SIGNS AND SYMPTOMS OF HEART FAILURE: AN EDUCATIONAL POSTER

by

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ABSTRACT

Heart failure (HF) disease management is complex and involves fluid and sodium restrictions, lifestyle changes, pharmacotherapy, and recognizing signs and symptoms. It is a daunting task for patients to learn how to manage their disease. Effective patient education is therefore crucial to enhance patient adherence.

Written patient educational materials have always been an important adjunct in patient education. However, studies have reported that current health-related educational materials are written at readability levels that do not take into account that most patients are older with limited literacy. Furthermore, educational materials are overall poorly designed with illustrations that are not age or culturally sensitive, that overuse medical jargon and that have inappropriate use of language. Meanwhile, patient knowledge deficit continues to be a major obstacle in HF disease management.

This project provides a patient educational poster that is based on the guidelines recommended in the literature. The objective is to increase patient’s knowledge for the purpose of recognizing as well as promptly reporting these signs and symptoms of HF and ultimately decreasing preventable readmissions to the hospital.
CHAPTER 1
Introduction

The incidence of heart failure (HF) is close to 10 out of every 1000 patients among those 65 years and older. HF five-year mortality rate is as high as 50% (AHA, 2007). The American Heart Association (2007) estimates that the United States will spend over $33 billion in 2007 on direct and indirect costs of HF, with hospitalization being the major source of cost. It is both the most common diagnosis for admission as well as for discharge in Medicare patients (American Heart Association, 2007). The number of incidence and prevalence of HF will continue to rise as Americans live longer due to reduced mortality from acute myocardial infarction, diabetes, hypertension, and other causes (Clark & Lan, 2004).

The most frustrating aspect of HF may be its high readmission rates. Current studies continue to show a soaring HF readmission rate within 6 months of discharge that is as high as 50% (Aghababian, 2002; Hamner & Ellison, 2005; Krumholz et al., 1997). A large number of these readmissions could be preventable because they are a direct result of patient nonadherence to discharge instructions (Clark & Lan, 2004). Nonadherence is often due to lack of knowledge in HF patients and is a leading cause of their lack of successful self-care management (Scotto, 2005).

Heart failure self-care management is a complex process. It is especially well documented that a large number of HF patients do not understand the importance of early reporting of symptoms. Patients often first attribute the worsening symptoms to old age or multiple medication side effects, rather than cardiac origins (Rogers et al., 2002).
Instead of contacting their health care providers, they manage early difficulties in breathing and increased tiredness by reducing activity and taking frequent breaks. It is only when patients feel they can no longer manage symptoms that they call for help at which time they often have urgent distress that requires emergency and acute care services.

Problem Statement

Heart failure management involves multiple pharmacological regimens according to the patient’s disease classification, specific diet restrictions of sodium and fluid, and early detection of impending exacerbation that warrants readjustment of medical therapy. This complex process, in a large part, relies on the patient’s daily adherence. Patients, however, often lack knowledge of the correct regimens, including medication purposes and adverse effects, diet restrictions, and most importantly, the early signs and symptoms of worsening HF (Wehby & Brenner, 1999; Rogers et al., 2002), with fluid overload being one of the primary reasons for HF patients’ readmissions (Caldwell, Peters, Dracup, 2005).

A report stated that even after HF education, more than 20% of 113 HF patients who had greater than 12 years of education thought daily weight in HF self-management was not important (Ni et al. 1999). Another report stated that more than 50% of study subjects diagnosed with HF did not know that sudden weight gain and increased ankle swelling were symptoms of worsening HF (Carlson, et al., 2001). Lack of knowledge about early detection of worsening HF is hence an important factor. Patients postpone reporting early worsening signs and symptoms, which contributes to hospital readmission
and delays in medical intervention that result in readmission to emergency departments and intensive care units.

With shortened hospital stays and office visits, written materials are an important adjunct used in patient teaching by health care providers. Studies on HF patient education frequently address and acknowledge the importance of nursing counseling, though research evidence seldom exists to support effects of written materials. Currently, there are various written patient educational materials available to HF patients in health care facilities across the nation; yet, there has not been a quality measure to evaluate these materials.

Studies have found current hospital written educational materials are overall poorly designed, with overuse of medical jargon and poor choice of language. The layouts, as well as contents, also do not promote patient learning (Doak, Doak & Root, 1996; Walsh & Shaw, 2000).

Strengthening the written aspect of patient education can have a great impact and lead to improved patient outcomes. Furthermore, effective written patient educational materials can assist patient educators, such as nurses, physicians and other members of the health professional team, to effectively use their limited time with each patient to provide focused teaching and reinforce important knowledge for patients to better manage their disease and maintain their health. With HF patient readmission rates continuing to rise, there is a critical need to strengthen patients' knowledge by providing clear, simple and yet important information related to their disease management regimen.
Purpose of Project

The purpose of this project is to develop a patient educational poster to raise patient awareness of early signs and symptoms of pending HF exacerbation, and to prompt patients to contact their primary care practitioners and specialists for early intervention and prevention of hospital readmission. It is also intended to be a practical instrument for nurses and health care clinicians to facilitate patient learning. Even though it is only a one-page double-sided poster, evidence-based principles are followed in the development. The poster is an effective and important adjunct to assist in patient learning of the signs and symptoms of pending HF exacerbation. This poster has an outcome oriented purpose, which is to facilitate the reduction of preventable readmission rates and subsequent related health care costs due to delayed reporting of HF signs and symptoms due to a patient’s lack of knowledge.
CHAPTER 2

Introduction

This chapter will provide the rationale for the project and the significance of improving patient knowledge and clinical outcomes related to HF. In the literature review, discussion focuses on the shortcomings in current patient educational materials. Finally, this chapter includes discussion of the advanced practice nurses' role in the development of written patient educational materials.

Significance to Health Care

Posters and pamphlets are inexpensive and easy to disperse. They provide permanent information and are convenient for patient access. As in all health fields, the written material has always been a necessary component for HF patient teaching across health care settings. The Centers for Medicare and Medicaid Services (CMS), as well as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), have recognized the importance of written instructions and recently expanded hospital quality measures for HF to include written educational materials on every aspect of HF self-management: follow-up appointment, diet, exercise, discharge medications, weight monitoring and what to do when symptoms worsen (Berkowitz, Blank & Powell, 2005).

As patients become active participants in their health decisions and demand more information about their disease, they can more competently understand and manage their symptoms. Special consideration of the HF patient’s ability to read and comprehend when designing teaching materials is vital (Crowder, 2006). In addition to the complex self-care process and pharmacological treatment, these patients are older and often have
many co-morbidities, such as diabetes, hypertension and deficits in motor, sensory and cognitive functions. It is important to develop an effective and practical educational tool that takes into account the special considerations of HF patients. Written materials can serve as an important adjunct to verbal patient education.

Knowledge does not guarantee compliance, though it is necessary to produce it (Ockene, 2001). Strengthening a patient’s knowledge so that they understand the importance of monitoring HF signs and symptoms may promote their adherence to self-care management, such that a worsening disease state can be interrupted early, unnecessary medical expenses prevented, and deterioration of the patient’s heart functions lessened, consequently leading them to a better quality of life.

Literature Review

In clinical practice, patients are given limited time for personal counseling and often need to subsequently rely on educational materials as a reference. Written educational material, therefore, has an important role in patient teaching and should not be overlooked in facilitating patient education. Unfortunately, current teaching materials appear to still be unsuitable to adequately meet patients’ needs.

The most problematic area identified in literature is the readability, although there are also concerns in the content. Doak et al. (1996) is a text that is often cited on problems related to patient literacy level. These authors concluded that 75% of adult Americans read at a 6th grade level. Billek-Sawhney & Reicherter (2005) suggest in their study that older American adults read at a 5th grade level because of decreased reading ability with age; therefore, low literacy rates are especially prevalent in older adults.
Over 300 studies have found American health-related materials exceed the readability of the patients (Billek-Sawhney & Reicherter, 2005). From topics in diabetic education to outpatient procedures, many are rated at an 8th to 10th grade level (Badarudeen & Sabharwal, 2008; Billek-Sawhney & Reicherter 2005; Doak, Doak & Root, 1996; Johnson & Stern, 2004). Interestingly, many of these studies were conducted over 20 years ago. Yet, health-related written educational materials continue to be developed without consideration of the patient’s reading ability and literacy level.

Walsh & Shaw (2000) extensively reviewed literature published in North America and the United Kingdom to offer evidence-based practice guidelines specifically on the format and presentations for written patient educational materials. Problems again are found to be that most educational materials are difficult for average readers to comprehend, the wording and sentences are too long with too many technical terms, in addition to small font size and use of ineffective illustrations. They further report that it is a major concern that research findings are not applied when teaching materials are developed. For example, there are no pilot studies done to test patient satisfaction and knowledge following the use of patient educational materials.

From this literature, the importance of simplified patient educational materials to meet the readability of patient’s needs is emphasized. Even in patients with higher literacy levels, during illness when emotional and psychological stress are high, materials with a lower reading level may promote greater understanding and therefore result in better retention of knowledge. It is also important to pay attention to the format and presentation of the written material, such as size of letters, lengths of sentences, and use
of appropriate illustrations that enhance the patient’s motivation to read the educational material.

Regarding content, Nicklin (2002) reviewed studies of written educational materials in the United Kingdom. She summarizes how patients value written materials given to them in health care settings. Patients want to know the causes and pathology of symptoms but with explanations that are practical and specific to their needs. Additionally, patients point out the importance of having contact telephone numbers for further questions and in case of emergency.

In America, learning needs research specifically for cardiac patients started appearing in the 1980s and various instruments were developed to study the patients’ perceptions of the importance of educational topics (Clark & Lan, 2004). In the 1990s, some researchers began to focus specifically on HF patients’ perceived learning needs. These studies have reported similar results and have identified medication, HF signs and symptoms as priority subjects for HF patients to learn (Clark & Lan, 2004; Frattini et al., 1998; Hagenoff et al, 1994; Wehby & Brenner, 1999). Recently, Clark & Lan (2004) partially replicated earlier studies on HF learning needs studies but focused on surveying HF patients after hospital discharge. They found that regardless of the patient’s age, gender or educational differences, the signs and symptoms of HF exacerbation are perceived to be the most important concept to learn, slightly leading the importance of medication.

The implications of this research are that health educators should prioritize the topics of patient interest, as well as what is most relevant to prevent their hospital
readmissions. This action is likely to thereby effectively promote the patient’s readiness to learn, increase retention of knowledge, and ultimately build the patient’s confidence and trust in health care professionals.

Advanced Nurses’ Role in the Development of Patient Educational Materials

Patient education is an important role for all nurses. Patients report that they value nursing teaching, which is less technical and more personal, compared to doctors (Webb & Hope, 1995). Patient knowledge deficit is one of the most common nursing diagnoses (O’Connor, Hameister, & Kershaw, 2000) and advanced practice nurses (APNs) report that they spend a large amount of their clinical practice providing patient education and counseling (Brown, 1995). The APNs, who have an important role within the multidisciplinary team, provide unique perspectives and experiences through close interpersonal relationships with patients. The American College of Nurse Practitioners encourages APNs to provide innovative patient education and provides assistance for APNs to design patient educational materials via internet (Spross, 2005, p. 188).

APNs bring advanced clinical knowledge and a higher level of academic training in evidence-based practice and research. Equally important is their understanding of current health care environment, the barriers to patient education and the challenges for nurses to provide critical and correct information within a limited amount of time. These are compelling reasons that APNs should be the front runners in developing patient educational materials.
Summary

Many studies were discussed on current patient educational materials. Flaws that obstruct effective patient learning were identified. These studies explain rationales for these problems and provide specific directions for creating effective written teaching materials for HF patients. Lack of knowledge is a common nursing diagnosis, and studies report that APNs place value and emphasis on patient education. APNs have the academic training, organizational support, and most importantly, the experience to be the effective leaders in providing effective patient educational tools to promote patient learning.
CHAPTER 3

Introduction

This chapter will discuss the decision process on the development of this educational poster. Rationales for the inclusion of topics, design of format and content as well as readability level will be provided. Principles guiding the decision making drawn from the literature will also be discussed. They are drawn from review literature discussed in previous chapters.

Components of the Educational Poster

The main components of this educational poster are the following:

- Signs and symptoms of exacerbation
- Causes and pathology of these signs and symptoms
- Illustrations matching each sign and symptom
- Health providers' contact phone numbers
- A weight chart

Doak et al. (1996) stress the importance of ensuring that the health information is accurate and current and that the information fulfills the purpose of the health material. With the focus of increasing HF patients' knowledge of recognizing the pending HF signs and symptoms, the topic of this educational poster includes only the signs and symptoms of HF exacerbation. In addition, following Niklin’s (2002) recommendation, the poster offers the causes and pathology of these signs and symptoms, as well as the health care providers' contact phone numbers for further questions and in case of
emergency. These elements are reported by patients as important to include in health educational materials.

Illustration is an important feature in health educational materials. Effective illustrations to aid text information is especially helpful for low literacy and even illiterate patients as pointed out in many studies, including Walsh & Shaw (2000) and Doak et al. (1996). This educational poster therefore provides illustrations matching each sign and symptom to help patients build impressions.

Finally, a weight chart is present in the poster. Weight charts have become a common feature in HF patient educational materials; it is adopted in this project as well. It is reasonable to assume that weight charts may make it easier for patients as well as their health care providers to follow trends of patients’ weight changes simply because weight charts allow for daily recording and comparison.

In its final production phase, regarding the illustrations, as well as the use of appropriate and cost effective paper materials, a graphic designer’s creative skills were employed. A company called Fusion Designs was contacted and a qualified assigned designer was closely involved in the development process to ensure the final product was made according to plan.

Key Principles for Educational Poster Development

Doak et al. (1996), Walsh & Shaw (2000), and Niklin (2002) provide specific and practical guidelines that are relevant to elements specific to older adults, which is especially the case among the HF population. Furthermore, these authors offer specific evidence-based guidelines derived from extensive literature review, making strong
arguments that their findings are not only based on expert opinions, but also on the existing clinical data.

Their guidelines have a common theme: Keeping it simple. It is also important to note that in keeping it simple, patient’s needs are placed at center stage. As discussed in previous chapters, most health educational materials fall prey to the overuse of medical jargon with readability problems. This impedes the patient learning, or worse, the patient’s motivation to learn. It is therefore this project’s goal to maintain a theme of “keeping it simple” as well as their many other recommendations applicable to this educational poster. Attention was given to topics, use of words, level of readability, and illustrations to assure appropriateness for the patient’s age and cultural background. The recommendations are organized into a checklist. See Table 1.
<table>
<thead>
<tr>
<th></th>
<th>Handouts must meet patients’ literacy level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Readability set at approximately fifth to sixth grade level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide clear and simplified description of information with high quality of illustration to gain patients’ interest</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Keep writing clear and simple</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employ easier to read fonts (such as San Serif)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use a large font size (ideally 14-18)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoid medical jargon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use capitals, italics, underlinings and bold type sparingly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question and answer format is effective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Make it personal, use words like “we” and “you” rather than “the nurse” or “the patient”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use positive tone of voice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choose good quality paper with a matt surface, avoid glossy, which produces reading glare</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use light colored paper with dark print</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keep color within text to a minimum.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Illustrations should relate to the surrounding text. Use illustrations, diagrams, and/or pictographs that are culturally age sensitive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keep it simple</td>
<td></td>
</tr>
</tbody>
</table>

3. Pay consideration to the patient’s cultural background
Topic of Educational Poster: HF Signs and Symptoms

According to the National Guidelines Clearinghouse, the American Heart Association (June, 2006), as well as the National Heart Lung and Blood Institute (June, 2007), there are six HF signs and symptoms that the patient should report as part of the self monitoring regiment. These are:

1. Sudden weight gain
2. Shortness of breath: dyspnea on exertion or at rest, orthopnea and paroxysmal nocturnal dyspnea
3. Frequent hacking cough
4. Peripheral edema
5. Swelling of abdomen, loss of appetite
6. Fatigue and weakness

The Causes and Pathology

Sudden weight gain is a sign that indicates the possibility of decreased cardiac output which can compromise kidney function and cause retention of fluid, therefore, weight gain. Shortness of breath includes dyspnea on exertion or at rest, orthopnea, and paroxysmal nocturnal dyspnea. Increased difficulty in breathing can be due to pulmonary edema due to an inadequate left ventricle as excess of blood volume accumulates in the pulmonary circulation, causing fluid shift into the alveoli, impairing gas exchange (Diller, 2005). Gradual increased difficulty in breathing can be detected by patients as they perform their daily activities and is an important self-monitoring symptom.
Frequent hacking cough is also related to accumulation of fluid in the pulmonary alveoli (Diller, 2005). The characteristics of non-productive coughs may be moist with the white and frothy sputum.

Peripheral edema and abdominal swelling are signs of right heart failure. When right heart function is unable to accommodate venous return, fluid volume backs up to where it came from, the venous circulation, leading to edema on ankles and feet and ascites (Diller, 2005). Loss of appetite is related to engorgement of the venous system within the abdominal organs (Diller, 2005).

Fatigue and weakness are related to both the left and right ventricular dysfunction. Left ventricular failure causes decreased oxygen supply, compromising organ functions, and leads to accumulations of catabolic waste products (Diller, 2005). An impaired right heart causes compromised systemic circulation and impaired tissue function, leading to waste product accumulation, and also manifests in the symptoms of fatigue and weakness (Diller, 2005).

It is a challenge to explain these disease pathologies without becoming technical and without using medical terminology. However, it is an advantage for APNs, as they have unique insight and experiences in nursing. Equipped with nursing education, APNs are trained to explain complex medical conditions in layman’s terms.

Level of readability was checked using the Window’s Microsoft Office Word 2003 system, and was kept between grades 5th to 6th. The six signs and symptoms are in short question and answer format as this brings patients in as active and relevant participants (Walsh & Shaw, 2000). It was easy to present signs and symptoms of HF in
the question and answer format. The title of the poster is “Have I asked myself these questions today?” An example of the question is “Are my feet and ankles more swollen than yesterday?”

When addressing the patients, the words “you” and “we”, instead of “the patient” and “the doctor/your health care providers” are used to make the poster more personable. Font is at least at 14 and in San Serif as listed in checklist. Use of capitals is minimal.

After the text was drawn, the graphic designer became involved in the process of making effective illustrations, choosing appropriate paper materials and the ink colors. The checklist was again applied to ensure that the paper material did not produce glare and that the ink used provided good contrast against the background color. To offer cultural consideration, the illustrations are of patients of different ethnic backgrounds experiencing the signs and symptoms. Six pictures of patients are placed to match each of the six questions that patients will ask themselves daily.

Summary

This chapter describes the planning stage of educational poster. Applying recommendations of existing literature on patient educational pamphlets, this project was developed according to evidence-based practices. It aims to provide patient educational material that is optimal in accuracy, readability and suitability for HF patients. Meeting a goal of increased patient knowledge and promoting increased patient's early reporting of early symptoms of HF exacerbation leads to their decreased readmission rate to hospitals.
CHAPTER 4

Introduction

This chapter presents the completed product of this project. Major elements of this patient educational poster are discussed. Finally, a black and white copy of this poster, including both the front and reverse sides, is presented in figures 1 and 2.

Presenting the Product

This poster is designed for HF patients, the population that is likely to have advanced age and other comorbidities; therefore, cautious effort is taken to ensure that the often committed flaws that interfere with patient learning in the written educational materials are avoided. The checklist guidelines on Table 1 are carefully followed.

Actual size of poster is 11"x17", which would fit on top of most regular-sized refrigerator freezer doors. The poster offers patients a daily reminder of the six signs and symptoms of HF to monitor. The front side of the poster, which intends to be the main poster on display has large fonts and illustrations and areas to fill in their health care provider contact numbers and daily weight on the weight chart. Placing this information on a one-page poster on the refrigerator door invites and encourages the patients to review it often, and if they are in need to discuss changes in HF signs and symptoms. Also, the phone numbers are readily available. This may prevent delayed patient reporting of HF signs and symptoms and promote early intervention, and therefore help to avert patient readmissions to hospitals.

In question and answer format, the reverse side offers the simplified causes and pathology for each of the signs and symptom. Patients reports that knowing the causes
and pathology is important in the learning process. It includes information for patients who wish to read more about these signs and symptoms on their leisure.

The front of the poster leads with the title question of “Have I asked myself these questions today?” The tone of language intends to make patients an active part of his/her health decision-making. The language is personable, using “you” and “we”, and not “the patient” and “the health care provider,” so patients do not feel that they are being talked down. There is no use of medical jargons. The readability of the text is at Flesch-Kincaid grade level 3.3. The font is San Serif at size 16 and some are larger.

There are six questions representing the six pending HF signs and symptoms with matching illustrations for each. These illustrations are carefully drawn to be age and culturally sensitive, which is specifically suited for the HF population here in Southern Arizona. A picture has a male with gray hair and coughing, while another picture shows a female, with darker hair and skin tone, yawning, indicating feeling tired easily or fatigued.

Illustrations are interestingly lively with facial expressions. This is to invite patients to look at them and link these pictures to his/her own experiences with HF signs and symptoms. This may also help with knowledge retention.

The reverse side leads with the title question of “We are your health care providers, and we would like to help.” Then, the six signs and symptoms are listed. For example for frequent hacking cough, there is a questioning sentence of “What does this mean?” and below are two short sentences of rationales, explaining the causes and pathology, which, as are all other signs and symptoms, is followed by an urge to report
this symptom early to adjust treatment plan. Because even with large font there is still room on the bottom, an additional question is added and reads “Additional questions?” It welcomes patients to identify any other questions they might have. As previously mentioned, HF patients often feel unsure about whether their signs or symptoms are cardiac in origin or due to other comorbidities and poly-pharmaceutical therapy. The language was carefully reviewed so that it is personable and inviting instead of technical or distant, which might deter patient reporting to their health care providers.

On the reverse side, the readability is at grade level 5 although originally it was rated at the 6th and 8th grade level. Font size of at least 16 on the text is also used. The same guidelines listed in table 1 were carefully checked and followed.
Figure 1. Front side of educational poster

Note. Figure is reduced in size to fit the format of this paper. Actual poster is 11x17 inches.
Figure 2. Reverse side of educational poster

Note. Figure is reduced in size to fit the format of this paper. Actual poster is 11x17 inches.
This written patient educational poster can be dispersed as either part of discharge patient education or as an additional insert to existing hospital teaching pamphlets; it may also be given during patient visits to cardiac rehabilitation centers, primary care offices and cardiac clinics. This poster is intended for HF patients as well as health care providers (from nurses to physicians), who may use it during their patient teaching as a quick overview on HF self-monitoring on pending HF signs and symptoms. For the patient, it is designed with a size that would fit on most regular refrigerator freezer doors, offering the patient convenient self-monitoring and a daily reminder tool.

Summary

This chapter presents the product of this project development, the educational poster in its completion. Results in the reading levels, use of language, illustration and contents were compared with guidelines recommended by the literature to make certain that they were followed. This double-sided educational poster can be a convenient, inexpensive, and effective adjunct to patient education that can be used in all types of health care settings, as well as the patients’ homes.
Chapter 5

Introduction

This chapter will discuss the evaluation of this educational poster, including the weaknesses and strengths of this patient educational tool. Discussion will also include future directions from this project development and the potential role that the APNs may play to improve development of written patient educational materials.

Evaluation of the Effectiveness of Patient Educational Poster

Patients are the primary consumers of educational written materials. It is a goal of health care professionals to learn the patients’ perspectives and thereby improve clinical practices to satisfy patients’ needs. Pilot testing of written health information is therefore vital (Walsh & Shaw, 2000). Walsh & Shaw (2000) recommend a simple way to evaluate written materials, which is to ask patients to write down their opinions on the information as a whole, in addition to any particular areas of like and dislikes in terms of illustrations, contents and format.

Pre and post-test questionnaires are another way to evaluate effectiveness of the poster in the improvement of patient knowledge. Patient clinical outcomes can be measured in their readmission rates related specifically to delayed reporting of these signs and symptoms due to knowledge deficit.

Strength of Project

The main strength of this project is that it is based on the principle of evidence-based practice. Patient educational materials are widely available within each health care setting; yet, studies often report the lack of evidence-based practice in the development of
these teaching materials. Data derived from literature was organized into a checklist, particularly those of Doak, Doak and Root (1996), Niklin (2002) and Walsh & Shaw (2000). This project development avoids designs that cause ineffective patient learning and enhances those features that promote patients’ motivation. This poster development demonstrates special considerations to the objective data, such as patients' readability and learning needs as well as patient’s subjective perspectives on what they would like to learn in HF, strengths that make this an effective patient educational material.

Limitations

It is important to remember that this educational poster is an adjunct to patient teaching and does not replace face-to-face contact. Furthermore, even though this educational poster has features that enhance patient readability and motivation to learn, especially for those who are older and with limited literacy, it is not an appropriate tool for those patients who are illiterate.

Another major limit of this project is patient adherence. Knowledge deficit is one of the reasons for patient non-adherence; other factors are patients’ denial to their diagnoses, personal beliefs and values, conflict with care regimens and the lack of sufficient support from family and healthcare professionals (Scotto, 2005). This educational poster aims to improve patient knowledge deficit on HF signs and symptoms. It has little impact on those aforementioned personal barriers that cause delayed reporting of these warning signs and symptoms.
Future Directions

The completion of this project is only the first phase of patient educational material. Further evaluation by other members of the multidisciplinary team should be put forth to review the materials on the contents in its clinical accuracy and appropriateness before the material can be put forth for copy and distribution. A clinical specialist and a patient educator should be involved in this process. And as previously mentioned, this process should also include pilot studies from their consumers, such as the patients and the nurses. As fast as medical science advances, patient educational material also must be reviewed and updated regularly to offer the most relevant and scientifically sound knowledge (Nicklin, 2002).

A more comprehensive patient booklet can be developed to offer information that patients learn following competence in recognizing signs and symptoms of HF; for example, it could include information about fluid and salt restrictions, diet recipes, and exercise routines that maintain physical health. As patients gain proficiency in recognizing signs and symptoms of HF, this knowledge will motivate them to learn these new topics, which now may become more meaningful and relevant.

Discussion

Improving readmission rates in HF patients will continue to be challenging for both patients and health care providers. With limited time in today’s health care atmosphere, effective written educational materials, such as this educational poster, can help clinicians to reinforce teaching on important self-monitoring signs and symptoms that impact patients’ readmission rate.
Patient education has been one of the major endeavors in heart failure management. Many innovative ways to reach out to patients are being tested, such as telephone and home consultation, using nurses and systematic teaching through outpatient education centers (Edwardson, 2007). Among these patient teaching activities, effective written educational material will continue to be an important adjunct.

Patients need knowledge in order to follow self-care regimen. APNs have an opportunity to be the leader in patient written educational materials, advocating for a standard set of requirements that ensure that the most effective, accurate, reliable and appropriate health care information is put forth to facilitate patient knowledge on disease monitoring, therefore improving the course of their disease progression.

Summary

This chapter discussed the strength and the weakness of this educational poster, provided potential direction for future project development, as well as a brief discussion of innovative ways that are being tested in HF patient education. In closing, APNs are advocated to take on the leadership role in facilitating a standard for written patient educational materials so that they can improve the patient’s disease course.
REFERENCES


Audit Commission (1993). What seems to be the matter? *Communication between Hospitals and Patients.* London. HMSO.


