The use of video for patient information and education: a scoping review of the variability and effectiveness of interventions

Chatterjee, Arunangsu; Strong, Gary; Milne-Ives, Madison; Meinert, Edward; Halkes, Matthew; Wyatt-Haines, Emma

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Abstract

Objective

To provide an overview of video interventions used for patient information and education, and of the tools used to evaluate their effectiveness, in order to consider the feasibility of developing generic guidelines and appraisal tools for the use of video in patient care.

Methods

A scoping review was carried out to describe and synthesise emerging knowledge, using thematic analysis of data. Studies focussed upon videos for health professional education were excluded, as were those which consider the impact of videos available via social media.

Results

A narrative overview of 65 identified papers provides insight into the range and scope of studies. Common themes emerge, notably the aim of reducing anxiety and the variety of instruments designed to measure this. The use of self-report questionnaires was common, but their design is variable.

Conclusion

Targeted video-based intervention can improve patient experience and outcomes. High utility guidelines and appraisal tools, transferable between contexts, are needed to facilitate deployments at scale for sustainable outcomes.

Practice Implications

Video production guidelines and appraisal tools will be of value to those engaged in video development and deployment. Guidance should be based upon emerging evidence of effectiveness and incorporate an emphasis on reusability.

1. Introduction

1.1 Background

The use of video for patient information and education purposes is widespread and growing. The National Health Service website NHS Choices alone offers 423 publicly accessible videos covering a wide range of topics, from 'how to wash your hands' through to dealing with death and bereavement [1]. The ease of filming and a sense of the value of visual learning make the use of video an attractive alternative to patient information leaflets. Intuitively, making a video seems like a good idea. Whether a patient is about to undergo surgery, or needs guidance regarding rehabilitation, or advice about incontinence or any other aspect of healthcare, the provision of a video offers information in a form of media with which the vast majority of the population are comfortable. But little is known about the effectiveness of video interventions or of what is considered an effective intervention.

1.2 Rationale

Some previous reviews have examined video interventions for health. Bieri et al [2] systematically reviewed the impact of health education videos aimed at schoolchildren, dealing specifically with infectious diseases. Studies reviewed incorporated a range of measures including knowledge, attitude/compliance, behaviour and prevalence/incidence. Their conclusion offers guidelines for the development of future studies of the effectiveness of video for teaching children about infectious diseases. Tuong et al [3] carried out a systematic review of the impact of video on health behaviours, with instructive results. Behavioural change was observed in some contexts, but not all. The authors conclude that the content and style of video can determine its effectiveness within context. Of note is the recommendation that gain-framing is likely to prove a more successful strategy than loss-framing. A similarly targeted review by Abed et al [4] concluded that whilst there is a lack of clear evidence that video is effective in modifying behaviour, success is more likely if the format of the video is centred upon real people enacting real scenes, rather than simple didactic delivery of information. However, each of these reviews is in its own way context-specific. There is a need for a scoping review that reviews and compares studies which sought to measure patient response to video interventions, with no restrictions on the type or definition of patient response.

1.3 Aim and Research Questions

The aim of this scoping review is to gain an overview of the current state of knowledge of 'what works' when using video to provide information and guidance to patients. The objective is to create an overview of video interventions in use in healthcare and their aims. The review seeks to answer two primary questions: 1) what evidence is there for the use of video in healthcare, when used to provide information to and education for patients? and 2) what evaluation tools have been used to assess the effectiveness of video in healthcare? All of the included studies will be 'real world' studies with the

potential for significant unknown or unreported variables amongst patient groups, so the term ‘effectiveness’ was used instead of ‘efficacy’ for this study [5,6].

Based on previous reviews, the aims of specific video interventions and the type of measurement tools are expected to vary widely. Therefore, a scoping review approach, as described by Mays et al [7], was used to facilitate an overview of emerging evidence [8]. Commentary is offered on the range and applicability of evaluation tools in use, with a view to further investigation into the feasibility of creating a fit-for-purpose video development guidelines and evaluation tools.

2 Methods

For the primary search strategy, MeSH headings were used to find studies of video interventions and in particular, those which in some way measured patient response (see table 1). Inclusion criteria were straightforward: articles from 1 January 1995 to 31 December 2017 of any study type which measure the effectiveness of the use of video as a means of providing information or education to patients. A population, intervention, comparison, outcomes (PICO)[9] strategy was used to guide the searches:

Population: adult patients who have viewed videos aimed at improving their experience of healthcare.

Intervention: any video-based advice, guidance or instruction aimed at patients and designed to enhance healthcare outcomes.

Comparison: standard written or verbal advice, guidance or instruction.

Outcomes: variable according to study design but may include reported levels of satisfaction, anxiety, pain or measured physiological parameters such as cortisol levels or blood pressure.

Note that in some instances the PICO criteria were not strictly applied, as several studies did not include a comparator but were nevertheless deemed worthy of inclusion. Studies included must report primarily on the effectiveness of a video-based intervention, so more complex multimedia-based interventions were generally excluded. However, video is rarely used in isolation, so studies involving video alongside verbal or written information were included. Review articles dealing with videos available through social media were excluded, as were video interventions aimed at developing the skills and knowledge of healthcare professionals. The professional learner will view an educational video with a different set of aims and assumptions to those of the patient, perhaps in order to pass an Objective Structured Clinical Examination (OSCE) or learn a new surgical technique. The effectiveness of video usage in health professional education is deemed to be a separate study.

For the initial search, each of the Educational Technology terms listed in Table 1 was matched to the range of Patient Behaviour Change terms in the second column. Thus, thirteen search terms were used each with seven variables. Using PubMed, Medline and Cinahl Plus this strategy first produced 4787 results. A review of headings reduced this to 854 and a further review of abstracts and removal of duplicates left 40 papers for review. Two further reviewers carried out hand searches seeking titles which included combinations of the following terms: 'video, patient, information, education, evaluation'. This added a further 25 papers leading to a total of 65 for review (Figure 1).

3 Results

A comparative overview of the characteristics of included studies was produced (Table 2). To gain insight into the range of and rationale for the various studies and their methodologies, two broad methods of classification were used initially: area of healthcare (or specialism) and type of measurement tool. This classification is used irrespective of study design. Forty-two of the studies are listed as randomised trials, but some form of self-reporting by patients as a data collection tool is deployed in both randomised and non-randomised studies. Evaluation methods deployed are almost exclusively quantitative, however the heterogeneity of contexts and methodologies precludes meaningful meta-analysis. In order to achieve this, the field of interest would need to be narrowed and potentially useful studies excluded. For present purposes, a more inclusive scoping approach is favoured, seeking a broader understanding of what has been attempted thus far in order to help frame the questions leading to the development of standardised guidelines and tools.

40 of the 65 studies reported the video duration, which ranged from 2 minutes to 54 minutes, with an average of 15.2 minutes. Country of origin is also reported. Studies carried out in the UK are of particular interest as there is a need to understand the effectiveness of interventions within the context of National Health Service provision and the potential benefits of standardised guidance.

3.1 Area of Specialism

Classification according to area of healthcare or specialism is shown in Figure 2. The dominant areas where video intervention has been appraised are surgery and oncology. For the purposes of this study, all types of surgery were grouped together, so the range includes orthopaedic, urological, ophthalmic, abdominal, pulmonary, cardiac, cancer and neurosurgery. Procedural interventions such as coronary angiography or colposcopy were classified separately according to specialism, as were those studies where video was used to enable patients to make an informed decision as to whether to undergo a procedure or investigation. Where the study spans more than one area of healthcare, the dominant area is used to simplify classification. Studies which aimed to improve patient knowledge prior to deciding whether to enter a clinical trial are grouped together under the general heading of research.

3.1.1 Surgery

Of the 15 studies classified as surgery, 5 were carried out in the context of abdominal surgery, 4 orthopaedic, 2 cardiac, 1 lung surgery, 1 neurosurgery, 1 ophthalmic and 1 in the context of a decision whether to undergo prostate resection. It is helpful to consider the rationale for the study and the concerns being addressed. Here we find commonality across specialisms and classifications.

Doering et al [10] (n = 100) focus upon anxiety and pain levels, using a range of physiological and self-report measures and finding a positive difference in the experience and outcomes in the video intervention group (for anxiety: $p = 0.042$). Anxiety and pain are common themes. Lin et al [11] (n = 100) used repeat measures of the Chinese version of the Spielberger state trait anxiety inventory (STAI) [12], supplemented by an overall satisfaction survey, to detect reduced state anxiety and increased satisfaction ($p<0.05$) in the video intervention group. Walsh et al [13] (n = 81) used real time video in a colposcopy clinic, measuring women's anxiety levels using STAI and knowledge questionnaires and observing a significant decrease in anxiety in both control and intervention groups, but markedly so in the intervention group ($p = 0.001$) along with reported decreases in pain experienced ($p = 0.003$). Zieren at al [14] (n = 100) included pain in their assessment of post-operative quality of life. Sorlie et al [15] (n = 109) considered anxiety, depression and pain as well as self-reported exercise and cigarette consumption data in patients following coronary artery bypass graft. Preoperative anxiety is also clearly addressed in studies based in anaesthetics [16,17].

3.1.2 Oncology

In the oncology based studies, several of the interventions were designed to assess and improve patient ability to make informed decisions regarding investigations and treatment [18–22]. Others sought to improve patient understanding and preparedness prior to treatment [23–26]. Again, these are common themes which transcend the boundaries of the specialisms within oncology.

3.1.3 Other Areas of Specialism

The physiotherapy based study reported increased knowledge amongst patients but had no impact on behaviour [27] (n = 71). Improved knowledge retention is both a purpose and an instrument of measurement and is widely reported across the disciplines, for example in immunization [28,29] and genetics [30].

3.2 Measurement Tool

Classification according to measurement tool is shown in Figure 3. The majority of studies use questionnaires to elicit data from patients. All measurement tools which require the patient to report information, opinions, preferences and symptoms have been grouped together as 'self-report' studies. This is clearly the preferred option and is also deployed by those using multiple measures. The latter frequently add objectively recorded data such as length of stay, blood pressure and other physiological parameters. Questionnaire tools which specifically assess knowledge acquired through the education process are listed separately. Several studies asked patients to rate the video itself, as well as providing other data.

A wide range of self-report questionnaires is deployed. Spielberger's state trait anxiety inventory (STAI) [12] is the most commonly used, with eleven occurrences. In all but

one instance this instrument is used alongside one or more others [31]. Amongst the other instruments used, many are prevalidated [18], whilst others appear to have been designed for the purpose of the study [32]. Some studies aim for a comprehensive approach to data gathering, incorporating observable clinical data alongside patient reported data [33,34]. The latter consider the impact of a pre-surgical video intervention on length of stay (LOS) as a primary outcome, along with self-reported physiological parameters (pain score, nausea score) and satisfaction with the procedure. In this instance, no statistically significant difference in outcomes is detected ($p = 0.239$). Length of stay is recorded in a number of studies [10,35,36].

One paper describes a feasibility study, focussing upon the construction of the video and relying upon expert consensus to rate its usability [37]. Another simply asked patients to rate the video using an 18 item bespoke questionnaire [38]. Structured interviews were used by Volandes et al [39] in the context of advance care planning in dementia. Sandberg et al [40] asked healthy volunteers to engage in a recall task to assess how well information presented in a video is retained.

3.3 Country of Origin

A majority of the studies were carried out in the USA. Country of origin is shown in Figure 4. Racial background of subjects is reported in some studies [22,28,32,36,39,41–43] and cultural sensitivity in video production is reported by O'Donnell et al [44], but results of viewing videos are not generally differentiated according to race or culture.

All UK based studies deployed self-report questionnaires, three as part of a multiple measures approach. Ihedioha et al [35], Boulton et al [45] and Sahai et al [46] are all single arm studies whose results should therefore be considered with due caution. Of the other UK studies, only Jlala et al [16], Thomas et al [23] and Freeman-Wang et al [31] produced unequivocally positive results for video intervention.

Jlala et al [16] ($n = 110$) used the STAI and a visual analogue scale to assess perioperative anxiety before and after viewing the video and before and after the operation. Patients in the intervention group were significantly less anxious before ($p = 0.04$) and after ($p = 0.005$) the operation. Feedback on the video was also collected with reported 90% satisfaction. Thomas et al [23] ($n = 220$) investigated the benefits of a preparatory video for patients receiving chemotherapy or radiotherapy, using the Hospital Anxiety and Depression Scale [47] and a bespoke questionnaire relating to the video. Significantly lower anxiety and depression scores were noted in the intervention group ($p = 0.001$). An interesting variable is the number of times the video was watched, varying from one to five times amongst the study group. Freeman-Wang et al [31] ($n = 93$) mailed a video to patients and used the STAI scale once only, prior to attendance for colposcopy. Again, a significant reduction in anxiety was noted ($p = 0.00004$).

4 Discussion and Conclusion

4.1 Discussion

This literature review identified 65 studies measuring the effectiveness of the use of video as a means of providing information or education to patients. 48 out of 65 studies reported positive results arising from the video intervention. The prevalence of positive outcomes suggests that despite multiple variables, the use of video and the appraisal of its effectiveness are useful areas for further study. Most authors are clear about the purpose of the video, but the reporting of other characteristics varies: its length, quality and perspective (patient or healthcare professional); whether it was viewed alone or with support, and how many times; and whether it was accompanied by written or verbal instruction. These factors, along with the individual traits of the viewers, may all influence results.

The type of data being recorded is an area for future exploration of options. In this review, it was found that subjective patient-reported data is the norm, ensuring that the lived experience of the patient is considered. Reporting discrete data such as physiological parameters or length of stay arguably adds objectivity. Isolating these effects on the impact of video intervention is more challenging.

The difficulty and complexity of trying to establish the benefits and effectiveness of the use of video in a given context is illustrated by Doering et al [10] (n = 100). This study merits further consideration as an example of a thorough approach. With the aim of reducing stress and improving outcomes in hip replacement surgery, those in the intervention group (n = 46) were shown a 12-minute video of a patient undergoing total hip replacement surgery, covering the time period from hospital admission to discharge, keeping strictly to the patient's perspective. Participants were carefully screened for confounding factors such as comorbidities or medication that might interfere with the collection of results. Measurements of anxiety, depression and pain were taken pre and post operatively. Intraoperative heart rate and blood pressure were recorded along with postoperative intake of analgesics and sedatives and urinary levels of cortisol, epinephrine, and norepinephrine. Finally, notes were taken on initial postoperative ambulation, use of stairs and length of stay. Results are presented in detail and include a statistically significant difference in anxiety levels immediately prior to surgery ($p = 0.32$) and post operatively ($p = 0.22$); a reduction in postoperative intake of analgesics by the intervention group ($p = 0.12$); and a lack of any measurable differences regarding ambulation and length of stay.

The authors conclude that their specific video intervention is effective in reducing peri-operative stress and anxiety. They note potential limitations with regard to the viewing of the video, which in this instance was conducted in the presence of a healthcare professional, in order to provide support should the patient react anxiously to the viewing. They also discuss the impact of personality traits on surgical outcomes; by

implication, these will also influence the effect of the video. It is suggested that those who do not wish to view a video should not do so, as it may lead to a negative outcome for some personality types. Of the genre under review this study is exemplary: many relevant measurable parameters are considered, and limitations are carefully noted. However, in other contexts this may not be feasible. Informed decision making in primary care or waiting in an emergency department may be highly suitable areas for the use of video, but it is unlikely that repeat, standardised clinical measurements can be recorded in these scenarios without adding another variable in the form of the subject's response to, for example, having a blood pressure recorded.

Nevertheless, the specific healthcare context may be less important than the purpose of the video. Whether in surgery, oncology, the emergency department or in primary care, common themes emerge: there is a universal aim of better patient understanding, leading to reduced anxiety and a more positive experience of healthcare, whether that be greater clarity in decision making, improved confidence when approaching a difficult treatment process, fewer peri-procedural complications, improved compliance or any combination of these desired effects.

We have noted that the most widely used instrument of measurement is a self-report questionnaire (Table 2). Within this group, varied and overlapping types of data are sought: patients' clinical knowledge, levels of anxiety (and sometimes depression), satisfaction with the education process (sometimes specifically with reference to the video, sometimes not), satisfaction with the clinical procedure and/or staff performance and self-reported clinical data (e.g. pain). Adding objectivity by including measurement of physiological parameters or discrete data such as length of stay offers promise, if the context permits. However, it is acknowledged that future research in this area needs to consider the complexities of human behaviours and the impact of the wider care context on such measures and evaluate the impact appropriately. Cultural factors also require further consideration.

Within the UK, the low number of studies demonstrating effectiveness suggests the need for further investigation, given the proliferation of video. To return to NHS Choices: during the time of writing the initial draft of this review, over a period of approximately one month, a further six videos were made available at this respected and authoritative website [1] . Yet there is no readily available evidence that any of the videos has been subject to a particular evidence-based approach or set of standardised guidelines for production to maximize the potential for large-scale evaluation. Such evaluations would require libraries of videos which are produced using the same standards and principles for application across specialty areas and types of information. Research studies could then be designed to study the impact of video across different clinical settings and assessed for key standards such as length, style, and presentation of the contents.

Zangi et al [48] advise that research aims within patient education should be strictly defined according to the goal of the healthcare intervention and the needs of the

patient. This principle is evident in many of the studies included here and may help to establish guidance for video development and research. Introducing video as an educational component of patient pathways has been shown to be feasible and, in many instances, effective in enhancing the patient experience. Stenberg et al [8] are confident that effective patient education can also reduce healthcare costs.

4.2 Limitations and Future Research

The strength of this type of review lies in the identification and overview of a growing body of literature dealing with the intervention. However, there are inherent limitations in attempting to balance breadth and depth of analysis across a multiplicity of study designs. This paper did not use a specific framework to characterise the features of the different video interventions and does not include an in-depth analysis of the various features of the interventions that were identified in Table 2. This will be an important area for future research to examine in more depth, because an analysis of the association of various media features with the effectiveness of the intervention would help to inform the development of more useful video interventions for patient education. A study conducted in collaboration with a health communications or media expert would provide the necessary expertise to properly evaluate the impact of various features and characteristics of the video interventions.

Another limitation is that, in spite of the 22-year span of the searches, there will likely be further relevant studies which have not been included, for example those not published in English.

4.3 Conclusion

The range of study types, contexts and measurement instruments surveyed should be set alongside the continuing growth in the use of video for patient information and education. Ultimately, the purpose of video goes further than this: many of the studies demonstrate that video can be part of a strategy for improving the patient experience and perhaps even clinical outcomes. However, there is as yet no universally accepted means of testing whether or not the deployment of video has been effective. Some commonalities of purpose have emerged, notably with regard to the need to educate and reduce anxiety, on the assumption that the former will lead to the latter. But there is clearly room for investigation into the feasibility of establishing high utility guidelines and appraisal tools, transferable between contexts, with modifications appropriate to the setting. The best option may be to create tools which seek both subjective and objective data: validated self-report instruments in combination with physiological measurements or others, such as length of stay or economic impact.

In a systematic approach to design, a focus is needed upon the purpose of the video as well as the format. Time and resources spent creating meaningful video require justification, not least by those responsible for departmental budgets. This may be a key driver for the development of guidelines and appraisal tools, to encourage further targeted use of video as part of the overall strategy for improving patient engagement,

experience and outcomes. Guidelines should also emphasise reusability: a video produced to enhance patient experience in a specific care context should ideally be transferable across geographical boundaries, avoiding duplication of costs as well as content. The NHS choices platform demonstrates the feasibility of creating nationally applicable content.

In view of the emerging evidence we propose the following next steps to guide research and video production:

1. Categorisation of the type of video used in outcome focused research, for example didactic, simulation based or 'real' lived experience. This will help researchers to compare levels of patient engagement for each format.

2. The use of validated or agreed tools for measurement of outcomes in order to facilitate comparative evaluation of results.

3. The development of evidence-based standards and guides for producing videos for health and care.

3. Consideration of the potential for scale in production and dissemination, so that when video-format is introduced into the care pathway, it can be produced in a cost-effective way for multiple contexts and pathways. This will ensure that publically funded videos become high utility cost effective reusable tools which may be embedded in patient pathways nationally as well as locally.

4.4 Practice Implications

There is a growing body of evidence which suggests that the use of targeted video education can improve the patient experience of healthcare and potentially also patient outcomes. Video development guidelines and appraisal tools are needed, to help optimize the use of time and resources in video production and assist the clinicians actively deploying video as a means of informing and educating patients. Incorporating principles of transferability and reusability into guidelines and appraisal tools will ensure that high quality videos produced as a component of a specific care pathway are available for use by all clinicians caring for patients in similar pathways.

Conflict of interest

The authors of this review have no relevant conflict of interests to disclose.

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Tables and Figures

Table 1 Keywords

Video based patient education	**Patient behaviour change**
Educational Technology (MeSH)	Attitude to health (MeSH)
Audio Video Demonstration*” Audiovisual Demonstration Video-Audio Demonstration Instructional Technologies Multimedia Education* video* Information video* Instructional film* Instructional video* Video intervention* Video assisted patient education Mobile video Video demonstration*	Health Care Utili#ation Patient behavio?r change Patient Acceptance Patient* perception* Patient* knowledge Consent Patient decision making

Figure 1 Flowchart of study selection

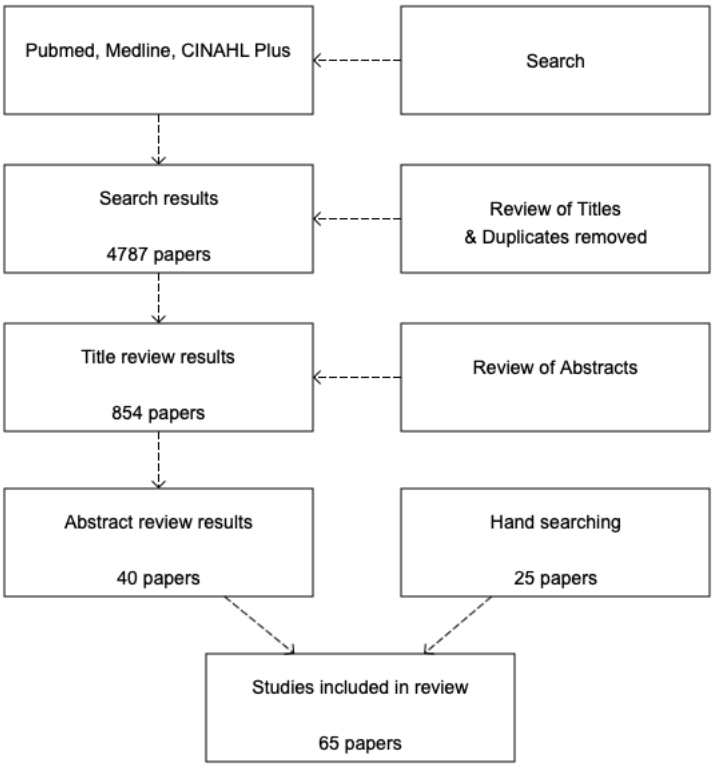


Table 2 Characteristics of included studies

Author	Country of origin	Pathway (surgical, medical, etc.)	Study design	Population size (n)	Video duration (min)	Video description	Evaluation tool(s)	Outcome (Positive, negative, neutral)
Angott, A. M. (2012)[72]	USA	Surgery	2 stage non-randomised study	223	3	Video of a man changing an ostomy pouch.	Self-report questionnaire	Positive
Baldwin, D. M. (2013)[33]	USA	Nephrology	Single arm pilot study	150	45	Educational video on phosphoros control for dialysis patients.	Multiple measures	Positive
Bartels, S.J. (2013)[74]	USA	Primary care	Pilot study	23	20	Video featuring a simulated primary care encounter with a patient with serious mental illness.	Self-report questionnaire	Positive
Bassett (2011)[27]	New Zealand	Physiotherapy	Randomised trial	71		Protection Motivation theory (PMT) video and attention control video .	Self-report questionnaire	Neutral
Bernstein, S.J. (1998)[43]	USA	Cardiology	Randomised trial	109	54	Educational treatment choice video.	Multiple measures	Neutral

Boulton, M (1996)[45]	UK	Genetics	Cohort study (retrospective and prospective)	81		Video mailed to cystic fibrosis carriers through a community screening programme (unable to access full paper).	Self-report questionnaire	Positive
Bouton, M.E. (2012)[32]	USA	Oncology	Prospective cohort study	81	8	Video based on questionnaire on basic breast cancer concepts.	Self-report questionnaire	Positive
Browner CH (1996)[30]	USA	Genetics	Retrospective cohort study	130	11	Video on alpha feto-protein screening programme.	Self-report questionnaire	Positive
Cassady, J.F. (1999)[57]	USA	Anaesthetics	Randomised trial	85	22	Pre-anaesthesia educational video.	Self-report questionnaire	Positive for all domains
Corbett, S.W. (1998)[69]	USA	Emergency Medicine	Randomised Trial	198	6	Emergency department orientation video.	Self-report questionnaire	Positive
Crabtree, T. D. (2012)[36]	USA	Surgery	Prospective cohort study	300		Educational video on lung resection.	Multiple measures	Positive

Cull, A. (1998)[66]	UK	Oncology	Randomised trial	128		Before and after video on breast cancer risks.	Multiple measures	Positive
Doering (2000)[10]	Austria	Surgery	Randomised trial	100	12	Video of 'real' patient experience of surgery.	Multiple measures	Positive
Done, M.L. (1998)[55]	Australia	Anaesthetics	Randomised trial	127		Preoperative video (unable to access full paper).	Self-report questionnaire	Neutral
Du, W. (2008)[70]	USA	Research	Randomised Trial	126	18	Video about clinical trials for lung cancer patients.	Self-report questionnaire	Positive
Du,W. (2009)[68]	USA	Research	Randomised trial	196	18	Video about clinical trials for breast cancer patients.	Self-report questionnaire	Neutral
Dunn, R (1998)[28]	USA	Immunisation	Randomised trial	287	15	Vaccine information video.	Knowledge questionnaire	Positive
Eley, V. A. (2013)[63]	Australia	Anaesthetics	Randomised Trial	110		Information video pre caesarian section (unable to access full paper).	Self-report questionnaire	Neutral
Freeman-Wang, T. (2001)[31]	UK	Gynaecology	Observational Study and Randomised Trial	93	7	Pre colposcopy information video.	Self-report questionnaire	Positive

Frosch, D. L (2001)[19]	USA	Oncology	Randomised trial	176	25	Educational video for men considering PSA test.	Multiple measures	Positive
Frosch, D.L. (2003)[73]	USA	Oncology	Randomised trial	226	23	Educational video for men considering PSA test.	Self-report questionnaire	Positive
Fureman, I (1997)[29]	USA	Research	Randomised trial	186		Educational video on HIV for IV drug users (unable to access full paper).	Self-report questionnaire	Positive
Gautschi, O. P. (2010)[38]	Switzerland	Surgery	Prospective cohort study	52	5-20	Web based pre surgical video 5–20 min long depending on intervention.	Video rating	Positive
González-Arriagada, W. A. (2012)[26]	Brazil & Chile	Oncology	Longtitudinal controlled study	38	6	Video about head and neck radiotherapy side effects.	Self-report questionnaire	Neutral
Hahn, C.A. (2005)[25]	USA	Oncology	Prospective cohort study	53		Educational video for radiation oncology patients (unable to access full paper).	Multiple measures	Positive

Hoppe, D. J. (2014)[64]	Canada	Surgery	Randomised Trial	34	10	Educational video tutorial pre arthroscopy.	Self-report questionnaire	Neutral
Hua, L. (2014)[67]	China	Ophthalmology	Randomised trial	86		Ocular massage education video (unable to access full paper).	Discrete data	Positive
Ihedioha (2012)[35]	UK	Surgery	Prospective cohort study	32	15	Descriptive educational video on colorectal surgery.	Self-report questionnaire	Negative
Ihedioha (2013)[34]	UK	Surgery	Randomised trial	60	15	Descriptive educational video on colorectal surgery.	Multiple measures	Neutral
Jeppson (2013)[49]	USA	Pain management	Focus groups and randomised trial	40	16	Educational video on sacral nerve stimulation using patient footage & 3D animation.	Self-report questionnaire	Positive
Jlala, H. A. (2010)[16]	UK	Anaesthetics	Randomised trial	110	9 and 7	2 videos of patients undergoing surgery under regional anaesthesia.	Self-report questionnaire	Positive
Kinnane, N. (2007)[78]	Australia	Oncology	Randomised Trial	64	10.5	Educational video pre chemotherapy.	Multiple measures	Positive

Liao, L. (2002)[52]	USA	Surgery	Prospective cohort study	60		Interactive video on ischaemic heart disease. No further details (conference abstract)	Self-report questionnaire	Positive
Lin, S-Y (2016)[76]	Taiwan	Anaesthetics	Randomised trial	100	8	Educational anaesthetic video.	Self-report questionnaire	Positive
Low, J. K. (2016)[37]	Australia	Nephrology	Qualitative cohort study	25	18	Video aimed at medication compliance amongst post-transplant patients.	Expert consensus	Positive
Luck, A. (1999)[58]	Australia	Gastroenterology	Randomised trial	150	10	Pre-colonoscopy information video.	Self-report questionnaire	Positive
Mason, V. (2003)[65]	UK	Gynaecology	Randomised Trial	31	5	Video giving information about sterilisation procedure.	Self-report questionnaire	Neutral
Matsuyama, R.K. (2013)[24]	USA	Oncology	Pilot study with single arm cohort	32	23	Guide to radiation therapy DVD, combining didactic material and patient narratives.	Self-report questionnaire	Positive

Morgan, M.W. (2000)[53]	Canada	Cardiology	Randomised trial	187		Interactive video on risks and benefits of treatments for ischaemic heart disease.	Multiple measures	Neutral
Murphy, P.W. (2000)[62]	USA	Sleep disorders	Not stated in abstract	Not stated in abstract		Instructional video about sleep apnoea (unable to access full paper).	Knowledge questionnaire	Unable to comment
O'Donnell L,(1995)[44]	USA	Sexual health	Randomised trial	3348		Video-based patient education on promoting condom use (unable to access full paper).	Discrete data	Positive
Pager, C. K (2005)[50]	Australia	Surgery	Randomised trial	141	9	Two preoperative educational videos on cataract surgery.	Multiple measures	Positive
Phelan, E.A. (2001)[71]	USA	Surgery	Randomised trial	100		Interactive videodisc with a booklet pre back surgery (unable to access full paper).	Self-report questionnaire	Positive
Pignone, M. (2000)[21]	USA	Oncology	Randomised Trial	249	11	Educational video, targeted brochure, and chart marker for	Discrete data	Positive

						colon cancer screening.		
Rossi, M (2004)[42]	USA	Surgery	Randomised trial	48	9	Educational video pre ankle fracture surgery.	Knowledge questionnaire	Positive
Ruffinengo, C. (2008)[56]	Italy	Cardiology	Randomised trial	93		Informative video for patients undergoing coronarography (unable to access full paper).	Self-report questionnaire	Positive
Sahai, A.(2006)[46]	UK	Surgery	Prospective cohort study	43		Video explaining laparoscopic surgery to assist with consent.	Multiple measures	Positive
Salzwedel C (2008)[17]	Germany	Anaesthetics	Randomised trial	209		Video to assist with anaesthesia risk education (unable to access full paper).	Multiple measures	Neutral
Sandberg, E. H. (2012)[40]	USA	Anaesthetics	Qualitative cohort study	98		Brief video containing a preoperative explanation of anaesthetic options.	Recall task	Unable to comment

Schapira, M.M. (1996)[22]	USA	Oncology	Prospective cohort study	32	20	Educational video on treatment options for prostate cancer.	Knowledge questionnaire	Positive
Schenk, R. J .(1996)[75]	USA	Physiotherapy	Controlled group study			Video on spinal mechanics and correct lifting to reduce risk of back injury (unable to access full paper).	Multiple measures	Neutral
Siva Jeya Anand, T. (2015)[77]	India	Gastroenterology	Prospective cohort study	50		Video teaching programme on diet and stress management in patients with peptic ulcer disease.	Knowledge questionnaire	Positive
Snyder-Ramos, S.A. (2005)[59]	Germany	Anaesthetics	Randomised trial	197		Pre operative documentary video.	Self-report questionnaire	Positive
Sorlie T (2007)[15]	Norway	Surgery	Randomised trial	109	12	Video using actors to explain coronary artery bypass procedure.	Multiple measures	Positive
Steffenino, G (2007)[61]	Italy	Cardiology	Prospective cohort study	100		Patient information video on coronary angiography (unable	Self-report questionnaire	Positive

						to access full paper).		
Thomas, R. (2000)[23]	UK	Oncology	Randomised Trial	220	20	Video to assist the patient with the decision making process on chemotherapy and radiotherapy (introduced by TV personalities).	Self-report questionnaire	Positive
Volandes, A.E. (2007)[41]	USA	Elderly care	Prospective cohort study	200		Video depiction of a patient with advanced dementia(unable to access full paper).	Multiple measures	Positive
Volandes, A. (2009)[39]	USA	Elderly care	Randomised trial	200	2	Video depicting a patient with advanced dementia.	Interview	Positive
Volk, R.J. (1999)[20]	USA	Oncology	Randomised trial	160	20	Educational video on PSA screening.	Knowledge questionnaire	Positive
Wagner, E. H. (1995)[54]	USA	Surgery	Cohort study	Unknown		Interactive video (unable to access full paper).	Unknown	Unknown
Walsh, J. C. (2004)[13]	Ireland	Gynaecology	Randomised Trial	81		Real time video viewing of	Multiple measures	Positive

						colposcopy during clinic.		
Wilkins, E (2006)[18]	USA	Oncology	Randomised trial	101		Early breast cancer treatment educational video(unable to access full paper).	Self-report questionnaire	Neutral
Wirshing, D. A. (2005)[51]	USA	Research	Randomised trial	83	16-18	Video explaining clinical trial recruitment for mental health patients.	Knowledge questionnaire	Positive
Zieren (2007)[14]	Germany	Surgery	Randomised trial	100	22	Informative video about inguinal hernia surgery.	Self-report questionnaire	Positive
Zvara, D.A. (1996)[60]	USA	Anaesthetics	Randomised trial	178	10	Video about anaesthesia (unable to access full paper).	Self-report questionnaire	Neutral

Figure 2

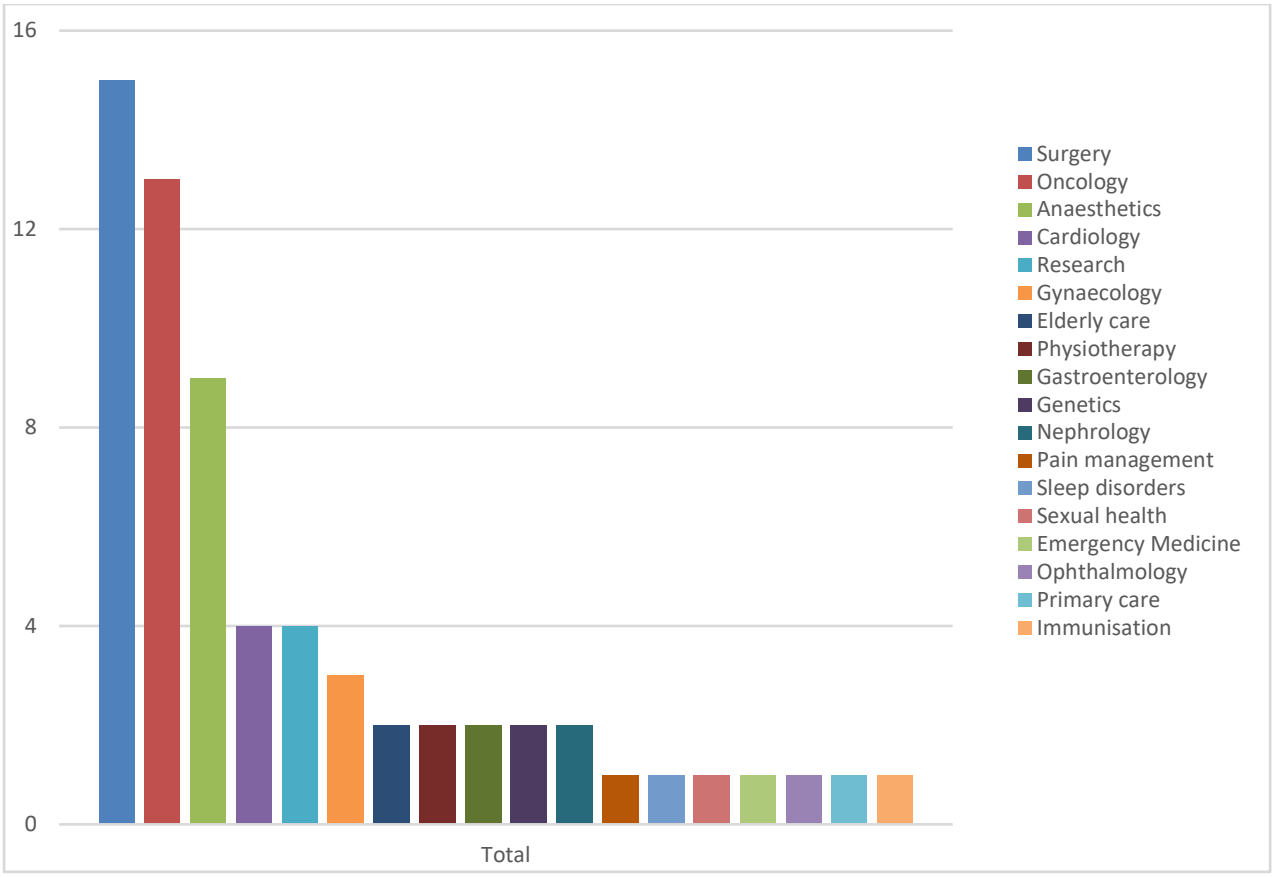


Figure 3

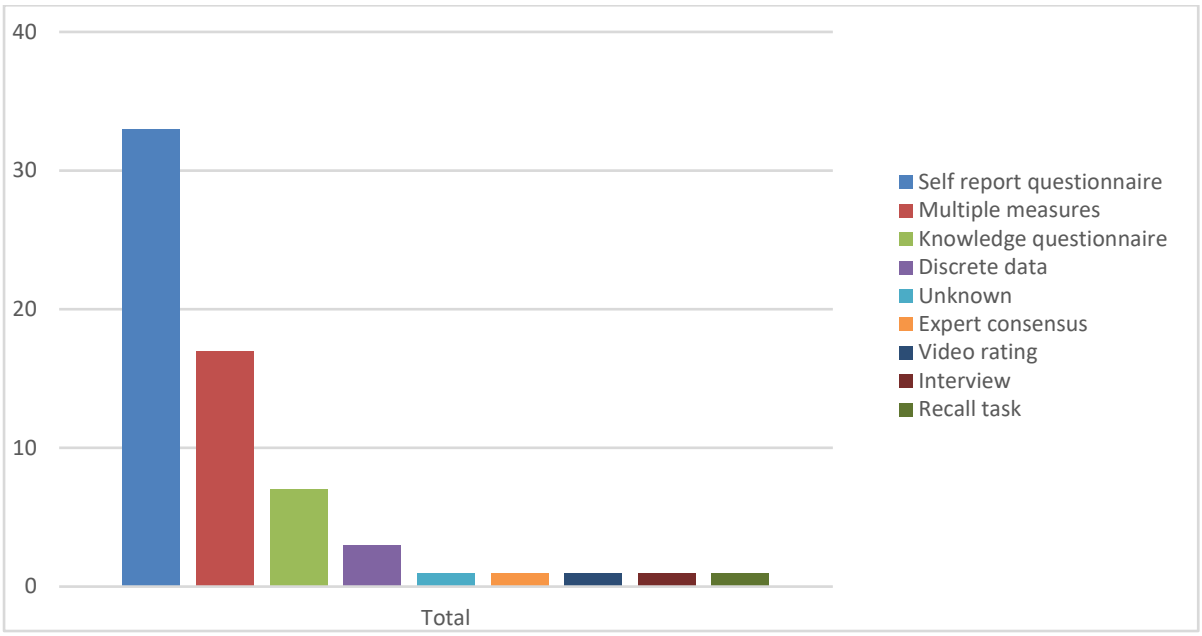
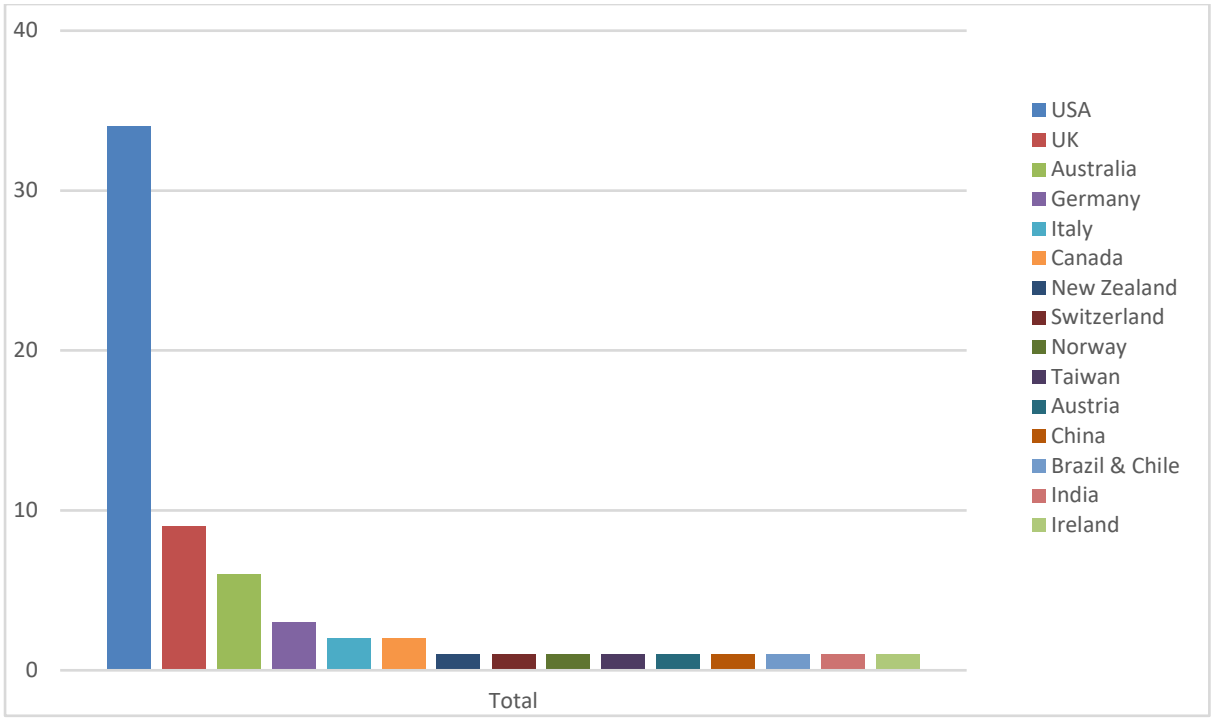


Figure 4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