Operational Mechanism of a Medical Public Welfare Caregiver Platform under the OMO Model

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Abstract: Against the backdrop of deepening population aging in China and the continuous expansion of the disabled and semi-disabled elderly population, the demand for professional medical nursing and rehabilitation care services is becoming increasingly urgent. However, traditional medical public welfare models generally suffer from problems such as insufficient professional competence of caregivers, low efficiency in supply–demand matching, and lack of effective volunteer incentives. Based on the practice of the "Shared Care Network" project, this study adopts a mixed-method approach combining questionnaire survey (N = 241) and field interviews to analyze market demand and key pain points in medical public welfare caregiving services. On this basis, an Online-Merge-Offline (OMO) operational solution is proposed. The findings show that 79.3% of respondents believe that caregiver skill levels are uneven, 92% are willing to book services through online platforms, and 70.1% of young people aged 18–30 recognize the public welfare caregiver model. The OMO model forms a closed-loop system through online intelligent matching, offline service delivery, training and certification, and supervision with feedback, which effectively alleviates information asymmetry between supply and demand. In addition, the "service-for-service" incentive mechanism proves feasible in the context of medical public welfare caregiving, though its effectiveness depends on diversified redemption channels and multi-party resource coordination. This study provides a replicable operational framework for the digitalization and professionalization of medical public welfare services.

Keywords: Medical Public Welfare; Caregivers; OMO Model; Operational Mechanism; Volunteer Service

1. Introduction

1.1 Research Background

According to data released by China's National Working Commission on Aging, by the end of 2024, the population aged 60 and above in China had exceeded 310 million, accounting for 22% of the total population[1]. The number of disabled and semi-disabled elderly individuals continues to grow. Meanwhile, family structures are becoming smaller and more fragmented, with a growing prevalence of empty-nest households. In particular, one-child families face significant caregiving pressure, making it difficult for family members to provide long-term, stable, and professional home care.

Given the limited overall medical resources, public medical institutions are primarily responsible for diagnosis and treatment, while extended services such as post-operative rehabilitation, chronic disease management, and daily care remain insufficient. This has led to increasingly prominent supply–demand imbalances. At the policy level, the "Healthy China 2030" strategy emphasizes the integration of healthcare and elderly care services and promotes the development of related service systems. In recent years, a series of policies have provided institutional support for the integration of online and offline medical public welfare service models.

However, in practice, significant shortcomings remain. Caregiver training is inadequate, and professional knowledge and operational skills lag behind actual needs. Information asymmetry persists, resulting in inefficient service matching. The service process lacks effective supervision, leading to unstable quality. In addition, volunteers often receive little recognition or reward, resulting in weak participation motivation. These issues collectively hinder the large-scale and standardized development of medical public welfare services.

1.2 Literature Review

Through a systematic review of the literature, this study finds that existing research mainly focuses on three dimensions: the professional competence and quality of caregivers on the supply side, the efficiency of supply–demand matching, and the sustainability of volunteer service from the perspective of incentive mechanisms.

From the supply-side perspective, previous studies have demonstrated that shortages of caregiver resources, uneven professional competence, and severe trust deficits are widely reported [2]. Similar issues are observed in the integration of medical and elderly care, including insufficient professional personnel and inadequate resource integration, as well as non-standardized service management[3]. Some scholars have proposed standardized service specifications for elderly care workers specializing in traditional Chinese medicine, emphasizing that standardization is a key pathway to improving caregiver professionalism[4]. These deficiencies directly constrain the quality and accessibility of caregiving services.

In terms of demand matching, surveys indicate that the majority of users are willing to book caregiver services through online platforms, suggesting that traditional offline models are inefficient in connecting supply and demand. Digital platforms can integrate resources across elderly care, domestic services, caregiving, and volunteer services to enable intelligent matching and reduce resource fragmentation and mismatches[5]. Practical cases, such as the "Internet + Caregiver" platform in Ningbo, have demonstrated the feasibility of a closed-loop model combining online booking and offline service delivery[6]. Additionally, studies on home-based elderly populations show that demand for healthcare services increases with age, further highlighting the urgency of improving supply–demand matching[7].

Regarding incentive mechanisms, the "time bank" model enables the exchange of labor time across different periods in return for future services, providing a useful reference for the "service-for-service" mechanism in public welfare caregiving. However, this model faces challenges such as low public awareness, insufficient digital support, and incomplete redemption mechanisms [8]. Some studies suggest that insurance companies or platform operators could establish professional caregiver databases and introduce multi-party collaboration to enrich redemption channels[9]. Research on digital wellbeing packages for healthcare workers indicates that long-term psychological support and organizational resilience are critical for sustaining participation, offering insights for designing caregiver incentive systems[10].

Overall, existing studies tend to focus on single-actor governance and lack a multi-stakeholder collaborative framework involving governments, hospitals, public welfare organizations, and social volunteers. Research integrating the time bank model with medical public welfare caregiving and further embedding it into the OMO framework remains limited. Studies specifically addressing the empowerment of caregiving platform operations through the OMO model are even rarer, which provides a valuable research opportunity for this study.

1.3 Research Objectives and Contributions

This study takes the "Shared Care Network" project as a case to systematically identify key pain points in current medical public welfare caregiving services and to design an OMO-based operational model that addresses these issues.

By embedding time bank theory into the emerging context of medical public welfare caregiving and integrating it with the OMO model, this study explores whether such a mechanism can effectively address problems such as insufficient volunteer incentives, thereby extending the application scope of time bank theory. In addition, from the perspective of operational mechanisms, this study constructs an integrated online–offline framework for medical public welfare platforms, providing both theoretical insights and practical references for future research and implementation.

2. Project Overview and Research Methods

2.1 Project Overview

The "Shared Care Network" is an initiative launched by students from a private university in Tianjin. It adopts an OMO model and focuses on public welfare caregiving services. The project has established cooperation with the Youth Volunteer Association in Wuqing District, Tianjin, and has reached preliminary cooperation intentions with enterprises such as Haidilao Catering Management Co., Ltd. It has also

completed the prototype development of an online platform and the deployment of offline service sites.

The project covers the full operational chain, including caregiver recruitment, training, matching, supervision, and incentive mechanisms, making it suitable for systematic analysis of operational mechanisms.

2.2 Questionnaire Design and Survey

In the first quarter of 2025, the research team conducted surveys both online (via Wenjuanxing and WeChat groups) and offline (through community visits and hospital waiting areas). The questionnaire consisted of 18 items, including single-choice, multiple-choice, and attitudinal questions. It covered respondents' demographic characteristics, caregiving experience, perceptions of public welfare caregivers, acceptance of online platforms, and evaluation of current caregiving market issues.

A total of 247 questionnaires were collected. After excluding incomplete or logically inconsistent responses, 241 valid samples remained, yielding an effective response rate of 97.6%. Among the respondents, 69.7% were female and 66.4% were aged 18–30. It should be noted that the sample is skewed toward younger females, which is acknowledged as a limitation.

To assess internal consistency, a reliability analysis was conducted on the core attitudinal items. The Cronbach's α coefficient was 0.816, indicating good internal consistency.

2.3 Field Investigation

In addition to the survey, the research team conducted field visits to a nursing home and a public hospital in Wuqing District. Semi-structured interviews were carried out with five patients' family members, three caregivers, and two community staff members. These interviews aimed to better understand the real-life contexts behind the survey data, such as dissatisfaction with caregiver professionalism and concerns about online booking. All participants were informed of the research purpose, and anonymity was ensured.

3. Results and Analysis

3.1 Descriptive Statistics of Demand

The data show that 28.6% of respondents or their family members have had experience hiring caregivers, while 71.4% have not. Within the sample, most individuals reported relatively good health conditions: 52.3% described their health as "very good, with no chronic diseases," 39.4% as "generally good, with occasional minor ailments," while only 7.5% reported having chronic diseases and 0.8% indicated that they require assistance from others.

A total of 92% of respondents expressed that they were "very willing" (22.4%), "willing" (35.3%), or "somewhat willing" (34.9%) to book caregiving services through an online platform, whereas only 7.5% reported being "completely unwilling." However, the actual number of users who have used online platforms to find caregivers is far lower. This suggests that the issue does not lie in users' acceptance of online platforms, but rather in the insufficient quality and development of existing online services.

There are significant differences across age groups. Among respondents aged 18–30, 70.1% expressed recognition of the public welfare caregiver model, while only 2.8% of those aged over 50 did so. As younger generations gradually become the primary decision-makers in family caregiving, the acceptance threshold for online public welfare caregiver platforms is expected to decrease further.

3.2 Descriptive Statistics of Core Pain Points

Question 16 of the survey asked respondents about the major problems they perceive in the current caregiver market. As shown in Table 1, 79.3% of respondents believed that caregiver professionalism varies significantly, 70.5% pointed to a lack of supervision, 51.5% considered services to be non-standardized, 50.2% identified high personnel turnover, and 43.2% believed that prices are too high. Among these issues, professional competence ranks as the most prominent concern. During interviews, many family members reported that some caregivers lack even basic caregiving knowledge, making it difficult to ensure service quality.

Question 10 asked what factors respondents value most when selecting a caregiver. A total of 90.9% chose "sense of responsibility and patience," and 85.1% selected "professional caregiving skills," both significantly higher than "reasonable price" (60.2%). This indicates that users prioritize reliability over cost. In Question 12, 92.1% of respondents expressed a preference for caregivers to hold professional certifications, with 49.8% believing that certification is "essential" and 42.3% considering it "preferable."

In other words, public welfare caregivers must not rely solely on goodwill; training and certification thresholds are necessary.

Table 1. Respondents' Perceptions of Medical Public Welfare Caregiving Services

Indicator	Percentage
Willing to book caregivers via online platforms	92.0%
Believe caregiver professionalism varies significantly	79.3%
Expect caregivers to hold professional certifications	92.1%
Recognition of public welfare caregiving among ages 18–30	70.1%
Believe supervision is lacking	70.5%

3.3 Descriptive Statistics of Incentive Mechanism Issues

During the interviews, one volunteer described their experience as follows:

"I went once, paid for my own transportation, worked for a whole day, and didn't even receive a simple 'thank you.' I never went again after that."

This statement directly reflects the underlying reason for the lack of volunteer motivation—not a lack of willingness to participate, but rather the absence of any form of return or recognition.

The data from Question 15 further support this conclusion. A total of 78.8% of respondents believed that the core difference between public welfare caregivers and regular caregivers lies in the "nature of service," such as being unpaid or market-based. Meanwhile, 67.6% considered the defining feature to be that "priority is given to vulnerable groups." This suggests that the public has a clear understanding of the positioning of public welfare caregivers. However, the key challenge lies in ensuring that "unpaid" does not equate to "unrewarded," which must be addressed in the design of the operational model.

3.4 SWOT Analysis

Based on the questionnaire data and interview findings, the current situation of the project can be summarized across four dimensions.

From the perspective of strengths and opportunities, the public welfare concept of the "Shared Care Network" aligns closely with mainstream social values. The OMO model is capable of integrating online and offline resources, thereby improving operational efficiency. The project has already established cooperative relationships with the Youth Volunteer Association in Wuqing District and enterprises such as Haidilao. Externally, population aging generates rigid demand, national policies support "Internet + healthcare," and the widespread adoption of digital technologies reduces platform operating costs. These factors collectively create favorable conditions.

From the perspective of weaknesses and threats, the current conversion rate of actual demand remains relatively low, and public awareness of the OMO public welfare model is still limited. The reserve of professional caregivers is insufficient. Market competition is intensifying, and the overall supply of caregiving talent remains constrained. In addition, changes in traditional caregiving concepts require time, while rapid technological iteration places higher demands on platform upgrading capabilities.

3.5 Main Findings

Based on the above analysis, this study identifies three core contradictions. First, users have a genuine demand for professional caregivers, yet the professionalism and level of supervision in market supply remain insufficient. Second, user acceptance of online service platforms significantly exceeds expectations, but existing platforms lack a complete service loop specifically tailored to public welfare caregivers. Third, volunteers demonstrate willingness to participate, but there is a lack of sustainable incentive and reward mechanisms. These three contradictions represent the key issues that must be addressed in the design of the operational mechanism.

4. OMO Operational Mechanism Design

4.1 Overall Design Framework

As shown in Figure 1, the operational mechanism of the "Shared Care Network" can be understood as a system in which the online component is responsible for connection and empowerment, the offline component is responsible for service delivery and verification, and the training, certification, and incentive systems serve as the linkage between the two. Specifically, the online platform undertakes four main functions: caregiver recruitment and information profiling (including skill tags, available service time, and geographic location), online delivery of training resources and theoretical learning, demand posting and

intelligent matching, as well as service evaluation and time recording. With regard to the matching function mentioned above, recommendations can currently be generated based on rules combining "type of medical condition + caregiver skills + geographic location." The offline component relies on community service stations, partner hospitals, and elderly care institutions to carry out on-site caregiving services, supervision, and face-to-face communication.

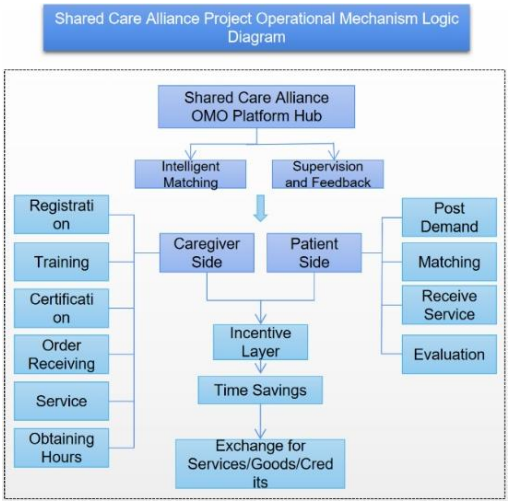

Figure 1. Logical Framework of the Operational Mechanism of the "Shared Care Network" Project

The framework constructed in this study does not pursue full automation or a "fully unmanned" model. Instead, it emphasizes the intermediary role of offline nodes. In the field of medical care, service provision is highly dependent on trust and emotional connection, and purely platform-based matching can easily turn into impersonal transactions. During the pilot operation in Wuqing District, Tianjin, it was observed that when community staff were present to introduce caregivers and patients during their first meeting, subsequent service satisfaction was significantly higher.

4.2 Training and Certification

In response to the issue identified in the survey, where 79.3% of respondents pointed out uneven professional competence, the project has designed a three-tier training system consisting of "theory + practice + assessment." The theoretical component includes laws and regulations, professional ethics, basic nursing knowledge, and first-aid knowledge. These materials are provided in the form of online videos and documents, allowing caregivers to arrange their learning independently. The practical component is conducted in the university's nursing training laboratory, under the guidance of professional instructors. It focuses on skills such as hygiene care, patient positioning, medication assistance, and rehabilitation support. Caregivers must pass the assessment before obtaining project certification and entering the service talent pool. This study emphasizes that public welfare does not equate to amateurism. Medical caregiving services are directly related to patient safety and health, and therefore must meet basic quality standards before being provided to society. At the same time, training itself can serve as a form of incentive. According to interview feedback, some participants expressed willingness to join the program because they could acquire practical skills, which would enhance their employability even if they do not continue in public welfare services in the future.

4.3 "Service-for-Service" Incentive Mechanism

The core of the "service-for-service" mechanism is to treat service time as a form of accumulable and exchangeable public welfare asset. In the operational model proposed in this study, one hour of service is converted into one hour of accumulated credit, which can be used for one's own future caregiving needs or transferred to immediate family members. For example, if a caregiver provides 20 hours of psychological support to a post-operative elderly patient, these 20 hours can later be redeemed when a family member requires professional rehabilitation care, such as in the case of a fracture. This expectation of "helping others now and being helped in the future" provides strong motivation for medium- and long-term participation.

In addition to redeeming caregiving services, accumulated time can also be converted into points, which can be exchanged for physical goods or coupons sponsored by partner enterprises. The project has already established cooperation with companies such as Haidilao and plans to collaborate with universities in the future, where students who complete 30 hours of service may receive one academic credit. In essence, public welfare service time is transformed into a quasi-currency, making it more flexible and attractive.

To ensure fairness, the platform adopts a dual verification mechanism consisting of "service

recipient confirmation + random checks by administrators," preventing false reporting of service hours. Time donated to the "public welfare pool" is centrally allocated by the project and prioritized for the most vulnerable groups, thereby avoiding resource idleness. In the preliminary survey, 82% of respondents expressed support for the concept of "service-for-service." However, caregivers showed greater concern about whether the redemption process is convenient and whether hidden barriers exist. Therefore, the platform design aims to simplify application and verification procedures as much as possible.

4.4 Multi-Stakeholder Collaboration to Promote Model Operation

From its inception, the "Shared Care Network" has established a multi-stakeholder collaboration network. At the government level, the project has connected with the relevant departments in the Wuqing area, obtaining policy endorsement and partial venue support. At the enterprise level, companies such as Haidilao provide material sponsorship, while insurance companies offer customized insurance products. At the medical level, the project collaborates with local nursing institutions to develop training programs and plans to integrate referral information from community hospitals in the future.

This form of collaboration is not merely a simple aggregation of resources but rather the construction of a "community of shared interests." For example, Haidilao's participation is driven by the alignment between the "public welfare caregiver" brand image and its corporate values. Employees can also participate as volunteers, enhancing team cohesion. Insurance companies are willing to join because the risks associated with caregiving services are controllable due to training and supervision, which can even lead to lower premium costs.

5. Conclusions and Recommendations

5.1 Main Conclusions

Based on field investigations, interviews, and the analysis of 241 valid questionnaires, this study draws three main conclusions. First, the demand for professional caregiving services is real and urgent, and the acceptance of online platforms far exceeds expectations. However, existing services exhibit clear shortcomings in professionalism and supervision. Therefore, public welfare caregiving platforms should not merely function as information intermediaries but must incorporate training, certification, and process supervision as essential preconditions. Second, the OMO model forms a closed loop through online matching, offline service delivery, training and certification, and supervision with feedback, effectively alleviating information asymmetry and instability in service quality. This demonstrates that technology and human-centered service are not contradictory; with appropriate operational design, efficiency and human warmth can coexist. Third, the "service-for-service" incentive mechanism is feasible in the context of medical public welfare caregiving. However, its sustainable operation depends on diversified redemption channels and multi-party collaboration. In short, relying solely on altruistic values is insufficient; practical user needs and convenience must also be considered.

5.2 Practical Recommendations

For teams or organizations intending to promote similar models, this study proposes three recommendations. First, in the initial stage, it is advisable to select a single subdistrict or two to three communities to pilot the full operational process, including recruitment, training, matching, service delivery, and redemption. After accumulating real data and experience, the model can then be replicated and scaled. Second, while the training standards for public welfare caregivers may be lower than those for professional nurses, they must include essential components such as first-aid knowledge, disinfection protocols, and communication skills. Practical assessment should also be incorporated. Third, the incentive mechanism should integrate short-, medium-, and long-term approaches. In the short term, material rewards sponsored by enterprises can attract participation; in the medium term, time accumulation and transfer mechanisms can enhance user engagement; and in the long term, social recognition and academic credit systems can foster cultural identification. Only by systematically integrating these three aspects into practice can the public welfare caregiving model evolve from a short-term enthusiasm into a sustainable long-term mechanism.

5.3 Research Limitations

The sample in this study is predominantly composed of young females, which does not

fully represent the characteristics of all caregiving demand groups. The questionnaire data mainly reflect subjective perceptions and lack objective measurements of actual service quality. Furthermore, the project is still in the pilot stage, and long-term operational data are insufficient. Future research should track indicators such as caregiver retention rates, service satisfaction, and time redemption rates over a broader scope and longer period in order to further verify the effectiveness of the operational mechanism.

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