Postprint: Research Advances in Quantitative Assessment Indicators for Continuity of Care and Their Applications

Authors: Jingxin Ma, Yang Rong, Liu Lidi, Yalin Zhang, Song Haiqi, Luo Jianzhao, Zhu Linlin, Liao Xiaoyang, Zhu Linlin, Liao Xiaoyang

Date: 2023-07-24T00:00:00+00:00

Abstract

Continuity of care is a fundamental principle and core characteristic of general practice. High-quality continuity of care contributes to improved patient satisfaction and reduced mortality. Accurate assessment of continuity of care is a prerequisite for enhancing its quality. Quantitative assessment indicators for continuity of care, by reflecting its level of quality, can guide healthcare professionals in improving continuity of care and assist healthcare institution administrators in refining management strategies, thereby providing optimal services for patients. Therefore, quantitative assessment of continuity of care is both highly necessary and crucial. However, domestic research introducing the concepts and applications of quantitative assessment indicators for continuity of care remains limited. This article therefore summarizes domestic and international literature, presents a categorized introduction of common quantitative assessment indicators for continuity of care, and outlines their applications to specific diseases and populations. Additionally, it analyzes the limitations of existing indicators and potential directions for future improvement, aiming to provide a theoretical basis for domestic researchers when selecting and applying these indicators.

Full Text

Advances in Quantitative Assessment Indexes of Continuity of Care and Their Application

MA Jingxin[1], YANG Rong[1], LIU Lidi[1], ZHANG Yalin[1], SONG Haiqi[1], LUO Jianzhao[1], ZHU Linlin[1], *LIAO Xiaoyang*[2]

[1]General Practice Ward, General Practice Medical Center, West China Hospital, Sichuan University, Chengdu 610041, China

[2]Department of Family Medicine, West China Hospital, Sichuan University, Chengdu 610041, China

Corresponding authors: ZHU Linlin, Associate chief physician; E-mail: llz1823@163.com
LIAO Xiaoyang, Chief physician/Professor; E-mail: 625880796@qq.com

Abstract

Continuity of care represents the fundamental principle and core characteristic of general practice. High levels of continuity of care contribute to improved patient satisfaction and reduced mortality rates. Accurate assessment of continuity of care is essential for enhancing its quality, as quantitative assessment indexes can guide healthcare providers in improving service delivery and assist healthcare administrators in refining governance measures, thereby optimizing patient outcomes. Despite its necessity and critical importance, domestic research on the conceptual framework and application of quantitative assessment indexes for continuity of care remains limited. This review synthesizes domestic and international literature to systematically introduce common quantitative assessment indexes categorized by type, summarize their applications across diseases and populations, and analyze existing limitations and potential improvement directions, aiming to provide a theoretical foundation for domestic researchers in selecting and applying these indicators.

Keywords: Continuity of patient care; General practice; Quantitative evaluation; Index; Review

Introduction

Continuity of care constitutes the core feature of general practice. The World Health Organization defines it as a series of discrete healthcare services that are consistent and coherent over time and aligned with patients' health needs and preferences, achieved through interdisciplinary and cross-level collaboration between general practitioners and specialists. This definition underscores the critical role of continuity of care in meeting patient needs and achieving favorable clinical outcomes. Multiple studies support this conceptualization, demonstrating that low continuity of care correlates with decreased patient compliance and satisfaction, as well as increased rates of hospital readmission and mortality. Consequently, improving continuity of care represents a key strategy for enhancing patient outcomes, and accurate measurement—particularly through quantitative indicators—is essential. These indicators provide intuitive reflections of continuity levels, enabling precise guidance for healthcare providers to improve service quality and clinical outcomes, while equipping administrators with tools

to monitor population health and refine governance strategies. Recent studies have affirmed the practical utility of quantitative indicators, yet domestic research employing these measures remains scarce, largely due to insufficient literature introducing these indexes and their applications. This review addresses this gap by tracing the evolution of quantitative assessment indexes for continuity of care, reconstructing their practical applications in general practice, and providing a theoretical basis for future research and clinical implementation.

1 Literature Search Methods

1.1 Data Sources

We searched PubMed Core Collection and CNKI (China National Knowledge Infrastructure) using the subject terms "continuity of care," "primary health care," and "measurement/index." The search period extended from database inception to April 2023.

PubMed Core Database search strategy:

```
#1: ((((((Continuity of Patient Care[MeSH Terms]) OR (Care Continuity, Patient[Title/Abstrac
#2: ((((((Primary Health Care[MeSH Terms]) OR (Health Care, Primary[Title/Abstract])) OR (Pr
#3: (((((((Weights and Measures[MeSH Terms]) OR (Measures[Title/Abstract] AND Weights[Title/
#4: (((((Index[Title/Abstract]) OR (Indices[Title/Abstract])) OR (Indicator[Title/Abstract])
#5: #1 AND #2 AND #3 AND #4
```

CNKI search strategy:

```
#1: 连续性照顾 (in title/abstract/keywords) OR 连续性服务 (in title/abstract/keywords)
#2: 测量 (in title/abstract/keywords) OR 指标 (in title/abstract/keywords)
#3: #1 AND #2
```

1.2 Inclusion and Exclusion Criteria

Inclusion criteria: (1) Literature published in English or Chinese; (2) Studies assessing continuity of care.
Exclusion criteria: Literature discussing only qualitative assessment of continuity of care.

2 Classification and Quantitative Assessment of Continuity of Care

In 2003, Jee et al. conducted a multidisciplinary review identifying three dimensions of continuity of care: relational continuity (the ongoing therapeutic relationship between patients and providers), informational continuity (the transfer and utilization of patient medical history), and management continuity (collaboration among providers to ensure coordinated service delivery). Optimal outcomes require high performance across all three dimensions, whereas deficiencies in any dimension can produce adverse consequences. Consequently, comprehensive measurement of continuity of care is crucial for improving clinical outcomes.

Researchers have developed over 15 quantitative assessment indexes, which can be categorized into five types based on their characteristics: density, dispersion, sequence, duration, and subjective evaluation. All indexes range from [0,1], with values closer to 1 indicating higher continuity of care. This review focuses on the three most commonly used categories.

2.1 Density Indicators

Usual Provider of Care (UPC): Proposed by Smedby et al., UPC measures the proportion of visits to the most frequently seen provider, serving as an indicator of informational continuity. The formula is: UPC = max(n)/N, where N represents the patient' s total number of visits and n represents visits to the i-th provider. UPC can measure continuity at both individual and family levels due to its additive property—family-level UPC is calculated by summing visits across all family members before computation.

UPC' s primary advantage lies in its intuitive reflection of the density of patient-provider interactions. However, it has significant limitations: UPC captures immediate rather than longitudinal continuity patterns, cannot identify fluctuations in visit frequency over time, and fails to detect provider changes.

2.2 Dispersion Indicators

2.2.1 Herfindahl-Hirschman Index (HH) Originally an economic measure of market concentration, HH was adapted by Bice and Boxerman for continuity of care assessment. The formula is: HH = Σ (n /N)^2, where M represents the total number of providers/institutions visited, N is the total number of visits, and n is visits to the i-th provider/institution.

Compared to UPC, HH demonstrates greater sensitivity to provider switching behavior. Its economic origins also enable analysis of relationships between market competition and hospitalization rates, where high HH values indicate dominant hospitals or reduced market competition.

2.2.2 Bice-Boxerman Continuity of Care Index (COCI) COCI evolved from HH, representing a modification of Rae and Taylor' s fragmentation index. It measures informational continuity using the formula: COCI = (Σ n ^{2} - N)/(N(N-1)), where M is the total number of providers, N is total visits, and n is visits to the i-th provider.

As a dispersion indicator, COCI uniquely reflects both visit dispersion and concentration, enabling comparison of continuity levels between patients with identical N but different M values. However, COCI is heavily influenced by N: when a patient visits two providers equally, COCI equals 0.333 for N=4, 0.474 for N=20, and approaches the theoretical value of 0.5 as N increases. Consequently, COCI is unsuitable for patients with few visits.

2.2.3 Modified Continuity Index (MCI) and Modified Modified Continuity Index (MMCI) The formulas are: MCI = 1 - M/(N + 0.1) and MMCI = [1 - M/(N + 0.1)]/[1 - 1/(N + 0.1)], where M is the total number of providers and N is total visits. MMCI was developed by Magill et al. to address limitations of UPC, COCI, and MCI, though practical differences between MCI and MMCI are minimal.

Longitudinal studies demonstrate that MCI and MMCI better reflect true continuity levels. Nicolet et al. analyzed 240,000 Swiss residents and found that after four years, only MCI and MMCI increased compared to baseline, while UPC, HH, and COCI decreased, suggesting these modified indexes more accurately capture continuity improvement over time.

2.3 Sequence Indicators

Sequential Continuity Index (SECON): Developed by Steinwachs, SECON measures informational continuity by assessing visit sequence patterns: SECON $= \Sigma_{2} S /(N-1)$, where N is total visits and $S = 1$ if consecutive visits involve the same provider, otherwise $S = 0$.

SECON identifies temporal patterns in provider switching but requires sequential coding that makes computation cumbersome, limiting its use to short-term continuity assessment. Additionally, SECON cannot distinguish between alternating visits between two providers (ABABAB···) and progressive provider changes (ABCDEF···), as both yield SECON = 0 despite the former representing higher continuity.

3 Application Areas of Quantitative Assessment Indexes

Continuity of care is fundamental to primary healthcare and community practice. Quantitative assessment indexes are applied to all community residents and common diseases to optimize population health management and deliver appropriate continuity of care.

3.1 Application in Specific Diseases

Community health centers predominantly manage hypertension (20.29%), type 2 diabetes (11.98%), metabolic disorders (8.43%), episodic conditions (7.47%), and acute upper respiratory infections (6.09%). Applying these indexes to measure continuity for these conditions optimizes community health management and enables timely intervention against adverse outcomes.

3.1.1 Hypertension A retrospective case study found that hypertensive patients receiving care from general practitioners with higher continuity levels achieved better blood pressure control (HR = 4.36), with control status positively correlating with continuity levels ($P < 0.001$). Poor blood pressure control leads to decreased quality of life, increased medical costs, and multi-organ

damage. Ye et al. demonstrated that higher continuity significantly improved health-related quality of life in hypertensive patients ($P < 0.05$), while Liang et al. found that each 0.1-point increase in continuity indexes reduced healthcare expenditures by 151–228 RMB ($P < 0.001$).

3.1.2 Type 2 Diabetes As a chronic disease requiring long-term management, type 2 diabetes often involves treatment errors, particularly insulin misuse due to non-adherence. Improving continuity of care enhances treatment adherence, making quantitative assessment valuable for monitoring and managing patient compliance. A cohort study of China' s family doctor system found that diabetic patients with assigned family doctors showed significantly higher UPC, COCI, and SECON values (increases of 0.016, 0.019, and 0.018 respectively, $P < 0.01$), which improved adherence and facilitated effective community-based diabetes management. Hansen et al. additionally found that patients with UPC $= 1$ had significantly lower outpatient visit rates (OR $= 0.53$).

3.1.3 Other Conditions Beyond hypertension and diabetes, community-managed conditions such as dyslipidemia, stroke, and chronic obstructive pulmonary disease (COPD) impose substantial economic and psychological burdens due to high incidence, mortality, and disability rates. Real-world evidence indicates that dyslipidemia patients with COCI > 0.8 had lower atherosclerotic cardiovascular disease risk (HR $= 1.09$). Yang et al. found that stroke patients with MMCI between 0.86–0.99 had lower one-year mortality risk compared to those with MMCI ≤ 0.75 (HR $= 0.56$). Tranmer et al. demonstrated that COPD patients with lower COCI had higher one-month readmission rates (OR $= 2.44$).

3.2 Application in Specific Populations

Continuity of care represents a unique advantage of general practice, emphasizing lifelong service from birth to death. Beyond disease-specific care, it encompasses life-stage care including prenatal, infant/child development, and elderly chronic disease management. As women, children, and elderly individuals constitute primary service populations in community health centers, applying these indexes enhances health management and preventive services.

3.2.1 Maternal Population Growing societal attention to maternal health has increased research using quantitative indexes to monitor prenatal care quality, coverage, and adequacy, particularly in low- and middle-income countries. Since most maternal complications during delivery are unpredictable, high continuity during prenatal care is essential. A specialized indicator, **Place of Delivery Continuity (PDC)**, calculates the proportion of prenatal visits occurring at the delivery institution. Higher PDC values (closer to 1) indicate lower probability of changing healthcare facilities during prenatal care, reflecting higher continuity. Dery et al. found PDC yielded the lowest values among five tested indexes (MFPC, MMCI, COCI, SECON, PDC), making it most sensitive for identifying gaps requiring intervention.

3.2.2 Children A retrospective study of asthmatic children found those with UPC $>$ 0.7 had the lowest hospitalization rates (OR = 0.87). Arthur et al. showed that each 0.1-point increase in COCI reduced the probability of $ $1 emergency department visits by 4% (OR = 0.96) among children with medical complexity. However, children' s visit patterns differ significantly from adults: most pediatric visits address acute rather than chronic conditions, and infants under one year have frequent well-child visits that limit the utility of long-term monitoring indexes. Consequently, these indexes are primarily applied to children older than one year. Developing pediatric-specific indicators remains an important future direction to expand applicability and accuracy.

3.2.3 Elderly Population Continuity indexes are particularly relevant for elderly individuals requiring long-term care. Maarsingh et al. found that Dutch elderly with HH values of 0–0.5 had higher mortality than those with HH = 1 (HR = 1.2). Similarly, a retrospective cohort study of veterans aged $ $65 showed that UPC and MMCI $<$ 0.5 correlated with higher hospitalization rates (OR = 1.04). These findings underscore the importance of enhancing continuity for elderly patients to delay disease progression, prevent unnecessary hospitalizations, and improve quality of life.

4 Limitations and Improvement Strategies

Despite widespread application across diseases, populations, and settings, quantitative assessment indexes face significant challenges. First, computational complexity poses barriers: calculations are intricate, require difficult-to-obtain longitudinal data, and are time-consuming. Future directions include developing simpler quantitative indexes or adopting qualitative tools such as the Primary Care Assessment Tool (PCAT) and Quality and Costs of Primary Care (QUALICOPC) survey instruments.

Second, representational adequacy remains problematic. Single indexes cannot comprehensively capture continuity of care, while multiple indexes sometimes yield inconsistent results. Although continuity of care models have been developed to guide comprehensive interventions, corresponding multidimensional or composite measurement tools remain underdeveloped. Creating integrated assessment systems that calculate composite continuity scores represents a promising future direction.

These limitations restrict practical application. Pereira et al.' s systematic review found that only 14 of 43 studies examining continuity-mortality relationships utilized quantitative indexes. Addressing these limitations and promoting standardized measurement tools is essential for ensuring scientific evaluation of continuity of care.

While current indexes serve multiple domains, they share common limitations. The central challenge is developing effective, simple, and comprehensive measurement tools. International research has progressed from theoretical frame-

works to practical applications and optimization, whereas domestic research remains largely theoretical. Chinese researchers should draw upon international advances to develop culturally appropriate, comprehensive measurement systems for practical implementation.

References

[1] MEIQARI L, AL-OUDAT T, ESSINK D, et al. How have researchers defined and used the concept of "continuity of care" for chronic conditions in the context of resource-constrained settings? A scoping review of existing literature and a proposed conceptual framework[J]. Health Res Policy Syst, 2019, 17(1): 27. DOI:10.1186/s12961-019-0426-1.

[2] LIANG Jiajie, KUANG Li. Introduction to measurement indicators for continuity of health services[J]. Chinese General Practice, 2013, 16(1): 108-112. DOI:10.3969/j.issn.1007-9572.2013.01.035.

[3] GULLIFORD M C, NAITHANI S, MORGAN M. Continuity of care and intermediate outcomes of type 2 diabetes mellitus[J]. Fam Pract, 2007, 24(3): 245-251. DOI:10.1093/fampra/cmm014.

[4] FACCHINETTI G, D' ANGELO D, PIREDDAM, et al. Continuity of care interventions for preventing hospital readmission of older people with chronic diseases: a meta-analysis[J]. Int J Nurs Stud, 2020, 101: 103396. DOI:10.1016/j.ijnurstu.2019.103396.

[5] LI Chunyu, LIANG Wannian. Continuous care in community health services[J]. Chinese Journal of General Practitioners, 2003, 2(5): 294-295. DOI:10.3760/cma.j.issn.1671-7368.2003.05.014.

[6] JEE S H, CABANA M D. Indices for continuity of care: a systematic review of the literature[J]. Med Care Res Rev, 2006, 63(2): 158-188. DOI:10.1177/1077558705285294.

[7] HAGGERTY J L, REID R J, FREEMAN G K, et al. Continuity of care: a multidisciplinary review[J]. BMJ, 2003, 327(7425): 1219-1221. DOI:10.1136/bmj.327.7425.1219.

[8] HA N T, HARRIS M, PREEN D, et al. A time-duration measure of continuity of care to optimise utilisation of primary health care: a threshold effects approach among people with diabetes[J]. BMC Health Serv Res, 2019, 19(1): 276. DOI:10.1186/s12913-019-4018-9.

[9] BAHR S J, WEISS M E. Clarifying model for continuity of care: a concept analysis[J]. Int J Nurs Pract, 2019, 25(2): e12704. DOI:10.1111/ijn.12704.

[10] SMEDBY O, EKLUND G, ERIKSSON E A, et al. Measures of continuity of care. A register-based correlation study[J]. Med Care, 1986, 24(6): 511-518. DOI:10.1097/00005650-198606000-00010.

[11] VAN WALRAVEN C, OAKE N, JENNINGS A, et al. The association between continuity of care and outcomes: a systematic and critical review[J]. J Eval Clin Pract, 2010, 16(5): 947-956. DOI:10.1111/j.1365-2753.2009.01235.x.

[12] KAO Y H, LIN W T, CHEN W H, et al. Continuity of outpatient care and avoidable hospitalization: a systematic review[J]. Am J Manag Care, 2019, 25(4): e126-e134.

[13] CHHATRE S, MALKOWICZ S B, JAYADEVAPPA R. Continuity of care in acute survivorship phase, and short and long-term outcomes in prostate cancer patients[J]. Prostate, 2021, 81(16): 1310-1319. DOI:10.1002/pros.24228.

[14] SENOT C. Continuity of care and risk of readmission: an investigation into the healthcare journey of heart failure patients[J]. Prod Oper Manag, 2019, 28(8): 2008-2030. DOI:10.1111/poms.13027.

[15] CHO K H, PARK E C, NAM Y S, et al. Impact of market competition on continuity of care and hospital admissions for asthmatic children: a longitudinal analysis of nationwide health insurance data 2009-2013[J]. PLoS One, 2016, 11(3): e0150926. DOI:10.1371/journal.pone.0150926.

[16] BICE T W, BOXERMAN S B. A quantitative measure of continuity of care[J]. Med Care, 1977, 15(4): 347-349. DOI:10.1097/00005650-197704000-00010.

[17] DREIHER J, COMANESHTER D S, ROSENBLUTH Y, et al. The association between continuity of care in the community and health outcomes: a population-based study[J]. Isr J Health Policy Res, 2012, 1(1): 21. DOI:10.1186/2045-4015-1-21.

[18] KAO Y H, TSENG T S, NG Y Y, et al. Association between continuity of care and emergency department visits and hospitalization in senior adults with asthma-COPD overlap[J]. Health Policy, 2019, 123(2): 222-228. DOI:10.1016/j.healthpol.2018.11.005.

[19] MAGILL M K, SENF J. A new method for measuring continuity of care in family practice residencies[J]. J Fam Pract, 1987, 24(2): 165-168.

[20] NICOLET A, PEYTREMANN-BRIDEVAUX I, WAGNER J, et al. Continuity of care of Swiss residents aged 50+: a longitudinal study using claims data[J]. Integr Healthc J, 2022, 4(1): e000105. DOI:10.1136/ihj-2021-000105.

[21] EJLERTSSON G, BERG S. Continuity-of-care measures. An analytic and empirical comparison[J]. Med Care, 1984, 22(3): 231-239. DOI:10.1097/00005650-198403000-00006.

[22] ERIKSSON E A, MATTSSON L G. Quantitative measurement of continuity of care. Measures in use and an alternative approach[J]. Med Care, 1983, 21(9): 858-875. DOI:10.1097/00005650-198309000-00006.

[23] HUANG Yanli. Analysis of outpatient service capacity characteristics in community health service institutions based on real-world diag-

nostic data[J]. Chinese General Practice, 2021, 24(34): 4336-4342, 4355. DOI:10.12114/j.issn.1007-9572.2021.00.316.

[24] NGUYEN D L, DEJESUS R S, WIELAND M L. Missed appointments in resident continuity clinic: patient characteristics and health care outcomes[J]. J Grad Med Educ, 2011, 3(3): 350-355. DOI:10.4300/JGME-D-10-00199.1.

[25] FORTUNA R J, GARFUNKEL L, MENDOZA M D, et al. Factors associated with resident continuity in ambulatory training practices[J]. J Grad Med Educ, 2016, 8(4): 532-540. DOI:10.4300/JGME-D-15-00755.1.

[26] YE T, SUN X W, TANG W X, et al. Effect of continuity of care on health-related quality of life in adult patients with hypertension: a cohort study in China[J]. BMC Health Serv Res, 2016, 16(1): 674. DOI:10.1186/s12913-016-1673-2.

[27] LIANG D, ZHU W J, QIAN Y L, et al. Continuity of care and healthcare costs among patients with chronic disease: evidence from primary care settings in China[J]. Int J Integr Care, 2022, 22(4): 4. DOI:10.5334/ijic.5994.

[28] RUSZALA V. Ensuring continuity of care for patients with diabetes mellitus[J]. Nurs Stand, 2019, 35(1): 61-66. DOI:10.7748/ns.2019.e11454.

[29] YANG Siman, ZHANG Xi, ZHOU Mengping, et al. Study on the impact of core characteristics of general practice on treatment adherence of diabetic patients[J]. Chinese General Practice, 2022, 25(1): 62-69. DOI:10.12114/j.issn.1007-9572.2021.00.331.

[30] LIU X Y, ZHANG L Y, CHEN W. Impact of the family doctor system on the continuity of care for diabetics in urban China: a difference-in-difference analysis[J]. BMJ Open, 2023, 13(2): e065612. DOI:10.1136/bmjopen-2022-065612.

[31] HANSEN A H, JOHANSEN M L. Personal continuity of GP care and outpatient specialist visits in people with type 2 diabetes: a cross-sectional survey[J]. PLoS One, 2022, 17(10): e0276054. DOI:10.1371/journal.pone.0276054.

[32] HU J J, WANG Y X, LI X X. Continuity of care in chronic diseases: a concept analysis by literature review[J]. J Korean Acad Nurs, 2020, 50(5): 647-662. DOI:10.4040/jkan.20079.

[33] LEE J, CHOI E, CHOO E, et al. Relationship between continuity of care and clinical outcomes in patients with dyslipidemia in Korea: a real world claims database study[J]. Sci Rep, 2022, 12(1): 3062. DOI:10.1038/s41598-022-06973-3.

[34] TRANMER J, ROTTER T, O' DONNELL D, et al. Determining the influence of the primary and specialist network of care on patient and system outcomes among patients with a new diagnosis of chronic obstructive pulmonary disease (COPD)[J]. BMC Health Serv Res, 2022, 22(1): 1210. DOI:10.1186/s12913-022-08588-w.

[35] MOTHUPI M C, KNIGHT L, TABANA H. Measurement approaches in continuum of care for maternal health: a critical interpretive synthesis of evidence from LMICs and its implications for the South African context[J]. BMC Health Serv Res, 2018, 18(1): 539. DOI:10.1186/s12913-018-3278-4.

[36] DERY S K K, AIKINS M, MAYA E T. Longitudinal continuity of care during antenatal and delivery in the Volta Region of Ghana[J]. Int J Gynaecol Obstet, 2020, 151(2): 219-224. DOI:10.1002/ijgo.13301.

[37] COOPER S, RAHME E, TSE S M, et al. Are primary care and continuity of care associated with asthma-related acute outcomes amongst children? A retrospective population-based study[J]. BMC Prim Care, 2022, 23(1): 5. DOI:10.1186/s12875-021-01414-y.

[38] ARTHUR K C, MANGIONE-SMITH R, BURKHART Q, et al. Quality of care for children with medical complexity: an analysis of continuity of care as a potential quality indicator[J]. Acad Pediatr, 2018, 18(6): 669-676. DOI:10.1016/j.acap.2018.04.009.

[39] MAARSINGH O R, HENRY Y, VAN DE VEN P M, et al. Continuity of care in primary care and association with survival in older people: a 17-year prospective cohort study[J]. Br J Gen Pract, 2016, 66(649): e531-539. DOI:10.3399/bjgp16X686101.

[40] KATZ D A, MCCOY K D, VAUGHAN-SARRAZIN M S. Does greater continuity of veterans administration primary care reduce emergency department visits and hospitalization in older veterans?[J]. J Am Geriatr Soc, 2015, 63(12): 2510-2518. DOI:10.1111/jgs.13841.

[41] JATRANA S, CRAMPTON P, RICHARDSON K. Continuity of care with general practitioners in New Zealand: results from SoFIE-Primary Care[J]. N Z Med J, 2011, 124(1329): 16-25.

[42] TAO W J, ZENG W Q, YAN L, et al. The health service capacity of primary health care in West China: different perspectives of physicians and their patients[J]. BMC Health Serv Res, 2019, 19(1): 143. DOI:10.1186/s12913-019-3964-x.

[43] COMA E, MORA N, PEREMIQUEL-TRILLAS P, et al. Influence of organization and demographic characteristics of primary care practices on continuity of care: analysis of a retrospective cohort from 287 primary care practices covering about 6 million people in Catalonia[J]. BMC Fam Pract, 2021, 22(1): 56. DOI:10.1186/s12875-021-01414-y.

[44] PEREIRA GRAY D J, SIDAWAY-LEE K, WHITE E, et al. Continuity of care with doctors-a matter of life and death? A systematic review of continuity of care and mortality[J]. BMJ Open, 2018, 8(6): e021161. DOI:10.1136/bmjopen-2017-021161.

[45] JACKSON C, BALL L. Continuity of care: vital, but how do we measure and promote it?[J]. Aust J Gen Pract, 2018, 47(10): 662-664.

DOI:10.31128/AJGP-05-18-4568.

Author Contributions: MA Jingxin, YANG Rong, ZHU Linlin, and LIAO Xiaoyang conceived and designed the article. LIU Lidi and ZHANG Yalin conducted feasibility analysis. MA Jingxin, YANG Rong, and LIU Lidi collected and organized data. MA Jingxin drafted the manuscript. MA Jingxin, YANG Rong, LIU Lidi, ZHANG Yalin, SONG Haiqi, and LUO Jianzhao revised the manuscript. ZHU Linlin and LIAO Xiaoyang supervised quality control and overall responsibility.

Conflict of Interest Statement: The authors declare no conflicts of interest.

Received Date: 2023-04-15
Revised Date: 2023-07-05
Editorial Responsibility: CUI Sha

Note: Figure translations are in progress. See original paper for figures.