



How to Choose and Develop Written Educational Materials

Linda L. Pierce, PhD RN CNS CRRN FAHA

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KEY WORDS

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Education is a key component of comprehensive rehabilitation care because it helps promote clients' healthy behaviors and recovery from diseases and injuries or adaptation to chronic conditions. Choosing to use written, organization-based, commercially generated, and Internet-based educational materials is dependent on credibility, readability, and availability. If these materials are unsuitable or no appropriate information on a topic is available, the decision to adapt existing material or design new materials must be made. Recommendations for developing readable materials center on having a clear purpose for writing about a topic; listening to patients; presenting accurate information that reflects accepted, common practice; and using a clear writing style. The strategies presented in this article are intended to help nurses and other healthcare professionals choose or develop educational materials for patients and their family members.

As the length of hospital stays continue to decrease, nurses and other healthcare professionals are challenged to adequately educate patients and their families prior to discharge. The Joint Commission and the Commission on Accreditation of Rehabilitation Facilities (CARF) make client education outcomes a priority and survey focus area (CARF, 2008; Rankin, Stallings, & London, 2004). However, no matter where care is dispensed—from hospital to outpatient to nursing home to home settings—educating patients is essential for achieving successful outcomes. For example, inadequate information sharing and poor communication in hospital and postdischarge settings for stroke survivors are major areas of dissatisfaction for this population and their caregivers (Hoffmann, McKenna, Worrall, & Read, 2004; Pound, Gompertz, & Ebrahim, 1994; Tyson & Turner, 2000). Patient education is a critical component of comprehensive care because it helps promote healthy behaviors, recovery from diseases and injuries, and adaptation to chronic conditions.

Frequently, professionals rely on oral education to teach patients important components of care, such as basic information about stroke, spinal cord injury, Parkinson's disease, Alzheimer's disease, diabetes, and congestive heart failure; medication dosages; dietary regulations; bowel and bladder management; and treatment and therapy schedules. Mansoor and Dowse (2003) reported that patients retain only 20% of what they hear. Written materials can strengthen or augment these verbal directives, having the potential to improve patients' knowledge and confidence, increase their participation in healthcare decisions, and

encourage adherence to the treatment plan. Written materials offer message consistency, aid information recall, and further clarify information or instruction provided verbally (Wiles, Pain, Buckland, & McLellan, 1998). Ideally, written education materials should be used as an adjunct to—rather than a substitute for—verbal education, because they can be referred to later when reinforcement is needed (Hill, 1997; Wiles et al.). However, for these written materials to be valuable, patients must be able to read and understand the content. The purpose of this article is to provide strategies for choosing and developing meaningful and appropriate written educational materials that are patient focused.

Choosing Written Educational Materials

Before choosing educational materials, conduct a professional assessment—paying attention to your clinical experience—of the patient's educational needs and listen carefully to his or her perceptions of what he or she wants to know. After the patient's educational need is established, questions will emerge. Will available written materials that are organization-based or commercially generated be usable? Will materials found on the Internet be appropriate? Carefully choose any written educational materials by assessing the content for credibility and readability.

Appraisal of Credibility

All written materials—print or electronic—need to be reviewed for credibility, accuracy, and completeness. Some critical indicators for credibility include satisfactory author and publisher credentials and

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verifying the information has been peer reviewed by authorities in the field. Authors and reviewers with advanced degrees, employed by reputable organizations (e.g., well-known universities, government agencies) or with numerous publications on the topic, tend to be more credible than those who lack any of these credentials. In addition, respected publishers, such as those affiliated with reputable organizations or universities, are more credible because they have reputations to maintain. Credentials provide proof that the materials are accurate, based on sound reasoning, and contain all necessary information.

Another element in establishing credibility is timeliness. Educational materials, print or Web based, should be published within the past 2–3 years, with cited references no older than 5 years. New knowledge becomes available as scholars continue to conduct research and clinicians apply the generated evidence in their practices. Look for materials with authors who appear to consider various interpretations and present balanced accounts. Beware of materials that present only evidence that supports one interpretation. Avoid materials with an agenda—political, ideological, or financial. One clue an article may have an agenda is the author's use of emotional tone or language. Drug companies may present a biased narrative in their materials because their goal is to market their products. Finally, evaluate the reasoning of an author's argument. Try to avoid sources that rely on false arguments, which can distract or mislead readers rather than build on objective reasoning. Three common logical fallacies in articles include (1) referring to an argument that is actually a personal attack, (2) distracting the reader rather than building an argument, and (3) asserting causality because one event took place first.

When using Internet-based materials, the type of Web site the educational material appears on—home pages, special interest, professional, news or journalism, and commercial sites—is important to consider (Montecino, 1998). Personal home pages are maintained by individuals and most likely informal (i.e., individuals post personal opinions and showcase ideas). Special interest sites are usually maintained by not-for-profit organizations or activists dealing with particular issues (e.g., legalization of marijuana, assisted suicide). They can be relatively mainstream or radical in interests and vary widely in credibility of information. Special interest sites are, by their nature, biased based on the views of the authors. Professional sites are maintained by institutions or organizations, and sometimes by individuals. These sites may house research, reference sources, and fact sheets. Many institutions provide

such services to the public, and the credibility of the institution or professional credential of the individual provides clues as to the reliability of the presented information. If this site is only linking to other Web sites for information, the credibility of the information is connected to the originating sites. News or journalism sites may include national news, international news, online newspapers, magazines, and homegrown publications. Anyone can publish any type of “news” on the Internet. It is important to remember that just because information is published it does not necessarily mean it is true. However, if a periodical article has an International Standard Serial Number, it carries more authority. Commercial sites may represent legitimate businesses; however, some sites may not be legitimate, and many are in the business of making money as well as acquiring and retaining customers. Readers should be wary; these sites are inherently biased in favor of the business's products.

To help determine different types of Web sites, it is helpful to look at the domain names: *.edu* indicates an educational institution; *.gov* indicates government entities (e.g., National Institutes of Health, Library of Congress); *.org* refers to organizations (e.g., Association of Rehabilitation Nurses, Sigma Theta Tau International); and *.com* is used for commercial groups (e.g., WebMD, or Prevention; Johnson & Lamb, 2007; Montecino, 1998).

Table 1 lists seven criteria useful for evaluating Web sites (Beck, 2009; Schrock, 2002; Standler, 2004). Some colleges and universities post criteria and how to evaluate informational resources on their library home pages (e.g., Cornell University Library, www.library.cornell.edu/olinuris/ref/research/evaluate.html; University of California, Berkeley, www.lib.berkeley.edu/instruct/guides/evaluation.html). If the information presented in print or posted to a Web site is deemed credible, then its readability is assessed.

Assessing Readability

Readability of written materials is an attempt to match the reading level of the text to the “reading with understanding” level of the reader. Most people read and understand content that is between a 7th and 9th grade reading level, which is approximately junior high level (McLaughlin, 1969). However, Friedman, Hoffman-Goetz, and Arocha (2004) found that the majority of Web sites for breast, colon, and prostate cancer ($n = 55$) were written at grade 13+ level, which demonstrates that the information is presented at a college level. According to the 2003 National Assessment of Adult Literacy, approximately 30 million adult Americans are at a below-basic level in health literacy, which is the ability to use reading skills

Table 1. Seven Criteria to Evaluate Web Sites (Beck, 2009; Schrock, 2002; Standler, 2004)

<p>1. Authority (Who says so? Know your author and publisher.)</p> <p>Who created this information and why?</p> <p>Do you recognize this publisher or author or their work?</p> <p>What knowledge or skills do they have in the area?</p> <p>Is the publisher or author(s) stating fact or opinion?</p> <p>What else has this author written?</p> <p>Does the author acknowledge other viewpoints and theories?</p> <p>2. Objectivity (Is the information prejudiced? Think about the point of view presented.)</p> <p>Is the information objective or subjective?</p> <p>Is it full of fact or opinion?</p> <p>Is a balance of perspectives represented?</p> <p>Does it reflect bias? How?</p> <p>How does the sponsorship impact the perspective of the information?</p> <p>Could the information be meant as humorous, parodistic, or satirical? Is this appropriate?</p> <p>3. Authenticity (Is the information true? Know the source.)</p> <p>Where does the information come from?</p> <p>Is the information from an established commercial or professional organization, university, or government source?</p> <p>Is this a primary (main) or secondary (lesser) source of information?</p> <p>Has the information been reviewed by others to ensure correctness?</p> <p>Are original information sources clear and documented?</p> <p>Is a bibliography or reference page provided that cites the sources used?</p> <p>4. Reliability (Is this information correct? Consider the origin of the information.)</p> <p>How do you know?</p> <p>Who is sponsoring this publication?</p> <p>Does the information come from a business/company or organization, school, or government site?</p> <p>What is the purpose of the information resource (e.g., to inform, instruct, persuade, sell)?</p> <p>What is their motive?</p> <p>Does this matter?</p> <p>5. Timeliness (Is the information current? Consider the relevance of the information.)</p> <p>Does the site provide specific dates for the information?</p> <p>How current are links to other sources for information?</p> <p>Does currency of information matter with your particular topic?</p> <p>6. Relevance (Is the information useful? Think about whether you need this information.)</p> <p>Does the information contain the breadth and depth needed?</p> <p>Is the information written in a form that is helpful (e.g., reading level, technical level)?</p> <p>Is the information in a form that is useful (e.g., words, pictures, charts, sounds, or video)?</p> <p>Do the facts contribute something new or add to your knowledge of the topic?</p> <p>Will this information be valuable to you?</p> <p>7. Efficiency (Is this information worth the effort? Think about the organization and speed of information access.)</p> <p>Is the information well-organized (e.g., table of contents, index, menu, and other easy-to-follow tools) for navigation?</p> <p>Is the information displayed in a way that is easy to use (e.g., headings, fonts, graphics, pictures)?</p> <p>Is the information quick to access?</p>
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Table 2. SMOG Formula (McLaughlin, 1969)

<p>Directions</p> <p>Select 30 sentences from the text.</p> <ul style="list-style-type: none">• For instance, take 10 sentences from the beginning, 10 from the middle, and 10 from near the end of the document. <p>Next, count every polysyllabic word (i.e., words of three or more syllables).</p> <ul style="list-style-type: none">• Estimate the square root of the nearest perfect square of the number of polysyllabic words that are counted. <p>For example, if the polysyllabic word count is 110, the nearest perfect square is 100 and its square root is 10.</p> <p>Now add 3 to the approximate square root.</p> <ul style="list-style-type: none">• This is the SMOG Grade, which is the reading grade that people must have reached if they are to fully understand the text assessed.• In this example, the square root of 10 plus 3 equals 13, so the reading grade level is 13, which indicates that the text was written for people with some college education.
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and understand health-related materials and forms (Baer, Kutner, & Sabatini, 2009). It is important that educational materials be written at a 6th grade (or lower) reading level (Badarudeen & Sabharwal, 2008; Monsivais & Reynolds, 2003).

One way to measure readability is to use the SMOG (simplified measure of gobbledygook) formula developed by McLaughlin in 1969, which is presented in **Table 2**. In addition, McLaughlin has an online calculator to determine SMOG reading grade level (www.harrymclaughlin.com/SMOG.htm) that allows you to quickly and easily calculate the readability level of any text by entering 30–2,000 words. Another way to check readability of materials is to use word-processing programs, such as Microsoft® Word or Works, or Word Perfect®. Run a grammar check to obtain readability statistics and determine how difficult a reading passage is to understand. For example, in the Microsoft® Office Word 2007 program, reading level can be automatically checked for any document using the Flesch-Kincaid formula. Highlight any word in the document, click on “Review,” select “Spelling & Grammar,” and the U. S. readability grade is automatically calculated.

Other considerations to weigh include word choice, image use, and the design; it is important to make choices that will best help readers understand the content. Materials need to be written using common words. For example, use “stroke” in place of “cerebrovascular accident” or “change the bandage before breakfast, after lunch, and at bedtime” for “tid” (an abbreviation for *ter in die*, which in Latin means “three times a day”). Another important point is to assess the use of jargon (e.g., acute, chronic) that is used without being defined. In addition, evaluate whether there are drawings, pictures, or diagrams that help readers to better understand the written content.

Design elements for print or Internet materials also contribute to readability (e.g., font size, layout

of text, information broken into smaller sections; The Literacy Company, 2009). Generally, look for written materials that have a font size of at least 10–12 points, which is about the size used in most journal articles and larger than 8-point fonts used in many newspapers. Also, assess the material for how the information is presented or laid out on the page. Be sure to look for use of headings and topic sentences, along with fewer words and shorter sentences. Finally, evaluate if the material’s content is split into more easily digestible and understandable chunks or sectioned into short bits of information (The Literacy Company). These design components make text easier to read and comprehend.

If credibility and readability remain issues for the chosen materials, most nurses and healthcare professionals will seek other published sources of information on the topic. However, appropriately written materials may not be available, especially for some highly specialized areas. If there is nothing suitable, the decision to revise already written materials or develop new educational materials must be made.

Developing Written Educational Materials

Many of the same strategies used in choosing educational materials can be used in revising or developing new materials. When beginning the development or revision process, you must define the goal or purpose for writing about the topic and identify the target audience, because each will impact every future decision. The goal will determine what information will be included in the text and whether illustrations will be used. For example, if your goal is to show the proper use of a prosthetic limb, emphasize the outcome of its proper use and include pictures. An example sentence might be, “Properly following directions for putting on your artificial leg may help prevent skin sores.” A picture of a person without

any signs of skin breakdown correctly putting on the limb will reinforce this information. Clear and precise teaching goals help focus the materials on what patients need to learn from the written materials.

The target audience is usually determined from basic demographic information, such as age, gender, ethnicity, language, health conditions. This information can be gathered from program statistics or agency demographic information. Oftentimes these patients can provide input because they have experienced the condition or situation. These individuals may want to understand the cause of their problems or their treatment options, which includes any risks, or to know what they can do to help themselves deal with the issue (Turnbull, 2003). Depending on the topic, there may be more than one target audience that could benefit from the educational materials. However, there are standard approaches to writing educational materials that must be considered to meet the needs of a targeted audience.

General Considerations in Developing Materials

Focus the material on a few key concepts that flow from the goals. Throughout the material, use consistent, simple words that are 1–2 syllables (e.g., “walk” for “ambulate”; “bruise” for “contusion”) and an average sentence length of 10–12 words (Aldridge, 2004; Monsivais & Reynolds, 2003). Be sure to use a clear topic sentence at the beginning of each paragraph. Follow the topic sentence with details and examples (Turnbull, 2003). For example, “Proper use of crutches helps you walk in a safe manner. Here are the reasons why.” Next provide reasons for why this is true. Emphasize benefits of adopting the desired behavior, such as, “Using these tips can help you build your strength and endurance for walking.” The inclusion of examples and stories may help engage readers, but limit paragraph length to 4–5 sentences. Within any paragraph, tell three or fewer points about the topic. If the information is too complex, break it into more paragraphs or use lists. Start a new paragraph when the topic changes. Use the second person point of view (i.e., “you”) because personalization helps the reader understand what he or she is supposed to do (Turnbull).

The use of Internet resources may also keep readers interested in the topic. However, remember to evaluate the Web site using the criteria presented earlier in the article (see Table 1) before including it into the written material (Beck, 2009; Schrock, 2002; Standler, 2004). One caveat of using any established Web site is that information may move to another location, be deleted by the authors, or removed from the Web site entirely.

Key Practice Points

1. Educating clients is a key component of comprehensive rehabilitation care.
2. Choosing written, organization-based, commercially generated, or Internet-based educational materials depends on their credibility, readability, and availability.
3. Deciding to adapt existing materials or design new materials depends on whether materials are deemed unsuitable or inappropriate.
4. To develop readable materials, nurses need to have a clear purpose for writing about the topic and listen to client requests; present accurate information that reflects accepted, common practice; and use a clear writing style.

Arrange the content in a logical manner; some readers prefer step-by-step instructions; other individuals find that concepts arranged from the general to the specific are easier to comprehend. A question-and-answer format can also be useful in presenting information. In structuring the ideas, the reading level should be kept at about a 6th-grade level (Badarudeen & Sabharwal, 2008; Monsivais & Reynolds, 2003; Thorley, 2005–2006). Use the information presented earlier in this article and displayed in Table 2 to calculate the reading level for the text (McLaughlin, 1969).

Unlike verbal instructions, written educational materials serve as a permanent record of instructions given to patients (Aldridge, 2004). The information must be accurate and reflect accepted, common practice. It is advisable to place a disclaimer at the end of the material (Aldridge), such as, “The medical information presented in this material is meant for general educational purposes only. Please contact your healthcare provider for specific medical concerns or treatment. Further, the inclusion of links to external Web sites is not intended to reflect their importance, nor is it intended to endorse any views expressed or products or services offered by the author or the organization operating the site.”

Another general strategy is to personalize the written material to encourage patients to actively use the information (Aldridge, 2004). This can be easily accomplished by leaving blank spaces to insert information pertinent to the patient, such as setting aside room to insert the individual’s blood pressure readings or laboratory values. The material can also be tailored to the specific plan of care used. For example, if from a class of medications, one specific drug is used by a prescribing advanced practice nurse, physician

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assistant, or physician, it should be included in the materials. On the other hand, if a certain drug is not routinely prescribed, it should not be included in the written material (Aldridge).

Language and Writing Style

Gender-free or neutral language, as well as sensitivity to the cultural values and beliefs of diverse communities, must be considered when developing educational materials. When writing, find alternatives for complex words, medical jargon, abbreviations, and acronyms to make the material more readable. When no alternatives are available, spell complex terms and abbreviations phonetically and give clear definitions. A glossary is important for difficult terms and should be placed at the beginning rather than at the end of the written material, where the reader will be more likely to find and use it. Likewise, keep your language conversational and use complex words mainly for precision. Statistics and other facts are simple ways to support your point, but ensure your facts are correct. It is best to write using consistent terms throughout the material (Aldridge, 2004; Monsivais & Reynolds, 2003). For instance, do not use “drugs” and “medications” interchangeably. In addition, keep most sentences short; but vary sentence length to maintain interest while keeping the sentences simple. Another idea is to use the active voice, which is more authoritative, and vivid verbs (e.g., “assert yourself”) in writing (Monsivais & Reynolds; Turnbull, 2003). Active voice uses words like “I” and “you.” Passive voice is indirect, makes the writing vague, creates a distance between the message and the audience, and frequently contains more words, which can make reading the material difficult. Here is an example:

- Active voice: Mary used her walker today.
- Passive voice: The walker was used by Mary today.

When possible, say things in a positive way (Turnbull, 2003). For example, use the sentence “Drink less caffeinated soda.” instead of “Do not drink lots of caffeinated soda.”

Visual Presentation and Representation

In developing written educational material, consider using colors that are appealing to your target audience. However, be aware that some individuals cannot tell red from green because of color blindness. Use photos with concise captions and keep captions close to the images. Avoid graphs and charts unless they actually help readers understand content. Balance the use of text, images, and white space. Some writers use chunking of information, which is simply splitting the information into short, easily scannable elements, which

helps to cluster main ideas (Aldridge, 2004). Use bullets to call attention to main points in the text. Avoid words or sentences in all capital letters, and avoid italic font because it is harder to read. Do use bolded subheadings to separate and highlight sections and, when possible, spell out fractions and percentages—it makes the text easier to read and understand (Monsivais & Reynolds, 2003).

Test the Developed Material

After the material is developed, test the new material to ensure the audience will get the message (Aldridge, 2004). The evaluation process of pretesting the material with select professional content experts and members of the target audience helps determine whether the material is easily understood, credible, appropriate, useful, and attractive or attention getting. Pretesting can be conducted using self-administered questionnaires, interviews, or focus groups with 5–10 individuals. Self-administered questionnaires are quick and relatively inexpensive to administer. They can be mailed or distributed and collected in person. A minimum of 20–30 completed questionnaires should suffice for reviewing the material. Individual interviews or focus groups (with at least 5 people), asking a short list of structured questions about the materials are also good for testing. These methods are cost effective if individuals can be interviewed in a short amount of time. If testing is not possible, continuously analyzing feedback from your patients is a must. In addition, ask yourself, “Does this material help achieve the intended teaching goals?” If not, begin the process of re-evaluating the written educational material.

Discussion and Conclusion

According to a study of 20 stroke team members conducted by Hoffmann, McKenna, Herd, and Wearing (2007), only 70% of these professionals provided written educational materials to patients. Ninety percent of study participants reported that patients and their families rarely or occasionally received sufficient written information. Limitations of this study were a small sample size from one metropolitan area, untested questionnaire without established reliability and validity, and a retrospective report that was subject to recall bias (Hoffmann et al., 2007). Nonetheless, this study reinforces that the amount of written educational materials being distributed to patients by healthcare professionals needs to be increased.

Strategies are necessary to ensure that patients receive comprehensive educational materials when in the hospital and after being discharged to other settings. Furthermore, no matter what the setting, it is important to establish explicit guidelines for

- which materials must be distributed and reviewed with patients dealing with specific diseases, injuries, or chronic conditions
- how and when professionals should disseminate information to these patients.

Predetermined materials could be organized in packets and made available for distribution. A simple and easy-to-use checklist, which becomes part of the patient's medical record, could be used as a record of the information provided to and discussed with patients. The information presented in this article can be used by nurses and other healthcare professionals to enhance their ability to choose or develop educational materials based on specific patient needs as well as appropriate quality, readability, and presentation.

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About the Author

Linda L. Pierce, PhD RN CNS CRRN FAHA, is a professor at the University of Toledo in Toledo, OH. Address correspondence to her at l.pierce@utoledo.edu.

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Access to Cardiac Rehabilitation Among South-Asian Patients by Referral Method: A Qualitative Study

Keerat Grewal, MSc • Yvonne W. Leung, MA • Parissa Safai, PhD • Donna E. Stewart, MD • Sonia Anand, MD PhD • Milan Gupta, MD • Cynthia Parsons, BScPT • Sherry L. Grace, PhD

KEY WORDS

cardiac rehabilitation
qualitative
referral
South Asian

People of South-Asian origin have an increased prevalence of coronary artery disease. Although cardiac rehabilitation (CR) is effective, South Asians are among the least likely people to participate in these programs. Automatic referral increases CR use and may reduce access inequalities. This study qualitatively explored whether CR referral knowledge and access varied among South-Asian patients. Participants were South-Asian cardiac patients receiving treatment at hospitals in Ontario, Canada. Each hospital refers to CR via one of four methods: automatically through paper or electronically, through discussion with allied health professionals (liaison referral), or through referral at the physician's discretion. Data were collected via interviews and analyzed using interpretive-descriptive analysis. Four themes emerged: the importance of pre-discharge CR discussions with healthcare providers, limited knowledge of CR, ease of the referral process for facilitators of CR attendance, and participants' needs for personal autonomy regarding their decision to attend CR. Liaison referral was perceived to be the most suitable referral method for participants. It facilitated communication between patients and providers, ensuring improved understanding of CR. Automatic referral may not be as well suited to this population because of reduced patient-provider communication.

People of South-Asian origin (i.e., from India, Pakistan, Sri Lanka, and Bangladesh) have an increased risk of developing coronary artery disease (CAD) and experiencing cardiovascular death (Anand et al., 2000; Bhopal, 2004; Gupta, Singh, & Verma, 2006; McKeigue, Miller, & Marmot, 1989). Although cardiac rehabilitation (CR) is effective in improving prognosis after a cardiac event, there is growing evidence that certain ethnic populations, including South Asians, are among the least likely people to participate in such programs (Banerjee, Gupta, & Singh, 2007; Mochari, Lee, Kligfield, & Mosca, 2006; Oldridge, 1988; Tod, Wadsworth, Asif, & Gerish, 2001; Yancey, 2004). This group's lower rate of CR participation is concerning given the increased prevalence of CAD among South Asians (Wilkinson et al., 1996).

CR attendance is influenced by numerous factors, including referral practices. When usual methods of CR referral are used, such as physician referral, there generally is low participation in CR (approximately 15%–30% of eligible patients; Bunker & Goble, 2003; Cooper, Jackson, Weinman, & Horne, 2002; Grace et al., 2002). When automatic referral is used, however, participation in CR has been shown to increase to approximately 50% (Grace, Evindar, Kung, Scholey, & Stewart, 2004a; Grace et al., 2007). Studies suggest that automatic referral (CR referral is a standard order

for all eligible patients) not only increases the number of referrals made to CR, but it may reduce inequalities in access for ethnocultural minorities (Dafoe et al., 2006; Grace, Evindar, Kung, Scholey, & Stewart, 2004b; Smith & Harkness, 2006). A dearth of literature exists examining referral methods as a means to increase CR access among ethnocultural minorities, and few studies examine the poor CR attendance of South Asians (Jolly, Greenfield, & Hare, 2004; Tod et al., 2001; Yancey, 2004).

Information about the three ways in which hospitals operationalize automatic referral—universal electronic, universal paper, and liaison—have been identified through interviews (Krepostman, Scholey, Stewart, & Grace, 2005). With universal electronic referral, all patients are referred to CR unless they are ineligible based on clinical practice guidelines (Canadian Association of Cardiac Rehabilitation, 2004) via an automated referral in their electronic health record. Referral data are printed out in the CR program; physicians have to preapprove these referrals to be generated automatically when indicated. The universal paper referral category is similar in process, with the exception that the referral is paper based. In the liaison referral category, an allied health professional discusses CR with cardiac patients. Referrals are not universal and they require a physician signature; however, the opportunity for

two-way communication between patients and providers is increased and this may be integral to encouraging CR enrollment. These three methods of referral, in addition to referrals made at the discretion of a specialist or generalist, are examined in this study. The purpose of the present study is to qualitatively explore whether CR referral knowledge, access, and attendance is influenced by different methods of referral among South-Asian patients.

Methods

Participants

This study used the interpretive-descriptive qualitative research method to explore South-Asian cardiac patients' perceptions of CR and methods of referral to CR. Participants were identified and recruited from a larger study evaluating referral methods to CR, the Cardiac Rehabilitation Care Continuity Through Automatic Referral Evaluation (CRCARE) study (Link et al., 2007). Inpatients who were consecutively admitted with an underlying diagnosis of acute coronary syndrome (ACS) were recruited from 11 hospitals across Ontario. Each hospital operates under one of the referral categories described earlier.

As part of a baseline survey for the CRCARE study, patients self-identified their ethnocultural

background. Those who self-identified as South Asian and spoke English and/or Punjabi were eligible for this study (this article's first author can communicate in both English and Punjabi).

Design and Procedure

Ethics approval for the CRCARE study and this qualitative substudy was obtained from each participating hospital's ethics board. Patients who were recruited and consented to participate in the CRCARE study and who fit the selection criteria for this substudy were contacted after discharge by telephone to determine interest in participating in a telephone interview. Participants were asked for consent to record the interviews to allow for later translation and transcription. Interviews were conducted in English or Punjabi depending on the participant's preference. Interviews followed a semistructured interview guide with open-ended questions and probes to ensure relevant issues were examined, such as participants' awareness and knowledge of their CR referral, beliefs regarding why they were or were not referred to CR, discussions with hospital staff about CR, and intentions to participate in CR (Table 1).

Table 1. Semistructured Interview Guide

<ol style="list-style-type: none"> 1. Where were you born? 2. What religion do you practice? 3. Have you heard of cardiac rehabilitation (CR)? <ul style="list-style-type: none"> • If yes, what have you heard about it, and how did you hear about it? • See if they have an accurate awareness of CR services. 4. Do you know whether you were referred to CR while you were in the hospital for your cardiac condition? <ul style="list-style-type: none"> • Description of the program; positive/negative tone; discussion of the benefits, barriers, facilitators, family/shared healthcare decision-making, self-esteem/efficacy, health beliefs, attitudes toward healthcare system, support during/after decision, knowledge of CR (friends, relatives who participated) <ol style="list-style-type: none"> 4a. If YES, they were referred. <ul style="list-style-type: none"> • What type of discussions took place about CR with your healthcare providers? • Describe the referral process. • Have you attended CR yet? Did you sign up? Why or why not (barriers)? • What were the most important factors that influenced your decision? • Will you continue attending CR? Why or why not? 4b. If NO, they were not referred or do not know whether they were referred. <ul style="list-style-type: none"> • Did you ask your doctor/nurses about CR? <ul style="list-style-type: none"> • If so, tell me about the discussion. • Did you have ideas about what the program may be about? • Would you have gone if you knew about CR? Why? Why not? • What recommendations were made to you by doctors/nurses for ways to reduce your heart risk? 5. What do you think were the barriers that made it hard for you to access heart services (i.e., CR) to help your recovery or to follow through on recommendations to improve your heart health? 6. Do you have any other thoughts or comments on the heart healthcare services you received and/or how they can be improved? 7. Do you have any thoughts on how being South Asian might affect your access to cardiac rehabilitation?

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Data Analysis

Interviews were translated if necessary and transcribed verbatim to allow for content analysis. Drawing upon interpretive-descriptive analysis, interview transcripts were coded by the first author using NVivo software (QSR International Pty Ltd., 2006) to identify major themes through the use of exploratory inductive reasoning. Themes were captured within a subjective perception and generated into an interpretive description capable of informing clinical understanding (Thorne, Kirkham, & McDonald-Emes, 1997). NVivo software facilitated coding and analysis of interviews, searching and retrieving of related segments and subthemes, and theorizing. Data transcription and analysis were concurrent with data collection and involved inductively documenting emerging themes around differences in CR referral knowledge, awareness, and intentions to participate; comparisons between referral methods; and opportunities for and barriers to CR access and participation. Concurrent data analysis (i.e., analysis of the previous transcript before the next interview) facilitated the generation of new questions for subsequent participants. After overarching themes were developed, each was analyzed regarding similarities and differences between referral methods.

To ensure the transparency of results, techniques of memoing to describe codes and transcripts were used; a review of the representativeness of the coding and categories was implemented by discussing coding strategies and examples of quotes with other authors. To guarantee the analysis was trustworthy, processes such as extensive use of direct quotations regarding themes and use of systematic coding were incorporated. To reduce bias, a second researcher independently reviewed the coding tree and transcripts after the first iteration of coding for each transcript had occurred.

Results

Sixteen South-Asian participants with a confirmed ACS diagnosis were interviewed. Fifteen (93.8%) participants were men, and the mean age was 62.6 ± 7.9 years. The majority of participants ($n = 11$, 68.8%) were born in India, with 2 (12.5%) born in Bangladesh, 2 (12.5%) born in Sri Lanka, and 1 (6.3%) born in Uganda. Three participants (18.8%) had been living in Canada for less than 10 years, 3 had been in Canada between 11 and 20 years, 2 had been in Canada between 21 and 30 years, and 7 had been in Canada for more than 31 years (data for one participant were missing).

Four participants from each referral category were interviewed and theme saturation was achieved. Four central themes influencing patients' decision to

attend CR emerged from analysis of interview data. Each theme and its relationship to referral method is described as follows.

Predischarge CR Discussions with Healthcare Providers

Across all referral categories, participants noted a general lack of discussion about CR with patients during their hospital stay. In the liaison referral category, however, some discussion about CR in the hospital often was evident, although these discussions typically took place with nurses or physiotherapists and not physicians. Because liaison referral is not universal, one participant was not referred to CR and did not discuss CR with a healthcare provider.

As part of the automatic referral methods (universal paper and universal electronic), some study participants had been given information about CR in English-language documents (e.g., letters or pamphlets) while in the hospital, but they had not discussed CR with healthcare providers in person. One participant referred through this method said, "[Healthcare providers] were not too emphatic about it... They do not, you know, emphasize on how important it is. It is just like any other instruction set that they give you... the only suggestion that I have is that they could make it kind of, you know, a little more emphatic and highlight the benefits of the program."

Another participant referred through the universal electronic method said, "The only time I heard about [CR] was through the letter, which I received probably a week to 10 days ago." Several participants referred through usual methods had CR discussions with physicians or allied health professionals. Usual referral often does not result in CR use among South-Asian patients, however, because many in this category never were initially referred to CR given there were no discussions about the topic. One participant said, "I did not enroll, I did not go to any CR center, nothing. I do not know anything about it." Another participant initiated discussion about CR with his physician only after hearing about CR program benefits from friends and other patients.

Overall, participants from all referral categories pointed to a lack of discussion with healthcare providers about CR while in the hospital. Many study participants acknowledged that they desired to have CR discussions, especially with their physicians.

Patients' Limited CR Knowledge

Many study participants who had not yet attended CR were unaware of the comprehensive nature of services offered by CR programs. Among those who were aware of CR, they often only spoke about the exercise component of CR programs. As one participant in the liaison referral category noted, "It

involves walking and some exercises they give you and they monitor you while it is being done." Some patients were unsure of the benefits of CR programs, and this especially was evident in the two automatic referral categories. One study participant, referred through universal electronic methods, said with hesitation, "Well, I guess there are exercises and I have a first meeting on the 8th of May, and I don't know, I guess they will be explaining it further." For this participant, the first meeting is an important opportunity to gain information about CR; however, his uncertainty highlights the lack of information he received from healthcare providers during his hospital stay.

Patients in the usual referral category who had not heard of CR while in the hospital often gained knowledge of CR from other patients or from family or friends who had undergone rehabilitation. One participant noted, "Well, I was told about it by the other patients who had the same bypass surgery that you can go to rehab. So I asked my doctor and he recommended me to rehab." For other study subjects, the current cardiac hospitalization was not their first hospitalization and they had an understanding of CR from previous participation in such programs. Both of these situations highlight the haphazard level of awareness or knowledge about CR programs among patients.

Ease of Referral Process as a Facilitator of CR Attendance

The majority of participants in the universal electronic, universal paper, and liaison categories believed the referral process was well organized. With liaison referral, patients had heard about CR while in the hospital and then had follow-up contact with the CR program upon discharge. Many of these patients initially were contacted by the CR program postdischarge to schedule an assessment appointment. One participant who was referred through the liaison method said, "The process is already facilitated. They are proactive in terms of getting in touch with you. They already know that you have been to the hospital, have had a heart incident."

When some patients received letters about CR, they were instructed to call the program themselves to schedule an initial appointment. This was the case for one patient in the liaison category and for three of the four patients in the universal electronic category. One patient in the latter category said, "I called them to make an appointment. I got a letter, and the letter said to contact them and make a date, so I called." The major difference between referral categories was knowledge of CR before the referral; most patients referred through liaison referral had a previous awareness of CR through in-hospital discussions.

The Need for Personal Autonomy Over Decisions to Attend CR

When patients were referred to CR, the decision to enroll was deemed a personal choice. Patients who had enrolled in CR or intended to enroll did so because they believed it was a means to obtain information and improve their health. Although external factors influenced patients' decisions to attend CR (such as medical advice and suggestions from friends, family, or other patients), the perception was that the final decision to attend largely was the patient's own choice. One subject said, "No, that's solely my decision. I'm a conscious being and I understand the last time I could have done more. But this time, now that I'm off [work] for a good time, I should be able to make use of that program."

Participants who did not attend CR believed it was not necessary. The majority of these patients said they could exercise at home or at a gym. One participant, referred through the usual method of referral, said, "Why I go? That's the question. I talk to my doctor, he said, 'Doesn't need, up to you.' So, I just control myself. I don't eat much. I have good health. I do exercise, I joined the club here." Some patients who previously participated in CR thought they already had the necessary information and could exercise on their own.

Although many participants said the decision to participate in CR remained in their hands, many also identified barriers that made their decision to attend CR more complex. These barriers included the distance of the CR program from home, lack of transportation, the timing of the program with regard to work conflicts, and the wait time associated with commencing some CR programs. Interestingly, the concern about wait times only was an issue for participants referred to CR via the universal electronic method. One such participant said, "If they were to call me today, I would go. This is the proper time to do it, not after 4 months." This theme confirms that the decision to attend CR among this population appears to be a largely personal choice. However, obtaining accurate information about CR programs further influences a patient's decision to attend CR.

Discussion

Given higher rates of CAD and lower rates of CR participation identified among South Asians in the literature (Banerjee et al., 2007; Mochari et al., 2006; Oldridge, 1988; Tod et al., 2001; Yancey, 2004), this study qualitatively explored the effect of referral method on South-Asian patients' awareness of and access to CR in Ontario. After analyzing the themes and exploring thematic differences based on referral category, results indicated that liaison referral may

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be the most suitable means to refer South-Asian cardiac patients, and this method may result in enhanced positive perceptions and awareness of and access to CR. This referral method allows for improved communication between patients and providers, which may enable better understanding of CR and its benefits, clarify misconceptions, and address perceived barriers. Such referrals should be universal to ensure all eligible patients are referred.

Liaison Referral

In the liaison category, patients had the opportunity to have one-on-one discussions with healthcare professionals, often nurses and physiotherapists, about CR. These discussions gave patients an awareness of CR even though it may have been limited to the exercise component. The opportunity to talk with a healthcare provider during a liaison referral may be related to greater intent to participate in CR. During a liaison referral, professionals can discuss the CR concept, the benefits of participation (e.g., frequency of visits, duration), and CR programs close to home. This method of referral may increase CR participation among South-Asian patients. Furthermore, liaison referral offers an opportunity to address language barriers, which are a potential obstacle to CR participation. Healthcare providers who are fluent in the patient's first language may be able to communicate more effectively about CR with those who have difficulty communicating in English.

Research has shown that South-Asian patients are receptive to physician advice (perhaps more so than advice received from allied health professionals; Muthu Kumar et al., 2004). Considering that the strength of a physician's referral is one of the strongest predictors of CR attendance among all cardiac patients (Daly et al., 2002), encouraging physicians to make referrals may increase participation among South-Asian cardiac patients. Given the rates of physician referral under usual referral conditions, however, physicians are unlikely to make referrals on a universal level. Discussions with nurses involved in the patient's care may prove a useful alternative.

Automatic Referral

Among patients in the two automatic referral conditions (universal electronic and universal paper), similar issues often arose. Few patients had the opportunity to discuss CR with allied health professionals while in the hospital or they had obtained their information from English-language pamphlets. Although patients in this study spoke and understood English, English-language patient education materials may represent a barrier for non-English-speaking South-Asian patients (or for any other ethnocultural minority group).

Some patients reported that they were unaware a referral for CR had been made until they received a letter in the mail after discharge. Predischarge discussions may increase CR awareness and the likelihood of program attendance (Arthur, 2006). At the same time, it may be difficult for many patients to recall in-hospital discussions because of the volume of information they received, anxiety, sedation, or other medication side effects. The pamphlets patients take home may serve as useful supplements that help them to remember these discussions. Developing multilingual pamphlets for dissemination in hospitals and recruiting ethnoculturally diverse and multilingual healthcare providers are options to explore to ensure all patients are fully informed.

Patients in the two automatic referral categories perceived the referral process as well facilitated. Some patients were called by the CR program to schedule an intake appointment, while others received letters from the program with instructions to call the program. The latter approach may reduce CR enrollment because it places responsibility for scheduling an appointment on the patient. This approach often is used in programs with capacity limitations.

Patients in the universal electronic condition group reported the wait time to access CR as a barrier to attendance. In an article reviewing access to CR, Dafoe and colleagues (2006) recognized that through automatic referral "CR programs may exceed capacity, resulting in longer wait times" (p. 907). Patients in this study feared that a delay in accessing care could negatively affect their recovery or the effectiveness of CR, and they worried that their return to work would conflict with access to CR (and prohibit their participation). CR sites that institute universal automatic referrals need to consider their service capacity and implement methods to ensure patients have access to services without lengthy delays. Dafoe and colleagues recommend 7–60 days as an acceptable wait time for various diagnostic categories. Increases in funding for CR services would ensure timely access to this evidence-based care after universal referral.

Usual Methods of Referral (At Physician Discretion)

Similar to trends seen in the general cardiac population, usual methods of referral does not often result in CR use among South-Asian patients. It was within this referral category that some patients never were referred for CR, contrary to recommendations in clinical practice guidelines (Canadian Association of Cardiac Rehabilitation, 2004). Compared to automatic referral, usual referral is provided at the discretion of the physician; consequently, substantially fewer patients

are referred to and enroll in CR when compared to automatic referral methods (Grace et al., 2007). Although several patients had heard of CR from healthcare professionals while in the hospital, discussions about CR with other patients, friends, or family provided their major source of information.

CR Barriers

The decision to attend CR was perceived as a personal choice. Patients want to have discussions about CR while in the hospital. Information gained in the hospital can influence a patient's decision to attend CR, so in-hospital discussions can be tailored to overcome misconceptions and address barriers patients perceive when deciding to enroll. For example, two patients who decided not to attend CR said they believed it was not necessary because they engage in exercise independently at home or already had attended CR for a previous cardiac event. With a one-on-one conversation about CR, there is an opportunity to clarify misconceptions, discuss the educational and other comprehensive components offered and the benefits of participation, and convey that exercise in CR is undertaken in a medically supervised environment.

Limitations

Caution is warranted when interpreting this study's results. Results cannot be generalized to non-English or Punjabi-speaking South Asians. Moreover, given the nature of the qualitative design and the lack of literature in this area, replication is warranted with a more heterogeneous population. Furthermore, because patients from other ethnocultural groups were not interviewed, it is unclear whether, or by how much, South-Asian participants have differing perspectives on CR referral compared to other ethnic groups. Finally, the lack of women in this study warrants more exploration of CR participation among South-Asian women.

Conclusion

Although results from this first qualitative study on CR referral methods indicate that liaison referral may be optimal for referring South-Asian cardiac patients, further investigation is needed. Advantages to liaison referral include improved communication; however, referrals are not universal and a provider fluent in the patient's first language may not be available. After follow-up assessments, the larger CRCARE study will enable quantitative examination of the rates of CR referral, enrollment, and participation by referral method.

Results indicate that the opportunity for discussions with healthcare providers and ease of

the referral process may contribute to CR attendance among South-Asian cardiac patients; these all are characteristics in liaison referral as well. Overall, this study's preliminary findings highlight the importance of CR discussions between South-Asian patients and healthcare providers (such as nurses) before discharge. These conversations can increase the level of CR awareness among South-Asian cardiac patients and also may eliminate misconceptions about CR programs. Nurses should be encouraged to engage patients in discussions about CR because such opportunities for education are important when making the personal decision to attend CR. Implementing these methods, along with proactive facilitation of CR referrals at the health-system level, shows promise in ensuring more use of these life-saving services.

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About the Authors

Keerat Grewal, MSc, is a medical student at the University of Toronto in Toronto, ON. Address correspondence to Keerat Grewal at keerat.grewal@utoronto.ca.

Yvonne W. Leung, MA, is a doctoral student at York University, Toronto, ON, Canada.

Parissa Safai, PhD, is an assistant professor at York University, Toronto, ON, Canada.

Donna E. Stewart, MD, is a professor in and chair of the Women's Health Program at the University Health Network and the University of Toronto, Toronto, ON, Canada.

Sonia Anand, MD PhD, is a professor of medicine and Michael G. Degroote Chair in Population Health Research in the department of medicine, McMaster University, Hamilton, ON, Canada.

Milan Gupta, MD, is an associate clinical professor of medicine at the University of Toronto and Division of Cardiology, William Osler Health Centre, Brampton, ON, Canada.

Cynthia Parsons, BScPT, is a cardiac rehabilitation coordinator at York Central Hospital, North York, ON, Canada.

Sherry L. Grace, PhD, is an associate professor at York University, University Health Network, University of Toronto, and York Central Hospital in Toronto, ON, Canada.

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