

Construction of Weight Management Clinics in Primary Healthcare Institutions and Case Studies of Typical Models: A Postprint

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Abstract

With the global obesity problem becoming increasingly severe, weight reduction has become a key task for improving public health and reducing the burden of chronic diseases. Primary healthcare institutions can effectively promote the forward shift of obesity prevention and control, with clear advantages in being close to the needs of the population and ensuring strong accessibility of health services. Based on policy context and practical needs, this paper elaborates on the necessity and existing problems of establishing weight management clinics in primary healthcare institutions, and systematically explores their functional positioning, service models, and the development of both soft and hard capacities. At the same time, taking the construction of the weight management clinic at the Huichengmen Community Health Service Station in Haidian District, Beijing, as a typical case, it analyzes practical experiences such as relying on academic support from a tertiary Grade-A hospital, building a bidirectional referral mechanism, and establishing an intelligent management system. The development of primary-level weight management clinics is an important measure to promote the transformation of primary healthcare from a “disease-centered” to a “health-centered” model. As the construction of such clinics at the primary level nationwide is still in its initial stage, this paper may provide references and guidance for their standardized development.

Full Text

Construction of Weight Loss Clinics in Grassroots Medical Institutions and Typical Case Studies

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Abstract

As the global obesity issue becomes increasingly severe, weight management has become a key task for improving public health and reducing the burden of chronic diseases. Grassroots medical and health institutions can effectively advance the prevention and control of obesity, offering clear advantages such as proximity to community needs and strong accessibility of health services. This paper, based on policy background and practical needs, elaborates on the necessity and existing issues in the construction of weight loss clinics in grassroots medical and health institutions, and systematically explores their functional positioning, service models, and the development of both software and hardware capabilities. Furthermore, taking the Weight Loss Clinic at Huichengmen Community Health Service Station in Haidian District, Beijing, as a typical case, this paper analyzes its practical experiences, including relying on academic support from tertiary hospitals, establishing a two-way referral mechanism, and building an intelligent management system. The construction of grassroots weight loss clinics is an important initiative to promote the transformation of grassroots medical services from a “disease-centered” to a “health-centered” approach. Currently, the construction of grassroots weight loss clinics nationwide is still in its early stages, and this paper can provide references and insights for their standardized development.

Keywords: Grassroots medical institutions; Weight loss clinic; Graded diagnosis and treatment; Community health services; Multidisciplinary collaboration; Information construction

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Introduction

Obesity is not a single disease but is closely associated with cardiovascular and cerebrovascular diseases, chronic kidney disease, tumors, and gynecological

conditions. It serves as a common pathological basis for hypertension, dyslipidemia, and diabetes mellitus (collectively referred to as the “three highs”), with metabolic disorders and chronic inflammation being the core mechanisms for their development and progression [1]. According to the *Report on Nutrition and Chronic Diseases of Chinese Residents (2020)*, the overweight and obesity rates among Chinese residents aged 18 and above are 34.3% and 16.4%, respectively [2]. With accelerated urbanization, changes in food supply patterns, and increasingly sedentary work styles, obesity prevalence in China continues to rise annually. Studies project that by 2030, the overweight/obesity rate among Chinese adults could reach 65.3%, with medical costs attributable to overweight/obesity potentially reaching 418 billion RMB, accounting for approximately 21.5% of total national medical expenditures [3]. Clearly, obesity has become a major public health issue in China, harming both physical and mental health while imposing significant medical and economic burdens on the nation [4]. Multiple studies demonstrate that weight loss can significantly reduce patients’ blood glucose, blood pressure, and lipid levels, and that controlling obesity can reduce hidden costs in healthcare services [5-7]. Therefore, weight management has become a critical task for improving public health and reducing the burden of chronic diseases.

The *2025 World Obesity Report* [8] proposes urgent actions for obesity prevention and control, recommending the promotion of community-based programs and the integration of obesity prevention and management services into primary care systems. During the 14th National People’s Congress, the National Health Commission explicitly stated that it will continue to promote the “Weight Management Year Action” to popularize healthy lifestyles, elevating weight management and obesity control to an important national agenda. Survey data show that 83.8% of residents prefer to seek medical care at grassroots medical and health institutions [9]. As the “gatekeepers” of public health, grassroots medical institutions offer broad coverage and convenient management. Through active screening, health education, and accessible clinical services, they can rapidly identify overweight and obese populations, advance the management and treatment frontline, reduce chronic disease incidence, and lessen subsequent medical burdens. Consequently, establishing weight loss clinics in grassroots medical institutions represents both an inevitable requirement for implementing graded diagnosis and treatment policies and a key measure for facilitating residents’ access to care and achieving life-cycle health management.

Currently, medical institutions nationwide are actively responding to the national “Weight Management Year” initiative. Grassroots medical institutions play an important role in promoting healthy weight management. However, significant challenges remain: weight loss services are concentrated in tertiary hospitals, creating issues of “difficult access, low compliance, and fragmented management”; public awareness of obesity risks, treatment rates, and control rates remain low, with residents experiencing suboptimal convenience, timeliness, and satisfaction; general outpatient clinics focus primarily on chronic disease management and lack professionalism in obesity health education, follow-up

management, medication guidance, and referral systems; and grassroots medical institutions still lack clear guidelines and standards for weight management. Given these circumstances, this study explores the functional positioning and service models of grassroots weight loss clinics based on practical grassroots scenarios, combined with typical case analysis, to provide practical references for addressing grassroots weight management challenges, implementing national weight loss policies, and reducing chronic disease burdens.

1. Functional Positioning of Grassroots Weight Loss Clinics

The functional positioning of grassroots weight loss clinics is determined based on their service population characteristics, resource conditions, and primary healthcare responsibilities. These clinics are not merely “weight loss” facilities but serve as frontier positions for chronic disease prevention and health lifestyle promotion platforms. Their core mission is to shift from a “disease-centered” to a “health-centered” approach through early intervention, standardized management, and community collaboration.

Grassroots weight loss clinics offer broad coverage and strong accessibility, serving as residents’ first point of contact with weight management services. Their work focuses on three levels of prevention. **Primary prevention:** Regular health education for healthy populations through group classes, educational brochures, and one-on-one consultations to disseminate knowledge about balanced diets and scientific exercise; identifying high-risk overweight populations through routine physical examinations and outpatient screenings based on height, weight, waist circumference, blood pressure, blood glucose, and lipid profiles; raising public awareness of overweight and obesity risks to reduce incidence. **Secondary prevention:** Developing non-pharmacological intervention plans including diet and exercise prescriptions; for patients requiring medication, monitoring treatment efficacy and complication risks in collaboration with family doctor teams; regularly assessing weight, body fat percentage, blood glucose, and other indicators to adjust medication plans promptly, curbing obesity progression and preventing complications while achieving scientific weight loss. **Tertiary prevention:** Developing comprehensive treatment plans for patients with obesity or chronic comorbidities, as well as special populations such as pregnant women, children, and perimenopausal women, in collaboration with specialists to promote patient recovery.

2. Service Models of Grassroots Weight Loss Clinics

2.1 Multidisciplinary Collaboration in Weight Loss Clinics

Medical personnel in weight loss clinics primarily include general practitioners, traditional Chinese medicine (TCM) physicians, dietitians, nurses or health managers, psychologists, and rehabilitation therapists. The weight loss clinic is centered around general practitioners, who are responsible for clinical decision-making, complication risk assessment, and referral coordination. TCM physi-

cians can promote metabolism and achieve synergistic effects on weight loss, glucose reduction, and lipid regulation through herbal medicine, acupuncture, moxibustion, cupping, and acupoint embedding [10]. Clinical dietitians develop individualized dietary plans, provide nutrition education, and guide patients away from extreme dieting while improving dietary structure. Nurses or health managers conduct basic examinations including blood pressure, blood glucose, and BMI measurements, guide patients in maintaining health logs, and perform regular follow-ups. Psychologists provide psychological support and counseling for patients with emotional eating or weight loss anxiety, strengthening their determination and improving willpower and compliance. Rehabilitation therapists design individualized safe exercise programs to reduce muscle and joint injuries during exercise, promoting healthy and scientific physical activity.

2.2 Development of Personalized Weight Loss Plans

Personalized weight loss plans help patients achieve safe, feasible, and sustainable weight loss goals. Grassroots medical institutions, being close to communities, can comprehensively grasp patients' health information and establish long-term trusting relationships, familiarizing themselves with patients' living habits and family environments—this provides the foundation for personalized plans. Before developing a weight loss plan, it is necessary to fully consider patients' physiological indicators such as BMI, body fat percentage, waist-to-hip ratio, and basal metabolic rate; understand their dietary structure, exercise habits, sleep quality, and psychological status; combine laboratory test results including blood glucose, lipids, liver and kidney function, and uric acid for complication screening; and then match patients' health goals and occupational characteristics to develop personalized “three-factor-appropriate” plans. Such personalized plans can improve patient compliance, reduce discomfort from weight loss, and enhance the scientific nature and safety of weight reduction.

2.3 Community Collaboration and Family Engagement

Grassroots medical institutions leverage their community proximity to transform individual weight loss behaviors into collective actions through residents' “herd mentality,” creating a virtuous cycle of “one person loses weight, motivating the whole family; one family loses weight, radiating throughout the community.” By mobilizing community resources and collaborating with neighborhood committees, fitness facilities, and schools to conduct group health activities, these institutions create collective action atmospheres and design group interactive activities to stimulate residents' willingness to participate in weight loss together. This not only enhances weight loss effectiveness and increases patient compliance but also strengthens community cohesion and promotes sustainable dissemination of healthy lifestyles.

2.4 Long-term Follow-up and Continuous Management

Weight loss is a long-term process requiring continuous management and monitoring, where grassroots medical institutions possess multiple advantages. According to the *Chinese Guidelines for the Diagnosis and Treatment of Obesity (2024 Edition)* [11], most overweight and mildly obese patients should aim to reduce BMI by at least 5%-15% within 3-6 months and maintain it; guidelines recommend evaluating weight loss effectiveness and metabolic indicators every 3-6 months. Grassroots weight loss clinics can conduct regular follow-ups through outpatient visits, phone calls, or online tools, adjusting diet and exercise plans based on patient progress and addressing practical difficulties in implementation. Simultaneously, these clinics can promptly focus on the maintenance phase after weight loss, helping patients avoid weight regain risks, consolidate healthy behaviors, and ultimately achieve sustainable healthy lifestyles.

3. Connection with Higher-level Hospitals

Close linkage between weight loss clinics and higher-level hospitals represents an important manifestation of graded diagnosis and treatment. Through two-way referrals, resource sharing, and technical collaboration with higher-level hospitals, continuous and precise management of obesity and related metabolic diseases can be achieved. Currently, there are no clear guidelines or standards for obesity tertiary diagnosis and treatment referral processes. Linkage models with higher-level hospitals mainly include two-way referrals and regular expert consultations at grassroots institutions. **Two-way referral** refers to grassroots institutions submitting electronic referral forms and patient weight loss records through regional medical platforms, with higher-level hospitals opening “weight loss specialty green channels” for prioritized appointments with endocrinology, nutrition, and metabolic surgery departments. After receiving diagnosis and treatment at higher-level hospitals and achieving stable conditions, patients are transferred back to grassroots institutions where teams continue management and supervision according to treatment plans provided by higher-level hospitals. **Regular expert consultations** involve higher-level hospital experts regularly visiting grassroots institutions to guide complex case management and medication adjustments, while providing specialized training for grassroots doctors on topics such as weight loss medication usage standards and behavioral intervention techniques.

4. Challenges in Grassroots Weight Loss Clinic Construction

Currently, weight loss clinics at all levels of hospitals have been established successively nationwide, but service capacity and quality vary significantly. Grassroots weight loss clinics face multiple challenges in practice. Most general practitioners have not received systematic multidisciplinary training in obesity, with insufficient knowledge of psychological intervention and exercise rehabil-

itation; multidisciplinary teams remain unstable, with dietitians and exercise rehabilitation specialists mostly working part-time or as external consultants at low service frequency, unable to meet clinical needs. Additionally, weight loss guidelines and standards for grassroots medical institutions are lacking, and obesity-related graded diagnosis and treatment pathways remain undefined. Furthermore, most grassroots institutions lack effective linkage mechanisms with higher-level hospitals, with insufficiently smooth referral processes; grassroots and higher-level hospitals often use different medical record management systems, preventing sharing of patient records and weight loss documentation, creating information barriers. Currently, the scientific construction of grassroots weight loss clinics remains in the exploratory stage, requiring continuous practice and improvement to enhance service quality and standards.

5. Typical Case: Huichengmen Community Health Service Station

Huichengmen Community Health Service Station in Haidian District, Beijing, established in 2011, is a grassroots medical institution directly under Beijing Shijitan Hospital Affiliated to Capital Medical University. It features strong clinical capabilities, solid academic backgrounds, and excellent nursing skills. The station leverages the rich medical equipment, technical resources, and green channel support of its tertiary hospital, serving as an important service window for Beijing Shijitan Hospital. The station's own medical team works closely with regularly deployed experts from Shijitan Hospital, solving the problem of unstable multidisciplinary teams; maintains close linkage and information sharing with the higher-level hospital, breaking traditional barriers between institutions; and operates a green channel with smooth referral processes. As one of the first grassroots institutions in Beijing to establish a community-based weight loss clinic with regular expert consultations from the weight loss medicine department, its weight loss clinic construction was featured in a Beijing TV news report on April 7, 2025. Its construction experience is analyzed below.

5.1 Rich Research and Clinical Experience in Obesity and Metabolic Diseases

The Capital Medical University Beijing Shijitan Hospital Weight Loss and Metabolism Center participates in the community service station's weight loss clinic construction, regularly deploying experts to provide guidance on patient medication and general practitioners' clinical work. For difficult problems encountered during diagnosis and treatment, solutions can be provided promptly within the community, improving clinical efficiency. The service station has smooth referral channels, allowing patients to directly schedule appointments with experts at Beijing Shijitan Hospital for outpatient visits and related examinations. After evaluation by higher-level experts and stabilization of patient conditions, patients are transferred back to the community for continued health management by the grassroots team.

The service station possesses stable clinical and research teams, with members holding doctoral and master's degrees in medicine who have undertaken multiple research projects in related fields, accumulating rich research results in individualized lifestyle interventions for metabolic diseases [12]. The team leader has long been engaged in the management and treatment of chronic diseases including diabetes, hypertension, hyperlipidemia, obesity, and coronary heart disease. The team has previously conducted health surveys on populations with obesity, hyperlipidemia, and hypertension, while TCM physicians completed constitution identification for relevant populations. Based on survey results and constitution identification, general practitioners, TCM physicians, rehabilitation therapists, and dietitians jointly develop scientific, personalized self-health management plans to guide patients in adjusting dietary and exercise habits, enhancing their ability to self-manage blood glucose, blood pressure, and lipids, thereby delaying disease progression. In response to the current lack of standardized guidance for weight management in grassroots medical institutions, the team is leading the development of *Beijing Grassroots Multimorbidity Diagnosis and Treatment Management Standards Based on Weight Management* and *Graded Diagnosis and Treatment Model for Multimorbidity Based on Weight Management*. These studies will transform fragmented chronic disease guidelines (such as those for hypertension, diabetes, hyperlipidemia, and obesity) into practical grassroots protocols, providing a foundation for grassroots weight loss clinic construction.

5.2 Academic Support from Beijing Shijitan Hospital Weight Loss and Metabolism Center

Beijing Shijitan Hospital of Capital Medical University is a national demonstration unit for healthy weight loss. Relying on its multidisciplinary hospital team, it is committed to providing personalized diagnosis and treatment plans for overweight, obese, and metabolic syndrome patients, covering nutritional intervention, exercise guidance, psychological support, and precision medicine. Hospital weight loss and metabolism experts participated in developing the *Chinese Guidelines for the Diagnosis and Treatment of Obesity (2024 Edition)* [11] and possess extensive experience in weight loss and metabolic surgery [13-14]. Currently, Beijing Shijitan Hospital is planning to establish a standardized weight management center providing full-process services covering health assessment, customized planning, follow-up management, and education support. The center will adopt a “medicine + technology + community” linkage model, introducing AI algorithms to analyze patient behavioral data including sleep duration, exercise duration, exercise patterns, and dietary habits. It will provide timely reminders for patients with poor compliance and correct unhealthy behaviors to improve intervention quality and precision. Through multidisciplinary collaboration, the hospital will provide one-stop services from diagnosis and treatment to long-term follow-up for obese patients, ensuring maximal and sustained weight loss outcomes.

5.3 Stable Doctor-Patient Trust Relationships

Located in the compound of Fuxing Road Yi No. 4 (within the Ministry of Foreign Affairs family residential area) in Haidian District, Huichengmen Community Health Service Station serves residents of Fuxing Road Yi No. 4 and No. 6, surrounding community residents, and Ministry of Foreign Affairs staff. The community it serves is stable with low population mobility and generally high educational attainment. All community residents have completed family doctor contracts at this station and established comprehensive health management records. Through preliminary work, the station has built strong trust relationships with community residents, familiar with their living habits and healthcare patterns, enabling real-time updates to patient health records.

5.4 Expert Deployment and Smooth Two-way Referral Mechanism

The service station has a stable clinical team and research team, with members holding doctoral and master's degrees in medicine who have undertaken multiple research projects in related fields, accumulating rich research results in individualized lifestyle interventions for metabolic diseases [12]. The team leader has long been engaged in the management and treatment of chronic diseases including diabetes, hypertension, hyperlipidemia, obesity, and coronary heart disease. The team has previously conducted health surveys on populations with obesity, hyperlipidemia, and hypertension, while TCM physicians completed constitution identification for relevant populations. Based on survey results and constitution identification, general practitioners, TCM physicians, rehabilitation therapists, and dietitians jointly develop scientific, personalized self-health management plans to guide patients in adjusting dietary and exercise habits, enhancing their ability to self-manage blood glucose, blood pressure, and lipids, thereby delaying disease progression. In response to the current lack of standardized guidance for weight management in grassroots medical institutions, the team is leading the development of *Beijing Grassroots Multimorbidity Diagnosis and Treatment Management Standards Based on Weight Management* and *Graded Diagnosis and Treatment Model for Multimorbidity Based on Weight Management*. These studies will transform fragmented chronic disease guidelines (such as those for hypertension, diabetes, hyperlipidemia, and obesity) into practical grassroots protocols, providing a foundation for grassroots weight loss clinic construction.

5.5 Complete Infrastructure and Medical Laboratory Information Systems

The service capacity of weight loss clinics depends on multiple factors including physicians' professional competence, hardware facilities, and service conditions. Huichengmen Community Health Service Station can independently conduct obesity-related examinations including blood glucose, blood pressure, weight, electrocardiogram, and body fat percentage. It is also equipped with devices connected to Beijing Shijitan Hospital. For example, Beijing Shijitan Hospital

and its affiliated community hospitals can share remote dynamic electrocardiogram data, allowing Shijitan Hospital experts to conduct remote consultations, reducing patients' waiting time for reports and consultations and lowering medical costs from repeated visits [15]. Patients can have blood drawn directly at the community health service station, with samples sent uniformly to Beijing Shijitan Hospital for comprehensive testing, enabling patients to receive tertiary hospital laboratory services without leaving the community. Additionally, the station's general practitioner assistants can directly help patients schedule ultrasound, CT, and MRI examinations at Beijing Shijitan Hospital, shortening waiting times and improving patient compliance. All patient examinations can be completed at this service station and Beijing Shijitan Hospital, effectively reducing information barriers between different medical institutions, ensuring continuity of patient health records, and preventing management discontinuity caused by patients frequently changing institutions.

5.6 Intelligent and Information-based Doctor-Patient Management System

Hospital Information System (HIS) data can be synchronized and optimized into the chronic disease health management system. Relying on a shared medical order management system and health kiosks, personalized health monitoring and management plans are provided to patients. Through mobile phones or wearable devices, multiple health-related data are collected from patients, including physiological indicators (such as heart rate and blood pressure), activity data (such as step count and exercise volume), and dietary records. The collected data undergo unified formatting to ensure accuracy and consistency. Using big data analysis technology, health patterns and changing trends in patients are mined, and personalized exercise, diet, and lifestyle recommendations are provided based on patient health conditions.

Conclusion

Currently, the construction of grassroots weight loss clinics nationwide remains in its initial stages, generally facing challenges including insufficient professional personnel, unstable multidisciplinary teams, lack of standardized protocols, poor referral systems, and information barriers. The practice at Huichengmen Community Health Service Station demonstrates that relying on strong academic and technical support from tertiary hospitals, establishing stable doctor-patient trust, improving smooth two-way referral mechanisms, equipping interoperable basic laboratory facilities, and constructing intelligent information management systems are effective pathways to overcome these challenges and achieve standardized, professional management of grassroots weight loss clinics. This institution's practical experience can provide references and insights for weight loss clinic construction in grassroots medical institutions nationwide.

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and manuscript proofreading; LIAN Dongbo and ZHANG Jing revised the manuscript and supervised paper quality and viewpoints; ZHANG Han and ZHANG Jing are responsible for the manuscript.

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[2] National

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

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