

Patient response to physician expressions of uncertainty: a systematic review

R. McGovern¹ · D. Harmon²

Received: 14 September 2016 / Accepted: 24 February 2017 / Published online: 7 March 2017
© Royal Academy of Medicine in Ireland 2017

Abstract

Background The consequences of uncertainty are extensive with the potential to influence a multitude of issues such as patient expectations, diagnosis, treatment decisions, patient confidence and satisfaction and ultimately patient compliance.

Aims To review the relevant literature pertaining to physician expressions of uncertainty and its effects on patients.

Methods A search was conducted in July 2016 of electronic databases; PsycINFO, PsycARTICLES, MEDLINE and Embase. Key search terms included uncertainty, physician uncertainty, patient attitude, patient confidence and patient satisfaction. Other sources were obtained from reference lists. The eligibility of studies and data extracted were cross-checked with inclusion and exclusion criteria.

Results The search yielded 14 studies and 4 were included for review. These studies yielded mixed results. In some studies patients preferred disclosure of uncertainty while in others such disclosure was negatively associated with patient confidence and satisfaction. This is at odds with the belief of theorists that uncertainty disclosure to patients is the crux of a successful doctor–patient relationship. The studies were, however, united in so far as the way in which the uncertainty was communicated to the patient was pivotal to patient responses to uncertainty.

Conclusions Uncertainty is a ubiquitous feature of medicine and more research should examine how physician’s expressions of uncertainty affect patients.

Keywords Uncertainty · Physician uncertainty · Patient attitude · Patient confidence · Patient satisfaction

Introduction

Medicine is a fallible science. There is an inherently pervasive uncertainty within medicine. It is uncertainty itself that inspires many aspects of medicine from patients seeking medical help to conducting medical research [1, 2]. Uncertainty may come about by way of incomplete mastery of available knowledge or by limitations in current medical knowledge [3]. Uncertainty is a ubiquitous part of the clinical consultation and the doctor–patient relationship [3]. Such a relationship is purported by theorists to be strengthened by physician disclosure of uncertainty as it is believed to enhance patient-centred communication, patient trust and shared decision making [4].

There are many meanings of uncertainty. Han et al. [2] have defined it as the subjective perception of ignorance. Mishel [5] defines uncertainty as “the inability to determine the meaning of illness-related events involving four dimensions of patients’ experiences of uncertainty in illness: (1) ambiguity—patients’ evaluation of the state of illness as unclear; (2) complexity—the multiplicity of varied cues patients perceive about treatment and the system of care; (3) deficient information—inadequate information regarding patients’ diagnosis; (4) unpredictability—absence of stability in the patients’ course of illness and outcomes.

Studies to date have largely addressed the uncertainty of the physician. From the physicians’ perspective reluctance of

✉ D. Harmon
dominicharmon@hotmail.com

¹ Graduate Entry Medical School, University of Limerick, Limerick, Ireland

² Department of Anaesthesia and Pain Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland

physicians to disclose uncertainty [6], physician characteristics predisposing to intolerance of uncertainty [7] and the impact of uncertainty on physicians [8] has been studied. This is despite the fact that it is the patients who are ultimately implicated by the disclosure or nondisclosure of uncertainty. The consequences of uncertainty are extensive with the potential to influence a multitude of issues such as patient expectations, diagnosis, treatment decisions, patient confidence and satisfaction and ultimately patient compliance.

Aims and objectives of systematic review

To review the relevant literature pertaining to physician expressions of uncertainty and its effects on patients as identified in both qualitative and quantitative studies.

Methods

Data sources and inclusion criteria

Search strategies

A search of the following relevant electronic databases, PsycINFO, PsycARTICLES, MEDLINE and Embase was conducted. The search was carried out from inception and no date limitations were applied. Key search words used to construct the search systematically included #1 uncertainty, #2 physician, #3 patient confidence, #4 patient satisfaction, #5 patient attitude, #6 (#1 AND #2), #7 (#1 AND #2 AND #3 OR #4 OR #5). The results yielded from the search were filtered for unrelated or duplicated articles. Inclusion and exclusion criteria were strictly adhered to in determining which studies to include (Table 1). Reference lists of articles that fulfilled the inclusion criteria were also examined. Methods and reporting adhere to the guidelines outlined in the PRISMA statement [9].

Data extraction

To be included in this review, studies were required to have been published in an English language journal, include qualitative or quantitative data describing patient responses to physician expressions of uncertainty. A total of four studies out of 14 were identified for review. These were all qualitative studies involving a mixture of observed videotapes, audio-recordings and various questionnaires.

Results

A total of four studies were selected for review from 14 titles all of which were qualitative studies (“Appendix”). There were no quantitative studies addressing patient response to physician expressions of uncertainty.

Table 1 Inclusion and exclusion criteria

Study types	Quantitative or qualitative studies including Surveys Systematic reviews Observational Exclusion criteria: Interviews/focus groups, papers published in languages other than English, papers not available in full text, book chapters, and discussion pieces
Types of participants	Patients that encountered physician-expressed uncertainty or patients that observed physician-expressed uncertainty. Patients must be adults, that is, 18 years old and above Exclusion: children, cognitively impaired patients or patients suffering from dementia Physician. Practicing medical practitioner Exclusion: medical students, non-practicing physicians and all other allied health professionals
Types of settings	Hospital consultation settings, primary care settings and outpatient clinic settings Exclusion: psychiatric clinics, paediatric clinics teleconferencing, online consultations
Types of communication	All types of physician–patient interactions

Patient satisfaction

In an observational study by Johnson et al. [3], disclosure of uncertainty was associated with patient dissatisfaction. Patients observed one of five randomly selected videotapes. All five videotapes were identical save a 1 min segment which distinguished each of the tapes by depicting various physician responses and expressions of uncertainty. Patient satisfaction proved highest in videotapes whereby no uncertainty was demonstrated and lower in videotapes depicting uncertainty communicated by the physician.

By contrast, Gordon et al. [6] found positive correlation between physician-expressed uncertainty and patient satisfaction in a study which examined audiotapes of doctor–patient consultations, followed by the completion of patient satisfaction questionnaires. It is pertinent to note, however, that patient satisfaction in this sense was not independent of other physician expressions discussed further in this text.

The study by Politi et al. [10] approached patient satisfaction from the viewpoint of patient and physician reactions to uncertainty on patient satisfaction in terms of best health decisions. Here patient anxiety caused by uncertainty was not independently related to decision satisfaction; however, physician anxiety caused by uncertainty correlated with a greater degree of patient decision satisfaction. This illustrates the significance of physician attitudes to uncertainty, the idea of which has been subjected to a greater deal of interrogation [6, 8, 11, 12].

Patient confidence

Patient confidence like patient satisfaction is also impacted by uncertainty. Ogden et al. [13] found that both general practitioners and physicians, when compared directly, agreed that expressions of uncertainty were detrimental to patient confidence. Despite this unanimity general practitioners were found to significantly underestimate the potential harm of verbal expressions on patient confidence. This may illustrate that physicians are failing to understand the nature of uncertainty and its consequences [7, 8, 12, 14].

Communication of expressed uncertainty

The manner in which uncertainty is communicated featured heavily in each of the analysed studies. Johnson et al. [3] clearly demonstrated that the way in which the physician resolved uncertainty affected patient satisfaction. Patient rates of satisfaction were relatively higher where physicians consulted a computer and lower where physicians consulted a book to resolve uncertainty. These findings are in keeping with Gordon et al. [6] who discovered a positive association between physician uncertainty expressions and patient satisfaction that was not independent of other physician-specific factors. Such factors included partnership building, information giving and talking positively. Ogden et al. [13] findings are equivocal. In this instance, verbal expressions proved more detrimental to patients than behavioural expressions with “Let’s see what happens” being the most potentially damaging. In the context of communication, a clear variability in patient response to uncertainty was observed, which would illustrate the multifaceted nature of uncertainty.

Patient-specific variables pertaining to patient response to uncertainty

Relevant to patient response to uncertainty is the issue of context, i.e. the patient-specific variables that influence patient response. Johnson et al. [3] specifically analysed patient attitudes. Patients comfortable with bargaining, who believed in physician authority and those who were of an omniscient disposition had higher satisfaction ratings when uncertainty was communicated to them. In this same study, however, demographic factors did not affect patient satisfaction which is in keeping with other studies [15, 16].

By comparison, Gordon et al. [6] found that physicians expressed more uncertainty to better educated patients, those who asked more questions and those who requested more information. No correlation, however, was made between number of previous visits and patient satisfaction. This is at odds with Ogden et al. [13] where longstanding

patients of general practitioners reported that they would feel more confident if their physician were to communicate uncertainty to them. This would denote that numerous patient-specific factors may contribute to patient satisfaction. Moreover, individual patients may not react to physician-specific variables in the same way.

Discussion

This review was designed to assess the relevant literature pertaining to physician expressions of uncertainty and its effects on patients. In carrying out the review it was evident that the existing body of research on this subject is limited. The review demonstrated the variability of patient responses to physician expressions of uncertainty and the relevance of communication and context in expressing uncertainty. It has also highlighted the need for further study in the area of uncertainty as medical knowledge continues to expand.

The studies yielded different results in relation to patient response to uncertainty. Results conflicted as to whether expressions of uncertainty impaired or improved patient satisfaction [3, 13]. This demonstrates that the effect of physician expressions of uncertainty on patient satisfaction and patient confidence is not a consistent one. As reported by Johnson et al. [3], patients witnessing the same encounter may have different reactions which highlight the intricacy of patient responses to uncertainty.

It is clear from the studies that communication plays a significant role in expressing uncertainty to patients. Patient responses to uncertainty were shown to vary according to how uncertainty was communicated. The manner in which uncertainty was conveyed was associated with increased patient satisfaction in the presence of other physician behaviours. Such behaviours ameliorated the doctor–patient rapport and included sharing information, talking positively and resolving concerns pertaining to uncertainties. The nature of the expression, i.e. whether it was verbal or behavioural, resolved or unresolved also affected patient response. This suggests that the communication of the uncertainty is a significant factor in determining patient satisfaction.

Ghosh [8] and Hewson et al. [14] have set out guidelines which aim to facilitate effective communication of uncertainty. These guidelines are based on the well-established assertion of theorists that expressing uncertainty is central to patient-centred consultations, shared decision making, improving patient expectations and to further facilitating communication [13]. Despite such work, research is lacking as to the impact of expressions of uncertainty on patients but also the impact of the various means of communicating uncertainty.

Uncertainty expressions take place within a broad context. In terms of context, study results have provided that numerous patient- and physician-specific variables influence patient response to uncertainty. Studies have examined different variables ranging from patient attitudes to bargaining with the physician and social class. Where studies analysed the similar variables the results conflicted as to the effects of such variables. The above highlights the salient point that uncertainty arises within the context of an interaction between two distinctive individuals each with their own personal characteristics [13]. As a result, it stands to reason that patient responses to uncertainty are inconsistent. Future research should further explore the role of context by addressing a wider set of personal factors to both physician and patient and the role of personal experiences of the patient, both in health care systems and personal life. An understanding of such variables might help physicians take into account their own personal characteristics, as well as the patients, as it is within this environment that the uncertainty and the patients' response to such uncertainty ensue. It may aid physicians to gauge whether they ought to express uncertainty. Moreover, it might steer them toward the most suitable type of uncertainty expression and the most suitable means of communicating uncertainty for any given case.

Limitations of the studies themselves involved inability to reliably code indirect expressions of uncertainty, inability to account for tonal or affective features of physicians' speech and non-verbal physician cues. Studies also varied terms of methodologies with no two studies using a similar method. Furthermore, the uncertainties examined in each study were not confined to one specific part of the consultation. It is unclear as to whether this would give rise to inconsistencies between the study findings.

Expressions of uncertainty encourage honest, open communication between physician and patient. It facilitates shared decision making and strengthens the doctor–patient relationship [3]. Conversely it also has the potential to be detrimental to patient satisfaction, patient confidence and subsequent patient compliance. The question then arises as to whether uncertainties ought to be expressed at all. Where a physician is calm, reassuring, empathic, and appears confident and comfortable with uncertainty, with patient care as their main concern, dissatisfaction may not occur [3]. Future studies should address how patient experiences, both in their personal life and within the health care system, affect their ability to cope with expressions of uncertainty.

This review suggests that uncertainties should be expressed. Expressions of uncertainty may adversely affect patient satisfaction. It is effective communication by the physician and understanding the context within which the uncertainty takes place that is fundamental to avoiding detrimental patient responses to uncertainty.

Compliance with ethical standards

Funding No external funding.

Conflict of interest Author A declares that he/she has no conflict of interest. Author B declares that he/she has no conflict of interest.

Ethical approval This article does not contain any studies with human participants performed by any of the authors.

Appendix

Study	Patient sample	Type of data	Study type	Outcome
Johnson (1988)	Hospital clinic waiting list ($n = 100$)	Audiovisual recordings	Qualitative	Expressing uncertainty is detrimental to patient confidence and evaluation of the consultation. The manner in which uncertainty is disclosed affects patient satisfaction
Ogden (2001)	General practitioners ($n = 66$) and their attending patients ($n = 550$)	Matched questionnaires	Qualitative	Physicians and patients agreed that expressions of uncertainty were detrimental to patient confidence. Verbal expressions were more detrimental than behavioural expressions
Gordon (2000)	Review visits to a hospital clinic ($n = 216$)	Audio-taped dialogue	Qualitative	Physician expressions of uncertainty were associated with greater patient satisfaction when other specific physician verbal expressions were present. Uncertainty disclosure was associated with a greater doctor–patient rapport
Politi (2010)	Cancer treatment clinic ($n = 75$)	Questionnaire telephone call	Qualitative	Physician expressions of uncertainty lead to greater patient decision satisfaction

References

1. Babrow AS, Kasch CR, Ford LA (1998) The many meanings of uncertainty in illness: toward a systematic accounting. *Health Commun* 10(1):1–23
2. Han PK, Klein WM, Arora NK (2011) Varieties of uncertainty in health care: a conceptual taxonomy. *Med Decis Making* 31(6):828–838
3. Johnson CG, Levenkron JC, Suchman AL, Manchester R (1988) Does physician uncertainty affect patient satisfaction? *J Gen Intern Med* 3(2):144–149
4. Henry MS (2006) Uncertainty, responsibility, and the evolution of the physician/patient relationship. *J Med Ethics* 32(6):321–323
5. Mishel MH (1981) The measurement of uncertainty in illness. *Nurs Res* 30(5):258–263
6. Gordon GH, Joos SK, Byrne J (2000) Physician expressions of uncertainty during patient encounters. *Patient Educ Couns* 40(1):59–65
7. Schneider A, Wübken M, Linde K, Bühner M (2014) Communicating and dealing with uncertainty in general practice: the association with neuroticism. *PLoS One* 9(7):e102780
8. Ghosh AK (2004) Dealing with medical uncertainty: a physician's perspective. *Minn Med* 87(10):48–51
9. Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gotzsche PC, Ioannidis JP, Clarke M, Devereaux PJ, Kleijnen J, Moher D (2009) The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Ann Int Med* 151:65–94
10. Politi MC, Clark MA, Ombao H, Légaré F (2011) The impact of physicians' reactions to uncertainty on patients' decision satisfaction. *J Eval Clin Pract* 17(4):575–578
11. Ghosh AK (2004) Understanding medical uncertainty: a primer for physicians. *J Assoc Phys India* 52:739–742
12. Srivastava R (2011) Dealing with uncertainty in a time of plenty. *N Engl J Med* 365(24):2252–2253
13. Ogden J, Fuks K, Gardner M, Johnson S, McLean M, Martin P, Shah R (2002) Doctors expressions of uncertainty and patient confidence. *Patient Educ Couns* 48(2):171–176
14. Hewson MG, Kindy PJ, Van Kirk J, Gennis VA, Day RP (1996) Strategies for managing uncertainty and complexity. *J Gen Intern Med* 11(8):481–485
15. Linn LS (1975) Factors associated with patient evaluation of health care. *Milbank Mem Fund Q Health Soc* 53(4):531–548
16. Murphy-Cullen CL, Larsen LC (1984) Interaction between the socio-demographic variables of physicians and their patients: its impact upon patient satisfaction. *Soc Sci Med* 19(2):163–166