



Audiotapes and literacy: A summary of current research

This is the second in a series of briefs that focus on evaluative research into the use of alternative means of health communication; these include plain language, audiotapes, videotapes, interactive media, and visual images. Searches were conducted of the medical and education literatures as part of a Health Literacy Project that is examining the communication needs of patients with limited literacy or other communication barriers. The guiding question was: 'What impacts have been documented in relation to the identified target groups?'

The Health Literacy Project is a joint initiative of The Centre for Literacy of Quebec and the Nursing Department of the McGill University Health Centre (MUHC).

Introduction

Some research on adult literacy and social policy has suggested a correlation between limited literacy skills and poor health. Understanding medical consultations and information is critical in helping people make informed health decisions and maintain adequate self-care. However, the dominant method of communication in medical fields is print pamphlets and information sheets, much of it written at a Grade 10 level or higher. Increasingly, there are suggestions that health care professionals should use other means to interact with populations who have barriers to communication, including limited literacy.

Audiotapes may provide one suitable alternative learning tool. A review of the medical and education literatures on the effectiveness of audiotapes for communicating health information showed however that, while they have potential advantages in certain circumstances, there has been no systematic research conducted on their use with the groups in question. This brief summarizes the literature and suggests some future research questions.

Methodology

A search was conducted of the following medical and education databases: Medline, CINAHL, ERIC, Cochrane Library and

Dissertation Abstracts. Some journals were searched manually. Keywords included terms applied to a hearing medium such as "audiotape," "audio recording," "tape recording" and "cassette," and educational terms such as "patient education" and "health education." The search identified 283 articles of interest. Thirty-one of these articles were reviewed for this brief. These studies focus on audiotape recordings of health-related information as educational interventions for patients and their family members. They measure the value of audiotapes for the purpose of information exchange. A search for the use of audiotapes as an effective educational tool for the low-literate and hard-to-reach populations did not yield any results.

The 31 studies focused on the following criteria:

- *Knowledge/recall* – long- and short-term retention of medical information.
- *Behavioural change* – how individuals apply new knowledge in their daily lives by following medical advice and/or changing their lifestyle.
- *Anxiety* – emotional distress and fear after a diagnosis or before a medical procedure.
- *Self-care* – patients' interest and consistency in managing their healthcare.
- *Satisfaction* – how valuable and/or helpful patients find an intervention.



Who was included?

Most of the research reviewed examined the effectiveness of audiotapes for the exchange of health information. Three studies specifically focused on the use of recording oncology consultations as an educational intervention (McClement, Scott, Tattersall 2002).

Most of the studies focused only on Caucasian participants. Four mentioned the race or ethnic background of their sample (Ah-Fat, Jones, Hagopian, Tattersall 1994) and one noted the socioeconomic class of its participants as a possible indicator of literacy level (Reynolds). Most participants averaged 10 years or more of education. Three studies mentioned some participants with less than grade 12 (Hack, Hagopian, Davison 1997). Many studies specifically excluded participants with language, cognitive or physical barriers (Bruera, Davison 1998, Dunn, Ford, Gift, Jones, Moore, Ong, Tattersall 1994). Even when they were not systematically excluded, it can be inferred that the patients who participated in most of these studies were able to read the consent forms and fill in questionnaires, and were physically and mentally capable of being participants in a research study.

Findings

Overall, the results show that audio recording offers certain advantages such as sharing accessible information. However there are some limitations and more research is necessary to identify those patient subgroups that might find audiotapes helpful.

Knowledge/recall

Some studies indicate that the recording of medical consultations could increase the understanding and retention of medical information. A few found similar recall ability even when patients are given traumatic diagnoses, such as cancer (Bruera, Ford, Hogbin 1992, Krackow, McHugh, Ong). Several studies concluded that recording medical information could potentially be useful to educate patients (Hagopian, Jenkinson, Man-Son-Hing, North). Overall the majority of studies found that audiotapes benefited patients, although a few researchers found that they did not necessarily help in recall or increase knowledge (Dunn, Hogbin 1989, Reynolds).

Behavioural change

Two studies examined the success of patients using audiotape recordings to apply medical information and/or change lifestyle behaviours (Davison 1997, Ford). Only Davison's study on men with prostate cancer proved positively that patients were empowered with the knowledge to make and implement their decisions.

Anxiety

Of seven studies that tested the effects of tape recording health information after a diagnosis or before an invasive procedure, three found that it was effective in decreasing anxiety in patients (Davison 1997, Gift, North). However, three studies did not find a connection between recorded information given to patients and decreased levels of anxiety (Davison 1998, Fullhart, Hogbin 1992). At the other extreme, one report concluded that anxiety levels actually increased in patients who received a tape recording of their consultation; the authors speculate that recorded information might not be helpful in reducing emotional distress in patients who use denial as a coping mechanism (McHugh).

Self-care

Three of the studies reviewed reported positive results in patients' use of self-care measures and encouraged the use of audiotapes to improve knowledge and self-care post-operatively (Hagopian, Jones, Moore).

Satisfaction

Satisfaction is difficult to measure reliably, but does give an important initial appraisal of an intervention. Most studies revealed that patients and their families accept and value receiving medical information and/or their consultation on audiotape (Ah-Fat, Krackow, Nathan, Rylance). However, one study found that patients prefer a recording of their own consultation as opposed to an audiotape with general information of their diagnosis (Dunn). Another study reported no significant increase in satisfaction when using an audio-booklet (Man-Son-Hing). Even studies that concluded there was no increase in knowledge or recall found that patients and their families appreciated the recorded information (Hogbin 1989, Reynolds).



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Advantages of audiotapes

Several studies found that audiotape recordings used to educate patients have several advantages. Some conclusions were that:

- patients can share the information on an audiotape with family members, to decrease misunderstandings and forgotten details and increase family communication (Ah-Fat, Bruera, Butt, Davison 1997, Deutsch, Hogbin 1989, 1992, Krackow, McHugh, Nathan, Ong, Reynolds, Rylance, Tattersall 1994);
- recorded information is easily accessed by patients (Hagopian);
- audiotapes can potentially decrease consultation time and phone calls from patients (Nathan) as well as reduce overall health care costs (McClement);
- patients can review recorded consultations before a follow-up (Krackow);
- recording an audiotape is relatively inexpensive (Deutsch, North, Rylance, Treacy); and
- the spoken word has a greater power to hold attention than the printed word (Oakley).

Limitations of audiotapes

While most studies indicated that audiotapes were advantageous, some limitations were found.

For patients, these include that:

- the information on the audiotapes was too general and not personalized enough (Hogbin 1989); and
- they need a tape recorder, although not many people actually found it to be a problem (Butt).

For physicians, the limitations include that:

- taping a consultation may inhibit open discussion (Tattersall 2002);
- recording a consultation may expose physicians to malpractice lawsuits (Krackow, Nathan); and
- recording a consultation may compromise physician recommendations (Krackow).

Looking ahead

Patients and their families found tape-recorded medical consultations and information valuable, and positive results were identified in patients' behavioural change and self-care. However, there were no clear trends in reducing patient anxiety levels or increasing their knowledge and recall of information through the use of audiotapes.

This review showed that there is limited literature on the use of audiotapes with patients who have specific barriers to communication. None of the studies analyzed the effects of recorded information on any specific "hard-to-reach" patient subgroup. Therefore, the hypothesis that these patients can more easily gain knowledge from information recorded on an audiotape still needs to be empirically tested. Future

studies could examine assumptions such as audiotapes allow patients to hear the information as many times as needed, or elderly patients with limited memory can reduce confusion by listening to a cassette or giving it to family members.

The population that has often been characterized as "hard-to-reach" by health care professionals in fact includes several subgroups or minorities, e.g. low-literate, visually impaired, second-language speakers, cognitively impaired, and more. If all these subgroups are considered as a whole, they comprise a large percentage of the population. They should not be marginalized by health care practices related to receiving necessary information or being participants in research studies.

When it comes to health, even highly educated individuals struggle with medical terminology when they confront a complicated illness or a novel hospital procedure. This synthesis concludes that if the average person is compromised in the context of information exchange, populations with communication barriers are at even greater risk. More research is needed to explore the value of using tape-recorded consultations and medical information with at-risk populations.

Key Findings

- Medical research has not explicitly considered the impact of recorded medical information or consultations on people with limited literacy or other barriers to communication.
- Patients and their families who were studied found recorded medical consultations and information valuable.
- Patients who were studied experienced positive results in behavioural change and self-care when they were given recordings of their consultations or information on their procedures.
- The literature is inconclusive about the impact of audiotapes on reducing patient anxiety or increasing their knowledge and/or recall of information.
- More research needs to be done to study the impact of recorded medical information and/or consultations on patients in at-risk populations.

Limitations of this brief

The literature review for this brief was limited to medical and education databases. Descriptive articles were eliminated, and stringent criteria were applied to the methodology. Literature in the fields of communication and disabilities was not included. We believe that research in these areas could increase our understanding of the potential for audiotapes as an alternative or addition to written health information and consultation.



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An extended article based on this research and entitled "Exploring the value of audiotapes for health literacy: a systematic review", written by Anelise Santo, Andrea Laizner, and Linda Shohet, is being published in fall 2004 in the journal *Patient Education and Counseling*.