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Postprint: Analysis of Persistent Frequent Attendance Among Residents in a Certain Community in Beijing

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Abstract

Background: With the development of general practice in China, the number of visits to community medical institutions has increased, with phenomena of both intermittent and persistent frequent attendance. Some of these cases represent abnormal frequent attendance, resulting in the unreasonable utilization of community medical resources.

Full Text

Preamble

Status of Persistent Frequent Attenders in a Community of Beijing

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Abstract

Background: With the development of general practice in China, the number of visits to community medical institutions has increased, with phenomena of both intermittent and persistent frequent attendance. Some of these cases represent abnormal frequent attendance, resulting in the unreasonable utilization of community medical resources.

Objective: To understand the status of intermittent and persistent frequent attenders at the Sanliheerqu Community Health Service Station in Beijing, analyze the characteristics of persistent frequent attenders, and identify the reasons for frequent attendance.

Methods: Residents who visited our facility between January 2017 and December 2019 were retrospectively selected as study subjects. Residents whose annual visits ranked in the top 10% within 12 months were defined as frequent attenders; those whose annual visits ranked in the top 10% for all three years were defined as persistent frequent attenders; and those whose visits ranked in the top 10% for only one or two years were defined as intermittent frequent attenders. We analyzed patients' visit patterns, basic demographics, and disease conditions. Convenience sampling was used to conduct qualitative interviews with 5 intermittent and 5 persistent frequent attenders regarding their reasons for frequent visits.

Results: A total of 639 frequent attenders were included, comprising 92 persistent frequent attenders (14.4%) and 547 intermittent frequent attenders (85.6%). Approximately 3% of persistent frequent attenders accounted for about 10% of total outpatient volume. The top three chronic diseases in both groups were hypertension, type 2 diabetes mellitus, and hyperlipidemia. Univariate analysis showed that the proportion of residents aged 60-79 years was significantly higher in the persistent frequent attender group than in the intermittent group ($p<0.05$). No statistically significant differences were found between groups in gender, marital status, education level, overweight/obesity status, family doctor contract status, or prevalence of hypertension, type 2 diabetes, hyperlipidemia, coronary heart disease, stroke, or disease complexity (all $p>0.05$). Interviews revealed that the top three reasons for choosing community care were: obvious geographical advantages with short waiting times, good doctor-patient relationships that basically meet daily medical needs, and higher reimbursement ratios than specialized hospitals. The top three reasons for intermittent frequent attendance were: reduced visits due to improved treatment compliance (standardized medication behavior and changed visit habits) leading to stable disease control; transient increases due to acute illness episodes or chronic disease deterioration; and repeated visits due to periodic "emotional" distress. Some patients also avoided repeated visits for "medication not yet due" through the implementation of appointment systems. The top three reasons for persistent frequent attendance were: multiple monthly visits due to non-uniform medication timing for chronic disease prescriptions caused by drug packaging issues; repeated visits due to "preference" for original research drugs and refusal of generic substitutes; and repeated community visits due to untimely referrals.

Conclusion: Persistent frequent attenders occupy substantial medical resources. Increased attention should be paid to abnormally frequent attenders in daily practice, and more in-depth research should be conducted in the future.

Keywords: Community; Intermittent frequent attenders; Persistent frequent attenders; Medical resources

Frequent attendance not only consumes considerable general practitioner time but also utilizes a substantial portion of community medical resources [1,2]. While some frequent attenders eventually return to normal visit patterns, a

small proportion become persistent frequent attenders [3,4]. Persistent frequent attenders have average annual visit frequencies 1.7 times and 6.2 times those of intermittent frequent attenders and non-frequent attenders, respectively [4]. Persistent frequent attenders consume an even greater proportion of physician time annually than intermittent attenders and present with more social problems, higher disease morbidity, and lower quality of life [3,5,6]. International studies indicate that persistent frequent attendance is associated with physical, psychological, and psychiatric factors, as well as sociodemographic factors [3,7,8]. A domestic study of elderly persistent frequent attenders showed that age over 70, female gender, and contracted family doctor status were associated with persistent frequent attendance [4]. In daily practice, timely identification of intermittent and persistent frequent attenders, given the complexity of their conditions and special resource needs, may better facilitate healthcare service planning [1]. To purposefully guide the balanced utilization of community medical resources, this study categorized frequent attenders into intermittent and persistent groups using routinely available objective data, analyzed the status and characteristics of persistent frequent attenders, identified high-risk populations requiring attention, and provided a theoretical basis for developing targeted health plans, necessary rehabilitation measures, and intervention strategies.

1. Subjects and Methods

1.1 Study Subjects

Visit data for patients attending the general practice clinic of Sanliheerqu Community Health Station in Beijing from January 1, 2017, to December 31, 2019, were extracted from our electronic information system using patient visit codes as unique identifiers. Residents whose annual visits ranked in the top 10% within 12 months were defined as frequent attenders [1,2]; those whose annual visits ranked in the top 10% for all three years were defined as persistent frequent attenders; and those whose visits ranked in the top 10% for only one or two years were defined as intermittent frequent attenders [4]. The system identified the visit count threshold for the top 10% of residents each year: 27 visits/year in 2017, 26 visits/year in 2018, and 34 visits/year in 2019. Therefore, residents with $ $27 visits in 2017, $ $26 visits in 2018, and $ $34 visits in 2019 were defined as frequent attenders. A total of 643 frequent attenders were initially identified. After excluding 3 cases without established health records and 1 deceased case, 639 cases were finally included, comprising 92 persistent frequent attenders and 547 intermittent frequent attenders.

1.2 Research Methods

Retrospective data extraction focused on objective information including basic demographics, disease information, and visit records. Basic information included gender, age, marital status, education level, body mass index (BMI), and family doctor contract status. Disease information primarily encompassed disease complexity, chronic disease history (hypertension, type 2 diabetes, coronary

heart disease, stroke, dyslipidemia, osteoarthropathy, hyperuricemia, chronic renal insufficiency, malignant tumors, chronic respiratory diseases), and visit information including annual visit counts. Frequent attenders were divided into persistent and intermittent groups for comparison of general characteristics and disease information. To further understand reasons for persistent frequent attendance, convenience sampling was used to select 5 persistent and 5 intermittent frequent attenders for interviews.

For classification purposes, the following definitions were applied: BMI grouping ($24.0\ kg/m^2 \leq BMI < 28.0\ kg/m^2$ as overweight, $BMI \geq 28.0\ kg/m^2$ as obesity [9]); disease complexity grouping (based on number of chronic disease types: 0-1 as simple, 2-4 as moderate, \$ \$5 as complex [10]).

1.3 Statistical Methods

Data were organized using Excel and analyzed using SPSS 26.0 software. Count data were described as rates or constituent ratios, and comparisons between groups were performed using chi-square tests, with $P<0.05$ considered statistically significant.

2. Results

2.1 Status of Persistent Frequent Attendance

Statistical analysis revealed that 10.7% (325/3,038) of resident visitors were frequent attenders, 60.0% (195/325) were frequent attenders for two consecutive years, and 28.3% (92/325) were frequent attenders for three consecutive years (persistent frequent attenders). Among frequent attenders in 2017, 26.3% (92/325) became persistent frequent attenders, generating 4,329 outpatient records, accounting for 34.1% of frequent attender visits (4,329/12,704) and 10.6% of total outpatient visits (4,329/40,925). In 2018, 25.7% (92/358) of frequent attenders became persistent, generating 4,159 outpatient records (32.1% of frequent attender visits [4,159/12,943] and 9.7% of total visits [4,159/43,017]). In 2019, 29.3% (92/314) became persistent, generating 5,288 outpatient records (30.5% of frequent attender visits [5,288/17,360] and 10.1% of total visits [5,288/52,318]). Visit patterns for frequent attenders from 2017-2019 are shown in Table 1 .

2.2 General Characteristics of Persistent Frequent Attenders

Persistent frequent attenders were predominantly aged 60-69 years, more than half had junior/high school or technical secondary education, most were female, the majority had contracted family doctors, most were overweight/obese, and the vast majority were married. Univariate analysis showed that the proportion of residents aged 60-79 years was significantly higher in the persistent frequent attender group than in the intermittent group ($p<0.05$). The persistent group had higher proportions of males, married individuals, those with junior/high

school/technical secondary education, overweight/obese individuals, and those without family doctor contracts compared to the intermittent group, but these differences were not statistically significant (all $p>0.05$). See Table 2 .

2.3 Chronic Disease Status of Persistent Frequent Attenders

The top five chronic diseases in both persistent and intermittent frequent attenders were hypertension, type 2 diabetes, hyperlipidemia, coronary heart disease, and stroke. Univariate analysis showed that the persistent group had higher proportions of hypertension and hyperlipidemia than the intermittent group, but the differences were not statistically significant (both $p>0.05$). Regarding disease complexity, the persistent group had a higher proportion of complex cases than the intermittent group, but the difference was not statistically significant ($p>0.05$). Chronic disease status is shown in Table 3 .

2.4 Reasons for Frequent Attendance

Among interviewed frequent attenders, the top three reasons for choosing community care were: obvious geographical advantages with short waiting times, good doctor-patient relationships that basically meet daily medical needs, and higher reimbursement ratios than specialized hospitals. Further interviews revealed that the top three reasons for intermittent frequent attendance were: reduced visits due to improved treatment compliance (standardized medication behavior and changed visit habits) leading to stable disease control; transient increases due to acute illness episodes or chronic disease deterioration; and repeated visits due to periodic "emotional" distress. Some patients also avoided repeated visits for "medication not yet due" through implementation of appointment systems. The top three reasons for persistent frequent attendance were: multiple monthly visits due to non-uniform medication timing for chronic disease prescriptions caused by drug packaging issues; repeated visits due to "preference" for original research drugs and refusal of generic substitutes; and repeated community visits due to untimely referrals.

3. Discussion

3.1 Persistent Frequent Attendance Phenomenon in Primary Care

In our facility, 60.0% of frequent attenders continued frequent attendance in the following year, and 28.3% persisted for two subsequent years, which is higher than the approximately 40% and 20% reported in international review articles for one-year and two-year persistence [11], and significantly higher than the 5.3% three-year persistence reported in a Shanghai community survey [4]. Persistent frequent attenders accounted for approximately 3.0% of all resident visitors, higher than the 1.4% reported in Finland [6]. This reflects the gradual realization of primary care's important roles in diagnosing and treating common diseases, managing chronic diseases, rehabilitation, and health management, indicating good community acceptance, strong doctor-patient attachment, and

high medical resource utilization among some residents. However, it also suggests that community medical resources are being "over-utilized" by a "minority population," warranting further exploration of how to intervene in unnecessary frequent attendance, improve disease management outcomes, and achieve rational community medical resource utilization for all.

International and domestic studies have examined medical resource utilization by persistent frequent attenders. A Finnish study indicated that 0.9% of persistent frequent attenders accounted for 6% of primary healthcare providers' clinical workload [1], while a Shanghai study showed that 5.3% of persistent frequent attenders consumed 21.4% of general practitioners' visits [4]. Our study found that approximately 3% of persistent frequent attenders accounted for about 10% of outpatient volume. Evidently, persistent frequent attenders occupy substantial general practitioner time and create considerable workload, necessitating further exploration of underlying reasons.

3.2 Characteristics of Persistent Frequent Attenders

International and domestic studies demonstrate close relationships between sociodemographics and persistent frequent attendance [4,6]. Our study indicates that the 60-79 age group had a higher proportion of persistent frequent attenders, possibly because these patients, being retired, begin focusing on their health, have higher chronic disease prevalence or perceived poor health than those under 60, and have better mobility than those over 80. The top three chronic diseases in both persistent and intermittent frequent attenders were hypertension, type 2 diabetes, and hyperlipidemia, which differs slightly from the disease pattern in elderly frequent attenders in Shanghai (coronary heart disease, hypertension, type 2 diabetes) [4]. This discrepancy may be due to differences in study population age and disease classification methods—our study used chronic disease history while the Shanghai study used each visit diagnosis. Previous studies identified contracted family doctor status as an influencing factor [4,13], but our study found no statistically significant difference in family doctor contract rates between persistent and intermittent frequent attenders, possibly due to different comparison groups—our study compared persistent versus intermittent attenders, while others compared persistent attenders versus non-frequent attenders.

Although the persistent frequent attender group had a higher proportion of complex disease cases (10.9%) than the intermittent group (6.9%), the difference was not statistically significant. This may be because our study only included chronic disease types, without incorporating acute conditions, chronic disease exacerbations, or psychosocial factors [1,2]. Previous studies have identified chronic disease as a factor influencing frequent attendance [1,12,14]. As the primary battlefield for chronic disease management, communities should evaluate chronic disease control in persistent frequent attenders. If persistent frequent attendance is due to poor chronic disease control, general practitioners should provide greater attention in future practice, applying a bio-psycho-social

medical model for patient-centered care.

3.3 Analysis of Reasons for Frequent Attendance

Qualitative interviews revealed that patients choose community care primarily for geographical advantages with short waiting times, good physician attitudes that meet daily medical needs, and higher reimbursement ratios than specialized hospitals. These findings are consistent with a Shanghai study of elderly persistent frequent attenders, where the top three reasons included chronic diseases, community hospital convenience (proximity, high reimbursement, short queues), and good doctor-patient relationships [14]. This indicates that community medical institutions attract residents through good geographic accessibility, high medical service compatibility, complete drug availability, and high reimbursement ratios. It also demonstrates that most patients can have common health problems resolved at the community level, suggesting that general practitioners possess the capacity for comprehensive diagnosis and common disease management, attracting patients through location and reimbursement advantages while retaining them through clinical competence. This suggests that urban community medical institution layout can effectively address common health problems, representing significant progress toward tiered diagnosis and treatment.

For intermittent frequent attenders, episodic frequent attendance due to acute illness or chronic disease deterioration can be considered normal. Some patients gradually abandoned unhealthy behaviors such as self-adjusting/discontinuing medications or habit-based medication use, accepting two-way referral recommendations. Standardized medication and visit behaviors led to stable disease control and reduced visits, benefiting from improved disease understanding. Therefore, community institutions should conduct targeted chronic disease health education to enhance patient cognition and self-management capacity. For patients frequently attending due to "emotional" distress, general practitioners should use screening tools such as PHQ-9 and SDS to identify suspected cases, facilitate timely specialist referral, conduct safety risk assessments, manage medication adherence and lifestyle, and provide family health education [15,16] to enable early detection and treatment, reducing unnecessary frequent community visits and preventing progression to persistent frequent attendance due to "poor emotional status." Interviews also suggested that implementing appointment systems helps avoid abnormal frequent attendance, as Beijing Medical Insurance Center regulations prohibit reimbursement for repeated prescriptions during medication periods (our HIS system automatically flags repeat prescriptions of the same medication when >3 days' supply remains as abnormal). Appointment systems prevent patients from registering and visiting for repeat prescriptions, reducing "empty registrations" or "visits due to registration." However, current appointment rates remain low, and could be improved by strengthening family doctor contract services [17].

The primary reason for persistent frequent attendance was drug packaging design causing multiple monthly visits. For example, in a hypertension patient

with type 2 diabetes receiving one-month prescriptions, statins are packaged as 7 or 28 tablets/box, and metformin as 20 or 60 tablets/box, creating 2-3 day supply discrepancies. Combined with elderly patients frequently losing medications and insurance restrictions on refills, this necessitates multiple visits. Institutions should address this packaging-induced abnormal frequent attendance by providing regular feedback during drug category management and coordinating timely adjustments. The second reason was suboptimal implementation of volume-based drug procurement, with insufficient patient trust in selected drugs and refusal to accept generic substitutes, leading to multiple visits attempting to obtain previous brands. Although studies suggest volume-based procurement hasn't affected patient satisfaction, coverage remains incomplete and "switching back to original research drugs" occurs [18]. International studies indicate that generic substitution for cardiovascular diseases and critical conditions requires vigilance for adverse events and efficacy changes [19]. Therefore, during active implementation of drug procurement policies, strengthened education on substitute drugs' pharmacological effects, adverse reactions, and efficacy is needed, with attention to special populations' treatment needs and monitoring of substitute drug efficacy and safety. Some patients also frequently visited community clinics due to refusal of referral despite indications or non-uniform referral criteria among general practitioners. The inadequate implementation of two-way referral systems is a common problem in community medical institutions [20], requiring improved top-level design, implementation of referral systems, standardized and simplified referral processes, and training on two-way referral protocols to guide general practitioners in making referrals according to procedures and standards.

3.4 Limitations

This real-world study offers high data selectivity, convenient access, and low cost, but lacks information on confounding factors [21], potentially introducing bias when determining causal relationships. The analysis focused primarily on objective data without examining subjective factors, and the study was conducted at only one community health station, which somewhat limits the generalizability of findings. Despite these limitations, this study of the current status of persistent frequent attendance provides a theoretical basis for subsequent more comprehensive and in-depth research.

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