

Videotape as a research tool

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SUMMARY. In a study of the natural history of back pain presenting in general practice, video recordings of consultations were used in the analysis of observer variation in the examination of the back. Video provided information which could not have been obtained from other sources and stimulated the doctors involved in the study to be meticulous in their examination technique.

Introduction

VIDEOTAPE recordings are making an increasingly valuable contribution to medical education. Many studies have demonstrated the effectiveness of video in developing the skills of interviewing and consultation (Maguire *et al.*, 1978; Verby, *et al.*, 1979; Sanson-Fisher *et al.*, 1981).

The principal advantages of a video recording of the consultation are that it enables an individual to observe his own performance and allows detailed analysis of the non-verbal as well as the verbal content of the doctor-patient encounter. These two qualities suggest that video recordings could also play a role in clinical research, where one common problem is how to assess the degree of subject reliability and observer error in the collection of clinical information.

This paper describes the way in which a videotape was used in a research project to study the natural history of low back pain presenting in general practice.

Methods and results

Between June 1979 and June 1980, a prospective study of the natural history of back pain was carried out on patients presenting to the Lambeth Road group practice with low back pain. During the course of the study, the videotape was used in the following ways.

1. Teaching an examination technique

Before the start of this study, the examination technique to be employed was recorded on videotape in order to

standardize the performance of the participating doctors.

2. Reinforcement of the doctors' training

During the course of the study year, examinations carried out by the doctors were videotaped. The videos encouraged the doctors to be critical of their own examination technique and at the same time they were reminded of the considerable care needed to obtain consistent diagnostic results. Specific faults of examination technique were detected in a number of cases and it was possible to draw the attention of the doctors to these faults.

3. Assessment of the reliability of the examination

In order to measure the inter-observer error in the recording of physical signs, a number of patients were examined independently by two doctors. In no case did the findings of the two doctors agree on all the items of history and examination.

These differences could have arisen because the patient's signs changed between the two examinations, or because the doctors varied in their conduct or interpretation of the examination.

For the analysis of the sources of variation, eight patients who were not part of the main study consented to video recording while being examined by between two and five doctors, yielding a total of 28 videotaped examinations. All examinations of an individual patient were carried out within one hour. The videotapes and the clinical information recorded by the doctors were reviewed by the author: no attempt was made to assess inter-observer variation in the rating of the tapes. Because of the small number of examinations in this series, it was only possible to obtain a general impression of the reliability of specific aspects of the examination.

One question in the history proved to be ambiguous and was amended. This would not have been detected if the content of individual consultations had not been available for analysis. Some of the more subjective aspects of the examination were found to be particularly unreliable. For example, there was little agreement between the doctors as to whether a patient's spine was

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abnormally kyphotic: information on kyphosis was therefore excluded from the analysis of the main study.

In general, more variation could be ascribed to changes in the patients' behaviour than to errors by the doctors. For example, some patients found it difficult to localize their pain, and pointed to different sites for different doctors. In another patient, there was a marked difference in straight-leg raising between two examinations carried out consecutively.

Discussion

The collection of high-quality data in research involving clinical assessment of patients imposes great demands on the doctors involved, and is an especial problem when the information has to be collected during routine consultations.

In this study, video proved useful to both those conducting the research and to the participating doctors. To the researchers it provided valuable information leading to some modification in the design of the study and the evaluation of the data which would not have been possible to obtain by other means. To the participating doctors it provided a regular stimulus to produce accurate information—even within the constraints of a seven-minute appointment.

Now that facilities to videotape consultations are becoming increasingly available to general practitioners, this technique should prove valuable for general practice research in the future.

References

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Acknowledgements

I would like to thank the doctors of the Lambeth Road group practice for their contribution to the study, in particular Professor D. C. Morrell and Dr L. I. Zander for their help in preparing the manuscript of this paper. The study was supported in part by a grant from the Department of Health and Social Security.

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