Mapping Health-Seeking Behaviours and Influences in Rural China: A behavioural systems approach

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Mapping Health-Seeking Behaviours and Influences in Rural China: A behavioural systems approach

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This paper explores the complex terrain of health-seeking behaviours and choices in rural China, underpinned by systemic and behavioural influences. Existing literature has elucidated the urban-rural disparities in health resources and access to healthcare, which have profound implications for rural communities. Furthermore, these disparities are exacerbated by the intricate psychology of health-seeking behaviours, which are often impeded by factors such as cognitive abilities, emotional distress, health beliefs, and mistrust of the healthcare system. The study adopted a mixed methods research design to provide a comprehensive and nuanced understanding of these issues, integrating document analysis, semi-structured interviews, narrative stories, and surveys.

The research was conducted in rural Yunnan Province, selected for its high rural population and ethnic minority representation, offering a rich context to explore health-seeking behaviours. Data sources included healthcare policy documents, interviews with healthcare professionals, personal narrative diaries, and surveys of rural residents, providing a holistic perspective of the healthcare system, from policy to personal experience. The collected data was then subjected to a convergent design analysis involving independent analysis of qualitative and quantitative data sets and subsequent integration of findings. The integration leveraged the Behavioural Systems Mapping (BSM) framework, a novel method for synthesising evidence and visually representing complex systems.

The study identified intricate behavioural patterns and key influences on health-seeking behaviours and decisions in rural China. These included a lack of disease prevention, undervaluing freely available medical products and services, limited access to family doctor services, and a significant influence of cultural beliefs and social networks. The findings, embedded within the healthcare system's context, offer a valuable foundation for designing inclusive and sustainable health interventions.

KEYWORDS: rural healthcare, mixed-methods design, behavioural systems mapping, health-seeking behaviours, health choices, health interventions

RSD TOPIC(S): Cases & Practice, Health & Well-Being, Mapping & Modelling

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Introduction

This research presentation describes a context-mapping study conducted in rural China with the aim of systematically uncovering the patterns of health-seeking behaviours, choice outcomes, and influences that shape these behaviours in rural populations. This systematic and behavioural perspective is critical because minority groups, characterised by their socio-economic, ethnic, cultural, or rural backgrounds, often face significantly worse outcomes in terms of health seeking and disease treatment. On the one hand, the systematic urban-rural divide has led to disparities in health resources and access to healthcare for rural communities (Song et al., 2019). On the other hand, seeking health and making decisions for one’s health are inherently complex and challenging for these marginalised groups. The underlying factors include limited cognitive abilities, emotional distress, biased health beliefs, and mistrust of the healthcare system. Innovative approaches are therefore urgently required to reduce this inequality in health-seeking behaviours and health outcomes.

By delving deeper into the rural healthcare system's context, this study aimed to systematically map the health-related choices and behaviours of people living in rural areas. Both qualitative and quantitative data were gathered through a mixed-methods study, which included document analysis, semi-structured interviews, narrative stories, and surveys, and then combined for a more comprehensive interpretation. As proposed

by Creswell & Creswell (2018), the mixed-methods design offers a more holistic understanding of the problem to be studied. It is well suited to this context mapping study because it allows for a more complete representation of the healthcare system than either qualitative or quantitative data alone could offer.

The application of the mixed-methods design was executed in three phases. Firstly, both qualitative and quantitative data were collected. The former involved an examination of healthcare policy documents, semi-structured interviews with healthcare professionals, and narrative diaries of personal health-seeking experiences and decision-making processes. The latter included a survey of residents living in rural villages. The second phase was to analyse the two data sets separately and independently with the content analysis technique. Finally, the third phase comprised merging the two sets of results by directly comparing and displaying the integrated results and generated themes using thematic analysis techniques. Particularly, behavioural systems mapping (Hale et al., 2022) was used as an integration framework to jointly display the themes identified. This presentation focuses on introducing the development of the behavioural system mapping (BSM) of health behaviours and choices.

Research process

Data collection

The empirical studies were conducted between May and August 2020 in a town in Yunnan Province, China. This town was chosen due to its high rural population and ethnic minority representation. In order to systematically map health-related decisions and behaviours within the local healthcare system, the study employed the key principles from Brakema et al. (2021) for data collecting:

1. a system (community level) perspective
2. rapid, in-depth and iterative data collection and analysis
3. triangulation of data.

The study employed systematic data collection methods, including:

- Secondary data collection of healthcare policies and regulations from government sectors.
- Semi-structured interviews with healthcare professionals to gain insight into the real-world application of policies in their daily practices. Participants included two rural doctors with extensive experience and an online doctor with a significant digital following.
- Narrative diaries recording personal experiences and memories of seeking healthcare in rural clinics and town hospitals.
- Surveys designed to understand individuals' health-seeking behaviours and decisions developed from literature review findings and prior empirical studies.

These methods ensured a holistic view of the healthcare ecosystem from policy to personal experience.

Data analysis

After analysing the qualitative and quantitative results separately, the core step of the mixed methods approach is to integrate the results. The intent of the integration is to obtain different but complementary perspectives on the local healthcare system in order to systematically map rural residents' health choices and behaviours. The six-phase thematic analysis method from Braun and Clarke (2006) was used flexibly and iteratively during the process of generating themes.

1. Become familiar with the data
2. Generate initial codes
3. Search for themes
4. Review themes
5. Define themes
6. Write-up

In mixed methods design, the integration results are usually jointly displayed in the form of visual diagrams that combine both qualitative and quantitative results (Creswell & Clark, 2017). In this study, the Behavioural Systems Mapping (BSM) from Hale et al. (2022) was used as an integration framework to jointly display the themes identified. The BSM brings together systems mapping and behaviour change framework to

understand human behaviour in complex systems (Hale et al., 2022), which is suitable for this context mapping study to synthesise evidence and map the local healthcare system visually. The BSM involves making explicit three types of variables: actors, behaviours, and influences on behaviour. This study added choice as the fourth type of variable to the mapping. Although making a choice is itself a type of behaviour, it is separately mapped since choice behaviour is the main focus of this study. Causal relationships are depicted using a directed arrow between two variables, which represents that the first variable is assumed to effect a mechanistic change in the second variable. Constructing a behavioural system map in this way provides a powerful tool for understanding influences on health choices and behaviours.

The above qualitative and quantitative results were entered into a spreadsheet using the thematic analysis (Braun & Clarke, 2006) procedure:

- Firstly, variables were extracted and coded as actor, choice, behaviour or influence. If a variable was identified as coming from more than one source, this was recorded. For example, ‘providing family doctor service’ may extracted both from the health policy documents and interview notes of rural doctors. When required, variables were renamed to fit the conventions of behavioural systems mapping. The integration of qualitative and quantitative data helped to provide different but complementary perspectives on rural residents' health choices and behaviours. While the quantitative data provided information on the “what, when, and where” people are seeking healthcare, the qualitative data helped to answer the why and how questions related to health choices and behaviours.
- Secondly, variables that were critical in explaining the health choices were clustered. Variables that were recorded in more than one source would be prioritised, while those extracted but may not be closely linked with clusters logically may be excluded.
- Thirdly, the critical variables clustered were used to build the map using the online mapping platform Kumu (2023) for constructing causal loop diagrams. A line between two variables suggests that there is a causal connection between the two variables (i.e., one influences the other), whilst the arrow on the line indicates the direction of causality (i.e., A influences B). Note that this map does not use symbols to indicate polarity, as all causal relationships were positive. A

positive line indicates that as the amount of one variable changes, the amount of the other variable changes in the same direction. The influence variables were adapted to accommodate the positive causal relationship.

- Fourthly, the map was used to develop themes which described how the variables were connected. The themes paid particular attention to two key areas: the local healthcare system, which determined the availability, accessibility, and usability of healthcare facilities, and the daily health decisions and behaviours of the targeted group, including how they seek, manage and make trade-offs when facing illness.
- Finally, the variables were refined with multiple iterations between quantitative and qualitative data, and the system map was revised with multiple iterations.

Results

Figure 1 shows the behavioural systems map for the system of rural healthcare, encompassing both community-based healthcare and online health systems. In the map, 12 actors, 7 choices, 26 behaviours and 43 influences were identified. Actors are shown in large bold text. Choices are shown in black text boxes. Behaviours are shown in medium bold text. Influences on behaviour are shown in small italic text. Colour coding is used to show which actors perform which behaviours. Arrows are used to show positive causal links identified among choices, behaviours and influences.

Centring on the choices made by rural residents when they seek health, the following is a brief description of the map:

1. In rural areas, when residents become sick, they may choose not to seek medical treatment immediately but choose self-medication or no treatment at all. This decision is influenced by a variety of factors, including the quality of local primary care, individual characteristics such as gender, age, and literacy, health beliefs such as overconfidence in health status and perceived seriousness, and the lack of time and/or money.
2. In the case that the symptoms get worse and require hospitalisation, there is a trade-off between accessibility and affordability due to lower incomes and higher medical burdens for hospitalisation. The rural residents prefer to go to the

county hospital. The quality of care, equipment, fee reimbursement, and travel distance are all important factors that influence this decision.

3. Rural residents may choose to under-invest in health prevention due to both objective factors, such as low income and heavy medical burdens, and subjective factors, such as a lack of awareness about disease prevention.
4. The untreated diseases could also develop into chronic diseases, as they may choose to neglect or poorly manage chronic diseases due to limited access to family doctor services, cultural beliefs, and peer behaviours.
5. Despite free medical products and services being available in the local community healthcare system, such as free health check-ups for those over 65 and free nutritional supplements for children aged 0-6, rural residents may undervalue these free products and services due to a lack of awareness or minor obstacles such as reluctance to travel to the clinic.
6. In addition to public healthcare services, rural residents may also choose to seek private healthcare services or traditional Chinese medicine, influenced by low fees, cultural beliefs, and social networks.
7. For daily health information seeking, there are two sources of influence: one comes from local social networks, and the other comes from the internet. Despite the prevalence of mobile technologies, rural residents may neglect mobile health as an alternative to access to healthcare.

Summary

In summary, the empirical study and the use of behavioural system mapping uncover contextual insights about the health-seeking behaviours and decision outcomes of people living in rural areas of China. Their health behaviours and choice outcomes during the process of seeking medical treatment are intertwined by external medical system supply, social networks and cultural customs, as well as internal factors such as personal economic burden capacity, cognitive level, belief and attitude towards health. The common characteristics of these decision outcomes are twofold: firstly, a lack of emphasis on health leads to neglect of disease prevention, resulting in the worsening of the disease, even falling into a poverty trap caused by illness; secondly, a lack of attention to available medical products and services leads to the failure to obtain

effective medical services. These contextualised insights obtained through this system mapping will be used to inform the design of inclusive and sustainable health interventions in future research.

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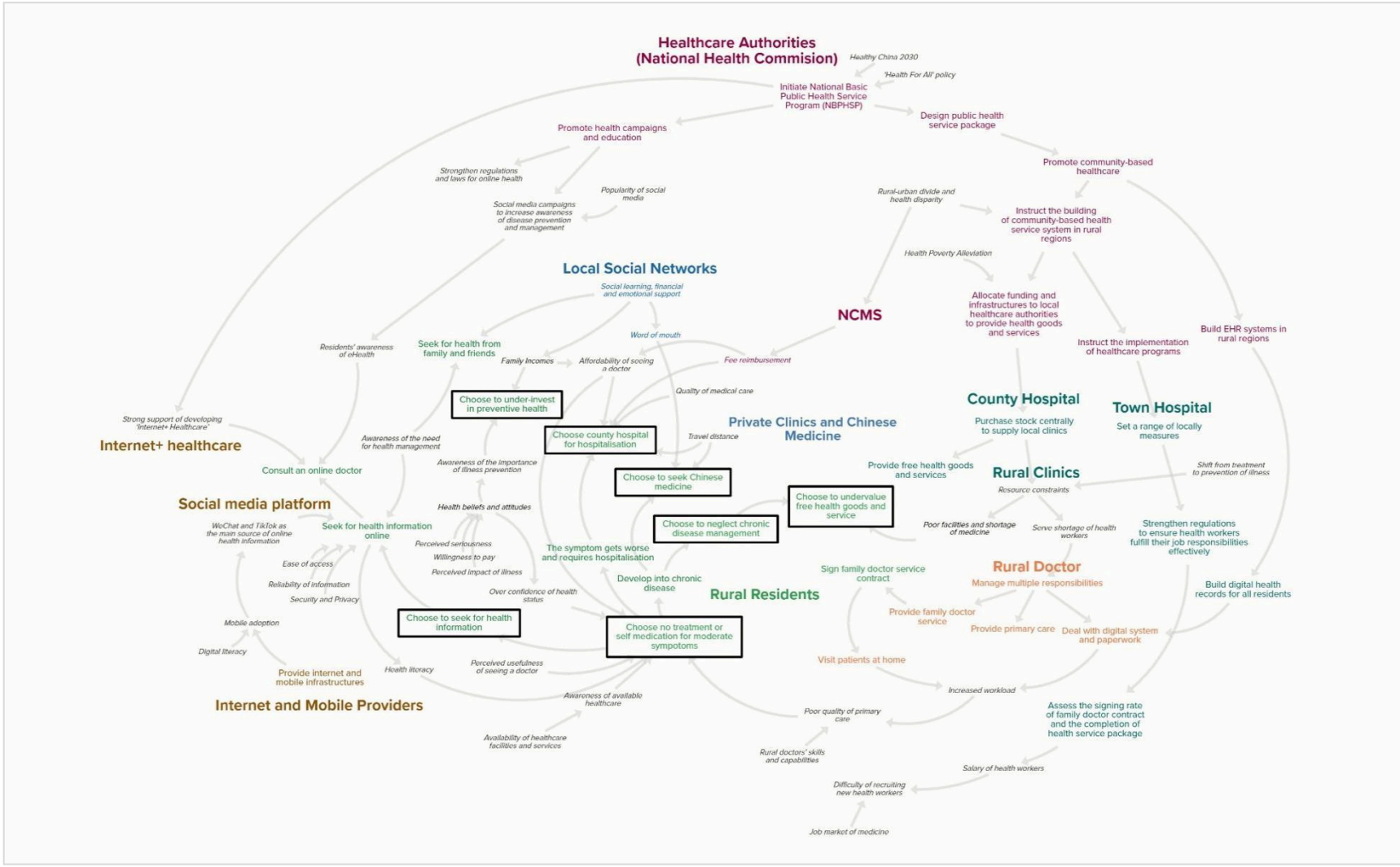

Figure 1. Behavioural system mapping for rural healthcare choice.