
year prior to the study. After four
months, a reminder was mailed to
those who did not answer the first
letter. The answers were registered
anonymously into a database at the
University Hospital of Lund.

In the questionnaire, structured
patient education was described as a
systematic and pre-planned educa-
tion session. The term ‘pedagogy’
was interpreted at the discretion of
the responding nurses.

Results
The questionnaire was answered by
583 nurses (47%), of whom 98
(17%) worked in specialist care
within the hospitals. The geographi-
cal spread over the country was rep-
resentative. Representation from the
main hospitals was 70%. From the
primary care facilities 466 nurses
completed the questionnaire and 19
considered themselves as ‘others’,
e.g. research nurses or nurses teach-
ing at the universities.

The responses showed that struc-
tured diabetes education was per-
formed by 486 nurses (83%). Thus,
the remaining 97 were excluded
from the statistical calculations. (See
Figure 1).

When structured diabetes educa-
tion sessions took place, they did so at
ordinary scheduled visits to the dia-etes specialist nurse (80%) which
are combined health care control
and educational visits. They also took
place at extra scheduled visits dedi-
cated to educational activity (59%), at
in-patient ward (9%), or as organised
diabetes schools (7%). Other occa-
sions could be home visits, telephone
contact or children’s camp (2%).
Structured diabetes education in
groups was arranged by 26% of the
nurses. The groups were combined
according to age, type of diabetes,
type of treatment, sex, extent of com-
lications, duration of disease,
nationality, or by random choice.

Collaboration within the teams
in hospitals and primary care
Eighty-nine percent reported that
diabetes education was considered as
quite important or very important by
management, and 8.5% said it was
considered to be of little importance
or of no importance at all. The main
person responsible for organising
the education was the diabetes spe-
cialist nurse (92%), followed by the
physician (36%), the dietitian
(15%), the chiropodist (9%), and
others (6%). The following profes-
sionals were taking part in the teach-
ing activities: diabetes specialist nurse
(95%), physician (55%), dietitian
(38%), chiropodist (36%), social
worker (9%), psychologist (1%), and
other (16%). In all, 84% of nurses
considered their own role in the
structured teaching as very or quite
important, while 0.3% considered it
to be of little importance. Thirty-two
percent said collaboration between
in-patient and out-patient wards took
place sometimes or often; 49%
reported that it seldom or never
occurred. Collaboration between in-
patient and out-patient wards was
considered to be quite or very very
important by 64% of the nurses, while 9.4%
considered it to be not very
important or not important at all.

Formulated goals for
structured patient education
Explicit goals for education at the
unit were described by 51% of the
nurses, while 22 nurses (4.5%) did
not know whether or not there were
clear goals at the unit. The described
goals were: increased general knowl-
edge (23%), improved metabolic
control (21%), increased safety
(18.5%), adherence to National
Guidelines (12.6%), increased
responsibility (9%), and other (3%).

The nurses expected patients to
achieve the following skills during
the structured educational course:
increased general knowledge regard-
ing diabetes (54%), correct usage of
self-testing (42%), taking increased
responsibility for their disease (41%),
improved dietary habits (27%),
improved metabolic control (15%),
ability to self-adjust treatment (9%),
increased compliance (5%),
improved foot care (3%), and accept-
ing the disease (2%).

The patient’s wishes or expecta-
tions regarding the organisation of the education and its components were solicited by 67% of the nurses. The patients were asked in the following ways: verbally (55%), in connection with the teaching situation (8%), and in written form (4.5%). The most common expectations from the patients, according to the nurses, were increased general knowledge about the disease (44%), increased safety regarding the disease (31%), dietary issues (20%), and improved metabolic control (8%). (See Table 1).

### Table 1. Nurses’ and patients’ (according to the nurses) expectations on diabetes education

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Nurses N (%)</th>
<th>Patients N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased general knowledge</td>
<td>261 (54)</td>
<td>216 (44)</td>
</tr>
<tr>
<td>Usage of self-testing</td>
<td>202 (42)</td>
<td></td>
</tr>
<tr>
<td>Increased responsibility</td>
<td>198 (41)</td>
<td></td>
</tr>
<tr>
<td>Improved diet</td>
<td>129 (27)</td>
<td>99 (20)</td>
</tr>
<tr>
<td>Improved control</td>
<td>75 (15)</td>
<td></td>
</tr>
<tr>
<td>Adjustment of treatment</td>
<td>43 (9)</td>
<td></td>
</tr>
<tr>
<td>Increased concordance</td>
<td>15 (3)</td>
<td></td>
</tr>
<tr>
<td>Foot care</td>
<td>37 (8)</td>
<td></td>
</tr>
<tr>
<td>Improved metabolic control</td>
<td>36 (8)</td>
<td></td>
</tr>
<tr>
<td>Various</td>
<td>17 (3.5)</td>
<td></td>
</tr>
<tr>
<td>Meeting with others</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Evaluation and follow up

The structured diabetes education was evaluated by 51% of the nurses and was not evaluated by 36%; 6% did not know whether they evaluate it or not.

The evaluation methods used were: the patient's HbA1c level (44%), patient's own blood glucose measurements (37%), an evaluation form (17%), interview with the patient (16%), and attitude examination (3.5%). External quality assurance revision such as the National Diabetes Register was mentioned by 3.3% of the nurses.

The evaluation took place within six months (22%), at the next scheduled visit (18%), within 12 months (7%), or later (1%). The evaluation was kept in written form by 33% of nurses. The goals were considered to have been achieved to a quite good or great extent by 67% of the nurses, and at a low extent or not at all by 9%.

### The nurses’ formal education

After their undergraduate nursing education, 73% had taken a formal 10 points (10-week) university course in diabetes care, and 7% had taken more than 10 points at the university. A shorter course from the Swedish Diabetes Federation was passed by 11%, and 14% had participated in other educational events, such as courses arranged by the employer or by the pharmaceutical industry.

The university courses in diabetes care contained mainly medical issues, according to the nurses, such as aetiology, symptoms, medical treatment and development of complications (23%), while nursing as an independent subject was mentioned by 2.5%. Particular teaching in pedagogy was mentioned by 1%. Three nurses were bilingual and used these language skills while teaching, speaking the patient’s own language.

Sixty-six percent of nurses replied that they had attended an extended educational programme to further develop their pedagogical skills after their formal education, while 25% answered that they had not. In this respect, most importance was attached to the 10-point university course in diabetes care (27%), followed by courses arranged by the employer (18%), the pharmaceutical industry (10%), a separate course in pedagogy (1.6%), and the Diabetes Nurses Association (1.5%). The need for further education was considered as great or very great by 89%, while 5% considered that need quite small or not at all important. The nurses expressed a wish to have the following issues included in an extended education programme: pedagogy (38%), general updating/medical news (30%), dietary issues (9%), psychology (8%), general treatment (6%), complications (5.7%), ‘everything’ (5%), and foot care (4.7%).

### Discussion

This survey of diabetes education in primary care and diabetes care in the hospital indicates that structured diabetes education is seldom or not routinely performed. This is in spite of the recommendations in the St Vincent Declaration and the Swedish National Diabetes Guidelines. Only a minority of the nurses with diabetes education are working with structured diabetes education.

This survey reveals that diabetes education takes place both in primary care and in hospitals. It is mainly organised and realised by the nurses, although many other members of the team participate. Unfortunately, only a minority of the nurses have explicit goals for the activity. The structured patient education process is not fully described in this survey, but it seems that the nurses consider their teaching to be a transfer of information and not as a life-long learning process with implications for the patient’s life. It is important that the teaching is evident and promotes health, although the patient’s goals, as expressed by the nurses in the survey, are not always realistic or measurable.

The attitude from the management of the hospital or primary health care service was expressed as positive. When it comes to giving resources in the form of time or money, it seems that management underestimates the resources required for educational tasks. Those nurses who have competence in patient education must be given fair opportunities to work with this, in order to meet the requirements in the National Guidelines and the Regulations of Nursing. Underestimation of resources required may have its root in the reimbursement system, where the unit mainly responsible for health promotion activities (funded by regional administration) cannot harvest the economic benefits from the prevention of late diabetes com-
Structured diabetes education in Sweden

Key points
- The nurse is mainly responsible for organising patient education
- Explicit goals were described by 51% of the nurses
- The goals were evaluated by 51%
- The content reveals more transfer of information than structured education
- The need for further pedagogical education was considered great by 89% of the nurses

Compliance, within nursing, is described as a process where the patient actively and deliberately cooperates together with the nurse to find out the way of life that he/she can adjust to and follow in order to achieve best possible health and well being. According to the nurses in this study, patients expect to learn more about the diabetes disease in general terms. The nurses also aim to enable patients to take responsibility over their lives and help them feel safer in making their own decisions. This might help improve patients’ attitudes towards their health. The nurses consider improved metabolic control a measure of improved health. Patients need the tools to achieve this and thus the nurses asked for medical updating in new treatment methods. This seems to have been provided to them partially via the pharmaceutical industry and the employer.

When it comes to dietary issues, there is plenty of new research performed by sectors of the university other than the medical or nursing faculties; however, it might be difficult for diabetes nurses to have access to it.

The industry often has well-developed educational programmes as part of their marketing, but is not necessarily an unbiased partner. During the last decade, due to financial crises the employer (public financed health care sector) has decreased educational activities for nurses to almost nothing, which leaves the market open for the pharmaceutical industry. This is an unsatisfactory situation, and can only be solved by giving more resources to the university system and by the public health care sector calculating resources for preventive care as a cost-benefit investment.

Clement has shown that patient hospitalisations for uncontrolled diabetes are often attributed to deficiencies in diabetes knowledge and self-management skills. A standardised national education programme should be used in the National Diabetes Register for quality assurance purposes and this would benefit patients, nurses and society as a whole. A standardised national specialist education for nurses working with diabetes is required to achieve these goals.

References