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I got the idea for this topic while studying William Perry's theories on how adults learn. I applied his theories to education for people with diabetes and felt it explained many of the challenges that health educators face.

L'idée de ce sujet m'est venue pendant que j'étudiais les théories de William Perry sur la façon dont les adultes apprennent. J'ai appliqué ses théories à l'éducation des personnes souffrant de diabète parce que selon moi elles expliquaient plusieurs des défis que doivent relever les éducateurs du domaine de la santé.

Strategies for teaching self-care with type 2 diabetes: Focus on adult development theory

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Diabetes mellitus affects over two million Canadians, and its prevalence is increasing.^{1,2} Many studies outline the importance of ensuring adequate glucose control to prevent complications of the disease, such as cardiovascular disease, nephropathy, neuropathy, and blindness. The nature of the disease and its interindividual variations mean that responsibility for achieving metabolic control falls mainly on patients, making it necessary for them to learn why this control is important and how to self-manage their illness. Unfortunately, ideal glycemic control is achieved by less than one-half of those with type 2 diabetes.³ Research has demonstrated that educational programs for individuals who have diabetes can improve their glycosylated hemoglobin levels and other clinical outcomes.⁴⁻⁷ Yet it is unknown which

components of these interventions actually contribute to effectiveness.⁸ As a result, the best method of teaching self-care has not been elucidated. This paper highlights the dilemmas patient educators face, connects these concerns to adult developmental theory, and suggests that pharmacists consider which teaching methods are likely to achieve their learning objectives.

The importance of self-care in diabetes

Self-care is an "individual's ability to manage the symptoms, treatment, physical and psychosocial consequences, and lifestyle changes inherent in living with a chronic condition."⁹ Clients assume responsibility for their own health and choose what to eat and if and when they will take medications. The question is not whether patients with diabetes manage their illness, but how they manage.²

The goals of diabetic education are to optimize glycemic control, prevent complications, and maximize quality of life by providing patients with the self-confidence and problem-solving skills to effectively control their condition.^{2,3} Knowledge about the disease alone is insufficient to induce the behavioural changes required to effectively manage it. Diabetic education programs have shifted away from didactic teaching and instead are geared toward teaching problem-solving and coping skills.⁶ This is largely in response to changes in practice where care is provided in a patient-centred model that attempts to empower patients to take control of their disease.¹⁰ In other words, clients learn to act on their knowledge. The challenge,

Summary

Diabetes mellitus is a chronic health condition that requires patients to self-manage their illness to prevent serious complications. Unfortunately, less than one-half of these patients obtain ideal glycemic control. Studies indicate that educational programs can improve some aspects of control, however, the best method for teaching self-care is still unknown. Adult development theory may provide guidance to pharmacists who coach self-care. Developing educational sessions that are tailored to an individual's learning needs and encouraging problem-solving skills may assist in achieving glycemic control and an optimal quality of life. Pharmacists are accessible health care professionals who liaise with diabetes educators and who can provide long-term support and education to those with diabetes.

however, is to understand why some individuals find it difficult to assume personal responsibility and why they are seemingly unable to act on their knowledge, while others manage their health successfully.

Adult development theory

The adult development literature describes how adults approach learning situations and act on acquired knowledge.¹¹⁻¹⁷ Studies that apply these theories in health care disciplines, such as oncology or psychopathology, outline how an awareness of different “ways of knowing” can guide interventions.¹⁸⁻²⁰ William Perry, an educational researcher at Harvard University, put forward a theoretical framework that offers insight into the various “ways of knowing” that affect educational experiences and why individuals may or may not act on, or respond to, particular educational interventions.²¹ Although Perry’s original studies were based on the research of undergraduate and graduate university students in the 1960s, his conceptual schema has been the foundation of related studies that encompass many professions.^{22,23} A search of the literature, however, did not reveal any pharmacy-related interventions based on adult development constructs.

Relating adult development theory to patient education explains why some patients experience difficulty in realizing that care providers are unable to assume responsibility for total management of their health. It is only as clients progress through the developmental positions (see box) that they begin to view knowledge of their disease as relative to their own situation and not in absolutes; in other words, they perceive the role of self in managing their health. As they attain higher levels of intellectual development, they are likely to assume responsibility for their diet, medications, and physical care. Similarly, they are willing to cooperate with health care workers to attain optimal outcomes.

Perry also states that learning may be hindered by stress or environmental situations. Thus, if clients are over-challenged, this may stall their progression through the learning stages, leading them to avoid responsibility for learning, or cause them to avoid new challenges and retreat to a more comfortable epistemology, or way of thinking about learning.²⁴ If we over-challenge our clients, they may retreat to a paternalistic philosophy of health care, expecting care providers to tell them what to do. This places the onus to improve health on the person who helps them and thus avoids the need for action on their part.

Intellectual development

William Perry’s theory on intellectual development states that adults develop their intellect throughout life, gaining factual knowledge and developing increasingly complex ways to assimilate, value, and act on knowledge.²¹ Perry postulates that adults move through three epistemological positions: dualistic, multiplicitic, and relativistic. When adults are at the **dualistic** level, they perceive knowledge in polaristic terms, wherein views are either right or wrong or good or bad and believe experts are the authority possessing absolute truths. The learner’s role is passive. As adult learners progress to the **multiplistic** stage, they begin to recognize that there are conflicting theories and perspectives, but believe their own unreasoned ideas are as valuable as those who teach or who are figures of authority. Learning is often viewed as finding the answers that the instructor wants to hear. When adults reach the **relativistic** level, they view knowledge as contextual and begin to understand the need to become active learners and thus assume responsibility for their own learning and actions. They eventually realize the need to make commitments to themselves and others, using their knowledge and experience to guide their actions. Reaching this level enables them to incorporate other points of view, providing a framework for analysis of a particular situation.

Patient education

What methodology would provide the best outcome, enabling clients to realize and act on the need for adequate self-care? This is the question for patient educators. The literature is unclear about the benefits of group versus individual learning. Many authors suggest that group learning is preferred.^{6,25-27} Group learning, however, cannot effectively teach problem-solving and coping skills, because of the complex psychosocial aspects of diabetes and the various stages of patients’ intellectual development.^{2,28,29} Further, group learning is based on numerous theories that involve helping fellow students and patients learn.³⁰ It is unlikely that cooperative learning and positive interdependence will occur among strangers who meet for only a few hours. Still, group learning provides a support system and helps when teaching topics of general interest, such as foot care and general diabetes management.

Another area of concern is the lack of long-term efficacy data from self-management education strategies. In many studies, the benefits of education are lost after a few months, perhaps occurring because diabetes is a chronic disease that affects all aspects of a person’s life.^{3,6} During an educational session, clients may memorize factual information and act on this information for only a short period, but are unable to internalize the information and commit to assuming responsibility for long-term care. Therefore, what is important is promoting lifelong learning about diabetes, thus encouraging clients to attend regular sessions at diabetic education centres. Likewise, refer computer-literate indi-

viduals to various health-related websites for information (see box on page 55).³¹

Another reason for the lack of long-term success may be complex social structures. Support systems are crucial to the success of self-management.⁸ Encourage family members to attend educational sessions on diabetes to learn how to support their loved ones. In addition, ensure educational programs are culturally sensitive.^{8,32} The Canadian Diabetes Association provides information to specific groups, such as Aboriginal peoples. Similarly, the elderly may benefit from specifically designed educational programs.³³

A third cause for the lack of long-term results is the absence of structured follow-up with the participants, although in practice, there are many ways for pharmacists to ensure that long-term favourable outcomes are achieved.^{3,34} Telephone follow-up, for instance, is one way for health providers to care for clients, keeping in mind that these should be reserved for times when face-to-face visits are difficult for the client. In fact, face-to-face interactions can improve glycemic control.^{5,27} Many diabetes educators are encouraging their clients to use diabetes passports, which include information such as action plans for sick days and the targeting of blood glucose levels. A recent study, however, showed no improvement in diabetes knowledge

and only minor changes in glycemic control with the use of a passport.³⁵ Again, this method may be more successful if related to the client's level of intellectual development and ability to assume responsibility for self-care.

An important aspect of any educational intervention is feedback. The majority of studies on self-management programs use glycemic control as an endpoint. Metabolic control is important, but quality of life is more important to patients. Studies surrounding the impact of educational programs on quality of life are rare.³⁶

Practical applications

Care providers should begin teaching self-management at the time of diagnosis and educators should attempt to

understand the patients' level of development. Although it is commonly believed that clients struggle to retain information during the emotional time of diagnosis, one study of 40 patients newly diagnosed with type 2 diabetes indicated that most participants believed that they had received inadequate information at diagnosis.³⁷ To avoid this, care providers should begin the educational process with the diagnosis of diabetes and subsequently refer all clients to a diabetes education centre as soon as possible.

It is important that educational programs provide knowledge about the disease and assist with problem solving and coping skills. At the time of diagnosis, clients require information on the nature of the disease and how to prevent complications and should be made aware of the importance of self-care and the support systems available to help manage their disease. Information regarding diet, exercise, medications, blood glucose monitoring, management of hypo- and hyperglycemia, as well as management of sick days, is vital. Clients should learn about foot and eye care. Printed materials are helpful for patients to review at their own pace. Diabetic education centres provide this information, using a multidisciplinary team that focuses on each patient's learning needs. These centres also facilitate access to others who have diabetes — a great resource.

Clients also need to learn how to create short-term action plans, which are specific short-term goals, for example, taking the stairs at work on Monday, Wednesday, and Friday for one week. Fulfilling the action plan is more important than the action plan itself; it increases patients' self-confidence in the ability to positively affect their own health.² Experience-based education programs also teach problem-solving skills that allow the participants to use their own experiences as a basis for acquiring self-management skills.³⁸ Participants are encouraged to experiment with various exercise programs and diets to see how their blood glucose levels respond. One theory behind this technique is that it allows participants to develop body awareness and provides a feeling of empowerment.³⁸

Nevertheless, one concern around patient education is that health care providers teach what they believe is important, which often differs from the patient's view. Thus, to help patients with learning and to take the first steps to successfully manage their disease, pharmacists should ask their patients, "What is your biggest concern?"^{2,29,39} Questions such as this enable the pharmacist to understand the expectations of the client, which, in turn, guide education toward the most appropriate development level.

Sommaire

Le diabète sucré est une maladie chronique que les patients doivent gérer eux-mêmes afin de prévenir des complications graves. Malheureusement, moins de la moitié de ces patients obtiennent un contrôle glycémique adéquat. Des études indiquent que les programmes d'éducation peuvent permettre d'améliorer certains aspects du contrôle, mais on ne sait pas encore quelle est la meilleure façon d'enseigner les soins autogérés. La théorie du développement de l'adulte peut guider les pharmaciens qui enseignent les soins auto-administrés. En élaborant des cours adaptés aux besoins d'apprentissage individuels et en favorisant l'acquisition d'aptitudes à la résolution de problèmes, on peut procurer un meilleur contrôle glycémique et une qualité de vie optimale. Les pharmaciens sont des professionnels de la santé accessibles qui sont en contact avec des éducateurs du diabète et qui peuvent fournir un soutien et une éducation à long terme aux personnes atteintes de la maladie.

The role of the pharmacist

Because of their accessibility, pharmacists are in an ideal position to provide frequent education and support to those individuals with diabetes and their families. Numerous studies indicate the positive role that pharmacists can play in managing and educating people with diabetes.^{28,38,40-42}

- Keep Perry's theories on adult development in mind when educating clients, and avoid forcing patients into a level of development and responsibility for which they are not prepared. This can be achieved by planning learning objectives for each of the basic intellectual development levels so that every learner can have some measure of success.
- Pinpoint the learners' personal objectives and ask them what they want to take away from the session.
- Begin the session with simple information and problem-solving and move to more complex items by linking the complex with the simple.
- Sessions should be interactive to avoid passive learning, and should include factual information for the dualistic learners and challenges for personal responsibilities for the relativistic learners.
- Pharmacists should be sensitive to those who are overwhelmed by the notion of taking responsibility for their own health care and need step-by-step planning.
- Remember that learners approach their learning from different perspectives and will ask different types of questions and require different challenges. Try to help each learner leave the session feeling that he can take some personal action (however small this may be) in the management of his own health care.
- Consider becoming a certified diabetes educator

to assist in the continuing education of clients and contact diabetes educators in your own communities to identify ways to supplement and emphasize what educators are teaching.

Conclusion

At the time of diagnosis, it is important that clients receive information on the nature of diabetes mellitus, possible complications of the disease, and how to manage and prevent these complications. An individualized, multidisciplinary approach to education ensures that clients' educational needs are met, with care being taken to avoid overwhelming them with responsibilities for which they are unprepared. As individuals grow in their intellectual understanding of the disease and their personal role in health care, they can begin to self-manage and problem solve when necessary. Their awareness and use of the many support systems that exist will help to achieve optimal health. Pharmacists are in a key position to provide education and positive reinforcement. Only when an individual patient understands the importance of lifelong learning in diabetes management will he or she achieve optimal glycemic control and quality of life. ■

Useful websites for patients or those who want to become certified diabetes educators

Canadian Diabetes Association
www.diabetes.ca

Quebec Diabetes Association
www.diabete.qc.ca

American Diabetes Association
www.diabetes.org

Joslin Diabetes Centre
www.joslin.harvard.edu

National Diabetes Education Program
www.ndep.nih.gov/diabetes/diabetes.htm

National Diabetes Information Clearinghouse
<http://diabetes.niddk.nih.gov/>

Canadian Diabetes Educator Certification Board
www.cdec.ca

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