

## A Qualitative Study on the Trends and Demands of Time Bank Mutual Assistance Elderly Care Volunteer Services Based on Big Data Analysis

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### Abstract:

This research aims to gain a comprehensive understanding of the current status and future needs of nursing students' volunteer activities in the Time Bank mutual support elderly care model, use big data analysis, providing a reference for the project, "Nursing Students' Volunteering in Time Bank Mutual Support Elderly Care". The phenomenological research method was used to conduct semi-structured interviews with 12 nursing student volunteers, data were analyzed by the Colaizzi 7-step analysis method, data were statistically analyzed using SPSS28.0 software. The interviews yielded a total of 8 themes and 21 sub-themes: 1) Elderly care issues among nursing homes residents, such as feeling loneliness, needing companionship, having negative mindsets, and difficulty in health education. 2) Challenges among nursing student volunteers, including low enthusiasm, insufficient professional and communication skills. 3) Shortcomings in volunteer activities, such as lack of sustainability and limited activity variety. 4) Limited volunteer training courses and non-standardized formats. 5) The positive impact of participating in elderly care volunteer activities on both the elderly and nursing students. 6) The need for innovation in volunteer activities from a professional perspective and improvement of the reward mechanism. 7) The desire for comprehensive and integrated training courses. 8) The expectation of flexible and diverse training methods. The following conclusions are drawn from statistical analysis: Elderly residents in nursing homes require various forms of psychological care, with health education among them presenting particular challenges. Simultaneously, nursing student volunteers exhibit deficiencies in professional skills, communication abilities, and enthusiasm, highlighting a pressing need for comprehensive training. In order to promote the official implementation of the Time Bank mutual support elderly care model in the local area, it is suggested to enhance the level of nursing student volunteer services through specialized training and improve the points-based reward system.

**Keywords:** nursing students, time bank, mutual pension, qualitative research, dig data

### INTRODUCTION

China has been in an aging society for more than 20 years. With the continuous aggravation of population aging, China is about to enter moderately aging society [1] and will rapidly move towards a severely aging society and an extremely aging society [2, 3], herald a pressing need for strategic interventions. However, investigations have unveiled several challenges within Chinese eldercare institutions: deficiencies in the professional expertise of caretakers, inconsistent levels of care quality, and high turnover rates [4-6]. Moreover, volunteer services in eldercare struggle with insufficient participant numbers, low enthusiasm, fluid team dynamics, service mismatches with actual elder needs, subpar service quality, inadequate organizational management, and a lack of incentivizing measures, as well as inadequate support across all fronts [7-11]. As such, amidst the substantial caregiving pressures faced by eldercare facilities, mobilizing volunteers from outside these institutions stands as a promising strategy to alleviate such strains. The time bank mutual support elderly care model, functioning through the deferred payment of labor through "stored service time", holds the potential to significantly boost volunteer engagement and attract a broader demographic to participate in this form of service, thus offering a novel avenue to ease the burden of eldercare. Nursing students, with their distinct professional educational background within nursing institutions, possess a unique advantage in providing specialized caregiving services compared to non-medical volunteers. In light of this observation, this study, through in-depth interviews with nursing student volunteers, delves into their current status and requirements in participating in the time bank mutual support elderly care volunteer activities. By big data analyzing and extracting pertinent themes from these interactions, this research serves as a foundational reference for formulating the Training Program for Nursing Students' Participation in Time Bank Mutual Support Elderly Care Volunteer Services, lay the foundation for the

next phase of "volunteer service for the elderly by students" and "design and development of a volunteer service platform the elderly", with the ultimate aim of propelling the formal implementation of the time bank mutual support elderly care model within the local community.

## **SUBJECT AND METHODOLOGY**

### **Research Subjects**

In this study, a purposive sampling method was employed to select nursing students enrolled in our city who had engaged in eldercare volunteer services from April to July 2022 as interview subjects. Inclusion criteria included: participation in eldercare volunteer services at least twice, enrollment in a nursing program, informed consent, and willingness to participate in interviews. Exclusion criteria encompassed individuals who withdrew for various reasons. The sample size was determined based on informational saturation. Ultimately, 12 nursing student volunteers were included in this study as interviewees, all of whom volunteered and signed informed consent forms. To safeguard the privacy of the interviewees, their identities were represented by numbers. This research has obtained approval from the institutional ethics committee (Approval No. 2022ER294-1).

### **Methodology**

Utilizing a phenomenological research approach within qualitative research, semi-structured, in-depth interviews were conducted.

#### ***Development of interview guidelines***

By integrating a literature review and aligning with the interview objectives, interview guidelines were crafted. Initially, pre-interviews were conducted with two nursing student volunteers. Subsequently, incorporating feedback from the research team discussions, the final interview guidelines were established.

(1) What were the main activities involved in the eldercare volunteer services you have previously participated in? (2) What challenges have you encountered during your volunteer service? (3) Drawing from your past volunteer experiences and nursing knowledge, what kinds of volunteer services do you think you could provide for the elderly in the "Time Bank Mutual Support Elderly Care" model? (If nursing students require clarification on the "Time Bank Mutual Support Elderly Care" model, please provide an explanation before they respond.) (4) What rewards or incentives do you hope to gain from participating in the "Time Bank Mutual Support Elderly Care" volunteer activities? (5) If given the opportunity to undergo training for eldercare volunteer services, what specific areas of training would you wish to receive? What type of training methodology would you prefer?

#### ***Data collection process***

Prior to the formal interviews, contact was established with the interviewees to confirm the interview location and time. The interviews were conducted within a timeframe of 30 to 60 minutes at the office within the medical school. The researcher provides the respondent with a detailed introduction to the purpose and content of the study, informed them of their voluntary participation and the right to withdraw at any point, assured them of strict confidentiality regarding personal information, and obtained their signed informed consent for the interview. During the interviews, with the interviewees' consent, a mobile recording software was used to record the entire interview process, with simultaneous notation of non-verbal cues from the interviewees, ensuring the comprehensive documentation of the interview content.

#### ***Data compilation and analysis***

Within 24 hours of each interview conclusion, two researchers promptly transcribed the interview recordings into textual data. The Colaizzi method was employed to organize and analyze the interview data [12, 13]. The specific steps involved were as follows: (1) The researchers meticulously and repeatedly reviewed the raw interview data to gain a holistic understanding of the information provided by the interviewees. (2) Each word and sentence of the original data was meticulously scrutinized to identify and mark significant statements relevant to the research questions. (3) Distillation and encoding of recurring content were conducted. (4) The encoded content was organized, categorized, and structured into a thematic outline. (5) A detailed description was formulated based on the study content and thematic outline, with the ability to extract the interviewees' original statements. (6) Similar

viewpoints were summarized, distilled, and used to construct thematic concepts. (7) The obtained results were presented back to the interviewees for validation and confirmation.

### ***Quality control***

(1) Prior to the interviews, prearrangements were made with the interviewees, elucidating the purpose of the interviews and confirming the time and location. (2) During the interviews, the researchers flexibly adjusted the sequence of questions based on the actual circumstances, employing techniques such as repetition, clarification, and probing, while also being attentive to the interviewees' non-verbal cues. (3) Within 24 hours of the interview's conclusion, the interview data was transcribed, organized, and promptly shared with the interviewees to verify the accuracy of the interview information.

## **RESULTS**

### **General Information of Interview Participants**

Twelve nursing student volunteers participated in this interview, identified by the labels “N1 to N12”. Please refer to Table 1 for their general information details.

Table 1. General information of nursing student volunteers

No.	Gender	Age	Grade	Team roles	Frequency of participation in elderly care voluntary service
N1	Female	20	Sophomore year	Deputy team leader	2
N2	Female	21	Junior year	Group leader	4
N3	Female	21	Junior year	Group leader	4
N4	Female	20	Sophomore year	Member	3
N5	Male	21	Sophomore year	Member	2
N6	Female	21	Junior year	Deputy team leader	6
N7	Female	20	Sophomore year	Member	2
N8	Female	20	Junior year	Group leader	4
N9	Female	20	Sophomore year	Member	2
N10	Female	21	Junior year	Team leader	4
N11	Female	21	Junior year	Group leader	4
N12	Female	21	Sophomore year	Deputy team leader	2

### **Summarization of Interview Topics**

Eight main themes and 21 sub-themes were identified in this interview:

#### ***Health issues among elderly residents in nursing homes***

##### **Feeling loneliness and seeking companionship**

Elderly individuals residing in nursing homes often experience feelings of loneliness due to changes in their environment and separation from family members. These feelings of loneliness persist throughout their stay in the nursing home [14], making companionship a vital need for them. Participant N2 expressed, “Because most elderly individuals feel quite lonely inside, they truly appreciate having someone to chat with.” Participant N3 noted, “Elderly individuals need volunteer activities because they are too lonely. When we visit, they are genuinely happy and even ask us to come more often.” Participant N5 shared, “Elderly individuals in nursing homes appear quite lonely. While their basic needs are met, they require companionship as there are few visits from family members. They are very welcoming of our presence.” Participant N7 reflected, “They greatly enjoy engaging in conversations and interactions with us, indicating they are quite lonely.”

##### **Elderly individuals with negative mindsets**

Due to physiological aging, changes in social roles, and reduced social interactions, elderly individuals often exhibit unhealthy psychological states such as complaints, feelings of inferiority, loss, and a lack of self-worth. It is essential to promptly recognize these issues and implement appropriate guidance measures. Participant N1 remarked, “Not all elderly individuals need your assistance. Some of them refuse to accept aging, claim self-

sufficiency, and advise us to focus on our own tasks.” Participant N3 observed, “They often have numerous complaints, whether about their children, accommodations, or the nursing home environment.” Participant N7 noted, “They may harbor feelings of inferiority, a common phenomenon where they resist social interactions, possibly due to feeling old and unwanted by their children, resulting in being sent to a nursing home, which they might perceive as a burden.”

#### Challenges in health education

Elderly individuals in nursing homes often face issues such as hearing loss and cognitive decline, posing significant challenges during health education sessions. Additionally, elderly individuals tend to have lower receptivity to new information, making it difficult to achieve the desired outcomes in health education activities. Participant N1 commented, “The majority of individuals have age-related cognitive impairments, making it challenging as they often cannot remember the information given due to their illnesses. It's quite frustrating.” Participant N2 highlighted, “Some elderly individuals in nursing homes have difficulties hearing due to their own reasons, leading to significant communication challenges.” Participant N11 shared, “When we conduct health education sessions, some elderly individuals are reluctant to listen and find it challenging to comprehend lengthy textual information. They may prefer promotional materials with images and concise content.”

#### *Challenges faced by nursing student volunteers*

##### Inadequate enthusiasm

Each volunteer may have different initial motivations for participating in volunteer activities. Some students engage in these activities half-heartedly, failing to truly provide care and assistance to the elderly. Participant N3 remarked, “Every team has students who are just going through the motions. I believe everyone should genuinely dedicate themselves to this cause, rather than simply aiming for credits or volunteer hours.” Participant N10 expressed, “I feel like we are only focused on completing tasks and preparing programs based on our own ideas. Some programs are not organized effectively, and the performances do not effectively help the elderly individuals we are trying to assist.”

##### Lack of professional competence

Nursing student volunteers often lack familiarity with professional knowledge and practical skills. Coupled with their limited experience, they may struggle to provide satisfactory answers to the issues faced by the elderly individuals. Participant N2 shared, “During a health check-up event where we conducted blood sugar tests, I followed the instructions from the textbook, but I still found it quite challenging.” Participant N8 mentioned, “The issues they present are never-ending, and we are cautious about offering advice because of lacking clinical experience.” Participant N10 expressed, “I feel my foundational knowledge is not sufficiently solid, and I lack a deep understanding of the basic conditions of the elderly. Hence, I am hesitant to casually advise them on what they should do.”

##### Lack of communication skills

Effective volunteer service heavily relies on good communication between volunteers and the elderly. However, nursing student volunteers still need to enhance their communication abilities. Participant N1 lamented, “My communication skills are not strong, and it feels like I lack the necessary abilities. I believe I need to change the way I communicate with the elderly.” Participant N9 pointed out, “Speaking in Mandarin is very disconnected, and those elderly individuals may not fully understand.” Participant N10 shared, “Communicating with them is quite challenging. I am not very familiar with how to communicate with the elderly; on my first visit, I felt a bit hesitant to engage in conversation with them.”

#### *Shortcomings in volunteer activities*

##### Lack of sustainability

The temporality and uncertainty surrounding the timing and locations of volunteer activities have hindered the establishment of a lasting mechanism for volunteer service. Participant N1 expressed, “The volunteer service team operates like a conveyor belt; after visiting a nursing home or meeting the elderly individuals once, we may not return next time.” Participant N6 shared, “I aspire to build very friendly relationships with them, but the frequency

of volunteer activities is low, and each time we visit a different nursing home.” Participant N12 reflected, “I feel that with every brief interaction with the elderly, they are deeply moved, but shortly after, we face separation. This dynamic does not foster stability in our relationships.”

#### Limited activity variety

Nursing student volunteers primarily engage in recreational forms of volunteer activities, with activities being quite homogeneous in both content and format, failing to distinguish themselves from other non-medical student volunteers’ service efforts. Participant N2 remarked, “Every visit to the nursing home involves the same recreational activities such as sketch performances, dances, and songs.” Participant N3 described, “We perform for them, deliver speeches, interact with them, and finally take commemorative photos together.” Participant N10 stated, “Our main focus is on performances to bring them joy, listening to them sing, or simply chatting with them.” Participant N12 elaborated, “For instance, singing, playing games, promoting knowledge related to the national history, and watching documentaries commemorating the national founding anniversary.”

#### *Insufficiency in volunteer training*

##### Limited volunteer training courses

Nursing student volunteers have limited access to specialized volunteer service training opportunities, with some respondents indicating that while they have studied related content in their regular coursework, they have not received dedicated volunteer training. Participant N1 remarked, “There are very few specific training sessions for volunteer service; I only know that the school club has a spring emergency aid society that provides first aid training.” Participant N6 shared, “We have studied community nursing and elderly care, mainly focusing on elderly care, but there have been no specific training sessions tailored for eldercare volunteer services.” Participant N11 noted, “As medical students, we possess general knowledge in this area, but there has been no specific training for engaging in volunteer services for the elderly.”

##### Non-standardized training formats

Some participants mentioned that volunteer training content is typically disseminated through experiential sharing during meetings or through informational brochures distributed online or in print, with formats lacking standardization and stringent requirements. Participant N3 stated, “We usually invite experienced senior students who have led teams before to share their insights with us.” Participant N12 shared, “Before conducting activities, we hold a meeting where experienced individuals can share their knowledge; I also personally search online for information on elderly care.”

#### *The significance of participating in elder care volunteer activities*

##### Bringing joy to the elderly

Volunteer activities bring the vitality of young volunteers to the elderly, providing them with care, happiness, and emotional support. Participant N8 expressed, “We are lively and cheerful, so we hope to interact with them and bring them joy.” Participant N10 stated, “Elderly people enjoy being around young individuals as it brings them energy, so they are very willing to have us around.” Participant N11 remarked, “Their peers are all elderly individuals, while we young people possess more vitality.”

##### Enhancing clinical experience

Nursing student volunteers have the opportunity to assess their grasp of nursing knowledge and skills during volunteer services, laying a foundation for future clinical internships and work, as well as fostering a desire to engage in elderly care. Participant N1 reflected, “Observing the conditions in nursing homes makes me review how teachers taught in the past and compare it with real-life situations, reinforcing my knowledge. When faced with unclear issues, I need to revisit textbooks.” Participant N3 mentioned, “Visiting nursing facilities allows for a better understanding of the physical and mental states of the elderly, engaging in more interactions with them. This may lead to a more relaxed clinical practice in the future, paving the way for future internships and work.” Participant N6 added, “Engaging with these individuals in advance provides significant support for our future work in elderly services.” Participant N11 concluded, “I believe that participating in volunteer service may serve as a reference for future work, especially in clinical settings where care and empathy for patients are essential.”

### ***Recommendations for improving volunteer services***

#### **Implementing professional volunteer services**

Nursing student volunteers equipped with professional theoretical knowledge and nursing skills can leverage their strengths to provide elderly individuals with professional volunteer services. Participant N3 suggested, “I believe there is a need to introduce professional services, starting from the most basic seven-step handwashing technique, then explaining some fundamental disease knowledge and precautions to them.” Participant N6 noted, “Given their advanced age, they tend to prioritize health preservation; providing them with insights into professional knowledge could potentially reduce instances of deception.” Participant N11 emphasized, “I think knowledge in first aid is crucial. The dissemination of theoretical insights into common illnesses among the elderly is essential.”

#### **Innovating volunteer service formats**

To enhance the quality of volunteer services, volunteers should adopt approaches that are easily embraced by the elderly, providing more personalized volunteer services. Participant N1 suggested, “Using engaging and relatable formats to convey information they particularly need, such as tips on eating, walking, and activities, along with brief explanations on the common diseases of each elderly person.” Participant N5 proposed, “Starting with a general presentation, volunteers can then offer personalized explanations to different elderly individuals.” Participant N6 recommended, “We should leverage our strengths and present health education through dramatic performances for them.” Participant N10 expressed, “I believe health education doesn’t have to be formal; it could be delivered in ways the elderly enjoy, avoiding overly formal language to make it more appealing to them.”

#### **Enhancing the reward mechanism for volunteer services**

It is imperative to refine the reward mechanism for volunteer services, whether through material rewards or spiritual acknowledgments. These forms of recognition serve as affirmations of volunteer efforts and act as incentives for more individuals to engage in volunteerism over the long term. Participant N2 suggested, “Currently, university students greatly value volunteer service hours and prestigious titles for outstanding volunteers, which could contribute to academic achievements. Additional rewards could include small prizes, with better rewards available for longer service durations.” Participant N5 proposed, “Rewarding an equivalent volunteer time is essential; after all, a time bank can store time, allowing individuals to accumulate hours of service for themselves. Occasional small gifts could also be distributed to give volunteers a sense of accomplishment and honor.”

### ***Anticipating comprehensive training content***

#### **Strengthening professional knowledge training**

Given the varying academic levels among volunteers, their grasp of theoretical knowledge differs as well. Lower-grade student volunteers may struggle to address the health issues of the elderly. Therefore, it is essential to organize volunteers for relevant professional knowledge training based on the caregiving needs and health concerns of the elderly. Participant N3 remarked, “Even third-year students may not have a thorough understanding, let alone first or second-year students. Profound expertise is certainly essential to tackle the array of issues they present.” Participant N10 expressed, “I believe there is a significant deficiency in professional knowledge. Once exams are over, many individuals are likely to forget what they’ve learned.”

#### **Strengthening first aid skills training**

It is crucial for volunteers to possess first aid skills. Some respondents have mentioned that conducting first aid training before activities can help solidify what has been learned in the classroom. Participant N2 emphasized, “Emphasizing first aid training can deepen my theoretical knowledge and practical skills.” Participant N4 highlighted, “I believe it is essential to receive first aid training. In comparison to foreign countries, there is a significant lack of awareness regarding first aid knowledge in China. As medical students, we can contribute to promoting first aid education.” Participant N10 expressed, “In class, teachers may not always be able to attend to each student, leading to variations in each individual’s techniques. At times, it’s unclear where mistakes in our procedures lie.”



#### Emphasizing communication skills training

In eldercare facilities, there is a significant population of elderly individuals, some of whom experience varying degrees of hearing impairments. Coupled with the potential lack of appropriate communication skills among volunteers, this can present challenges in interacting with the elderly. Participant N7 stated, “Communication is paramount. The content in textbooks tends to be formal, making it somewhat difficult to translate into easily understandable language.” Participant N8 shared, “I feel reserved at times, afraid of saying the wrong things or bringing up topics that may upset them.” Participant N9 expressed, “Communication poses significant challenges, especially with elderly individuals experiencing hearing impairments or dementia. Volunteers may find it challenging to communicate effectively in such cases.”

#### Enhancing professionalism and safety education training

Some volunteers engage in volunteer activities solely to earn credits without making meaningful contributions. There is a need to bolster the enhancement of volunteer professionalism. Additionally, it is essential to reinforce volunteer awareness of safety measures and prompt reporting of any issues. Participant N5 remarked, “Some volunteers simply spend time on their phones without engaging in conversations with elderly individuals, treating it solely as a platform to accumulate volunteer hours.” Participant N6 emphasized, “It is crucial to be warm and courteous. Some elderly individuals may exhibit certain characteristics of old age, but it is important not to look down upon them.” Participant N11 advised, “In cases where some elderly individuals may not be in the best mental state, if you find communication challenging, it's best not to handle the situation alone.”

#### *Anticipating flexible and diverse training methods*

A blend of online and offline training, with a preference for in-person sessions

Due to the impact of the COVID-19 pandemic, universities swiftly adopted online teaching methods. However, online training demands a high level of self-discipline from students, with the effectiveness of online classes falling short compared to in-person instruction. Participant N1 expressed, “Due to the pandemic, there's been an overflow of online learning, and I am not particularly fond of it.” Participant N9 noted, “Online learning requires a high degree of self-discipline. Personally, I easily get distracted during online classes, which affects my efficiency.” Participant N10 highlighted, “Tasks that require hands-on experience are best suited for in-person learning, while subjects related to the psyche and mental realms could benefit from a combination of online and offline approaches.”

#### Diversification of teaching methods

Some participants indicated that utilizing methods such as scenario simulations and role-playing can better engage students, thus enhancing learning effectiveness. Participant N1 suggested, “Increasing interactive elements, where real-life practice in communication, such as role-playing, is highly beneficial.” Participant N2 emphasized, “It's not sufficient for the teacher to solely lecture; a combination of various methods like practical demonstrations, role-playing, and group discussions should be employed. This variety keeps us engaged and interested in the learning process.”

### **DISCUSSION**

#### **Strengthening Training to Enhance the Service Level of Nursing Student Volunteers in Time Banks**

This study reveals that although nursing student volunteers have undergone coursework and operational training at schools, they have not engaged in practical applications. Consequently, their professional knowledge has not fully internalized, particularly evident in health education, leading to elderly individuals distrusting them and potentially causing adverse consequences due to misinformation. Apart from lacking in professional knowledge, volunteers also exhibit deficiencies in communication skills, which affect the effectiveness of volunteer services. In foreign time banks, training is utilized to enhance volunteer caregiving abilities to meet the care needs of the elderly population. Conversely, in domestic time banks, the absence of appropriate training confines volunteer services to daily life assistance [15]. Therefore, it is recommended that under the time bank model, a structured training program be established to provide nursing student volunteers with training in professional knowledge, operational skills, and communication techniques, aiming to elevate the service level of volunteers. Additionally,

assessments of the training content for nursing student volunteers are necessary to ensure service quality. Within the time bank model, volunteers can select tasks based on their areas of expertise through an assignment system, which can help address shortcomings during service delivery and enhance the overall quality of volunteer services.

### **Integrating Extracurricular Activities and Enhancing the Reward Mechanism for Nursing Student Volunteers in Time Banks**

Research by Mou Yanli and others [9] reveals that volunteers generally perceive the reward mechanism to be imperfect, leading to a decrease in their enthusiasm for participating in volunteer services. Interviews conducted during this study also indicate that nursing student volunteers hope to receive certain rewards after engaging in volunteer activities, whether in the form of material or spiritual rewards. These rewards serve as a form of support and praise for volunteer behavior, motivating volunteers to engage in long-term volunteer services. The time bank mutual aid elder care model quantifies, stores, and exchanges volunteer service hours [16], facilitating the continual provision of voluntary services. In this study, it is proposed to incentivize students to participate in time bank mutual aid elder care volunteer services by exchanging “extracurricular activity points for service hours”. Given that time banks have not yet been established in the Nanchong area, a commitment is made to store the service hours acquired by students for an extended period, enabling the exchange of service hours once time banks are officially launched in the local area.

### **CONCLUSION**

This study, conducted through in-depth semi-structured interviews with 12 nursing student volunteers, identified challenges faced by elderly individuals in care facilities, including a multitude of care needs and difficulties in health education. Furthermore, issues were noted within the nursing student volunteers themselves, such as insufficient levels of professionalism, lack of communication skills, and low service enthusiasm, indicating a strong need for training. Therefore, it is imperative to construct a Training Program for Nursing student volunteers Participating in Time Bank Mutual Aid Elder Care Volunteer Services based on the interview findings, enriching the caregiving content and enhancing the service level of nursing student volunteers. Additionally, the establishment and enhancement of reward mechanisms such as credit exchange are crucial to fully motivate nursing student volunteers to engage in volunteer services, facilitating the smooth implementation of the “Nursing Student Volunteers Participating in Time Bank Mutual Aid Elder Care Volunteer Services” project. This study solely focused on nursing student volunteers; however, considering the substantial potential of the younger generation in the society to become elder care volunteers, future research could systematically broaden the scope of interviews, providing a more comprehensive reference for the official launch of time banks in Nanchong.

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