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Defining comprehensiveness in primary care: a scoping review

Derek Baughman[A,*], Rafay Nasir[B], Lynda Ngo[B] and Andrew Bazemore[A]

For full list of author affiliations and declarations see end of paper

*Correspondence to:
Derek Baughman
Center for Professionalism and Value in Health Care | ABFM Foundation, 1016 16th Street NW, Suite 700, WA 20036, USA
Email: baughman.derek@gmail.com

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ABSTRACT

Introduction. The term comprehensiveness was introduced into the literature as early as the 1960s and is regarded as a core attribute of primary care. Although comprehensive care is a primary care research priority encompassing patient and provider experience, cost, and health outcomes, there has been a lack of focus on consolidating existing definitions. **Aim.** To unify definitions of comprehensiveness in primary care. **Methods.** The PRISMA extension for scoping reviews was followed, hierarchically filtering 'comprehensiveness' MeSH terms and literature-defined affiliated terms. Snowballing methods were used to include additional literature from known experts. Articles were systematically reviewed with a three-clinician team. **Results.** The initial search populated 679 607 articles, of which 25 were included. Identified key terms include: whole-person care (WPC), range of services, and referral to specialty care. WPC is the extent which primary care physicians (PCPs) consider the physical, emotional, and social aspects of a patient's health. It has been shown to positively impact clinical costs and outcomes, satisfaction, and trust. Range of services encompasses most health problems to reduce unnecessary spending on specialty care and promote continuity. Referral to specialty care is utilized when PCPs cannot provide the necessary services – balancing depth and breadth of care with the limitations of primary care scope. **Discussion.** This scoping review unified the interrelatedness of comprehensiveness's main aspects – whole-person care, range of services, and referral to specialty care – framing a working, evidence-based definition: managing most medical care needs and temporarily complementing care with special integrated services in the context of patient's values, preferences, and beliefs.

Keywords: comprehensive care, comprehensiveness, PCP, primary care, range of services, referral to speciality care, whole-person care.

Introduction

Origins of comprehensiveness

Discussions on comprehensiveness emerged in the 1960s as primary care formalized itself into the specialty of family medicine. Deemed a core attribute of primary care, comprehensiveness was acknowledged early on as a responsibility of the physician to see the whole person, an idea supported by the US Millis Commission Report in 1966 – among the earliest documents to define and categorize primary care. The concept of comprenesiveness gained traction in the 1970s internationally with the Alma-Ata conference declaration of health for all (jointly sponsored by the World Health Organization and the United Nations Children's Fund).[1] Operational aspects of comprehensive care were better outlined to describe socio-cultural implications, patient education, and preventive care.[2]

Nationally, in the USA, the Institute of Medicine (IOM) supported these ideas and published a definition of comprehensiveness: handling most problems by offering a wide range of medical services, and coordinating care with other practitioners (dentists, optometrists, podiatrists, etc.).[3] The IOM simplified this concept in the 1990s: 'Comprehensive care addresses any health problem at any given stage of a patient's life cycle', incorporating concepts such as 'first contact' care and 'gatekeeping' to referrals, preventive care (counseling and education), and both acute and chronic care.[4]

WHAP GAP THIS FILLS

What is already known: Comprehensiveness is a well-established academic concept known as one of the foundations of effective primary care delivery, but its definition and interpretations vary across medical organizations and research groups.

What this study adds: This scoping review organizes the known literature to unify a definition of comprehensiveness, generalizing the evidence-based, operationalizable concept for primary care leaders, researchers, and practitioners.

Starfield early definitions

As a pioneer shaping the understandinging comprehensiveness, Barbara Starfield defined comprehensiveness as a salient feature of primary care, meeting most healthcare needs[5]. PCPs can provide a broader range of services and therein, competently treat all problems within a population. Starfield described the need for only temporary referral, unless patients suffer from rare or unusual diseases (the vast minority of a population).[6]

Comprehensiveness in payment models

The US federal government has taken part in defining comprehensiveness by operationalizing the concept in various care-design strategies. After its birth from the Affordable Care Act, the Centers for Medicaid and Medicare (CMS) Office of Innovations continues to design alternative payment models to incorporate comprehensive care and reward the effort. The CMS describes comprehensive care as advanced primary care,[7] which reduces healthcare utilization outside of the patient-centered medical home (PCMH). Salient examples of these models include the Comprehensive Primary Care Initiative,[8] the Comprehensive Primary Care Plus,[9] and Primary Care First,[7] wherein participating practices meet specific categories of comprehensiveness for risk-based financial reward. Comprehensiveness aspects have also gained prominence on the international stage, particularly in the context of reimbursing primary care services based on population needs. One illustrative example is the care needs index, a comprehensive social deprivation metric that considers various factors such as patient age, health condition, and socioeconomic indicators.[10]

Comprehensiveness in the literature

Over the past 40 years, since comprehensiveness was initially defined, health service researchers have explored ways to measure its association with patient outcomes and costs. Some of the challenges of defining comprehensiveness are due to variability in definitions across published literature. Optimizing comprehensiveness is a well described research priority, as identified by the James Lind Alliance Priority Setting Partnership study, which identified the top 10 research uncertainties among patients and healthcare providers.[11]

The objective of this study was to provide an evidenced-based definition of comprehensiveness representative of the known literature to improve the future measurement, delivery, and understanding of its key features. A scoping review was conducted to gather and merge the varying academic interpretations of comprehensiveness in primary care.[12] The following research questions were formulated:

1. What are the key aspects of comprehensiveness that when combined, represent a unified working definition for primary care that considers the context of patient values, preferences, and beliefs?
2. What is the relationship between comprehensiveness and the quadruple aim (clinical costs, outcomes, and satisfaction)[13]?
3. How does comprehensive primary care incorporate specialty care?

Methods

A protocol was drafted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for Scoping Reviews,[14] and the methods were verified by the American Board of Family Medicine's (ABFM) medical librarian team. Peer-reviewed articles (English only, descriptive or analytic) were included if they met the scope of the research questions, specifically addressing the academic meaning of comprehensiveness in a primary care context (family or internal medicine and pediatrics) based on the IOM and Starfield definitions (handling most medical services and coordination with specialists to meet all healthcare needs within a population).

PubMed was the primary literature database used, with search dates from 1950 to January 2022. Google Scholar was also searched for known expert authors on comprehensiveness (who previously published on the topic). Additionally, forward and reverse snowballing methods gleaned relevant articles from author bibliographies during the literature review (Fig. 1).

For the primary PubMed search (executed 1 January 2022), Medical Subject Headings (MeSH) and other literature search vocabulary were built in collaboration with the ABFM's librarian team and vetted by the Center for Value and Professionalism in Health Care's (CVPHC) research staff. Primary MeSH terms and secondary sub-terms were based on medical specialty and key comprehensiveness vernacular. To narrow the search volume and specifically represent 'range of services' and 'coordination of care' (published methodological terms by known comprehensiveness experts), Berenson-Eggers Type of Service (BETOS) codes[15] and Healthcare Common Procedure Coding System

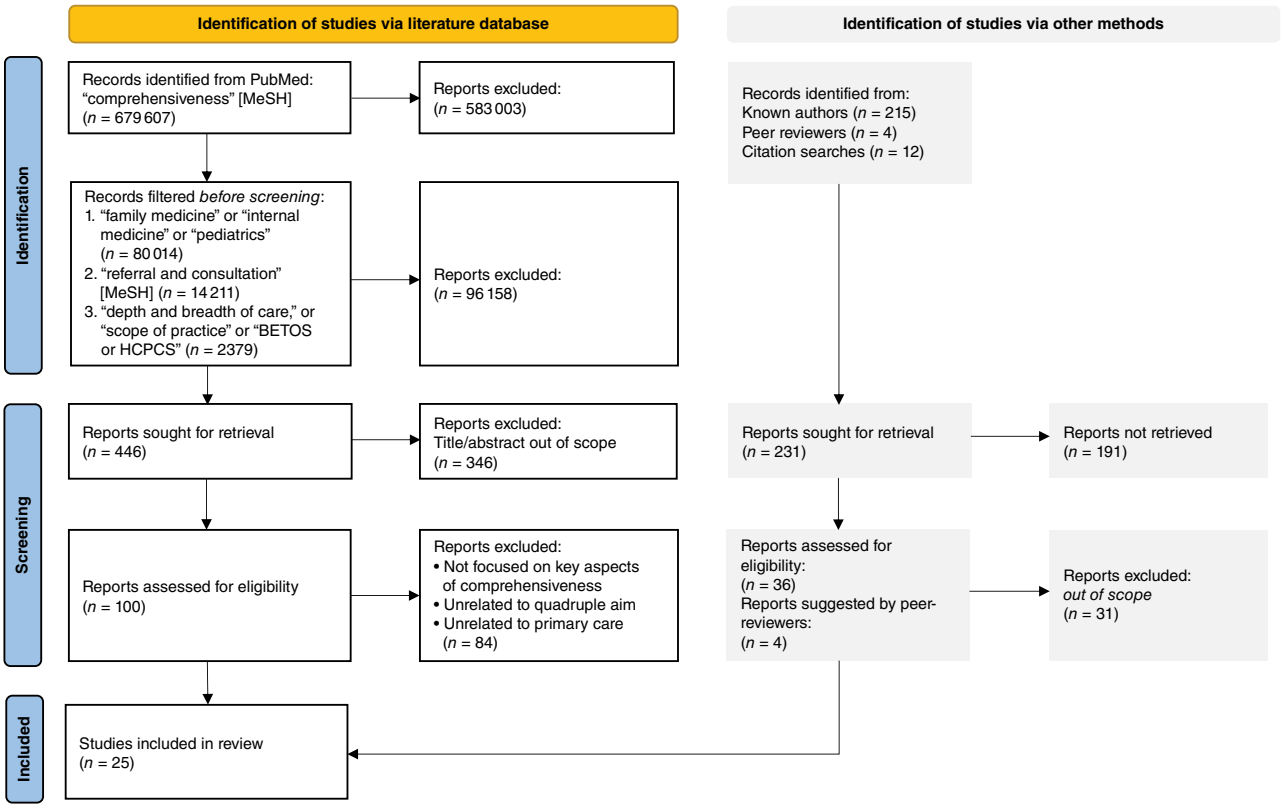

Fig. 1. Hierarchical schema of the literature review using MeSH terms and targeted sub-terms based on comprehensiveness literature terminology. For the medical specialty filter, 'primary care specialties' included only family or internal medicine and paediatrics. Figure adapted from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al.* The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/.

(HCPCS) codes (produced by CMS)[16] were added to the search query. See Supplementary File S1 for full electronic search strategy.

Article titles and abstracts were screened for content and inclusion appropriateness by a three-member clinical research team according to the three defined research questions. The research team fully reviewed included articles in a standardized annotative process (see Supplementary File S1). The team developed a data-charting format based on categorical themes (referred to as "key terms") related to identified comprehensiveness terms. Included articles were also characterized by country of authorship and type of article (qualitative, analytic, observational, etc). The data-charting categories and structured annotative elements were verified by the CVPHC's staff researchers. Included articles were summarised in a narrative based on the key terms and condensed further into a table.

Results

The initial PubMed search for comprehensiveness resulted in 679 607 results. Term filtering for primary care (family medicine, internal medicine and pediatrics, $n = 80\,014$), referral and consultation ($n = 14\,211$) and measures of comprehensiveness, BETOS or HCPCS, depth and breadth of care, and scope of practice, $n = 2379$) resulted in 446 articles, 91 of which met inclusion criteria for screening (Fig. 1). There were 25 articles that met inclusion criteria – eight from the United States, four from Australia, two from the United Kingdom, one from Canada, and the rest from other countries or unspecified. The articles were organized into three sub-categorical modalities of comprehensiveness (Table 1) to represent common themes:

1. **Whole-person care**: addressing the whole person, their goals, and needs in the context of family and community.
2. **Range of services**: delivering most of the services in most settings for most persons.
3. **Referral to specialty care**: avoiding unnecessary use of specialty and acute care health system care.

Whole-person care

As a key component of comprehensiveness, 'whole-person care' is the provision of individualized care to patients with respect to their physical, emotional, and social aspects of

Table 1. Key terms defined.

Key term	Evidence-based definition	Article cited	Takeaways/contextual application
Whole-person care *(also referred to as person-centered care)*	The extent PCPs consider the patient as a person, not as the disease, incorporating the biopsychosocial aspects of a patient's health, during each patient encounter and subsequent treatment plan	Haggerty *et al.*[17]	Whole-person care (WPC) is a key component of comprehensiveness. It can best be measured by the patient's perspective. The patient component of WPC is difficult to study, but includes the extent to which a provider elicits and considers physical, emotional, and social aspects of a patient's health. This perspective is currently not well measured.
		Kogan *et al.*[18]	WPC provides individualized care by understanding the preferences, values, beliefs of patients when making shared decisions about treatment and management. WPC addresses patient needs beyond the walls of a traditional clinical practice setting and it is applicable to home and community-based support.
		Tarrant *et al.*[19]	From the patient and provider perspective, personal care includes human communication, good interpersonal or communications skills and individualized treatment or management for patients. Personal care is an aspect of comprehensiveness that includes patient-provider communication and an individualized treatment plan.
		Morris *et al.*[11]	WPC treats the patient as a 'whole person' rather than focusing on individual conditions. There is a balancing act of individualized care while treating patient's individualized conditions.
		Bechtel and Ness[20]	The WPC approach to patient care reflects a profound comprehension of the various facets of a patient's life that exert influence on their health. This encompasses their life circumstances, home environment, and personal values, diverging from the conventional disease-centred perspective. Within the realm of healthcare delivery and payment models, the implementation of WPC might involve assessing metrics such as patient outcomes and experiences.
		Thomas *et al.*[21–24]	WPC is defined as having some elements of holistic medicine, including recognizing a patient's individuality and defining health care as more than the absence of disease; biopsychosocial care, including considering the multiple personal and social factors that influence a patient's health. Implementation of WPC into practice can improve doctor–patient relationship and patient trust. A constraint to delivering WPC is time spent in patient encounters.
		Rissi *et al.*[25]	Defined comprehensive WPC with four key variables: screening for potentially harmful behaviors, preventative care reminders, use of a common-care plan, and coordinated medical/behavioral health services. WPC is one of six key defining attributes of Oregon's PCPCH model.
		Jonas[26]	WPC is defined as the central feature of primary care. To return to the essence of primary care, a return to care of the whole person in mind, body, community, and spirit, is needed.
		Jonas and Rosenbaum [27]	WPC defines patients beyond the physical body to include environmental, social, emotional, and spiritual aspects. WPC has been shown to positively impact clinical outcomes, patient satisfaction, provider burnout, and cost. There are several different conceptualized models and definitions of WPC.
		O'Malley *et al.*[28]	Whole-person accountability is one of five key defining features of primary care alongside comprehensiveness and coordination of care. It can be empirically measured by patient surveys, physician surveys, practice surveys, electronic health record (EHR) data, and direct observation of patient encounters.
		Lynch *et al.*[29]	WPC should include elements of philosophical transdisciplinary, which will allow breadth and depth of care, a heavy emphasis on collaboration, a pragmatic approach to problem-solving, and an emergent system of thinking.

(*Continued on next page*)

Table 1. (*Continued*)

Key term	Evidence-based definition	Article cited	Takeaways/contextual application
Range of services *(also referred to as depth-and-breadth of care)*	Provision of a depth-and- breadth of services by PCPs that encompass most health problems in the patient population served	Starfield *et al.*[6]	Comprehensiveness is the extent to which primary care practitioners provided a broader range of services rather than making referrals to specialists. One of the benefits of providing a wide range of services is preventing unnecessary or inappropriate specialty care.
		Haggerty *et al.*[17]	Scope of services is a key component of providing comprehensive care. A full range of services includes prevention, diagnosis, and treatment of most common conditions. Scope of services can be measured using the provider perspective.
		Donaldson *et al.*[4]	Comprehensiveness of services should reflect the ability to handle the great majority of medical problems in the target population served. Services should include preventative services and care in a variety of settings, such as the hospital, chronic care unit, or home.
		Jimenez *et al.*[30]	A full range of comprehensive services includes preventative, curative, rehabilitative, and palliative services. Comprehensiveness includes the capacity of the PCP to manage a wide range of health issues, such as mental health, cancer, and chronic conditions.
		International Conference on Primary Health Care[1,2]	Primary health care should include patient education; preventative health care; promotion of basic sanitation, safe water supply, and proper nutrition; maternal and childcare; and treatment for common diseases and injuries with inclusion of essential pharmacotherapeutic options.
Referral to specialty care *(also referred to as coordination of care, integration of care)*	PCPs optimize care delivery by ensuring judicious use of specialist services, including coordination and integration of care	Starfield *et al*[6]	Comprehensiveness includes PCPs providing a broader range of services rather than referrals. One of the six mechanisms behind the benefits of primary care is reducing unnecessary or inappropriate specialty care. Comprehensive care should include most health needs and coordinate care when it must be sought elsewhere.
		Morris *et al.*[11]	Comprehensiveness relates to optimization of safe communication and coordination of general and specialty care.
		Institute of Medicine (US) Committee on the Future of Primary Care *et al.*[4]	Comprehensiveness is reflected by a PCP's capacity to differentiate primary care from specialty care or care provided by other professionals. PCPs should arrange for patients to receive care from medical specialists, only when appropriate and when the provision of services is not already handled by the primary office.
		Rissi *et al.*[25]	Coordination and integration include tracking frequent diagnoses and risk factors by utilizing electronic health records, care management teams, and practice affiliations. Coordination and integration of care is one of six key defining attributes of Oregon's PCPCH model.
		O'Malley *et al.*[28]	Coordination of care is one of five key defining features of primary care alongside comprehensiveness and whole-person accountability. Coordination of care can be empirically measured by patient surveys, physician surveys, practice surveys, claims data, and EHR data.
		Phillips *et al.*[31]	The 'Family Medicine for America's Health' initiative, which was a collaborative effort among eight organized medicine groups, identified coordination of care as one of four key tenets of family medicine next to comprehensiveness.
		Freeman[32]	Referral to specialty care includes recognizing the strengths and limitations of primary care and utilising referral networks when needed and appropriate. This strategy is imperative in maintaining successful WPC.
		Gottlieb[1,2]	Integrative primary care not only involves an integrated, functional, and mutually supportive referral network that prioritizes those most in need, but also includes non-healthcare sectors, such as agriculture, industry, education, housing, and public works. Including non-healthcare sectors in the definition of integrative primary care is of key importance to addressing social determinants of health.

their lives. It considers the aspects of care beyond the walls of a traditional outpatient visit, including socio-cultural, spiritual, and societal/environmental factors.

'Patient-centred' and 'whole-person care' are used similarly and sometimes interchangeably as commonly referenced attributes of comprehensiveness in primary care. Patients expect providers to elicit the physical, emotional, and social aspects of a patient's health and consider their community context in care decisions.[17] The essence of whole-person care is a focus on the individual, rather than the disease.[20] This is especially foundational within primary care, where physicians often care for complex patients with multiple chronic conditions. The emphasis on humanism is integral to shared decision-making in WPC – a concept well represented in the literature.[33,34] Whole-person care incorporates patient circumstances and values into medical decisions and its practice can improve patients' treatment adherence, understanding the patient's life situation, home environment, and personal preferences when making clinical decisions. Incorporating these factors into treatment plans allows physicians to make treatment recommendations that patients are more likely to follow.[20] Viewing patients as persons rather than a series of disease entities is a subtheme of whole-person care, because considering these various attributes allows PCPs to tailor care to individual persons.

From a patient perspective, 'individualized or tailored care' was recognised as a central role in primary care. The humanistic factor of WPC for patients manifests in multiple, even indirect aspects such as the physical clinical environment (ie the design and culture of the office space).[35] Patients surveyed about their perceptions of aspects of primary care referred to the importance of physicians to know and understand the life context surrounding a patient's illness.[19] This interpersonal relationship between patient and physician allows for physicians to develop an individualized care plan that recognizes different aspects of a patient's life. There is individualized care without focusing on individual problems. In contrast, a 'disease-centred' approach that eliminates patient preferences, values, and circumstances, might be harmful.[20] Patients might be less likely to adhere to a treatment plan that is unrealistic to their life circumstances or does not align with outcomes important to them or their values.

From a physician perspective, the application of person-centred care in clinical practice provides benefits to the doctor–patient relationship. Qualitative studies, conducted with the goal of identifying general practitioner's (GP) understanding of WPC, has shown that some GPs consider person-centred care to be integral to the doctor–patient relationship. Becoming familiarised with patients' environmental, social, emotional, and spiritual aspects, was perceived by GPs to strengthen the therapeutic alliance.[21] Additionally, WPC has been shown to positively impact clinical outcomes, patient satisfaction, provider burnout, and lower cost, through various mechanisms, including increased medication compliance and improved trust between physician and patient.[27] Physicians who use their emotional intelligence can successfully apply WPC (the art of generalism), and by leveraging their craft beyond the clinic at the community level, they can affect even larger change.[36]

Range of services

As a key component of comprehensiveness, 'range of services' includes multiple types of care venues, treatment types, and education across various settings and is linked to better outcomes at lower costs. Range of services includes several categories of health care, including preventative, curative, rehabilitative, and palliative services.[30] These services address a wide range of health issues, including acute and chronic conditions.[4] Range of services can also refer to the broad setting in which primary care is provided, including inpatient, outpatient, and home care settings. A prevention-based hallmark feature within the range of services provided is patient education.[1] There is an important correlation between empirically measuring range of services using provider data and the resulting clinical outcomes.[17] An increased range of primary care services has been consistently associated with better outcomes provided at lower cost.[28]

Understanding the ideal range of services PCPs provide is an ongoing investigation in the literature. An exemplar of this ideal range is Oregon's Patient Centred Primary Care Home (PCPCH) model, which has consistently demonstrated care with increased quality, access, affordability, and patient satisfaction.[25] For a practice to qualify as a PCPCH, they must implement 11 standards, such as telephone and electronic access, behavioral health services, continuity of care, end-of-life planning, and a variety of medical services (acute care, chronic care, procedures, diagnostics, preventative services, patient education).[37] In order to reach the '5-STAR' designation, a practice must offer an increased range of services, including after-hours access and alternative access (such as home care). The emphasis on range of services in Oregon's successful PCPCH model (as well as its proper implementation of referral to specialty care and focus on WPC) demonstrates the integral nature of comprehensiveness.

Range of services also includes services within non-healthcare sectors, such as agriculture, industry, education, housing, and public works. These industries create the foundation upon which patients' social determinants of health are derived. Overall, a broad, diverse, holistic, and flexible range of services allows primary care practitioners to manage patients with unique medical and social needs, reduces unnecessary spending in specialty care and mitigates fragmentation of patient care.

Referral to specialty care

As a key component of comprehensiveness, 'referral to specialty care' relies on integrated networks, leading to better patient outcomes, reduced costs, and enhanced satisfaction. Referral to specialty care has repeatedly been

identified as a core feature of primary care and comprehensiveness.[6,25,28,31] It is complementary to range of services, which reduces the need for unnecessary referral to specialty care (thus reducing the total costs of health services). Good stewardship of referral to specialty care also allows for greater maintenance of whole-person care.[32]

To deliver appropriate referrals, it is imperative to differentiate patients who could be best addressed from the lens of primary care versus the lens of specialized care.[4] This differentiation is a fine balance. PCPs must recognize the balance between depth and breadth of care within the limitations of primary care scope. This highlights the importance of utilizing highly integrated and coordinated referral networks to optimize care delivery, particularly in areas where care is difficult to access. An example of this can be seen with a case study of Rural Health Group, a Federally Qualified Health Center (FQHC) in rural North Carolina, where the health center became the regional default access point for behavioural health. Through utilizing an integrated in-house behavioral health service, PCPs were able to manage a broad range of services while utilizing specialist behavioural health care in an efficient and dynamic manner.

A key component of referral to specialty care is emphasizing the coordination and integration of care in a mutually supportive referral network. For example, tracking frequent diagnoses and risk factors by utilizing electronic health records, care management teams, and practice affiliations.[25] Coordination and integration of care in the setting of specialty referrals has been associated with less service duplication, better patient outcomes, and greater satisfaction for providers and patients. These concepts can be empirically measured using patient surveys, physician surveys, practice surveys, claims data, and EHR data.[28]

Discussion

The challenge of defining comprehensiveness lies in both the difficulty in measuring it and the presence of varying definitions that permeate the literature. The alignment of an evidence-based explanation requires the organization of key themes and terms to unify similarities and establish a common definition for the academic concept of comprehensiveness in primary care.

Quantitative approaches to defining comprehensiveness mainly involve the physician's perspective. But quantifying attributes at the PCP level, such as the scope of services provided and the breadth and depth of conditions managed, might not necessarily represent whole-person care, especially if it claims data are the sole means of investigation. For example, measurement that includes immunizations, family planning, and home visits, might quantify scope-of-practice, but may be unable to simultaneously capture depth and breadth of care. Conceptually, this approach makes it difficult to differentiate a PCP's comprehensiveness due to a seemingly infinite number of unique combinations of chronic conditions across empanelled patients.

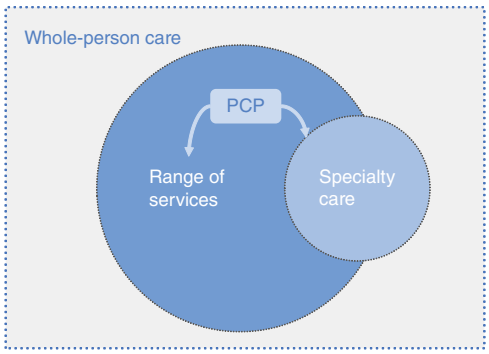

Fig. 2. Interrelatedness of the key components of comprehensiveness. PCPs frame medical care first in the context of whole-person care (grey area) and comprehensive PCPs handle most of the medical care via a broad range of services (dark blue) and coordinate the [temporary] integration of specialty care (light blue) when services are beyond the practice scope of primary care.

Qualitatively evaluating whole-person care allows researchers to define comprehensiveness from the patient and clinician experience. The Primary Care Assessment Tool (PCAT) and Components of Primary Care Index (CPCI) are two examples of survey-based approaches. However, comprehensiveness from a patient perspective needs further attention,[17] because most patient surveys lack responses on services offered or doctor's knowledge of the community. Nonetheless, there is agreement among the literature that a comprehensive PCP can manage most of their patient's medical problems and use whole-person care to deepen the provider–patient relationship. Further, PCPs can promote systemic-level patient care improvements on a large scale by advocating for whole-person care in non-healthcare sectors at the local, state, and federal levels. To depict the interrelatedness of comprehensiveness components in primary care – referral to specialty care, range of services, and whole-person care – the author's conceptualization is visually presented in Fig. 2.

Limitations

We acknowledge that our methods might have overlooked new articles on comprehensiveness that were either not yet categorized using MeSH terminology, used different language to describe the academic concept outside of primary care, or were not indexed within PubMed. Nonetheless, these methods ensured feasibility, considering the substantial initial query volume. Additionally, our review is limited by articles that predominantly examined high-income countries, including the USA with a non-socialised primary care system. Consequently, our discussion primarily concerns physician-level comprehensiveness (unique from population-level comprehensiveness). Therefore, generalizing comprehensiveness should consider health system context (e.g. serving entire

populations vs individuals, restrictions or enrolment stipulations, financial eligibility, etc).

Conclusion

This scoping review consolidated multiple definitions of comprehensiveness in current published literature. Key component terms representative of comprehensiveness in primary care include whole-person care, range of services, and referral to specialty care.

Range of services includes the delivery of a wide range of healthcare services that are designed to address most of a patient's needs (including preventive, curative, and rehabilitative care for acute and chronic conditions). Referral to specialty care includes medical and non-clinical healthcare focused on integrated complementary care (non-duplicative) to coordinate additional temporary services beyond the capabilities of primary care resources. Whole-person care includes emotional, social, and spiritual aspects, focusing on unique patient values in the context of their medical (physical) care.

Overall, the interrelatedness of these three key terms provides a working definition of comprehensiveness for the modern PCP: managing most of the medical care within a primary care population, and if needed, temporarily complementing care with special integrated services in the context of patient's values.

Future research could expand a comparison of primary care comprehensiveness beyond English-speaking, incorporating multilingual databases to facilitate a broader range of global perspectives.

Supplementary material

Supplementary material is available online.

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Author affiliations

[A]Center for Professionalism and Value in Health Care | ABFM Foundation, 1016 16th Street NW, Suite 700, WA 20036, USA. Email: ABazemore@theabfm.org

[B]Penn State College of Medicine, 700 HMC Cres Road, Hershey, PA 17033, USA. Email: rnasir@pennstatehealth.psu.edu, lngo@pennstatehealth.psu.edu