

# Six Basic Clinical Principles of Primary Care Practice

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## Research article

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# Abstract

**BACKGROUND:** The features of primary care are well described on the dimension of public health. Primary care clinicians consist of a large portion of health-care workforce. To guide clinical thinking in primary care practice, its basic clinical principles should be synthesized.

**METHODS:** We searched literature in PubMed, MEDLINE, China National Knowledge Infrastructure, and Wanfang Med Online, using the key words of “primary care practice”, “primary care”, “primary health care”, “general practice” in combination with “principle”, “ideal”, “description”, “characteristic” and “feature” to synthesize basic clinical principles of primary care practice.

**RESULTS:** Six basic clinical principles of primary care practice are synthesized. 1. Holistic: includes holism, whole person care, bio-psycho-social model, lateral clinical thinking, and overcoming fragmented specialization. 2. Integrative: consists of combination of orthodox and complementary medicine, coordinated care, and practicing holistic integrated medicine(HIM). 3. Continuous: deals with continuous clinician-patient relationship, seamless services, life-cycle medical services, and full medical care at any time and place. 4. Preventive: contains undifferentiated disease care, health habit counseling, screening for asymptomatic diseases, and immunization. 5. Patient-centered: comprises responsive to individual patient needs and values, people-oriented care, and practicing Patient Centered Medical Home (PCMH). 6. Standardized: involves use of evidence-based medicine (EBM), following the clinical guideline, and applying clinical pathway.

**CONCLUSION:** The six basic clinical principles of primary care practice are holistic, integrative, continuous, preventive, patient-centered and standardized care. They might be the backbone of primary care practice and be recommended to be used to construct the disciplinary knowledge of clinical primary care practice.

**KEY WORDS:** Primary care practice, primary care, primary health care, general practice.

## Key Messages

Despite a vast literature on the topic of features of primary care (primary health care) in the dimension of public health, evidences on clinical principles to guide clinical thinking of primary care clinicians are rare. We have synthesized 6 basic clinical principles of primary care practice, which might be the code to guide clinical thinking of primary care clinicians.

## Background

Primary care is essential in a health-care system.<sup>1</sup> Primary care clinicians consist of a large portion of health-care workforce.<sup>2</sup> The features of primary care are well described on the dimension of public health, however, primary care as a clinical discipline is undermined by unclear disciplinary pathways.<sup>3</sup> If the discipline is to thrive, there is a need to set up its own clinical disciplinary principles. In 2001, Starfield B.

summarized major concerns in primary care practice including recognizing and managing comorbidity, preventing the adverse effects of medical interventions, improving equity of health, and reducing the costs of care.<sup>4</sup> She also proposed that person centered, continuing, preventive and chronic disease managing care were some features of primary care.<sup>5,6,7</sup> In 2010, Stephens G. emphasized continuing care is a key point for family medicine.<sup>8</sup> Saultz J. urged family doctors to take the moral responsibility for patients.<sup>9</sup> In 2016, Hashim MJ. proposed five principles of general practice and family medicine including compassionate care, generalist approach, continuity of relationship, reflective mindfulness, and lifelong learning.<sup>10</sup> It seems, up to date, no one systematically reviewed publications and synthesized the basic clinical principles of primary care practice. Therefore, we have synthesized six basic clinical principles of primary care practice according to literature published. They might be recommended to serve as a clinical code for primary care clinicians.

## Methods

We searched the PubMed, MEDLINE, China National Knowledge Infrastructure, and Wanfang Med Online. Using the key words of “primary care practice”, “primary care”, “primary health care”, “general practice”, “family practice” “family medicine” and all their possible synonyms and spellings, in combination with “principle”. We further expanded searching by including “ideal”, “description”, “characteristic” and “feature” in combination with key words. In addition, all key words and combination words were translated into Chinese to search Chinese literature. We also conducted hand searching according some key references of literature.

Articles were included in the review if they were published in the year 1970 or later. This date range was chosen because of the availability of databases for primary care and met the following inclusion criteria: 1. Dealt with primary care; 2. Discussed principles or its related issues of clinical primary care practice; 3. Published in English or Chinese. Articles were excluded if they were not related to clinical primary care practice. After removing duplicates, we initially reviewed the titles and abstracts of identified literature to select relevant papers for inclusion, and a basic weeding process was undertaken to exclude irrelevant papers. Eventually, all qualified 69 references were analyzed by reviewers to synthesize the basic clinical principles of primary care practice. A PRISMA checklist was completed (see appendix).

## Results

### Literature flow diagram

The literature flow diagram summarized the results of the search and literature selection processes. The literature search resulted in a pool of the publications. Irrelevant papers were removed according titles and abstracts, and 97 records entered full text assessment. After full text reading, 28 papers were excluded because of no applicable data or invalidated citation sources and 69 references were included to synthesize results. The literature flow diagram was showed in Figure 1.

## Principles synthesized

After systematically reviewing the papers included in the study, we were trying to synthesize the basic clinical principles of primary care practice. To differentiate from principles of primary health care on the dimension of public health, we insisted on that the principles to be synthesized should be basic to guide the clinical thinking of primary care clinicians in their practice. Therefore, six basic clinical principles of primary care practice were synthesized. They were holistic, integrative, continuous, preventive, patient-centered and standardized care. The key components of those 6 basic clinical principles of primary care practice were summarized in Table 1.

## Summary of literature included

Sixty-nine papers included in the study to synthesize the basic clinical principles of primary care practice, of which 64 were in English and 5 were in Chinese. Papers could be categorized according to the principles synthesized, 10 papers for holistic care, 8 for integrative care, 10 for continuous care, 12 for preventive care, 9 for patient-centered care, 8 for standardized care. There were 12 papers dealt with more than one principles of primary care practice. The summary of literature included was showed in Table 2.

## Discussion

### Holistic care

“The Whole is Greater Than the Sum of its Parts” is a well known holistic statement of Aristotle. Holism is scientifically recognized through traditional Gestalt psychological tests<sup>11</sup> and modern experiments.<sup>12</sup> As advances in science and technology, in the 21<sup>st</sup> century, diseases threatened human beings in the past have been under control and chronic diseases, psychological diseases and sub-health statuses have become the dominant health problems.<sup>13</sup> Whole person care including the body, mind and spirit is required in primary care practice.<sup>14,15,16</sup> Bio-psycho-social model insists on that, not only biological, psychological, social and ecological factors can also cause diseases affecting health.<sup>17</sup> Although primary care specialties have been advocating bio-psycho-social model, the biological dimension still plays a major role in the assessment and plan in the primary care practice. Holistic care should be first applied in primary care practice at the biological level, including holistic diagnoses and appropriate clinical managements for all assessments. The holistic diagnosis in primary care practice consists of three types, i.e. diseases, symptoms and signs. It is featured by the lateral clinical thinking, and on the contrary, the specialized diagnosis is emphasized on the vertical clinical thinking.<sup>18,19</sup>

Overspecialization and weaken primary care usually affects quality of holistic patient care. Holistic care is suffering from the fragmented specialization resulting in higher wrong diagnoses and lower chronic disease control.<sup>20</sup>

The WONCA Europe defines the holistic approach that includes the ability to use a bio-psycho-social model that takes into account cultural and existential dimensions.<sup>21</sup> Holistic primary care is caring for the whole person in the context of his values, family beliefs, family system, culture and social-ecological situation within the larger community, and considering a range of therapies based on the evidence of their benefits and cost.<sup>22</sup>

## **Integrative care**

Integrative medicine used to be defined as the combination of orthodox and complementary medicine that accounts for the whole person, including all aspects of lifestyle.<sup>23,24</sup> With the development of medicine, we are facing challenges that result from the overspecialization and fragmentation of medical knowledge.<sup>25</sup> Interprofessional approaches coordinated by primary care become necessary to improve healthcare.<sup>26</sup> It should be enforced for integrative care that primary care clinicians play an important role in coordinated care, coordinating subspecialties and all services in the healthcare system, helping change the patient behavior, modify lifestyle and take therapeutics correctly.<sup>27,28</sup> Integrative medicine also enhances the safety of primary care practice, because it retains a primary care clinician as the primary contact practitioner and it uses strategies to increase disclosure of treatments between practitioners.<sup>29</sup>

Recently, academicians have developed the new ideology of integrative medicine which specifies that the current known pathogenic factors, new discoveries of relevant medical science and advanced clinical experience of various specialties should be integrated. And thinking and analyzing problems should be in use of both unit and philosophical pluralistic thought, thus architecting a new medical knowledge system that is more comprehensive, more systematic, more scientific, more conformed to natural law, more suitable for human health maintenance and disease diagnosis, treatment and prevention.<sup>30</sup>

Holistic medicine and integrative medicine are different, but they are complemented one another and inseparable, which is why scholars put holistic medicine and integrative medicine together, calling holistic integrated medicine (HIM).<sup>25</sup> In general, the former emphasizes theories while the latter actions. If holistic medicine can be considered as the theoretical basis of primary care practice, then integrative medicine is its program of action. HIM couldn't be practical without a primary care clinician in the modern health-care system.<sup>18</sup>

## **Continuous care**

Continuous care is continuing, during which patients and clinicians work together to participate in the uninterrupted medical care in order to achieve the high quality and low consumption of medical services, improving the overall medical quality of patients. Traditionally, continuity of care is a kind of continuous clinician-patient relationship between the patient and the determined medical staff. While for many developed countries, this fixed link is established lawfully by primary care contracts.<sup>18</sup>

Continuity is presumed to have several dimensions, including informational, longitudinal, interpersonal, geographic, team based, and familial.<sup>31</sup>

Continuing relationship between patients and clinicians improves the quality and outcomes of care, particularly for primary care. Exchange of information between the hospital and the primary care clinician at admission and discharge is essential as well for quality of care.<sup>32</sup> Continuing clinician- patient relationship is unique in primary care practice because it covers a span in time that is not restricted to a specific major illness.

Medical personnel in the integrative medical system hold that continuity of care is to provide seamless services that are achieved through integration, coordination and information sharing among them.<sup>33</sup> New evidences suggest that, to overcome fragmented care, seamless care coordinated by primary care clinicians is needed not only for early stage diseases, but also for end-stage diseases which are traditionally considered to belong specialized care.<sup>34</sup> Seamless care running well depend on the function of continuing primary care, particularly, the primary care clinicians' coordination.<sup>35</sup>

In the modern medical system, only primary care clinicians can provide life-cycle medical services.<sup>36</sup> All stages of life, starting with marriage and childbirth counseling, can be covered by primary care services during pregnancy, childbirth, neonatal period, infant and child period, childhood, adolescence, middle-aged, old age and up to death. Next, when a patient dies, the primary care clinician has to also consider the health care of their family members during the mourning period, and even the ongoing monitoring of certain genetic risk factors and diseases.<sup>37</sup> In addition, only primary care clinicians can provide the full medical care. At any time and place, including the patients who are on business trips or during travel, and even during hospitalization, primary care clinicians have a continuous responsibility for them, and they need to provide services in advance or at any time according to the needs of patients.<sup>38</sup>

Continuous care is the key to the quality of primary care practice because it follows time-efficiency principle: time as the key diagnostic strategy.<sup>39</sup> Improvement of the continuity of primary care can ensure that patients receive economic, effective, and high-quality services. Continuity is a central principle of primary care.<sup>40</sup>

## **Preventive care**

Evidences have demonstrated that the development of the disease followed the rule of converse transformation and preventive care can block the exacerbation or transformation of the disease in time. Preventive care is a principle of primary care.<sup>41</sup> The concept of the undifferentiated disease refers to the early stage of the disease difficult to distinguish what kind of diseases.<sup>42</sup> Undifferentiated diseases are the focus of primary care practice, and the treatment of undifferentiated diseases is an effective clinical prevention, which is not the same as the focus of public health prevention. The combination of the clinical prevention and treatment completed by a primary care clinician, can avoid unnecessary

omissions of preventive processes, because primary care clinicians frequently contact with patients.<sup>43</sup> A competent primary care clinician should be able to perform primary prevention, secondary prevention, and tertiary prevention to improve the quality of life.<sup>18,44</sup>

Preventive care contains health habit counseling, screening for asymptomatic diseases, and immunization. The health concealing service is considered as one of the most important tasks of primary care clinicians.<sup>45</sup> Preventive screening refers to use of the simple means to find unrecognized patients or people with health defects in the healthy population, and now it mainly includes yearly checkup and clinical screening in primary care services.<sup>18</sup>

One cohort study of male physicians was followed prospectively for 25 years. The authors found a 54% probability of survival to 90 years in subjects with the absence of 5 key adverse factors (smoking, diabetes, obesity, hypertension and sedentary lifestyle), and in contrast, subjects with all 5 factors present had less than a 5% probability of reaching 90 years, indicating human life expectation could be improved by primary care prevention.<sup>46</sup> Additional studies also suggest that adherence to primary care management with an emphasis on screening, prevention and lifestyle modification results in life extension and substantive reductions in medical care costs.<sup>47</sup>

The primary care clinician is responsible for the patient's vaccination, constantly checking the patient's vaccination status, timely preventing vaccination, and updating the patient's vaccination record. He or she is also responsible for the maintenance of the patient's health to prevent serious diseases.<sup>48</sup> Several common and effective preventive measures in primary care services include using aspirin with high-risk adults, immunizing children, and tobacco-use screening and brief intervention, screening adults aged 50 and older for colorectal cancer, immunizing adults aged 65 and older against pneumococcal disease, and screening young women for Chlamydia.<sup>49,50</sup> In addition, mental and behavioral health services are being recognized as essential components of a preventive, and cost-efficient primary care system.<sup>51</sup>

The advantage of primary care in clinical prevention for preventive diseases is significant, because in the long-term clinician-patient relationship, the primary care clinician fully understands the patient's health concept and living habits and helps the patient to change bad behavior and lifestyle.<sup>59</sup> To prevent deteriorating chronic diseases also relies on the specific implementation of primary care clinicians.<sup>52</sup>

## **Patient-centered care**

Patient-centered care is defined by the Institute of Medicine (IOM) as care that is responsive to individual patient needs and values and that guides the treatment decisions, including clear and open information sharing, patient respecting, participation and collaboration.<sup>53</sup> Before establishing an effective treatment plan, clinicians and patients should exchange views and communicate with each other as much as possible, reaching a consensus on different views. Those comprehensive exchanges are daily activities of primary care services.<sup>54</sup>

Patient-centered care is recognized as an important condition for ensuring the quality of primary care practice, particularly for chronic diseases.<sup>55</sup> Patient-centered primary care practice may result in greater knowledge of the patient, greater trust between physician and patient, and diminished need for additional specialty referrals, diagnostic testing, and use of hospital care.<sup>56</sup>

As the primary care service is people-oriented, what the primary care clinicians are concerned about first is people and then diseases in their service. Primary care practice always holds a basic idea that regards the patient as the center, emphasizing the whole person care.<sup>57</sup> Although there may be some differences in primary care practice around the world, no matter where it is, this concept will not change. Therefore, patient-centered care is the basic service concept of primary care practice.<sup>58</sup>

The patient-centered medical home (PCMH), also referred as the primary care medical home, is a model of team work designed to deliver comprehensive and advanced primary care.<sup>59</sup> As its name announced, patient-centered care is the key ideology in the PCMH.<sup>60</sup> Health-care using the PCMH model is delivered with the patient at the center of the transformation and by reinvigorating primary care. Considering patients as the center, the enhanced coordination of services, better provider access, self-management, and a team-based approach represent some of the key principles of the PCMH. As a movement toward higher quality patient-centered care, the PCMH emerges promising.<sup>61</sup>

## Standardized care

When it comes to standardized care, first of all, we should know evidence-based medicine (EBM). EBM is an approach to medical practice intended to optimize decision-making by emphasizing the use of evidence from well-designed and well-conducted research.<sup>62</sup> To standardize care, clinical practice should be according to medical guidelines, medical reviews and high reliable clinical studies. Standardized primary care practice is an important part of delivering effective, safe, and affordable care, and could improve the quality of patient life and longevity.<sup>63</sup> To standardize primary care practice requires primary care clinicians to standardize their practices of medicine. Such standards are based on the scientific basis of evidence-based medicine which helps select the best diagnosis and treatment program and standardize practices to provide each patient with the best treatment plan.<sup>64</sup>

The Quality and Outcomes Framework (QOF) has contributed to modest improvements in chronic illness care in the United Kingdom. The credit should be given to the standardized care in the British primary care system. The policymakers of the United States have proposed similar pay-for-performance (P4P) approaches to improve care which requires primary care clinicians perform standardized care to obtain the better patient outcomes.<sup>65</sup>

From the point of view of primary care practice, evidence-based medicine is to apply of the best current medical evidence, combined with the primary care clinicians' own professional knowledge, according to the wishes of patients to develop the best diagnosis and treatment plan.<sup>66</sup> From the perspective of

primary care practice, standardized primary care practice can be defined as: According to the criteria of evidence-based medicine, such as medical guidelines, medical reviews and clinical studies with high degree of reliability, the practice behavior of each primary care clinician is standardized.<sup>18</sup>

A clinical pathway is a process of standardized practice for specific diseases. It is more concise, easier to operate and more targeted than the guide, with prescribed diagnosis and treatment procedures, standardized medical behaviors, lower medical costs and improved medical quality.<sup>67</sup> It also facilitates uptake of clinical practice guidelines for the diagnosis, management and referral in primary care practice.<sup>68</sup> In order to improve the quality of the standardized diagnosis and treatment of common diseases, primary care providers can also use the clinical pathway.<sup>69</sup> The establishment of a clinical pathway in primary care practice should emphasize the characteristics of primary care practice, and standardize the treatment flow according to the basic practice process of the clinical pathway, which mainly includes: content formulation, standardized examination and medication, computerized operation, publicity and education, result evaluation, revision and supplementation.<sup>18,19</sup>

## **Limitations of the review**

We have synthesized six basic clinical principles of primary care practice, i.e. holistic, integrative, continuous, preventive, and standardized care, which might be the clinical backbone of primary care practice, and be recommended to be used to construct its clinical disciplinary knowledge, as well as, applied to set up criteria to evaluate primary care clinicians. The process of literature search is hard and the result of the review is solid. However, published clinical principles of primary care practice are limited and we had to expand the search clue to ideals, descriptions, characteristics and features in relation to primary care practice. According to literature we synthesized the six basic clinical principles of primary care practice. We only searched literature published in English and Chinese.

## **Implications for further research**

Key components of the six basic clinical principles of primary care practice might be further explored. Many functions of primary care were identified, for instances, availability, affordability, equality etc. are widely mentioned in literature of primary care. Those functions are more related to population health, instead of clinical primary care practice. The six basic clinical principles of primary care practice are directly related to clinical thinking of primary care clinicians. They should become the preliminary code to guide clinical behavior of primary care clinicians. Further research are encouraged to improve the code that we have set up today.

## **Conclusion**

Although, features of primary care are well described on the dimension of public health, the clinical principles to guide primary care practice should be clear, because primary care clinicians require different

clinical thinking from subspecialists. The review synthesized 6 basic clinical principles of primary care practice, i.e. holistic, integrative, continuous, preventive, patient-centred and standardized care. They might be the backbone of primary care practice and be recommended to be used to construct the disciplinary knowledge of primary care clinicians.

## **Abbreviations**

HIM: Holistic Integrated Medicine; WONCA: World Organization of Family Doctors; IOM: Institute of Medicine; PCMH: The Patient-Centered Medical Home; EBM: Evidence-Based Medicine; QOF: The Quality and Outcomes Framework; P4P: Pay-for-Performance.

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## **Availability of data and materials**

Databases are available for all who registered to access them without special requirements.

## **Authors' contributions**

JYL designed the study, searched literature and synthesized principles and wrote the manuscript. YL assisted in searching literature.

## **Ethics approval and consent to participate**

Not applicable.

## **Consent for publication**

Not applicable.

# Competing interests

All authors declare that they have no conflict of interests.

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## Tables

**Table 1. Six Basic Clinical Principles of Primary Care Practice**

Clinical Principles	Key Components in Primary Care Practice
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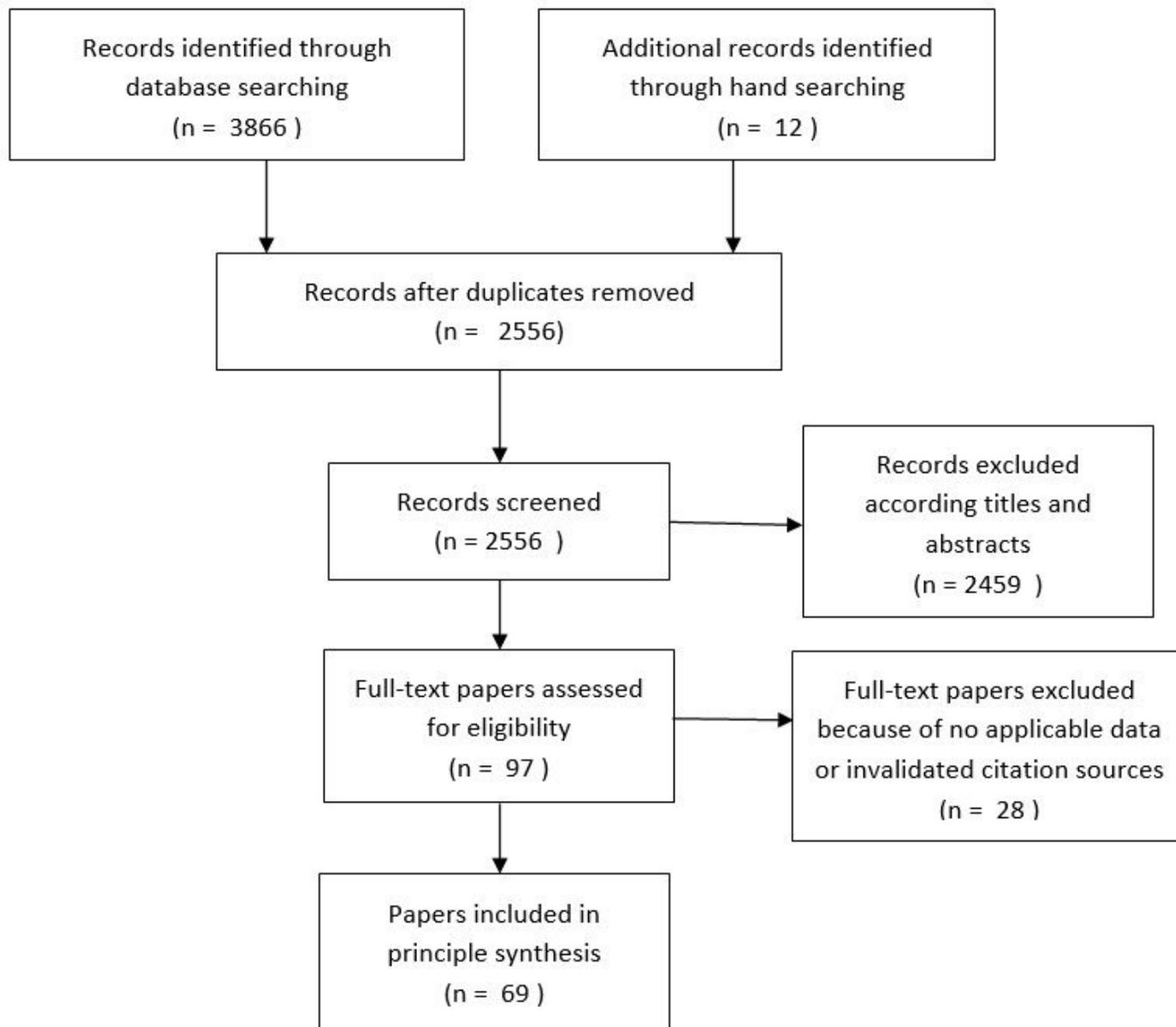
Holistic Care clinical	Holism,whole person care, bio-psycho-social model, lateral thinking, and overcoming fragmented specialization
Integrative Care coordinated	Combination of orthodox and complementary medicine , care, and practicing holistic integrated medicine(HIM)
Continuous Care cycle	Continuous clinician-patient relationship, seamless services, life-medical services, and full medical care at any time and place
Preventive Care for	Undifferentiated disease care, health habit counseling, screening for asymptomatic diseases, and immunization
Patient-Centered Care oriented	Responsive to individual patient needs and values, people-care, and practicing Patient Centered Medical Home (PCMH)
Standardized Care	Use of evidence-based medicine (EBM), following clinical guidelines, and applying to clinical pathways

**Table 2. Summary of Literature Included**

Principle Category	Literature Number
Holistic Care	10 (11-17,20-22)
Integrative Care	8 (23-30)
Continuous Care	10 (31-40)
Preventive Care	12 (41-52)
Patient-Centered Care	9 (53-61)
Standardized Care	8 (62-69)
More than One	12 (1-10,18-19)
Sum	69

Note: More than One means papers deal with more than one clinical principles of primary care practice

## Figures



**Figure 1**

Literature Identification and Selection

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