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Title: A New Model of Patient-Centred Care for General Practitioners: Results of an Integrative Review

Article category: Systematic Integrative Review

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Key Messages

- This paper presents a systematic review on patient-centred care by general practitioners.
- This study resulted in a new model of patient-centred care by general practitioners.
- The new model includes four components that can guide practice improvements.
- It can be used to develop toolkits that support general practitioners in their practice.

Abstract

Background

GPs providing patient-centred care (PCC) is embedded in international health care policies due to its positive impact on patients and potential to lower health care costs. However, what is currently known about GP-delivered PCC is unknown.

Objective

To synthesize literature investigating GP-delivered PCC and address “what is currently known about GP-delivered PCC?”

Method

A systematic literature search was conducted between June and July 2018. Eligible articles were empirical, full-text studies published in English between January 2003 and July 2018, related to at least three of the four dimensions of PCC described by Hudon and colleagues (2011), and related to preventative, acute and/or chronic care by GPs. Following screening, full-text articles were independently assessed for inclusion by two investigators. Data were extracted and quality assessed by two researchers. Findings on PCC were analysed thematically (meta-synthesis).

Results

Thirty medium to high-quality studies met the inclusion criteria. Included studies utilised varied designs, with the most frequent being quantitative, cross-sectional. A theoretical model of PCC was synthesised from included studies, and contained four major components: 1) understanding the whole person, 2) finding common ground, 3) experiencing time and 4) aiming for positive outcomes. Harms of PCC were rarely reported.

Conclusions

A New Model of Patient-Centred Care for General Practitioners

Four overarching theoretical components of PCC relate to elements of the consultation and experience of time. These components can be used to inform the development of toolkits to support GPs and general practice organisations in pursuit of PCC as well as tools to measure patient-centredness.

Keywords: patient-centred care; general practitioners; primary care; consultation duration; holistic health; integrative review

Background

Patient-centred care (PCC) is recognised as an important concept that underpins well-functioning health care systems¹. The World Health Organization (WHO) defines PCC as care that ‘meets people’s expectations and respects their wishes’². A high level of PCC has been associated with improved health care outcomes³⁻⁶, including enhanced relationships between clinicians and patients⁵, enhanced patient and clinician satisfaction^{3,7}, greater adherence to treatment⁴, improved quality of life⁶, reduced length of hospital stay and lower health care costs⁸. Clearly, PCC is a concept important to health care.

Primary health care is essential to a person’s health needs and includes prevention, treatment, rehabilitation and palliative care². General Practitioners (GPs) are specialised medical generalists fundamental to primary care systems⁹. The U.S. based Commonwealth Fund estimates that most people in developed countries visit their GP on more than five occasions per year¹⁰, indicating that GPs are typically accessible and highly utilised. Hence, GPs are well-positioned to develop long-standing relationships with patients, a fundamental component of PCC¹¹.

Despite its advantages, there are many barriers to the implementation of PCC in practice. Practitioners need to advance knowledge, develop new skills, and change perceptions about power dynamics between patients and GPs to effectively provide PCC¹². Practitioners are required to provide care in accordance with clinical guidelines¹², to a patient base reported to be increasing in size and complexity¹³. Joseph-Williams and colleagues found GPs felt time constraints shifted their priorities of care to treatment (e.g. medication prescription), at the expense of fundamental components of PCC¹⁴. General practice business models, structures and payment schemes are also likely to moderate GP delivered PCC¹⁵.

There are many definitions of PCC in the literature due to its highly contextual and conceptual nature^{2,11,16}. Figure 1 outlines one conceptual model of GP delivered PCC containing four inter-related dimensions, developed by Hudon and colleagues¹⁷. This model, published in 2011, formed from the results of two seminal reviews, a 2003 review by Stewart and colleagues¹⁸ and a review by Mead and Bower published in 2000¹⁹. The dimensions of PCC outlined by Stewart and colleagues¹⁸ also formed the conceptual basis for the most recent systematic literature synthesis of GP delivered PCC, published by Hudon and colleagues in 2012¹¹. Their thematic analysis examined articles published between 1980 and 2009, and was restricted to chronic disease care¹¹. Much has been published about PCC since this 2012 review, including broader health setting concept analyses regarding PCC^{16,20}. It is timely to update and expand the work by Hudon and colleagues¹¹.

To our knowledge, there has been no synthesis of studies investigating GP delivered PCC covering preventative and acute care, in addition to chronic disease management. Our work also advances the work of Hudon and colleagues¹¹ by synthesising the literature, to address: “what is currently known about GP delivered PCC?”, and inform an updated model of PCC. Greater conceptual understanding of PCC has the potential to identify strategies to support greater implementation of PCC by GPs, general practice consumers and health policy.

Methods

Overview of study design

An integrative review was undertaken to conduct a broad review that allows for simultaneous inclusion of qualitative and quantitative research²¹. This study utilised 5-step integrative review framework: 1) problem identification, 2) literature search, 3) data evaluation, 4) data analysis and 5) presentation²¹. The SPIDER tool²² (Sample, Phenomenon of Interest, Design, Evaluation and Research Type) was used to establish search parameters and the review question, “what is currently known about GP delivered PCC?”. This study was reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement²³. This study was registered through PROSPERO²⁴ (No. CRD42018104493) prior to the screening of search results.

Sample and inclusion/exclusion criteria

Studies were considered eligible for inclusion if they were empirical full-text studies published in English between January 2003 and July 2018, related to at least three of the four dimensions of PCC described by Hudon and colleagues (Figure 1)¹⁷ and related to preventative, acute and/or chronic care provided by GPs. Studies involving care provided by other health professionals were excluded. The review frame was commenced at 2003 because this is when the landmark conceptual framework on PCC was published by Stewart and colleagues¹⁸. After 2003, the terminology of PCC has been consistent with the model of GP delivered PCC by Hudon and Colleagues¹⁷ and allowed for the most comprehensive search of literature to inform this review. Increasing the breadth of the literature search to acute and preventative care enabled the review to expand on the chronic disease focus of Hudon and colleagues¹¹.

Literature search

A systematic literature search was conducted between June and July 2018 with the assistance of a health librarian. Three online databases were searched in line with methodological recommendations for integrative reviews²¹. Online databases searched were CINAHL Plus with Full Text, MEDLINE and SCOPUS. Medical Subject Headings (MeSH) were identified in an initial search. The following MeSH were used to identify all relevant peer-reviewed publications:

- **For patient-centred care:** patient-centered care OR patient-centred care OR family centered care
- **For general practitioner:** physicians, family OR general practitioners OR physician

The MeSH used for patient-centred care encompassed patient-focused care, client-centred care and medical home. Single dimensions of PCC such as ‘empowerment’ or ‘shared-decision making’ were not used as search terms as this study focused on holistic PCC rather than its constituent components. The Boolean connectors AND and OR were used to combine search terms. Journals were also found through journal hand, citation and forward reference searching. All literature search results were imported into EndNote.

Duplicates were identified and removed prior to the screening of collected articles. Article titles were screened for relevance by one investigator (BB), and those that met the inclusion criteria were retained. Abstracts were then independently screened by another investigator (IS) in duplicate with the primary investigator (BB) using the inclusion and exclusion criteria. All full-text articles were screened independently by two investigators to determine their eligibility. Discrepancies were resolved via discussion with two researchers and a third reviewer was not required during this process.

Data extraction and appraisal

One investigator (BB) extracted the data into a table developed by the research team. Data extracted included: first author, year, country, aim, study design, methods, participants/setting, measure of PCC, and findings related to PCC. A second investigator (IS) independently cross-checked the extracted data to ensure accuracy. Both investigators then critically appraised the articles using the Mixed Methods Appraisal Tool (MMAT), version 2018²⁵. The MMAT was used as it allows for simultaneous evaluation of qualitative, quantitative and mixed method studies, it is time efficient (15 min per study) and has demonstrated reliability²⁵. For assessment, studies received one mark out of a possible five per quality criterion specific to study design. Studies that received one mark out of a possible five were excluded due to serious quality concerns.

Data analysis

Meta-synthesis is recommended as a rigorous data analysis approach for integrative reviews because it facilitates a comprehensive and iterative examination of findings from quantitative, qualitative, mixed methods and systematic review articles²¹. In line with framework, the process of meta-synthesis is to initially analyse studies independently prior to collectively²⁶. Researchers read and re-read studies and tabulate key concepts as a group. Key concepts were labelled as table headings and positioned alongside one another to enable studies to be compared to identify relationships and themes. This process was continued until data saturation was achieved, where no new themes emerged. In line with integrative review methodology²¹, the analysis progressed from a description of patterns to a higher level of abstraction. The conceptual model was continually revised in order to be inclusive of as much data as possible. Then, the important elements were synthesised into an integrated summation of GP delivered PCC.

Results

Included studies

The PRISMA flow diagram (Figure 2) outlines the identification, screening and inclusion of studies. Thirty-three studies met the inclusion criteria. Three studies were subsequently removed as they were found to have been included in a systematic literature review (SLR) included in the present synthesis. The thirty remaining studies and their characteristics are described in Table 1. Eight ($n=8$) studies pertained to care of chronic disease^{11,27-33} and the remaining did not focus on a specific illness. The most frequently used methods included survey, interview and consultation observation. Study samples (excluding reviews) consisted of patients ($n=11$)^{3,29,31,34-41}, GPs ($n=1$)⁴² or both patients and GPs ($n=16$)^{27,28,30,32,33,43-53}.

Data appraisal

The methodological quality of included studies, ranged from low (2 marks) to high (5 marks). No studies were rejected based on their MMAT mark. The included RCTs lost marks for failure to adequately describe randomisation procedures and participant dropout^{27,43}. Qualitative studies were mostly rated high, though some lost marks for incongruence between data collection, analysis and presentation^{33,45,46}. The most frequent limitation of the quantitative studies was non-response bias, where explanations for participant withdrawal or non-consent were unclear^{28,36,38,53}.

Meta Synthesis

Four main themes of GP delivered PCC were identified: 1) understanding the whole person, 2) finding common ground, 3) experiencing time and 4) aiming for positive outcomes. A theoretical model of PCC containing components was constructed from these themes and their elements (Figure 3). The first three components are closely related through common

elements of PCC (e.g. interpersonal skills). The occurrence of the three interrelated components of PCC fosters the fourth component, aiming for positive outcomes. In our model, aiming for positive outcomes is also illustrated to be a starting point for PCC implementation. Clinicians who delivered PCC were rewarded with positive patient outcomes, while harms of PCC were rarely reported.

Understanding the whole person

The first theme related to GPs consideration of the patient as a whole person, in addition to the presenting illness. The ‘whole person’ includes an individual’s characteristics, values and capabilities, and their influence on the doctor-patient relationship^{11,54,55}. Patients wanted GPs to create dialogue to develop an understanding of the medical situation in the context of their everyday life⁴⁶. Patients expressed that their GP having knowledge of their values, lifestyle and medical history was conducive to successful adherence to treatment plans^{35,37}. Cross-sectional reports in European general practices indicated that one-fifth of patients felt that their GP lacked interest in their personal situation⁴⁸, and felt unable to discuss their beliefs in one-third of consultations⁵³.

Understanding patient preferences and perspectives was important to whole person comprehension^{36,45,46}. Patients who received care delivered in line with their preferences and perceptions exhibited higher satisfaction and treatment adherence³⁶. In the study by Cvengros and colleagues, patients who wanted to be involved in decision-making (DM) and were involved reported being highly satisfied³⁶. When GPs attempted to seek and understand the patient perspective, they used verbal (e.g. asking questions) and non-verbal communication (e.g. eye contact) to judge characteristics such as emotions and personality⁵⁰. Several cross-sectional survey studies collectively reported that patients have varied preferences for PCC^{36,41,44}, suggesting that patient needs differ on a case-by-case basis.

Finding common ground

The second theme, ‘finding common ground’ relates to the dynamic where GPs and patients ‘meet-halfway’ to build a relationship and form a partnership. This theme is closely related to the first component of PCC, because both are underpinned by effective interpersonal skills. Key GP skills observed in studies and reported by patients for this theme were verbal and non-verbal communication^{32,37,45,49}, such as information sharing^{45,46}, patient enablement and stimulating them to ask questions⁴⁷; empathy^{43,53}, mutual respect⁴⁹, trust^{33,41,51}, autonomy support^{41,52} and partnership building^{31,33,45}. Patients reported valuing GPs who conveyed respect, caring, concern and commitment⁴⁶, and reported wanting validation, respect and support⁴⁵. Both patients and GPs expressed the desire to share control and involvement in DM^{27,30,32,35}.

Observational studies reported that effective GP and patient interpersonal skills enhanced the doctor-patient relationship^{43,53}. Active listening by GPs conveyed respect, caring, concern and commitment⁴⁵. Effective non-verbal communication and consultation characteristics such as, attention, eye contact and consultation privacy supported the doctor-patient relationship¹¹. Patients expressed that ‘good’ doctor-patient relationships involved GP empathy⁵⁵. One cross-sectional survey found that patient-reported empathy was positively correlated with enhanced patient satisfaction and enablement⁴⁷. Patients and GPs both reported empathy to be highly important⁴³. Wrede and colleagues audio-recorded consultations and found that GPs demonstrated empathy at least once in two-thirds of consultations⁵³.

Trust was consistently reported as an element needed to establish common ground^{51,55}. In a cross-sectional survey by Dulewicz and Van Dem Assem, perceived GP trustworthiness was a predictor of patient satisfaction⁵¹, continuity of care^{38,51} and perceived GP performance³⁸. No included studies reported any negative consequences of high levels of

trust^{28,32,33,35,38,41,51,52,55} and patients surveyed by Choi and colleagues suggested that a lack of trust and respect could lead to disagreement with their GP³⁵. Patients felt that trust underpinned the depth of the doctor-patient relationship⁵⁵ and patients wanted a trusting relationship with their GP⁵¹. Patients felt that trust was formed when GPs were open, honest and self-aware of their own limitations⁵⁵. Over three-quarters of patients surveyed in two descriptive studies indicated that they trusted their GP^{28,41}.

The review by Hudon and colleagues reported that GPs facilitated and empowered patients to play an active role and be involved in DM¹¹. Cross-sectional studies suggested that higher levels of patient involvement in DM was associated with increased patient perceived autonomy support⁴¹, trust⁴¹ and patient satisfaction³. In an observation and interview study by Walseth and colleagues, patients reported that they felt obliged to heed medical advice if they were involved with DM⁴⁶. Less than 5% of patients surveyed by Lee and Lin reported to prefer a purely passive role in DM⁴¹. Rutten and colleagues surveyed patients and found that 94.4% were involved in treatment DM³⁰. Wrede and colleagues observed that GPs involved patients in DM in less than half (47%) of consultations⁵³. However, Rutten and colleagues reported that only 80% of GPs believed they shared decisions about treatment goals and care with patients³⁰. Patients want to be involved in DM, but there is an imbalance between the perceptions of GPs and their patients, as to the extent to which this is achieved.

Experiencing time

The third theme, 'experiencing time' has two key dimensions: i) the length of the doctor-patient encounter and ii) the longitudinal doctor-patient relationship. This theme is closely related to all other themes because providers accumulate knowledge³³, build partnerships⁴⁴, and develop deep relationships with patients over time^{33,42,45}. In one observation and interview study, patients directly expressed the need for more time in consultations and for

repeated consultations⁴⁶. In a different qualitative interview study, GPs expressed that having sufficient time to listen to patients was integral to the doctor-patient relationship³³. Vedsted and Heje surveyed patients and found they felt supported if GPs showed them time and interest⁴⁸. Analysis of audio-recorded consultations found that patients built higher levels of trust with their GP when the provider spent more time with them⁵¹.

Longer consultation duration was consistently reported in association with PCC^{42,51}. More time allowed GPs to focus on lifestyle intervention, health promotion and prevention^{3,42,51}. In urban primary care facilities, Orton and colleagues examined consultation length and found them to vary from 1-min to 36-min with an average length of 7.9 min⁴². In this observational study, increased consultation length was positively associated with PCC⁴², while shorter consultation length restricted empathy, participation and active listening⁴². Fiscella and colleagues reported that each additional minute shared by GPs and patients corresponded to increased patient-reported trust⁵¹.

Included studies indicated patient perception and experience of time to be an important determinant of optimal consultation duration. A Danish cross-sectional survey reported that 78% of patients felt that their GP ‘made them feel like they had time during the consultation’⁴⁸. A German cross-sectional survey, by Altin and colleagues, indicated that patients who felt their GP ‘often or always spent time’ with them were three times more likely to be satisfied with care³. Collectively, studies suggest longer consultation duration and patient perception of adequate time is associated with higher levels of PCC^{3,42,51}.

Interpersonal continuity of care, where patients re-present to the same GP, is one key dimension of longitudinal care. Dulewicz and Van Dem Assem reported that interpersonal continuity of care predicted patient-reported satisfaction, doctor performance and doctor trustworthiness³⁸. In their qualitative literature synthesis, Ridd and colleagues found that

patients expressed doctor continuity to be valuable in forming an effective doctor-patient relationship, with nearly one-third of patients who had seen their GP at least once before reporting having a deep relationship with them⁵⁵. The shared longitudinal experience of time between patients and GPs appears fundamental to PCC.

Aiming for Positive Outcomes

Clinical outcomes

General practitioners and patients set goals focused on harm avoidance and aimed for positive clinical outcomes⁴⁵. However, the effectiveness of PCC improving clinical outcomes was difficult to determine, because less than 10% of included articles involved a patient-centred intervention^{27,43,53}, only one of which measured clinical outcomes²⁷. The RCT by Cooper and colleagues coached patients in the intervention group to increase empowerment, engagement and participation within consultations²⁷. After 12-months there were no changes between the intervention and control group for systolic and diastolic blood pressure (BP), or for patient-reported medication adherence²⁷. Although not significant, there were trends for reduced systolic BP at 12-months in the intervention group with uncontrolled BP at baseline²⁷. On the basis of studies in this review, there is insufficient evidence for positive clinical outcomes as a result of PCC.

Patient-reported outcomes and experiences

Aiming for positive patient-reported outcomes and experiences was a recurrent theme in the literature. The most frequently cited positive outcome of PCC was global patient-reported satisfaction^{3,31,33,38,41}. Studies found that highly satisfied patients participated in shared DM³; experienced comprehensible communication³; felt their GP had spent enough time with them³; trusted their GP³⁸; received autonomy support⁴¹ and formed partnerships³³. Schunk and colleagues surveyed diabetic patients and found that enhanced health-related quality of life was

associated with a perceived higher quality doctor-patient relationship³¹. Lee and Lin reported higher levels of patient perceived autonomy support were found to be positively associated with health-related quality of life⁴¹. Collectively, PCC components were associated with positive patient-reported outcomes and experiences.

Clinician-reported outcomes and experiences

Clinician-reported outcomes, including their experiences, perceptions and feelings was identified in the meta-synthesis, although, the theme emerged from a single study³³. In a qualitative interview study by Cocksedge and colleagues, GPs identified potential psychological harms of an ongoing doctor-patient relationship³³. In this study, GPs felt that maintaining a trusting relationship and providing ongoing support to patients who had no expectation of cure to be challenging and frustrating³³. They expressed that their role in the patient-centred relationship required skills, time and knowledge³³. Clinicians were concerned of any negative psychological response to an ongoing doctor-patient relationship and the effect of this response on the care they provided³³. Future exploration of clinician-reported outcomes and experiences and PCC is needed to provide insight into any potential threats to the GP workforce if PCC is to be widely implemented.

Discussion

This literature synthesis progressed the knowledge regarding PCC delivered by GPs for preventative, acute and chronic care. The synthesis of thirty articles published over the past 15 years identified four main components of PCC: i) understanding the whole person, ii) finding common ground, iii) experiencing time and iv) aiming for positive outcomes, used to develop a theoretical model of PCC (Figure 3). This advanced previous work through the emphasis of the new dimensions, iii) experiencing time and iv) aiming for positive outcomes. This new model of PCC is valuable to GPs and general practices, and to researchers for informing PCC within the health sector.

Our study makes explicit the importance of the experience of time between GPs and patients as fundamental to the PCC model. This was implied in previous research, by Hudon and colleagues who described six longitudinal dimensions of GP delivered PCC for chronic disease, suggesting that the implementation of PCC occurs over time¹¹. Previous research also failed to acknowledge the importance of positive outcomes to PCC^{11,16}. In our proposed model, ‘aiming for positive outcomes’ is a component of PCC that has the potential to foster partnership, and enhance the experience of time shared between clinicians and patients.

Longer consultation durations were conducive to higher levels of PCC as more time enabled GPs to focus on lifestyle intervention, health promotion and prevention^{3,42,51}. This is of importance as broader research indicates that time constraints are a threat to the GP workforce, demonstrated to compromise clinicians’ sense of professional autonomy, values and job satisfaction^{56,57}. It should be noted that longer consultations will lead to higher costs and may not necessarily equate with optimal consultation duration. This is because patient perceived ‘time’ is an important qualitative determinant of optimal consultation length^{3,33}. Patient perceptions of sufficient time may be met through shorter consultations where lower

levels of PCC is implemented. General practice appointment systems and business/funding models that support flexible consultation durations are needed to enable patients to spend adequate time with their GP.

Both patients and GPs emphasised the importance of interpersonal continuity of care to PCC. Interpersonal continuity of care is important because it supports PCC elements such as, partnership, trust and involvement in DM^{53,55}. In wider research, A SLR of 22 cohort/cross-sectional studies found that GP continuity was associated with lower patient mortality rates⁵⁸. In recent years, some national health systems have been restructured to support care continuity, while other countries are yet to enact policy change. This is evidenced in the U.S. where patients are enrolled in the Medical Home⁵⁹ and the U.K., where nearly all National Health Service (NHS) patients are allocated to single practices⁶⁰. The Royal Australian College of General Practitioners has called for the health system to be restructured to encourage care continuity⁹. If health systems are to effectively implement PCC, their structure needs to be oriented to promote interpersonal continuity of care.

The model of PCC arising from this review forms a useful tool for GPs and general practices because it focuses on the doctor-patient encounter. Our study did not examine PCC components on the policy-level or organisational-level of healthcare. In a review by Scholl and Zill¹⁶, researchers' mapped dimensions of PCC on to the 'micro' (i.e. doctor-patient), 'macro' (i.e. policy) and 'meso' (i.e. system) level of health care. Little is known from this review about the influence of the general practice systems on PCC. Future research needs to explore the factors of general practice systems and their influence on GP delivered PCC.

The integrative review methodology increased the depth and breadth of this literature synthesis²¹. The bulk of included studies followed a cross-sectional or qualitative design, considered to be a low grade of evidence⁶¹. While RCTs provide a higher level of evidence,

quality appraisal of the included RCTs revealed them to be of medium to low quality. In line with a constructivist approach to this review⁶², all included studies were viewed as equal. Nevertheless, this highlights the need for well-conducted intervention studies regarding GP delivered PCC.

Conclusion

This study outlined a model of GP-delivered PCC with four components, advancing on earlier research. These components can be used to develop toolkits to support GPs and general practice organisations in pursuit of PCC as well as tools to monitor GP-delivered PCC. Strategies are required to support GPs to ensure they have the knowledge, attitudes and skills to practice PCC.

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Table 1. Description of ($n=30$) included studies in order of methodological design published 2003-2018

First author (year); country	Aim	Method	Participants (n)/setting	Measure of PCC	Findings related to PCC	MMAT Mark (out of 5)	Summary
Systematic Literature Review of mixed designs							
Hudon (2012); Canada ¹	Synthesise literature and outline main dimensions of PCC in chronic disease management in family medicine	Literature synthesis of articles published 1980-2009 and thematic analysis. Electronic databases: Medline, Embase and Cochrane	Articles ($n=32$), Reviews ($n=1$), Qualitative ($n=10$), Quantitative ($n=3$), M.M. ($n=3$), non-empirical ($n=15$).	N/A	Six themes: 1. Starting from the pts situation 2. Legitimising the illness experience 3. Acknowledging the pts expertise on their own life 4. Developing an ongoing partnership 5. Offering realistic hope 6. Providing advocacy for the pt in the health care system	N/A	Themes reinforce prior knowledge of conceptual definition of PCC by Stewart and colleagues ¹⁸ , emphasise PCC longitudinal dimension, and dimensions independent of the GP-Pt relationship.
Ridd (2009); United Kingdom ⁵⁵	Derive framework of the factors that define GP-pt relationships from pt perspective	Qualitative literature synthesis of articles published until 2008 and thematic synthesis. Electronic databases searched: Medline, Embase, Psycinfo, Web of Science	Qualitative studies ($n=11$); Interviews ($n=7$); Focus groups ($n=4$)	N/A	Two main themes with sub-themes: 1. Development and maintenance of doctor-pt relationships i. Longitudinal care 2. Depth of doctor-pt relationship i. Quality of interaction is important ii. Built on knowledge, trust, loyalty and regard, empathy and holistic care. iii. Pts wanted GPs to appear interested, listen well, explain clearly, elicit discussion and SDM	N/A	GP skills and knowledge are crucial to development of and maintenance of doctor-pt relationship.

					iv. GPs' openness, honesty and recognition of the boundaries to their own abilities supported trust.		
Randomised Controlled Trial (RCT)							
Cooper (2011); United States ²⁷	Compare effectiveness of pt-centred interventions with the effectiveness of minimal interventions	<u>Intervention</u> by community health workers in four arms, <u>Intensive (GPs)</u> : communication skills program via standardised pt and trained to increase pt engagement, activation and empowerment. <u>Minimal (GPs)</u> : received hypertension treatment guidelines and monthly health-education newsletter. <u>Intensive (Pts)</u> : Pre-visit coaching in-line with GP program and fortnightly coaching messages for 1yr. <u>Minimal (Pts)</u> : Monthly health education newsletter.	GPs (n=41); Pts (n=279); GP/Pt Intensive (n=83); GP Minimal/Pt Intensive (n=57); GP Intensive/Pt Minimal (n=84); GP/Pt Minimal (n=55)/14 urban PC clinics	PICS ⁶³ , RIAS ⁶⁴	<i>Change at 12-months for GP+Pt intensive vs. GP+Pt minimal</i> - PDM $\beta = +6.20$ vs. $\beta = -5.20$ (p=0.03) - GP facilitation $\beta = +0.22$ vs. $\beta = -0.17$ (p=0.03) - Information exchange $\beta = +0.32$ vs. $\beta = -0.22$ (p=0.005) - GP verbal dominance diminished in all pt visits as compared to pre-intervention standardised pt visit.	2	Communication skills training increased PCC for pt participation, involvement in DM, information exchange and GP listening.
Purkpl e (2016); United States ⁴³	Examine if pts could encourage GPs to pay attention to their QOL goals by writing them on pre-encounter forms.	<u>Intervention</u> : Pts completed pre-visit 3-item survey focused on QoL; <u>Control</u> : Pts completed 1-item symptom-based pre-visit survey. Then, both groups presented the survey to GPs during consultations. GPs blind to study purpose	Pts (n=64); GPs (n=16)/ Academic medical practice	Modified Flanders interaction analysis ⁶⁵ , Modified Carkhuff-Truax scale ⁶⁶	<i>Intervention vs. Control</i> Empathy: 2.53 vs. 2.92 (p=0.01) - No effect of intervention on clinical-DM, attendance, positive regard, doctor or pt talk.	3	Reminding pts of QoL rather than symptoms pre-consultation reduced empathy and had no effect on clinical DM in consultations.
Secondary analysis of a cluster-randomised controlled trial							

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Wrede (2013); German y ⁵³	Examine whether GPs set shared health priorities with older pts experiencing multi-morbidity and if it was facilitated through pt-centred behaviour	<u>Intervention:</u> GPs trained on prioritisation and pt-centredness, and conducted a geriatric assessment using a pt-centred guide <u>Control:</u> GPs conducted a conventional geriatric assessment with no training. Audio-recorded consultations analysed by occurrences of PCC.	Pts (n=43); GPs (n=28) (Intervention Pts n=24, GPs n=13); Control Pts n=19, GPs n=15)/Cluster randomised by postcode/41 total general practices	Theoretical categories of PCC: ICEE, SDM, empathy, empowerment	- Higher markers of PCC in intervention consultations. - Pts discussed their beliefs in 2/3 of consultations; GPs used empathy ≥ 1 in 2/3 of consultations; GPs initiated ≥ 1 ICEE component in 1/4 of all consultations; SDM took place ≥ 1 in 20 of 43 consultations.	3	GP training elicited moderately higher levels of PCC during geriatric assessment. Majority of pts able to discuss beliefs or were involved in SDM.
Case-controlled							
Street Jr. (2003); United States ⁴⁴	Examine if GP and pt preferences for pt-centredness were related to their communication styles and adaptations	<u>High PPOS scores:</u> 10 GPs (5 male) vs. <u>Low PPOS scores:</u> 10 GPs (5 male). Consultations with 5-8pts per GP were audio-recorded and verbal behaviour was coded and analysed by those blinded to the hypothesis	Pts (n=135); GPs (n=20)/2 PC clinics	PPOS ⁶⁷ , Pt participation and partnership building ⁶⁸	- GPs mean partnership statements per consultation: 3.17 (range 0-15). - No effect of GP PPOS scores on partnership building statements. - Pts with high PPOS scores asked more questions, expressed concerns and were assertive. - Pts with high PPOS scores were younger (F=10.92, p<0.01), more educated (F=46.25, p<0.01) and higher income (F=4.99, p<0.05). - Active pt participation and GP partnership building correlated (r=0.58, p<0.001). - 1/3 of GPs partnership building followed pt opinion, concern or question.	4	GP PPOS score had no effect on partnership building behaviour, while pts with high PPOS scores were more involved in consultation.
Longitudinal							
Lee (2010);	Examine the relationships between pt	Pt self-administered survey and medical data were assessed at: baseline (T1), 4	Pts: T1 (n=614); T2 (n= 516); T3 (n=396)/1	HCCQ ⁶⁹ , API ⁷⁰ , Trust	Linearly adjusted scores (Range 0-100)	5	Pt generally had high perceptions of trust,

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Taiwan ⁴ 1	perceptions of autonomy support and autonomy preferences with regard to their health outcomes	months (T2) and 12 months (T3). Multiple regression analyses conducted.	medical centre, 1 district hospital, 1 regional hospital	Scale ⁷¹ , Pt Visit-Specific Questionnaire ⁷²	- Trust T1: 81.95 ± 11.82 vs. T3: 83.27 ± 11.88; Satisfaction T1: 84.77 ± 16.77 vs. T3: 85.61 ± 17.15. - Cross-sectional informational preference: 80.68 ± 10.96; perceived autonomy support: 76.62 ± 15.15. - Younger, educated pts expressed higher decisional preference levels; <5% of pts did not want SDM. - Perceived autonomy support related to pt trust (r=0.19, p<0.01), satisfaction (r=0.21, p<0.01), and associated with self-rated mental QOL (r=0.18, p<0.01).		satisfaction and informational preference and desire to be involved in DM.
Cross sectional: Mixed methods							
Wiking (2009); Sweden ⁴ 9	1) Describe perspectives between immigrant pts, interpreters and GPs 2) Analyse pt satisfaction and if interpreters or GPs experience any ethical conflicts during consultation	Clinic receptionists distributed post-visit surveys to consecutive pts and respective GPs and interpreters. Survey included yes/no and open-ended items, and participants were asked to reflect and provide comments on some answers. All groups were asked about their experience and communication in the consultation. Interpreters and GPs were asked if they had experienced any ethical conflicts during the consultation.	Pts (n=40); GPs (n=40); Interpreters (n=40)/12 PC clinics	Author constructed survey	<i>Pt positive answers (%)</i> - GP respect for their culture: 65; personality: 80; wishes: 83 - GP understood their problem: 80 - Pt able to say what's important to them: 85 - GP's inability to listen a barrier to communication. - GPs need to adjust information to the pts educational level not culture. - 1/3 of GPs reported cultural differences had a negative impact on consultation.	4	Interpreters and immigrant pts report that not all GPs are able to provide important aspects of pt-centredness (e.g. respect). Possibly due to cultural barriers and limited GP interpersonal skills.
Cross-sectional quantitative: Survey							
Altin (2016); German y ³	To explore if subjective health literacy, perceived pt-	Nationwide survey via computer assisted telephone interviews. Descriptive statistics analyses including	Pts: (n=1125)	CAHPS ⁷³ , Commonweath Fund	<i>Domain x Satisfaction (OR (95% CI))</i> GP 'often or always' spending time with their pt 3.12 (1.410-6.905) (p<0.01); GP knew important things about medical	5	Pts more likely to be satisfied if experienced time, SDM and

	centred communication and SDM is associated with pts satisfaction	binary logistic regression analysis.		Perceived SDM ⁷⁴	history 3.46 (1.502-7.994) (p<0.01); experience SDM 4.02 (1.849-8.744) (p<0.001); Pt understand communication 4.44 (1.817-10.869) (p<0.001); Pt adequate health literacy 2.07 (1.002 – 4.264) (p<0.05)		information exchange with GP.
Blair (2013); United States ²⁸	Investigate clinicians' explicit and implicit ethnic/racial bias and black and Latino pts perceptions of care	Hypertensive pts completed a telephone survey administered by a professional company. If phone contact could not be made, a written survey was used. Data analysis included mixed effects models.	Pts (n=2908); GPs (n=134)/3 PC organisations. Pt ethnic groups; Black (n=612), Latino (n=859), White (n=1437)	PCAS ⁷⁵	<i>Pt ratings: Black vs. White vs. Latino (mean ± SD)</i> - Contextual knowledge: 75 ± 19 vs. 74 ± 20 vs. 73 ± 20; interpersonal treatment: 84 ± 19 vs. 86 ± 18 vs. 81 ± 19; communication: 84 ± 18 vs. 84 ± 17 vs. 80 ± 19; trust: 79 ± 16 vs. 82 ± 15 vs. 76 ± 15. - Subscale scores lower for Latino pts vs. White pts for 'interpersonal treatment' (p<0.01); 'communication' (p<0.01); 'trust' (p<0.01), and for Black vs. white pts for 'trust' (p<0.01)	4	Not all pts received PCC, but this did not vary by race. Lowest scores may be due to cultural barriers and limited GP interpersonal skills.
Baldwin (2008); United States ³⁴	Investigate how PPOS scores are associated with pts' medication information seeking behaviour and three different clinical markers of health.	Hypertensive pts participated in an interview where surveys were completed and dichotomous questions were answered. Laboratory data was assessed for clinical markers of health. Data analysis included logistic and linear regression models.	Pts (n=189)/ 2 Veteran Affairs clinics and 4 community-based clinics	PPOS ⁶⁷	High PPOS scores were associated with: - Higher engagement in health-related information seeking from a greater variety of sources ($\beta=0.21$, $t=2.86$, $p=0.005$) - Higher average systolic ($\beta=0.16$, $t=2.04$, $p=0.04$) and diastolic ($\beta=0.15$, $t=2.02$, $p=0.04$) blood pressure and \uparrow LDL levels ($\beta=0.17$, $t=2.05$, $p=0.04$)	4	Pts who preferred higher levels of PCC engaged in behaviour consistent with their preferences, but had poorer markers of health.

Choi (2015); South Korea ³⁵	Examine pt expectations for PCC and the related socio-demographic factors in a primary care setting at baseline and 5-years	Pt completed a self-administered survey in 2005 (Phase 1). Repeated at the same clinics in 2010 (Phase 2). Data analyses; Chi-square tests and two-way nested analysis of variance.	Pts (Phase 1: n=359); (Phase 2: n=468)/10 PC clinics	PPOS ⁶⁷	<p><i>Phase 1 vs. Phase 2 (mean ± SD) and Pt agreement (%):</i></p> <ul style="list-style-type: none"> - Adjusted sharing scores 3.67 ± 0.68 vs. 3.82 ± 0.44 (p<0.001) and caring scores (4.01 ± 0.57 vs. 3.67 ± 0.58 (p=0.001) - The GP should decide what gets talked about during visit 47.9% vs. 58.1% (p<0.01) - Healthcare less personal but a small price to pay for medical advances 30.9% vs. 39.5% (p=0.01) - Pt disagreement with the GP is a sign of a lack of pt respect and trust 45.1% vs. 38.0% (p<0.05) - Pt must always be aware GP is in charge 54.3% vs. 47.2% (p<0.05) - Treatment plan can't succeed in conflict with pt lifestyles or values 59.9% vs. 52.1% (p<0.05) - Humour a major ingredient in GPs treatment of the pt 72.4% vs. 64.1% (p<0.05). - Mean PPOS scores higher in the younger pts with a higher income, higher education level and better functional health status (all <0.001). 	3	Demographic factors may influence pt preferences for PCC. Sharing scores were higher over time, pts wanting more PCC is more recent.
Cvengros (2009); United States ³⁶	Examine pt preferences for clinical encounter and analogous dimensions of GP behaviour and effects of	Pts completed self-administered pre-visit survey. Researcher interviewed pts in the 48hrs after their consultation. Medical data collected from pt charts. Statistical analyses included hierarchical linear models.	Pts (n=218)/2 PC clinics	PPOS ⁶⁷ , KHOS ⁷⁶ , PBQ (author developed), PSQ-18 ⁷⁷	<ul style="list-style-type: none"> - Symmetry in information sharing and SDM, F(2, 208) 3.71, (p=0.03) and behavioural involvement, F(2, 205) 3.60, (p=0.03) were significant predictors of pt satisfaction. - Symmetry between pt preferred and reported behavioural involvement predicted self-reported diabetes adherence, F(2, 195) =3.39, (p=0.04) 	4	Pts more likely to be satisfied when GP comprehended their perspectives and tailored care accordingly. Congruence

	congruence on pt outcomes				- Pts who preferred ↑ information sharing and SDM but reported ↓ behaviour from their GP had ↑ mean HbA1c values than those symmetrical preferences and perceptions (mean =7.49 vs. 6.99%), (p=0.08).		between pt preferences and GP care may positively influence health.
Doubova (2016); Mexico, Brazil, Columbia, El Salvador ³⁷	Identify PCC attributes associated with perceptions of good quality in Brazil, Columbia, Mexico and El Salvador	Computer-assisted telephone survey administered to a nationally representative sample of pts in four countries. Pts recruited via random digit dialling. Data analysis included multiple Poisson regression analyses.	Pts (n=6005)	Adapted Commonwealth Fund survey ⁷⁸	<i>Item vs. association with quality care (Sample country)</i> - PCP knows relevant information about pt medical history; PR 1.21 95% CI 1.02-1.43 (Mexico) - PCP coordinates health care; PR 1.19 95% CI 1.02-1.20 (Columbia); PR 1.11 95% CI 1.02-1.20 (Mexico); PR 1.13 95% CI 1.04-1.22 (El Salvador) - PCP gives pts opportunity to ask; PR 1.16 95% CI 1.00-1.35 (Brazil) - PCP who explains things PR 1.35 95% CI 1.11-1.71 (Columbia)	4	Pts reported high quality care constitutes several elements of PCC such as, information exchange, understanding the whole person and care coordination.
Dulewicz (2013); United Kingdom ³⁸	Determine how GPs trustworthiness, practice orientation, performance and pt satisfaction are related	Clinic receptionists distributed survey to every fourth pt who had seen their GP previously. Sample closely reflected the profile of pts who responded to a 2010 national survey in England. Main data analysed with hierarchical regression and t tests.	Pts (n=372)	PPOS ⁶⁷ , Adapted Wake Forest scale ⁷⁹	- GP trustworthiness a predicted continuity of care (14% variance), doctors' performance (40%) and pt satisfaction (39%). - Continuity of care predicted GP performance (20%), pt satisfaction (19%) and GP trustworthiness (15%).	4	High levels of trust and continuity of care were important indicators of GP performance and pt satisfaction.
Jayasinghe (2008); Australia ²⁹	Evaluate association of pt and general practice characteristics, with PCC as a	Chronically ill pts completed a self-administered survey. Data analysis; factor analysis and multilevel regression models.	Pts (n=7505)/96 PC clinics	GPAS ⁸⁰	- Pt rated care to be pt-centred (241 ± 47.8) (Mean ± SD) - Highly satisfied with PCC: females (p<0.05), older chronically ill (p<0.001), better self-reported health status (p<0.001), less educated (p<0.001),	5	Most pts experienced PCC, while pts highly satisfied with PCC were identified in

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	main outcome measure				unemployed ($p<0.001$), living in urban areas ($p<0.001$).		demographic sub-samples.
Mercer (2006); United Kingdom ⁴⁷	Evaluate the CQI-2, an updated consultation quality index, by incorporating a process measure of GP empathy	Assessed two data sets: <u>West of Scotland Data vs. U.K. Data</u> . Data collected with Pt pre- and post-consultation surveys. GPs completed self-assessed measures for empathy. Data calculated into sextiles, and Pearson's correlations used.	Pts ($n=56$ to 131 per GP); GPs ($n=26$)/26 PC clinics	CARE measure ⁸¹ , PEI ⁸² , GPAQ ⁸³	- GPs perceived empathy correlated with pt ratings of GP empathy ($r=0.43$, $p<0.05$) and pt enablement ($r=0.52$, $p<0.05$). GP perceived importance of empathy correlated with pt ratings of GP empathy ($r=0.50$, $p<0.05$) and enablement ($r=0.47$, $p<0.05$). - ↓ consultation quality scores: GPs were valued less by pt ($p<0.01$), colleagues ($p<0.05$), work-home life imbalance ($p=0.001$), GPs valued empathy as less important ($p<0.05$), lower mean ideal consultation length ($p<0.05$). - ↑ consultation quality scores correlated with confidence in the GP ($r=0.54$, $p<0.01$), pt recommendation of GP to others ($r=0.87$, $p<0.001$), pt satisfaction ($r=0.79$, $p<0.001$), GP self-rated empathy ($r=0.45$, $p<0.05$).	5	GP experiences, outcomes and perceptions influence consultation quality. Pts who received PCC had better quality consultations, were satisfied and more likely to recommend their GP to others.
Rutten (2018); Netherlands ³⁰	Assess the value of a consultation model that facilitates person-centred diabetes care from the pt and provider perspective	Pt were asked to complete a pre- and post-consultation survey. GPs completed a post-consultation survey. Health data retrieved from electronic pt files. Multivariable binary logistic regression analyses performed.	Pts ($n=1200$); GPs ($n=57$)/47 PC clinics	Pt Activation Measure-13 ⁸⁴	- GPs gained insight into pt life-related factors (89.2% of consultations), shared decisions about treatment goals (80.1%) and care (82.5%). - PC pts were more often informed about treatment options vs. secondary care (93.1% vs. 87.3%; $P<0.001$). - 94.4% of pts were involved in SDM. Older pts' were more likely to feel involved in SDM (OR 1.0; $p<0.05$).	4	Most GPs reported being able to practice PCC. Majority of pts wanted to be involved in DM, while most felt they were involved.

					- PC SDM influenced by: pt motivation, preferences, lifestyle, QOL and self-management skills.		
Schunk (2015); German y ³¹	Examine the relationship of diabetes care processes and pt outcomes with indicators of pt-oriented care delivery	Researchers conducted face-to-face interviews using surveys, with a population-based sample of diabetic pts, regarding process and outcome parameters of diabetes care. Participants drawn from previous research. Multiple regression analyses performed.	Pts (n=486)	Likert scales and survey (author developed)	<i>Pt ratings of "Good/Excellent" (%)</i> - Psychological support: 78 - Information comprehension: 87 - Opportunity to ask questions: 90 - SDM: 85 - Positive Pt-GP relationship associated with medication adherence (OR 1.92; 95% CI: 1.39-2.64)	5	Positive GP-Pt relationship enhanced health behaviours. Majority of pt rated their GP highly for PCC.
Vedsted (2008); Denmar k ⁴⁸	1) Examine associations between EUROPEP survey items and pt recommendation of GP 2) Examine survey relationship with components of family medicine	GPs distributed surveys to 100-191 consecutive pts, who completed the survey and returned to secretary. Prevalence ratio and generalised liner model were calculated in analyses.	Pts (n= 50191) GPs (n=690)	EUROPEP Survey ⁸⁵	<i>Pt positive answers (%)</i> Perceived time during the consultation 78; Interest in pt personal situation 81; Easy for pt to discuss problems 81; SDM 78; Listening to pt 84; Keeping pt records and data confidential 94; Explaining purpose of tests/treatments 80; Saying what pt want to know about illness 76; Emotional support 73; - Positive answers in the GP-Pt relationship domain (PR range=1.96-2.04) and 'information and support' domain (PR range= 1.88-1.97) associated with willingness to recommend GP.	5	Most pt reported positive experiences of PCC by their GP.
Cross-sectional quantitative: Taped consultations and survey							
Aboumar (2013); United States ³²	Determine how low health literacy influences pt interest in participation, medical visit	Analysis using enrolment data from the RCT by Cooper and colleagues ²⁷ . Low health literacy (n=102), adequate health literacy (n=173). Pt surveyed and initial GP visit audiotaped, coded and	Pts (n=275); GPs (n=14)/Urban PC	3-item PDM scale ⁸⁶ , RIAS ⁶⁴	<i>Low health literacy Vs. Adequate health literacy (mean (95% CI))</i> - Medical question-asking 4.46 (3.37-5.89) vs. 6.82 (5.90-7.89) (p=0.02) - No differences in GP behaviours, overall communication, pt ratings of care, trust and PDM (p's>0.05).	5	GPs did not change communication behaviours based on health literacy. Majority of pt in

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	communication and patient reported outcomes	assessed. Analyses included multi-level models.			- Over 2/3 of participants wanted to experience PDM.		both groups wanted to be involved in SDM with GP.
Carrard (2018); Switzerl and ⁵⁰	Investigate whether GP interpersonal accuracy is related to GP behavioural adaptability (BA)	Pt completed pre- and post-consultation surveys and GPs completed a pre-consultation survey. Consultation videotaped and verbal and non-verbal behaviour was coded. Analyses included multi-level models.	Pt (n= 244); GPs (n=61)/PC Clinics	PPOS ⁶⁷ , RIAS ⁶⁴	- No link between interpersonal accuracy and verbal behavioural adaptability. - GP BA & pt-centred behaviour not related to pt outcomes (p's>0.05) -Female GPs' non-verbal BA significantly positively linked to pt outcomes (p<0.05).	4	GPs can adapt verbal and non-verbal behaviours to pt preferences, which may impact pt outcomes.
Fiscella (2004); United States ⁵¹	Assess GP pt-centred behaviours and their association with pt-reported trust	Trained standardised pt made 2 audio-recorded unannounced visits to GPs. These pts then completed a survey with items from PCAS ⁷⁵ trust subscale. RA administered the same survey to 50 consecutive pts from each practice in the MCO. Audio-recordings were analysed using the MPCC ⁸⁷ to assess PCC. Data analysed using multi-level modelling.	Pt (n= 4746); GPs (n=93)/Urban MCO	MPCC ⁸⁷ , PCAS ⁷⁵	- 1 SD increase in 'exploring pts disease and illness experience' associated with 0.08 SD increase in trust (95% CI 0.02–0.14). - 1 additional minute with standardised pt associated with a 0.01 SD increase in pt reported trust. - Higher pt trust associated with longer GP-pt relationship, longer visits, and exploring pt disease and illness experience (p's<0.05).	5	GPs experiencing time with pts is fundamental to the delivery of PCC.
Franks (2005); United States ⁵²	Examine relationship of GP interactional style and performance on quality of care indicators	<u>Data sources:</u> 1) Claims data provided by the MCO on quality care indicators, 2) Standardised pt visit transcripts from previous research ⁵¹ , 3) Pt surveys administered by a research assistant to consecutive pts in the MCO. Data analyses; multi-level modelling	Pts (n=4746); GPs (n=174)/Urban MCO	MPCC ⁸⁷ , PCAS ⁷⁵ , HCCQ ⁸⁸	- ↑ STAK was associated with ↑ undertaking of mammograms (Adjusted OR 1.03; p<0.05), HbA1c testing (Adjusted OR 1.18; p=0.01); and ↓ annual Pap tests (Adjusted OR 0.97; p=0.01). - Higher MPCC scores associated with ↑ undertaking of mammograms (Adjusted OR 1.02; p=0.05).	5	Deeper GP-Pt relationships and higher levels of PCC positively influences health behaviours.

Jani (2012); United Kingdom ³⁹	Compare GP consultations and early outcomes for pt with depression living in high/low socioeconomic deprivation areas.	Consecutive pts completed a survey at first GP attendance and had consultation video-recorded. Then completed a one-month follow-up survey. Verbal and non-verbal communication assessed. Multi-level modelling used for regression analysis.	Pts (n=163)/20 PC clinics	MPCC ⁸⁷ , CARE Measure ⁸¹ , PEI ⁸² , Modified Mehrabian's Schemata ⁸⁹	<u>MPCC component score (Mean ± SD) deprived vs. affluent areas (1=very pt-centred; 0=not at all pt-centred):</u> Exploring disease and illness experience 0.258 ± 0.13 vs. 0.321 ± 0.14 (p<0.01); Finding common ground 0.74 ± 0.17 vs 0.81 ± 0.13 (p<0.01) - GP in deprived areas looked at pt less (p<0.01), had fewer head nods (p=0.001) and had fewer positive facial expressions (p<0.05). - CARE & MPCC scores lower in pts with moderate-severe depression and living in deprived areas (p <0.01)	5	PCC is highly contextual, demographic and pt characteristics may be barriers to PCC delivery by GPs.
Orton (2016); United Kingdom ⁴²	Investigate factors affecting consultation length and association with PCC.	GPs (n=27 male, n=20 ≥20yrs experience, n=19 with emotional exhaustion) had 22 consecutive consultations audio-recorded. Analyses; multi-variate mixed-effects regression.	GPs (n=38)/PC clinics	MPCC ⁸⁷	- Consultation length ranged from 1 min to 36.1 min (mean: 7.9 min). - Longer consultations were associated with increased PCC: understanding the disease and the illness experience (p<0.001); finding common ground - GP expressions (p<0.001) - ↑ 1SD of pt-centredness equalled a ↑consultation time of 11.2min (p<0.001).	5	PCC required time; several elements of PCC were more prevalent in longer consultations.
Wolff (2012); United States ⁴⁰	Investigate effects of family companion presence on pt-centred processes among older adults with poor mental health function	Pts (>65yrs) and companions completed a self-administered pre- and post-visit survey. Visits audio-recorded, coded and analyses included logistic regression.	Pts (n=390)/3 PC clinics	RIAS ⁶⁴	- GPs engaged in less partnership-building (p<0.001), but contributed more orienting statements (p<0.05) when pts with poor mental health were accompanied by family companions. - Pts with poor mental health were significantly less likely to experience pt-centred communication when accompanied (aOR=0.21; 95% CI: 0.06, 0.68).	5	Presence of a family companion did not significantly influence PCC, although pt characteristics may be a barrier to the delivery of PCC.

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					- Accompanied pts in the lowest function subgroup experienced the least pt-centred communication (0.96 vs. 1.35; p<0.05).		
Qualitative							
Cocksidge (2011); United Kingdom ³³	Explore urban GP and pt experiences of chronic illness management, with a focus on holding relationships	Semi-structured interviews of GPs (>5yrs experience) and pt. Interviews audiotaped, transcribed, coded and analysed through the comparative method of Strauss and Corbin ⁹⁰ .	Pts (n=14); GPs (n=11)/1 suburban care group	Thematic analysis	Four themes: 1) holding – an acknowledged GP-pt relationship, 2) the value of holding, 3) dangers of holding; 4) judgements on the other. - GPs reported ‘holding’ as partnership, emotional and social support, reassurance, having accumulated knowledge about pt. - Trust, consultation efficiency improved over time as knowledge accumulated. - Pts described key attributes of ‘holding’ as time to listen, interest in their local context and partnership. - Pts valued their GP as source of support and information.	5	GP-Pt relationship develops over time. Pts expect partnership, support, trust, understanding and listening from their GP.
Nordin (2006); United States ⁴⁵	Identify GPs goals for managing PC pts with unexplained symptoms	Trained medical students interviewed GPs and Pts regarding goals, outcomes and disease management strategies. Interviews audio-recorded and transcribed for thematic analysis. Pt completed a self-assessed 26-item symptom survey to identify characteristics of unexplained medical symptoms.	Pts (n=47); Clinicians (n=36;29 GPs)	Thematic analysis	6 themes of pt-centred goals: 1) clinician support, 2) pt coping, 3) functional improvement, 4) reassurance, 5) insight, 6) harm avoidance. - 9% of GPs sought to reassure pts; 43% of pts and 32% of GPs expressed pt coping as a treatment goal. - GP listening conveyed respect, caring, concern and commitment - Pts wanted to feel validated by a respectful, supportive clinician - 5 clinicians wanted to share responsibility with pts for managing treatments	4	Goals of pts were mostly pt-centred. Few GPs sought to reassure pts and share responsibility for treatment management.

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Walseth (2011); Norway ⁴⁶	Examine Habermas's theory as a practical deliberation procedure in lifestyle counselling via pt perspective in general practice	Researcher directly observed consultations, and audio-taped and transcribed. Eight pts were interviewed at 3-months to further explore pt experience. Qualitative analyses by systematic text condensation.	Pts (n=12); GPs (n=8)/8 PC clinics	Thematic analysis	Three themes: 1) <i>Pt communication advice</i> . Pts wanted GPs to provide understanding, consolation and encouragement; and dialogue to facilitate understanding of the medical situation and their everyday life. Pts valued if GP knew them and their situation, and if they acted in an open, honest, direct and humorous manner. 2) <i>Time</i> . Pts emphasised need for time and repeat consultations. 3) <i>Motivation, obligation and care</i> . Pts felt obliged to heed GP advice if the GP involved them in DM and care. Pts tolerated counselling better if there was an enhanced GP-Pt relationship.	5	PCC was important to pts. Pts built relationship with GP over time, valued being involved in DM, and were more open to treatment if strong relationship with their GP.
Abbreviations: API, Autonomy Preference Index; BA, behavioural adaptability; CAHPS; Consumer Assessment of Healthcare Provider and Systems; CARE; Consultation and Relational Empathy; CI, confidence interval; DBP, diastolic blood pressure; DM, decision making; GP, general practitioner; GPAQ, General Practice Assessment Questionnaire; GPAS, General Practice Assessment Survey; HbA1c, glycated haemoglobin; HCCQ, Health Care Climate Questionnaire; ICEE, ideas, concerns, expectations experiences; KHOS, Krantz Health Opinion Survey; MCO, managed care organisation; M.M., mixed methods; MPCC, Measure of Patient-Centred Communication; OR, odds ratio; PBQ, Provider Behaviour Questionnaire; PC, primary care; PCP, primary care physician; PCAS, Primary Care Assessment Survey; PCC, Patient-centred care; PEI, Patient Enablement Instrument; PDM, participatory decision-making; PPOS, Patient-Practitioner Orientation Scale; PR, prevalence ratio; PSQ, Patient Satisfaction Questionnaire; Pt, patient; Pts, patients; QOL, quality of life; RA, Research Assistant; RIAS, Roter Interaction Analysis System; SBP, systolic blood pressure; SD, standard deviation; SDM, shared decision-making; STAK, satisfaction, trust, autonomy and knowledge							

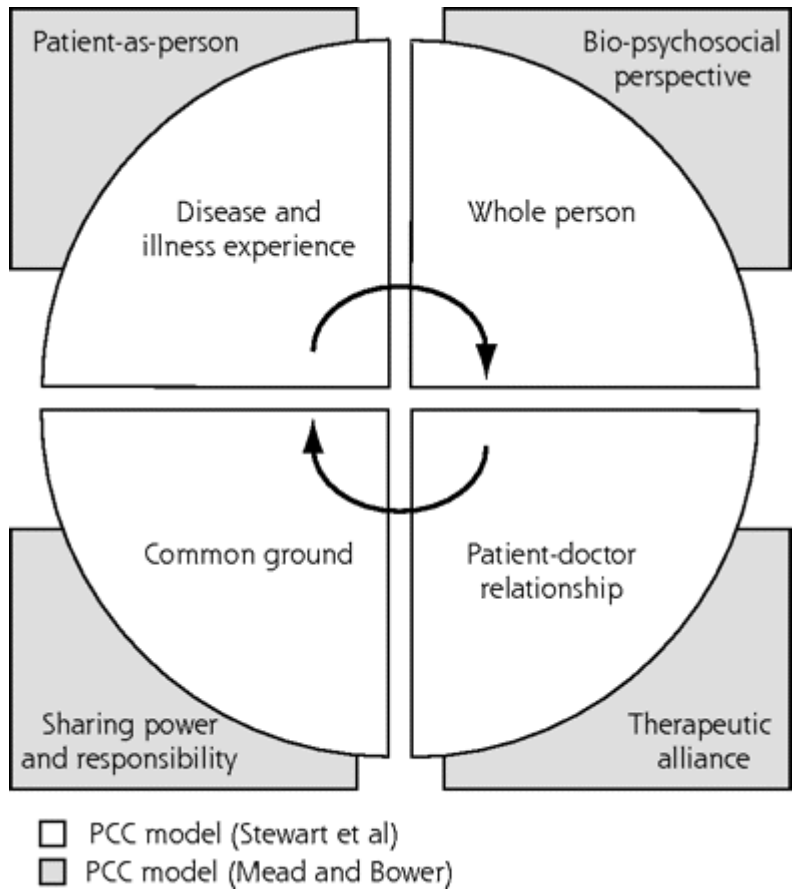
Figure Captions

Figure 1. Model of Patient-centred care illustrated by Hudon and Colleagues¹⁷

Figure 2. PRISMA Diagram

Abbreviations: GPs, General Practitioners; PCC, Patient-centred care

Figure 3. Model of Patient-Centred Care by General Practitioners



Identification

Records identified through database searching
(*n*=6496)

Additional records identified through other sources
(*n*=3)

Screening

Records after duplicates removed
(*n*=4012)

Records screened
(*n*=4012)

Records excluded
(*n*=3920)

Eligibility

Full-text articles assessed for eligibility
(*n*=92)

Full-text articles excluded, with reasons
(*n*=62)

- n*=24 not specific to GPs
- n*=22 did not relate to ≥ 3 dimensions of PCC
- n*=2 did not refer to episodes of care by GPs
- n*=10 study design (i.e. not empirical)
- n*=1 not in English
- n*=3 already assessed in included review

Included

Studies included in qualitative synthesis
(*n*=30)

