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How Is a Rigorous Case Study in General Practice and Primary Care Management Produced? (Postprint)

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Abstract

This paper aims to assist novices in case study research within the fields of general practice and primary care in clarifying the standard operating procedures of case studies and understanding that the "rigor" of case study methodology stems from strict adherence to standardized implementation protocols. The article first systematically reviews the literature to trace the evolution of case study research, outlining its conceptual underpinnings, historical background, and applicable research questions. It then sequentially elaborates each step of the standard operating procedures, supplemented with concrete examples to illustrate the application of case studies in general practice and primary care settings. The six steps are as follows: Step 1: Planning and initiation, determining whether to conduct a case study; Step 2: Protocol design, selecting appropriate cases and case study types; Step 3: Work preparation, conducting training and pilot studies; Step 4: Data collection, gathering data from multiple sources; Step 5: Data analysis, drawing conclusions based on empirical evidence; and Step 6: Report writing, engaging in dialogue with readers. Case studies are well-suited for addressing "what", "how", and "why" questions in general practice and primary care, holding considerable promise for broad application.

Full Text

Preamble

How Does a Rigorous Case Study of Primary Healthcare Service Management Get Produced?

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Abstract: This paper aims to help beginners in general practice and primary healthcare clarify the standard operating procedures for case study research, and understand that the "rigor" of case study stems from strict adherence to standardized implementation procedures. First, through literature review, this paper sorts out the development process of case study, summarizing its connotation, historical background, and applicable research questions. Then, it explains each standard operating procedure step-by-step, illustrating the application of case study in general practice and primary healthcare with specific examples. The six steps are: Step 1: Planning and initiation—determining whether to conduct a case study. Step 2: Protocol design—selecting appropriate cases and case study types. Step 3: Preparation—conducting training and pilot studies. Step 4: Data collection—obtaining data from multiple sources. Step 5: Data analysis —drawing conclusions based on evidence. Step 6: Report writing—engaging in dialogue with readers. Case study is suitable for addressing "What," "How," and "Why" questions in general practice and primary healthcare, and has very broad application prospects.

Key words: General practice; Primary healthcare; Case study; Research methods; Standard operating procedures

This paper provides concise and accessible standard operating procedures for case study beginners in general practice and primary healthcare-related fields, while conveying the central viewpoint that rigorous case study research stems from strict adherence to standardized implementation procedures. It first briefly reviews the development process of case study, including its connotation, historical background, applicable questions, and the purpose of this research. Next, it explains each standard operating procedure of case study in detail, illustrating its application through a primary healthcare service innovation case. This concrete example depicts how a rigorous primary healthcare service management case study is produced, providing readers with a reference for understanding. Finally, it summarizes the characteristics of case study application in primary healthcare, general practice, and primary health care fields, the skills required

for conducting case study research, and recommends relevant learning resources (books, papers, and courses) to help readers engage in deeper learning of case study methodology.

1. Connotation and Development of Case Study

Case study is a research method that excels at generating profound insights through in-depth investigation of individual or few cases. It has specific design logic, data collection and analysis processes, and follows its unique research paradigm and theoretical foundation [1-2]. According to research purpose, case studies can be divided into exploratory, descriptive, and explanatory types, though case study is often misunderstood as having only an exploratory function [2]. In fact, case study is also highly suitable for descriptive and explanatory research, and arguably possesses irreplaceable advantages in these two types of research [3]. Exploratory case studies focus on answering "What" questions, while descriptive and explanatory case studies focus on answering "How" and "Why" questions [2-4]. John Gerring (2007) argues that the fewer the number of cases, the more it conforms to the designation of case study; when the number of cases is large (generally more than twenty), it belongs to cross-case study [1], which is beyond the scope of this paper and will not be discussed here.

Some scholars [5-6] trace the origins of case study methodology to the earliest historical records and mythological epics, suggesting that case study could be considered the first research method in social sciences [1]. In the 19th and first half of the 20th century, case study became the dominant method in most social science disciplines, particularly represented by the "Chicago School." During this period, classic case study works by scholars such as Robert Lynd (1929) and his wife, Lloyd Warner & Paul Lunt (1941), and William Whyte (1943)—including *Middletown* and *Street Corner Society*—laid a solid foundation for the subsequent flourishing development of case study research. *Street Corner Society* described the living conditions of Italian-American youth in a Boston slum area in the 1930s, revealing many important phenomena previously unnoticed, such as "subculture," and profoundly influenced understanding of the social structure of the American underclass, becoming essential reading in community sociology. From the 1970s to the 1990s, case study was gradually accepted as an independent research method [7], and a large number of works discussing case study as a methodology were published during this period [8-11]. Yin (2014) summarized six general steps of case study with the logical sequence of: research planning, protocol design, preparation, data collection, evidence analysis, and case sharing [2]. Eisenhardt (1989) proposed an eight-step case study procedure: initiation, case selection, research instrument selection and protocol formulation, data collection, data analysis, hypothesis formation, literature dialogue, and conclusion [9]. Sergi Fàbregues (2019) and others further refined the case study process into ten steps: conducting literature review, formulating research questions, ensuring case study suitability, determining research design type, defining case boundaries and selecting cases, preparing data collection,

collecting and organizing data, analyzing data, writing case study reports, and evaluating quality [12]. The rise and popularization of case study methodology has provided essential methodological tools for the development and progress of various fields including politics, economics, education, and medicine [3]. Today, case study research in health-related disciplines and fields such as clinical medicine, nursing, community medicine, and primary healthcare is gradually receiving more attention in China [13]. It is foreseeable that case study methodology will play an important role in helping us explore health-related issues in the Chinese context.

Although case study has received due attention, its "rigor" has been somewhat compromised because many researchers lack sufficient implementation of standard operating procedures during case study research, use case study merely as a rhetorical device for qualitative data analysis, and equate case records and case teaching with case study research (the differences among the three are shown in Table 1) [3-4]. The challenge to case study "rigor" is also the greatest challenge faced by most general practice and primary healthcare researchers using case study methodology for academic exploration. This paper targets beginners in case study research in general practice and primary healthcare-related fields. Therefore, it avoids complex professional terminology as much as possible and strives to explain the operational steps of case study as a research method in accessible language, so that readers can at least gain the following after reading: (1) a general understanding of the operational steps of case study and key points in each step; (2) the ability to conveniently obtain reference materials for in-depth learning of case study under the guidance of this paper; (3) awareness that case study itself is a professional term representing rigor and should not be used casually; and (4) recognition that the "rigor" of case study stems from the research process—that is, strict implementation of case study operational steps.

Table 1 The Difference Between Case Study, Case Record, and Case Teaching

Dimension	Case Study	Case Record	Case Teaching
Case Selection	Typical, unique, extreme, deviant, heuristic, or socially influential cases, etc.	Must be real events	Must be heuristic
Case Content	Cannot be modified	Cannot be modified	Can be modified

Dimension	Case Study	Case Record	Case Teaching
Evidence Requirement	Emphasizes evidence (empirical materials like audio/video recordings)	Same as case study	No evidence requirement
Purpose	Construct or verify theory	Solve practical problems	Stimulate student interest, enhance analytical ability

Note: Summarized by the authors

2. Implementation Steps of Case Study

Yin (2017) and others [2] point out that case study is a linear, iterative process typically consisting of six basic steps (see Figure 1 [Figure 1: see original paper] and Table 2). However, this does not mean that case study steps always proceed in sequence, because research design, data collection, and analysis are interconnected and constantly iterative processes that can be adjusted according to actual research conditions and conducted in a slightly different order [12].

Figure 1 Common Procedure for Case Study Implementation

Note: Modified from Yin, *Case Study: Design and Methods*

Table 2 General Steps for the Case Study

Step	Key Points	Purpose
1. Planning and Initiation	Grasp research direction, clarify applicable situations of case study, decide whether to conduct case study	Reduce risk of research failure due to inappropriate methods
2. Protocol Design	Conduct literature review, define and select cases (theoretical sampling), select research type, focus research topics and questions	Maintain theoretical and research flexibility, improve internal/external validity and reliability
3. Preparation	Formulate research protocol, implement pilot case study	Enhance research skills, standardize research behavior, optimize design, strengthen team coordination

Step	Key Points	Purpose
4. Data Collection	Obtain data from multiple sources, establish database, form evidence chain, treat online data cautiously	Adopt multiple perspectives, pool collective wisdom, synthesize evidence, strengthen research foundation
5. Data Analysis	Summarize and refine information, lock in relevant themes, test hypotheses, construct or verify theory	Enhance reliability and validity, confirm, extend, and refine hypotheses and theory
6. Report Writing	Clarify target readers, arrange report structure, review and revise	Meet reading needs, enhance article readability, further ensure article quality

Note: Referenced from Yin' s *Case Study: Design and Methods* and *Applications of Case Study Methods*, and Zheng Boxun & Huang Minping' s "Case Study in Field Research"

2.1 Step 1: Case Study Planning and Initiation

The core of this stage lies in identifying suitable situations for case study to determine whether to conduct one. Case study is more appropriate for three situations [2]: (1) when research questions are "How" and "Why" ; (2) when research subjects are not under the researcher' s control; and (3) when focusing on current social reality and phenomena. These three situations also distinguish case study methodology from other research methods [14].

First, determining the type of research question is the most important step in the planning and initiation stage. Case study is particularly suitable for answering "How" and "Why" questions. For example, if a researcher wants to know how a certain medical service action is carried out in a community and why it proceeds smoothly (or not), this question is suitable for case study. Generally, case study first answers the "How" question, and through the process of answering "How," it touches upon the underlying mechanisms of phenomena or problems, thereby answering "Why."This unique logical thinking also distinguishes case study from other research methods (such as questionnaire surveys and archival analysis) [3]. Second, the researcher' s minimal control over research subjects is an important characteristic that distinguishes case study from experimental methods. Third, case study' s focus on current social reality and phenomena distinguishes it from historical analysis methods.

2.2 Step 2: Case Study Protocol Design

Clarifying case study design is the most important 环节 in the systematic implementation of case study. A concise design includes three main procedures: "defining and selecting cases," "selecting case study type," and "using theory" (there is no fixed order among the three procedures). Meanwhile, to make the research protocol more complete, authors need to conduct necessary literature review before this process.

Procedure 1: Defining the "Case" to be Studied. In case study, the case is the main unit of analysis, generally a phenomenon occurring within bounded contexts [15] (time, place, people, scene, events, or other social phenomena). Defining the case ensures research coherence, consistency, and feasibility in terms of time and resources [12]. Researchers should set high standards for defining cases to focus their limited energy on critical, important, and interesting cases. Selecting cases containing typical, unique, extreme, deviant, heuristic, or socially influential events or themes (for example, the creation and efficacy verification of a new medical technique applicable to communities) is an important way to make case study attractive. If conducting case study on everyday phenomena lacking the above characteristics, researchers need to define a convincing theoretical framework to select cases, because such a theoretical framework already gives the case study a certain degree of particularity [13]. It should be noted that case selection should be based on theoretical needs of the research (theoretical sampling) rather than random selection.

Procedure 2: Selecting Case Study Design Type. Yin (2014) [13] shows that case study types can be distinguished by analytical level and number of cases. Analytical level refers to the level of object that the researcher analyzes. In primary healthcare, general practice, and primary care fields, analytical levels can be individual, organizational, or national, depending on researcher needs. Number of cases refers to how many cases the researcher will study. Based on analytical level and number of cases, four types of case study designs can be obtained [4]. **Type 1: Single-case, single-level design**—one case and only one analytical level (see specific example in Part 3 of this paper). **Type 2: Single-case, multi-level design**—one case with two or more analytical levels. **Type 3: Multiple-case, single-level design**—multiple cases but only one analytical level, which can be seen as replication of Type 1. **Type 4: Multiple-case, multi-level design**—multiple cases with two or more analytical levels, which can be seen as replication of Type 2. Researchers need to select one of these four case study design types based on characteristics of cases they are interested in.

Procedure 3: Using Theory in Case Study Design. Controversy has long existed about whether theory should be used in case study. Some scholars [16] argue that referencing existing theories in the initial stage of case study risks constraining the generation of new insights. Other scholars [17-19] argue that for inexperienced case study beginners, starting case study with some theory

is easier to implement, and using theory is an embodiment of case study rigor itself, making case study results more persuasive and more likely to be valuable to the research field. Starting a case study with hypothetical expectations based on certain theories while leaving room for new ideas is an appropriate approach [20]. In fact, factors such as literature review and learning experiences make it difficult for us to be unaffected by existing theories; recording our "flashes of inspiration" during literature reading and research design is a good way to leave space for new ideas.

2.3 Step 3: Case Study Preparation

Many people equate the case study implementation process with case data collection. In fact, perfect data collection stems from good preparatory work. Case study preparation includes three core components: "formulating a detailed research protocol," "conducting necessary training," and "implementing pilot case study" [2].

Component 1: Formulating a Detailed Research Protocol. The research protocol is an important means to improve research process reliability, aiming to guide researchers to better collect evidentiary data through each single case (complex multi-case studies can be decomposed into multiple single-case studies). Generally, a case study protocol should include four parts [2]: (1) Research overview, which should cover background information and project introduction of the case study; (2) Fieldwork procedures, mainly including presentation of introduction letters, subject protection procedures, data collection plans, and other memorandum items; (3) Specific research questions, referring to specific questions during data collection that point to research purposes and evidence that can answer these questions; and (4) Research report content index, including research outline, data presentation methods, results display forms, and researcher profiles. The above are what a case study protocol needs to cover; specific detailed protocols need to be adjusted timely according to the theme, nature, and content of specific cases (examples of research protocols can be found in Table 3.2 of Chapter 3 in Yin' s *Case Study: Design and Methods* (5th edition) .2).

Component 2: Conducting Necessary Training. Case study methodology requires researchers to master essential basic skills, establish correct values, and conduct targeted training and reinforcement for specific case studies. This includes: (1) Asking good questions and providing reasonable explanations; (2) Being good at capturing useful information and identifying valuable parts; (3) Maintaining an open and inclusive research attitude without being constrained by preconceptions, and not hesitating to adjust and modify research when needed; (4) Having an optimistic and positive exploratory spirit to calmly cope with setbacks during the research process; and (5) Abiding by research ethics and protecting research subjects. Meanwhile, training is also an opportunity to expose problems in case study design, examine research team capabilities, and timely remedy existing problems and deficiencies, which researchers should

pay attention to. Training schedule is not always linear and needs to be determined according to specific circumstances.

Component 3: Implementing Pilot Case Study. Pilot case study helps researchers optimize research protocols, improve details of required investigation data, and enhance cooperation efficiency among research team members. Especially for case study novices, such "rehearsal" can expose as many problems and difficulties as possible that may be encountered in actual research, playing an important role in smoothly conducting real case studies. Therefore, we recommend that case study novices implement pilot case studies rather than directly starting with real cases. Researchers can select appropriate pilot cases by comprehensively considering factors such as interviewees, data availability, geographical convenience, and similarity between pilot cases and real cases [2]. Pilot case study is best to have (especially for novices) but is not essential; whether to implement it can be determined according to research conditions and researcher capabilities.

2.4 Step 4: Case Study Data Collection

Yin emphasizes two aspects of case study data collection: first, four main principles of data collection; and second, six main channel sources for case study data collection [2]. Zheng Boxun and Huang Minping (2018) concisely categorize these six channel sources into archives, interviews, and observation [4]. This section mainly introduces Yin' s six data collection channel sources for readers' learning.

The four main principles of case study data collection include: (1) Using multiple sources of data. Practice has proven that excellent case studies should include as many sources of data as possible. Evidence from different channels that corroborates each other and points to the same research conclusion will make research conclusions more stable and reliable. If multiple types of data are not used, the advantages of case study as a research method will be difficult to reflect. It can be said that using multi-source data is a necessary condition to ensure case study rigor. (2) Establishing a case study database. Evidence presented by data should ultimately point to corresponding results; in other words, all results and conclusions in the final case study report submitted by researchers should have corresponding data support. Therefore, researchers need to establish a well-organized database for verification. (3) Forming a complete chain of evidence. A clear cross-reference relationship between data evidence and research results/conclusions is what we hope to establish as a chain of evidence. Meanwhile, researchers should pay attention to the logical rigor of the evidence chain. This also indicates that the formation of evidence chain needs to be based on the database. (4) Using online data cautiously. The development of internet information technology has greatly enriched researchers' information sources, but the rampant growth of information also brings threats and challenges to researchers in identifying authentic and reliable information. When using information from websites, researchers should always maintain a

skeptical and alert attitude and try to avoid using online data from unknown sources.

The most common channel sources for case study data collection (also called evidence sources) mainly include six types: documents, archival records, interviews, direct observation, participant observation, and physical artifacts. Documents have a wide range, including all existing written materials such as journals, reports, and newspapers, with advantages of being re-readable, providing exact information, and having broad coverage, but also have the disadvantage that document data may be affected by document authors' subjective biases and lack objectivity. Archival records belong to the category of documents in a sense, possessing the advantages and disadvantages of document data, but unlike general document data, archival records are more objective, precise, and quantitative (such as national census data, patient health information files), with stronger privacy and confidentiality, which may affect access to certain data. Interviews are the most common information acquisition method in various case studies, mainly including three types: in-depth interviews, focus group interviews, and survey interviews (not elaborated here). Direct observation is when researchers can objectively observe the case event itself and related social environments as a third party while the event is still ongoing. Different from direct observation, participant observation requires researchers to actually participate in the case being studied and become part of the case. For example, when conducting a case study related to community health services, you could play the role of a patient or become a volunteer at a community health center to obtain relevant information. Physical artifacts such as technical devices, tools, or instruments can be collected and observed as part of field visits.

2.5 Step 5: Case Study Data Analysis

Data analysis is often the slowest-progressing 环节 for researchers [2] and also the most difficult part to explain clearly [4]. Scholars such as Carney (1990) [21] and Zheng Boxun (2005) [4] provide general data analysis procedures including: (1) Data abstraction and transcription of interview, observation, and archival data, and organizing data according to research needs, such as sorting data in chronological order. (2) Data categorization. Carefully and repeatedly reading each paragraph, decomposing each paragraph into one or two small units for summarization and coding. Meanwhile, organizing the summarized small units into different categories according to content and nature (this process can be assisted by computer software such as NVivo). If relevant theories are used in the research, a category matrix can also be constructed based on theory to categorize information summarized from small units. (3) Locking in relevant themes. Deeply thinking about the internal connections of each category' s content, looking for logical relationships between data, and arranging and naming them. Meanwhile, paying attention to the fit between data and the overall theme, and correcting inappropriate parts. (4) Testing hypotheses. Having data themes gradually derived in previous steps dialogue with theoretical hypotheses

at the beginning of the research to understand how well information presented by data fits with hypotheses, as evidence for accepting or rejecting hypotheses. (5) Theory construction or verification. Integrating all information contexts, evidence, and theoretical propositions to construct new theories or verify existing theories, laying a foundation for future research. As we can also see from Figure 1, the interaction between data analysis and other steps is the most frequent, which requires authors to repeatedly dialogue with data to achieve profound understanding and grasp.

2.6 Step 6: Case Study Report Writing

"Clarifying target readers,""arranging report structure,""reviewing and revising," and "quality evaluation" should receive full attention when researchers write research reports [2]. Additionally, a general suggestion is: start writing as early as possible, rather than waiting until after data analysis is completed.

First, when starting to write research reports, researchers need to clarify the reading audience and be oriented toward readers' needs [2]. For researchers in primary healthcare, general practice, and primary care-related fields, the main target readers include academic experts and scholars, health policy makers, community health service workers, and project funders. For experts and scholars, the focus may be on theoretical innovation, new discoveries, literature review, and logical relationships between cases. For health policy makers, the important aspect is policy measures pointed to by the research. For community health service workers, they are more concerned with descriptions of case events and inspirations from cases. For project funders, the focus is on research input, academic value, and practical significance. When target readers are mainly non-academics, researchers should try to avoid professional terminology in writing.

Second, arrange the writing structure of the report. The writing structure of case study reports corresponds to research purposes (explanation, description, or exploration). Among the six writing structures proposed by Yin [2], three are applicable to case studies with all types of research purposes. Considering that target readers of this paper are case study novices, this section mainly introduces these three universal writing structures. The first is the linear structure following research questions or projects, that is, arranging the writing structure according to the general paper writing format of "introduction," "literature review,""research design,""case content,"and "results and conclusions"(referencable to articles by Huang Yang [22], Ouyang Taohua [23], and others), which is also the mainstream structure of currently published case study articles in journals. The second is the comparative structure that repeatedly narrates the same case event from different perspectives to show multiple realities. The third is arranging according to the chronological order of case event development. Overall, the article structure of case study reports is very flexible, aiming to clearly present the report to the reader audience.

Third, after completing the first draft of the report, have domain experts, target

readers, and case study participants review it, and make corresponding revisions based on feedback (in fact, almost all researchers do this before submission and during revision). This is consistent with requirements for other types of research paper writing, and although common, it is important.

Finally, researchers can evaluate case study quality by clarifying research reliability and validity [14]. Reliability refers to whether different scholars can obtain the same results by repeating the operational procedures reported in the study. Validity is divided into: construct validity, referring to the accuracy of operational measurement of concepts to be explored in the research; internal validity, referring to the strength of causal relationship between independent and dependent variables within the research; and external validity, referring to the explanatory power of research results for other phenomena (detailed content on reliability and validity can be found in Table 9-1 of Chapter 9 of *Empirical Methods in Organization and Management Research* (3rd edition) by Chen Xiaoping and Shen Wei -1). In fact, when researchers can conduct case studies according to the operational steps and key points covered in each step listed in this paper, the quality and rigor of their case studies are already guaranteed during the case study process.

3. An Example of a Rigorous Case Study

Huang Yang [22] and others conducted a single-case, single-level design case study with staff of S Street Community Health Service Center in D City as research subjects. By connecting theories such as "policy entrepreneur," "street-level bureaucrat," and "policy agenda setting," and collecting data from multiple sources through field investigation, they constructed a "multiple motivations—tool selection—hierarchical windows" analytical framework to narrate and deeply describe the case. Through this small-scale case, they bottom-up explained the logical deduction of "family doctor service policy innovation → primary healthcare service policy innovation → grassroots policy innovation,"thereby answering the proposition of how street-level bureaucrats promote policy innovation and advancing the localized construction of "street-level bureaucrat" theory. This research well covers the "rigor" elements in case study implementation steps. This paper uses this research as a concrete example to demonstrate how "rigor" is realized in case study operational steps (as shown in Table 3).

Table 3 The Step-Executed Exemplification of a Rigorous Case Study

Step	Implementation Example
Planning and Initiation	Research question: How do street-level bureaucrats promote policy innovation? (How question) Research subjects: Community health service center staff (not under researcher control) Focus: Family doctor service policy innovation (current hot social reality issue) → Suitable for case study method

Step	Implementation Example
Protocol Design	Conduct literature review around the core of research– "policy innovation" and "street-level bureaucrat" Conduct corresponding literature review based on main theoretical foundation– "street-level bureaucrat" theory Theoretically sample, define and select case: Select a grassroots healthcare service innovation case of a community health service center based on theoretical needs Single-case, single-level design: Study one case–S Street Community Health Service Center in B District, D City (single case), focusing on how staff of the center promote family doctor service policy, involving only individual level (single level) Connect theories such as "policy entrepreneur," "street-level bureaucrat," and "policy agenda setting"
Preparation	Select field investigation for data collection and formulate a data collection plan including investigation time (December 2018 to June 2019), location (S Street Community Health Service Center), subjects (relevant health commission leaders, community health center heads, and frontline staff), methods (reviewing relevant archival documents, participant observation, in-depth interviews, etc.), anonymization, project introduction, acknowledgments, etc. Researchers pre-familiarized themselves with and reviewed field investigation methods and academic conventions to be followed Pilot case study not mentioned
Data Collection	Followed B District Health Commission public health service supervision team to S Street Community Health Service Center multiple times for investigation (investigation), stayed at S Street Health Service Center as an intern for participant observation (observation), resident health records and family doctor statistical data reports (archival records), family doctor policy documents at various levels (policy documents), conducted in-depth interviews with relevant leaders and staff of B District Health Commission and administrative and medical staff of S Street Community Health Service Center (interviews), etc. Organized collected data categorically by data attributes (policy documents, archival records, interview records, observation records, public reports, promotional materials, etc.)

Step	Implementation Example
	Every question, viewpoint, result, and conclusion proposed by researchers is supported by corresponding reference materials, statistical data (see original Table 3), observation records, and interview records Primarily used first-hand materials such as government documents, archival records, investigation and interviews; used public reports and promotional materials sparingly
Data Analysis	On the basis of panoramic scanning and repeatedly reading collected data, abstracted key information and then deeply described the case (the original article depicts the full picture of the case by connecting these key information) Constructed "multiple motivations–tool selection–hierarchical windows" analytical framework to facilitate data categorization Explored motivations of S Street Community Health Service Center staff in promoting family doctor service policy innovation, the resource shortage–increasing demand dilemma faced by the health service center, S Street's "tournament system," and doctor-patient relationships Advanced localization of street-level bureaucrat theory and responded to the "street-level blind spot" in policy entrepreneur research
Report Writing	Targeted experts, scholars, and policy makers as readers, used appropriate professional terminology, and provided necessary explanations for professional terms such as "policy entrepreneur collective" and "street-level blind spot" Arranged overall article structure following the framework of "problem 提出–literature review–analytical framework–case introduction and deep description–conclusion and discussion" (using mainstream writing structure) In "further discussion," deepened research reliability through explaining case typicality, dialogue between theory and practice, logical deduction, etc.

Note: Example adapted from Huang Yang & Chen Tianxiang, "How Do Street-Level Bureaucrats Promote Policy Innovation?–An Innovative Case Study in Primary Healthcare Service Field"

4. Discussion

This paper targets its reader group at workers and researchers in primary healthcare, general practice, and primary health care fields. Therefore, when explaining case study operational steps, the examples and specific instances used are

all closely related to these fields to make it easier for target readers to understand. Additionally, this paper uses a specific example from primary healthcare service management field (Part 3 of this paper) to demonstrate how to use "family doctor service policy" as an entry point, employ case study to elevate a phenomenon (policy innovation measures of S Street in D City) to theoretical height ("street-level bureaucrat" theory), and achieve localized construction of "street-level bureaucrat" theory. Uncovering theories hidden behind phenomena is the greatest advantage of case study as a method, and we hope target readers can fully realize this and cultivate corresponding abilities in future research. However, this does not mean that case study is more suitable for studying management issues in China' s primary care environment; case study can be used for any issues in primary healthcare, general practice, and primary health care fields that meet case study applicability situations.

Case study is one of the more difficult scientific research methods, emphasizing multi-method data collection and posing comprehensive skill requirements for researchers: (1) Literature review: appropriately selecting databases and literature search strategies can not only help understand the latest developments in relevant issues through literature review but also further propose insightful new questions. (2) Case selection: ability to use theories that fit research questions and conduct theoretical sampling based on theory. (3) Observation: designing complete observation outlines and objectively recording observation data. (4) Questionnaire survey: designing scientific questionnaires and formulating reasonable investigation plans. (5) In-depth interview: designing practical interview outlines and mastering basic interview skills such as "gaining interviewees' trust" and "timely silence and response." (6) Quantitative analysis: being familiar with common statistical methods and proficiently using common statistical software such as SPSS and Stata. (7) Qualitative analysis: possessing necessary data coding abilities.

Learning of relevant resources can be roughly divided into three stages. **Stage 1:** Through reading Chen Chunhua & Liu Zhen's "Basic Methods of Case Study —A Review of Classic Literature," Zheng Boxun & Huang Minping' s Chapter 9 "Case Study in Field Research" in *Empirical Methods in Organization and Management Research* (3rd edition) edited by Chen Xiaoping & Shen Wei, and Sergi Fàbregues & Michael D Fetters' "Foundations of Case Study Research in Family Medicine and Community Health" (translated by Zhao Xinyue & Wang Yang), and Yin Robert K.' s *Case Study: Design and Methods* (5th edition, translated by Zhou Haitao & Shi Shaojie), achieve overall grasp of case study operational steps and processes and understand relevant professional terminology. **Stage 2:** Through reading John Gerring' s *Case Study: Principles and Practices* (translated by Huang Haitao et al.) to learn specialized skills such as case selection, and Yin Robert K.'s *Applications of Case Study Methods* (3rd edition, translated by Zhou Haitao & Xia Huanhuan) to gain deeper understanding of case study practical operations combined with specific examples. **Stage 3:** Through reading Li Ping et al.' s *Revisiting Case Study Methods: Theory and Examples* for comprehensive systematic review, deepening understanding and

learning about frontiers and future development directions of case study, and Huang Yang & Chen Tianxiang' s "How Do Street-Level Bureaucrats Promote Policy Innovation?—An Innovative Case Study in Primary Healthcare Service Field" and Ouyang Taohua et al.' s "Constructing a Governance System for Major Public Health Emergencies: A Case Study Based on Chinese Context" to learn their writing structures. The learning resource list is shown in Table 4 . In addition to the above books and papers, the online course "Case Study Methods and Thesis Writing Skills" taught by Teacher Li Shuoyan from Shanghai University also provides an excellent learning platform for researchers.

Table 4 List of Learning Resources Related to Case Study

Stage	Resources	Purpose
Stage 1	Chen Chunhua & Liu Zhen. "Basic Methods of Case Study —A Review of Classic Literature" Zheng Boxun & Huang Minping. "Case Study in Field Research" Sergi Fàbregues & Michael D Fetters. "Foundations of Case Study Research in Family Medicine and Community Health" (translated by Zhao Xinyue & Wang Yang) Yin Robert K. *Case Study: Design and Methods* (5th edition, translated by Zhou Haitao & Shi Shaojie)	Preliminary understanding of case study, understanding relevant professional terminology, grasping overall operational steps and processes
Stage 2	John Gerring. *Case Study: Principles and Practices* (translated by Huang Haitao, Liu Feng, Sun Fanglu) Yin Robert K. *Applications of Case Study Methods* (3rd edition, translated by Zhou Haitao & Xia Huanhuan)	Learning specialized skills, combining examples for deeper understanding

Stage	Resources	Purpose
Stage 3	Li Ping, Yang Zhengyin, Cao Yangfeng. *Revisiting Case Study Methods: Theory and Examples* Huang Yang & Chen Tianxiang. "How Do Street-Level Bureaucrats Promote Policy Innovation?—An Innovative Case Study in Primary Healthcare Service Field" Ouyang Taohua, Zheng Shuwen, Cheng Yang. "Constructing a Governance System for Major Public Health Emergencies: A Case Study Based on Chinese Context"	Systematic review, deepening understanding, learning writing structures, understanding frontiers and future development directions

Note: Summarized by the authors

Given the complexity of case study methodology itself and the staged nature of case study learning, we suggest that researchers: (1) Make adequate preparation and do not start rashly. (2) Strictly follow general procedures of case study. (3) Improve their case study skills and understanding in practice. Additionally, we find that case study papers published in journals in general practice and primary health care fields rarely show the complete case study process. An important reason is the restrictive requirements of journals on paper length, which makes it difficult for researchers to present a standard and rigorous case study (compared with CSSCI case study papers, the length is only about half). Therefore, we also suggest that these journals can provide broader display space for case studies.

5. Conclusion

Rigorous case study stems from strict adherence to standard implementation procedures. Producing responsible, rigorous, and high-quality case study results in primary healthcare, general practice, and primary care-related fields requires joint efforts from both researchers and journals.

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

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