

Analysis

What mechanisms could link GP relational continuity to patient outcomes?

BACKGROUND

Relational continuity of GP care, defined as a patient seeing the same doctor repeatedly, is a means towards the end of better reciprocal doctor–patient relationships. It has been linked to various outcomes for patients, doctors, and health systems, including patient satisfaction, reduced accident and emergency use, better concordance with medical advice, and reduced hospital admissions.¹ Two systematic reviews^{2,3} have found that continuity is associated with reduced mortality; one in primary care.³ Another aggregate outcome of continuity is reduced costs in the health system, important when countries face cost pressures in health care. In antenatal care, there is evidence from 15 randomised trials that continuity improves outcomes,⁴ but in general practice trials have not yet been completed.

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best of our current knowledge, and on the balance of probabilities, continuity is likely to be beneficial. On this basis it is now important to consider what possible mechanisms can explain the continuity effects.

Outcome-specific mechanisms for continuity of care have been proposed separately and several were brought together in our previous reviews.^{1,5} The concept of accumulated knowledge was first proposed by Hjortdahl in 1992.⁶ Parchman and Burge wrote: *‘length of relationship and communication predicted accumulated knowledge of the patient by the physician, accumulated knowledge predicted trust, and trust predicted delivery*

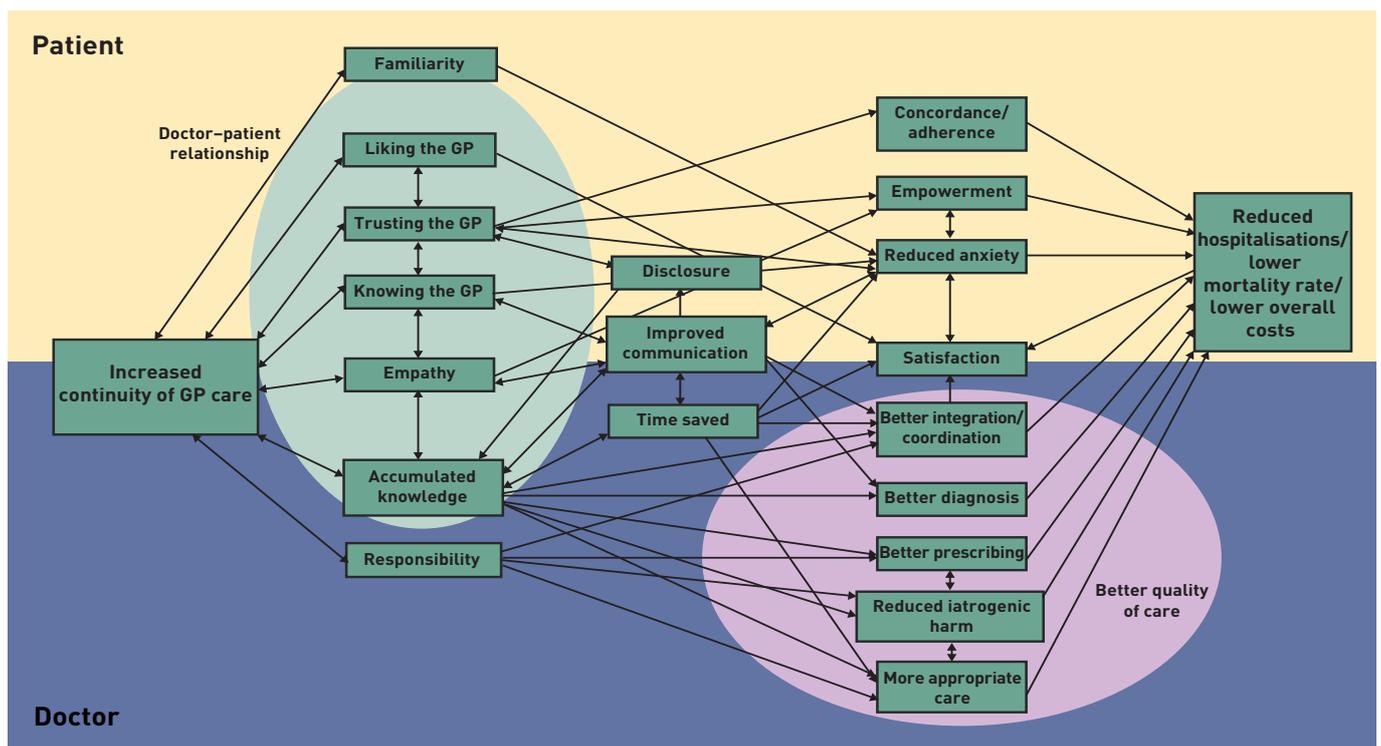
*of preventive services’.*⁷ The GP taking greater responsibility has been suggested as a potential mechanism for a mortality reduction. The reports from recent studies into outcomes linked to continuity of care commonly suggest knowledge, trust, and adherence to treatments as likely mechanisms. Other mechanisms include saving time, improved communication, and improved coordination of care.⁸

Building on our previous reviews,^{1,2,5} we have brought together the current literature on these putative mechanisms.

REPEATED CONTACT

An important characteristic of human

Figure 1. A flow diagram showing the potential positive mechanisms and beneficial intermediate outcomes linking increased continuity of care to overarching positive outcomes such as reduced mortality rates. Arrows show the potential of one factor to lead to another. The lower half (blue) of the diagram incorporates doctor-linked factors and the upper half (yellow) patient factors.



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behaviour is that repeated contact alters people’s attitudes to be more favourable towards each other. This was discovered in a study in psychology,⁹ leading to a body of knowledge that has been interpreted as a form of human conditioning. For general practices that foster continuity between patients and doctors, familiarity gives them an additional strengthening of doctor–patient relationships. A familiar setting is reassuring, whereas strange surroundings and strange doctors can generate anxiety and stress.

ACCUMULATED KNOWLEDGE

In consultations, a large amount of information is exchanged between patient and doctor. Doctors can only record a fraction, as it is impossible to capture most of what is communicated verbally or non-verbally in a consultation, such as what the patient said, how they looked, or about the social determinants of illness. Important contextual information, described by Hjortdahl as ‘*accumulated knowledge*’,⁶ often comes in passing: about the partner/

spouse; the children; family; work; and the home. The doctor’s knowledge of individual preference, such as not wanting to swallow capsules or unusual health beliefs, generates personal understanding. With increasing continuity the GP acquires more knowledge and understanding of the patient as a person, and so becomes equipped to incorporate the patient’s hopes, fears, wishes, and any personal idiosyncratic features of their personality into management proposals.

Family care across generations is a source of such knowledge. Information regarding family members who are not present may emerge during consultations, about children or living conditions, for example. Domestic abuse problems may be disclosed. GPs seeing children with chronic problems can get to know their parents, without this appearing in any medical record. Much accumulated knowledge is about the patient as a person rather than about technical medicine.

Most GPs consider accumulated knowledge to be useful clinically, more

for management than diagnosis. However, in the case of medically unexplained symptoms, knowledge often has diagnostic value.⁶ Over time, the GP builds up a picture of the patient as a person. This knowledge is likely to enable doctors to make better treatment decisions, and this is a potential mechanism by which improved continuity may protect against unnecessary hospital admissions.⁸ The common statement by patients that they hate having to repeat their story with strange GPs has been confirmed in qualitative research.¹⁰

GP’S SENSE OF RESPONSIBILITY

A GP’s sense of responsibility, although invisible, is a key factor and is much influenced by continuity. This sense of personal responsibility is fundamental as it encourages the GP to consider the patient’s long-term interests. Hjortdahl’s triad classified GPs into those with a perspective of the single consultation (7%), those whose perspective was an episode of illness (19%), and those whose perspective was long-term care (74%).⁶ GPs change with continuity of care, which rapidly increases their sense of responsibility for their patients. For example, there was a five-fold increase in GPs’ sense of responsibility in 12 months and a 16-fold increase over 5 years.⁶

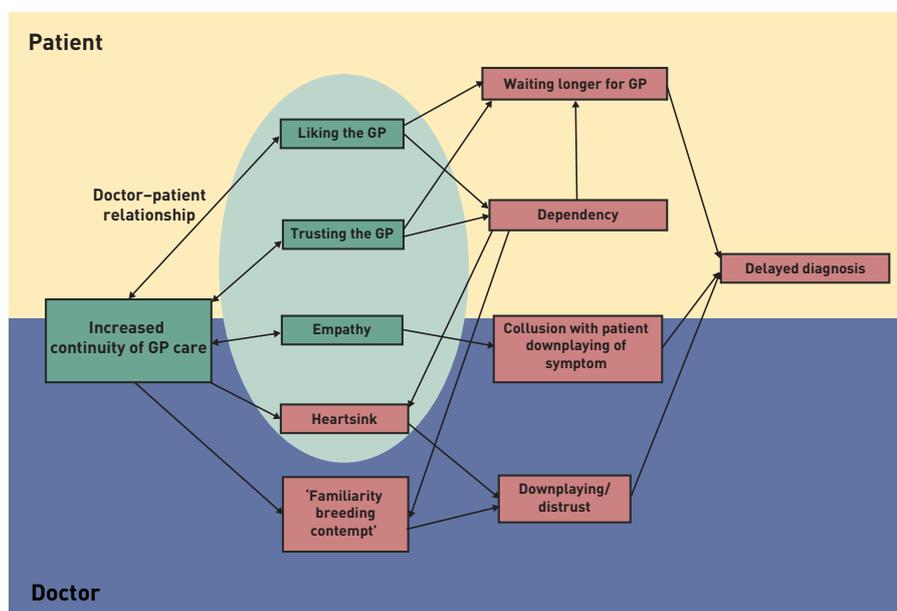
GP–PATIENT RELATIONSHIPS

Balint¹¹ demonstrated that the doctor–patient relationship was particularly important in general practice, a human service where the personality of the patient and the doctor are both relevant to the care provided. His metaphor for this relationship of a mutual investment company, into which patient and GP contribute capital and from which either can draw, has stood the test of time. General practice is the only branch of medical practice to define its role in terms of relationships. Contextual healing (placebo effect) is present in clinical encounters and may be stronger when a good doctor–patient relationship exists.

General practice is also associated with the longest duration of doctor–patient relationships. Many patients remain registered for years. Patients in Islington, London, with long-term conditions were found to have a mean duration of general practice registration of 15 years.¹² Although many practices have high patient turnover, they simultaneously may also have patients staying for decades.

Continuity of care is both a proxy for the quality of the doctor–patient relationship and a powerful way of fostering it. It is no guarantee of a good relationship developing,

Figure 2. A flow diagram showing the potential mechanisms and negative intermediate outcomes linking increased continuity of care to possible negative patient outcomes. Arrows show the potential of one factor to lead to another. The lower half (blue) of the diagram incorporates doctor-linked factors and the upper half (yellow) patient factors.



but makes it more likely; a necessary but not sufficient condition. Fundamental new insights into this relationship include that, with continuity of care, both patients and GPs change,^{6,13,14} with doctors becoming more responsive, and patients more trusting of the GP.

Knowing and liking the doctor

Patients feeling that they 'know the GP' is medically important. As Howie *et al*¹⁵ showed, it was significantly associated with enablement (patients' confidence and ability to self-care), a prime aim of generalist practice. As patients get to know their clinicians, many come to like them. This makes patients more comfortable and may explain increased disclosure. Ridd *et al*¹⁴ developed a measure of a 'deep' doctor-patient relationship and found that, on average, it required eight consultations between a patient and the same GP for there to be a 50% probability of the patient considering a 'deep' working relationship to exist.

Trust

With continuity, patients become progressively more trusting in the GP.¹³ There is baseline institutional trust accorded to all doctors, but this is limited and easily undermined. Repeated consultations help patients to develop 'secure' trust, and trust is also influenced by patients' expectations of future contacts with the doctor.¹⁶ Trust is an important psychological construct, influencing patients' behaviour in many aspects of medical care. This is a possible mechanism explaining better adherence to medical advice, including prescribed medications and preventive medicine.⁷ Taking a pill is an act of trust. Trust in the GP is one likely mechanism for the significantly reduced use of emergency departments.

Empathy

GP empathy has emerged as an important factor. Single, one-off consultations between patients and GPs are very different from repeated ones between the same people. Hirsh *et al* found that continuity enhanced medical students' ability to be caring with

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patients.¹⁷ Hearing patients' stories is a trigger for developing empathy. Mercer *et al* noted GP empathy was associated with patient enablement and found that they never observed maximum enablement without GP empathy.¹⁸ A systematic review found that GP empathy was associated with better patient satisfaction, better patient enablement, and reduced patient anxiety.¹⁹

Patient-perceived empathy in GPs is important and was reported to be associated with favourable outcomes of symptoms. Dambha-Miller *et al*²⁰ found that GP empathy is associated with reduced all-cause mortality in patients with diabetes. GP empathy is likely to be an important component of the doctor-patient relationship and may contribute to reduced mortality with continuity of GP care.

QUALITY OF GP CARE

After learning about the patient as a person and building a working relationship, care can be tailored towards the wishes and needs of an individual patient in both initial and all future consultations. This has been described as 'higher quality' care.²¹

Continuity enhances a GP's clinical skills. When seeing a patient repeatedly they can compare them with how they looked and behaved previously. The GP is also more likely to consider in greater depth the extent and personal implications of any other conditions the patient may have, as well as the treatments they have had. The knowledge acquired by the GP about individual patients through continuity improves patient safety. Increased continuity has been shown to be associated with fewer adverse drug-drug interactions.¹⁹

A possibility is that, when a GP knows a patient well, they feel more empathy and are more likely to go 'above and beyond' on the patient's behalf. This, and a better

understanding of a patient's needs, may lead to better integration and coordination of care.

These 'higher level' skills translate into better-quality care. Continuity of care is associated with the development of GP intuition and some earlier diagnoses. Two studies have found that having a usual GP was associated with higher rates of diagnosis of diabetes. Granier *et al* found that knowing the child and family aided the detection of meningitis by GPs before the rash appeared.²³ Management of diabetes also improved.²⁴

NEGATIVES

Doctor-patient relationships can also have important adverse effects. With increased mutual empathy, doctors may be more reluctant to bring up awkward topics and to collude with patients potentially downplaying their symptoms, which may lead to delayed diagnosis. Cancer diagnosis in particular can be delayed; one estimate is of around 7 days.²⁵ Liking and trust by some patients can induce psychological dependency on the GP. Negative feelings, such as 'heartsink' patients in general practice, have been described.²⁶

DISCUSSION

The literature does not reveal any single mechanism but a variety that operate simultaneously and are probably reinforcing. Figure 1 illustrates many of these links and pathways. The system is likely to include positive feedback, such as better patient and doctor satisfaction, and positive health outcomes, causing both to work towards increasing continuity of care. There are also ways in which continuity can lead to negative outcomes, such as delayed diagnosis, and these are summarised in Figure 2. Sometimes the same mechanism can produce both positive and negative effects.

Many have called for an integrative or overarching theory for continuity.^{3,16} Baker *et al*,³ after Donaldson,²⁷ suggest agency theory, but this has financial roots and implications of the patient 'delegating' to the doctor, emphasising inequality. The elements of aligning agendas and better informing the doctor²⁷ are helpful,

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but limited. Tudor Hart²⁸ described co-production with patients, building on Balint's¹¹ model of a 'mutual investment company'. Co-production may be a better integrative model than agency theory, fitting more of the interpersonal components of GP continuity.

Future research

Continuity may result in positive changes in neuro-endocrine-mediated immune function, as outcomes from many diseases relate to this. Future research could focus on effects of continuity on neuro-endocrine-mediated immunologic function although at present the science does not allow this. We also hope to see randomised controlled trials of continuity in general practice, to answer the question of causation.

Conclusion

The large number and importance of the outcomes now associated with continuity focuses attention on to the mechanisms by which these effects occur. We have extracted from the literature a number of broad mechanisms, which we have described and illustrated diagrammatically. There are calls for some overarching or integrative theory of continuity^{3,16} and we now offer this framework of interlinking mechanisms.

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