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Experiences of Male Nurses Providing Internet-Based Home Nursing Services: A Qualitative Study

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Abstract

Aim

To explore the real-world experiences of male nurses participating in Internet-based home nursing services, examining the specific effects of gender identity in the home care setting, practical challenges encountered, and support needs.

Methods

A qualitative descriptive design was employed. Semi-structured in-depth interviews were conducted with 11 male nurses from multiple hospitals in Henan Province, China, between August and December 2025. Data were analyzed using thematic analysis.

Results

Three themes and ten subthemes were identified: (1) The dual effects of gender on home care, including physical and safety advantages, gender complementarity in specific situations, gender bias and privacy constraints, and trust-building through professional competence and communication; (2) Risks and barriers in home care, including uncertainty in the home environment and service process, inadequate supplies and emergency support, and underdeveloped service promotion and platform operations; (3) Professional value experiences and improvement needs, including enhanced professional identity, participation willingness shaped by practical constraints, and training and external support needs.

Conclusions

Male nurses' gender identity in home care is neither a fixed advantage nor a barrier; its effects vary depending on patient gender, type of nursing procedure, and service context. Professional competence and effective communication help alleviate patients' initial gender-related concerns. It is recommended that healthcare institutions and platforms collaboratively strengthen support mechanisms in training, safety assurance, and staffing allocation.

1. Introduction

As population aging accelerates and the prevalence of chronic diseases continues to rise, nursing services are increasingly extending from hospitals to communities and homes [1, 2]. The "Internet Plus Nursing Service" (IPNS) model, through online application and offline home visits, provides a new care option for patients with mobility limitations, indwelling catheters, chronic wounds, and other conditions, reducing the burden of frequent hospital visits [3]. This model also facilitates the extension of nursing services from inpatient care to continuous community-based care [4].

Existing studies have primarily focused on IPNS service models, platform development, patient satisfaction, and overall nurse experiences [4]. However, discussion of male nurses as a specific group remains limited. In China, male nurses account for approximately 3% of the total nursing workforce [5]. In clinical practice, male nurses demonstrate certain advantages in physical strength, emergency response, and high-intensity task performance [6], but may also face additional pressures related to patient acceptance, privacy care, and professional identity due to traditional gender norms [7]. When nursing services move from hospitals to patients' homes, the care environment becomes more private and unpredictable. Nurses must independently complete assessments, procedures, and communication with less on-site support, a context in which gender-related experiences may become more salient [8].

However, previous research has largely concentrated on IPNS service models, platform operations, and patient satisfaction, with relatively limited exploration of male nurses' experiences in this context. When nursing services shift from hospitals to patients' homes, how male nurses' gender identity specifically manifests, what advantages and difficulties it brings, and whether these effects show consistent patterns across different situations remain insufficiently understood. Therefore, this qualitative study, through interviews with male nurses, aims to explore their actual experiences in IPNS, the main challenges they face, and their suggestions for service improvement, with the goal of informing policy development and management practices.

2. Methods

2.1 Study Design

A qualitative descriptive design was employed, using one-on-one semi-structured interviews to collect data, with thematic analysis applied for data analysis. The study report follows the Consolidated Criteria for Reporting Qualitative Research (COREQ).

2.2 Participants

Purposive sampling was used to recruit male nurses participating in IPNS from multiple hospitals in Henan Province, China. Inclusion criteria: (1) male registered nurses; (2) had home visit nursing experience; (3) able to clearly articulate personal experiences; (4) provided informed consent to participate voluntarily. Exclusion criteria: withdrawal during the interview or interview recordings that could not be effectively transcribed.

Eleven participants were enrolled and coded N1–N11. Ages ranged from 26 to 37 years, with nursing experience ranging from 4 to 13 years. Professional titles included nurse, senior nurse, and nurse-in-charge. Some participants held management positions as deputy head nurses or team leaders. Departments included intensive care units, emergency departments, orthopedic trauma units, wound and ostomy care clinics, urology, and respiratory and critical care medicine. Individual cumulative service volumes ranged from approximately 10 to 300 cases. Participant characteristics are presented in Table 1.

Table 1
Participant Characteristics (N = 11)

ID	Age, years	Title/Position	Years of Experience	Department/Specialty	Service Volume	Main Services Provided
N1	30	Senior Nurse / Deputy Head Nurse	8	Emergency Department	Approximately 230 cases	Venous blood sampling, nasogastric tube and urinary catheter insertion, PICC maintenance, wound and ostomy care
N2	32	Senior Nurse	10	Emergency Department	Approximately 60 cases	Infusion therapy, pressure injury care, wound dressing changes, PICC maintenance, enema, urinary catheterization, nasogastric tube replacement
N3	30	Nurse-in-Charge / Nursing Team Leader	8	Intensive Care Unit	Approximately 15 cases	Jejunal tube or nasogastric tube insertion and related maintenance
N4	30	Nurse-in-Charge	8.5	Emergency Department	Approximately 20 procedures	Venous blood sampling, intramuscular injection
N5	32	Senior Nurse	11	Department of Respiratory and Critical Care Medicine	Approximately 300 cases	Nasogastric tube and urinary catheter insertion, PICC and implantable venous access port maintenance, pressure injury and chronic wound care
N6	37	Nurse-in-Charge	12	Department of Orthopedic Trauma	Approximately 270 cases	Wound care, catheter care, nasogastric tube and urinary catheter care

ID	Age, years	Title/Position	Years of Experience	Department/Specialty	Service Volume	Main Services Provided
N7	36	Senior Nurse	13	Neurological Intensive Care Unit	120–130 cases	Tracheostomy care, nasogastric tube and urinary catheter care, health education
N8	26	Nurse	4	Wound and Ostomy Care Clinic	Approximately 80 procedures	Pressure injury care, wound care, diabetic foot care
N9	32	Senior Nurse	10	Department of Urology	Approximately 300 cases	Urinary catheter and ostomy care, tube maintenance
N10	36	Nurse-in-Charge / Deputy Head Nurse	13	Outpatient Department (Wound and Ostomy Care)	Approximately 300 cases	Wound and ostomy care
N11	34	Senior Nurse	11	Emergency Intensive Care Unit	Approximately 50 cases	Wound dressing changes, pressure injury management, urinary catheter and nasogastric tube replacement, drainage tube care, venous blood sampling, bladder irrigation

2.3 Data Collection

Semi-structured interviews were conducted between August and December 2025 by a researcher trained in qualitative research methods. Before each interview, the study purpose, audio recording, anonymization principles, and the right to withdraw were explained. Informed consent was obtained before commencing the interview. Key questions included: (1) How do you perceive the current implementation of IPNS? What types of services have you provided? (2) Why did you choose to participate in IPNS? What unique advantages or disadvantages do you perceive as a male nurse? (3) Have you encountered patient refusal or distrust due to your gender? How did you respond? (4) Has your professional identity changed after participation? Has your career planning been affected? (5) What suggestions do you have for improving male nurses' participation in IPNS? The interviewer asked follow-up questions about specific incidents, feelings at the time, and coping strategies.

Interviews were audio-recorded and transcribed verbatim promptly after completion, with cross-checking against field notes. Data collection and analysis proceeded concurrently. Data collection ceased when data sufficiency was reached—that is, when no new substantively meaningful information emerged from further interviews.

2.4 Data Analysis

Inductive thematic analysis was employed. NVivo software was used for data management and coding. The analysis process followed the general procedure of thematic analysis: researchers repeatedly read the interview transcripts and conducted initial coding of content with research significance; continuously compared statements across different participants and grouped codes with similar meanings, gradually forming candidate subthemes and themes; then repeatedly returned to the original data to examine consistency between themes, codes, and the complete dataset, adjusting, defining, and naming themes to arrive at final results. During the coding process, researchers wrote memos to document analytical thinking, and engaged in discussions with other research team members who had not participated in coding to scrutinize the reasonableness of thematic interpretations. Data analysis was not a fixed linear process but involved iterative movement between familiarization with the data, initial coding, theme development, theme review, and verification against the original data.

2.5 Rigor

Interviews were conducted using a consistent interview guide, with follow-up questions used to obtain contextually rich data. Transcripts were checked verbatim against audio recordings. Data analysis involved repeated comparisons across participants' statements, attention to experiences that diverged from the main themes, and retention of coding and theme development records. Findings were supported by original participant quotations to ensure that themes were grounded in the data.

2.6 Ethical Considerations

This study was conducted in accordance with the Declaration of Helsinki. Ethical approval was obtained from the Medical Ethics Committee of Zhengzhou Central Hospital (approval number: ZXYY2025221). All participants were informed of the study purpose, audio recording, anonymization procedures, and their right to withdraw at any time, and all provided written informed consent prior to participation.

3. Results

Analysis of interviews with 11 male nurses yielded three themes and ten subthemes.

3.1 Theme 1: The Dual Effects of Gender on Home Care

3.1.1 Physical, Safety, and Emergency Response Advantages

Most participants perceived advantages in personal safety when providing home visits that required entering patients' homes alone, sometimes at late hours. N2 stated: "The first advantage is safety. For example, when female nurses go to provide services at someone's home, the risk factor is higher than for males." Physical strength advantages were also evident when moving patients or assisting with positioning. N10: "We often

need to help move patients... If you don't have physical strength, you can't move them. You can't even position them properly."

Some participants also reported feeling calmer in unfamiliar environments or emergencies. N9: "Males may handle certain unexpected situations better... males may manage them more calmly."

3.1.2 Gender Complementarity in Specific Situations

For male patients requiring urinary catheterization or other procedures involving intimate areas, having a male nurse could reduce discomfort for patients and their families. N11: "For male patients needing urinary catheter or nasogastric tube replacement after discharge, families often feel it is inconvenient if a female nurse comes, so they choose a male nurse."

Participants also believed that home care staffing should consider both patient gender and the specific procedure. N2: "It shouldn't be all male nurses, but male nurses can take a leading role. For some specific services—for example, lactation support after delivery—female nurses are still needed."

3.1.3 Gender Bias and Privacy Constraints

Some patients and families expressed surprise upon seeing a male nurse at their doorstep and questioned the nurse's identity or competence. N3: "When they see it's a male nurse, patients question it—'Why is it a male nurse?' They may not trust you." Some patients requested a female nurse instead. N1: "Her first reaction was 'Why is it a male?' and she wanted to switch to a female nurse."

Such constraints were most prominent in female catheterization, perineal care, and wound care involving intimate areas. N6: "For female patients, there are concerns about procedures involving privacy—like urinary catheterization." To avoid affecting service delivery, male nurses typically assessed patient circumstances and communicated in advance. N5: "I wouldn't actively choose female patients for urinary catheterization... If needed, I communicate by phone before visiting."

3.1.4 Trust-Building Through Professional Competence and Communication

When patients expressed initial concerns, participants proactively introduced their qualifications, experience, and service content. N1: "If patients still have doubts, I tell them where my strengths lie, how proficient I am in the procedure, and give examples of similar patients I've served before."

After procedures were completed smoothly, patients' focus on the nurse's gender typically diminished. N2: "Ultimately it depends on your competence during the service. If your technique satisfies them, they won't care whether you're male or female." Some nurses developed relatively stable trust relationships with patients through repeated visits.

3.2 Theme 2: Risks and Barriers in Home Care

3.2.1 Uncertainty in the Home Environment and Service Process

Patients' homes varied greatly in space, hygiene, and equipment availability. Some participants felt anxious when first entering unfamiliar homes. N8: "If it's my first time visiting for a wound dressing change, I also feel unfamiliar, but I can't show it. I need to speak very professionally when explaining wound care basics."

Weather, travel distance, and patients' condition changes also contributed to uncertainty. N11: "When patients need you, you have to go—rain or shine. And at the patient's home, because the environment is unfamiliar, you have to prepare all supplies thoroughly."

3.2.2 Inadequate Supplies and Emergency Support

Home care supplies were primarily prepared by the nurses themselves. Omissions, contamination, or insufficient quantities could compromise procedures. N11: "If you forget something or supplies get contaminated at the patient's home, that's an uncertainty. Supplies must be sufficient—otherwise, it affects the procedure."

Participants also worried about sudden changes in patient condition without on-site support or emergency equipment. N9: "The biggest challenges in home care are supply preparation and handling emergency events or unexpected situations."

3.2.3 Underdeveloped Service Promotion and Platform Operations

Some participants noted low public awareness of IPNS and limited service orders. N11: "We need more promotion so other departments can also place orders—the main need is promotion; patient volume is still low." Some patients were unaware that platforms could provide home nursing services and required proactive education from nurses. N7: "You have to educate patients about the service, otherwise you have no orders—patients don't know it exists."

Platform information display also failed to fully meet patients' needs for selecting supplies and services. N5: "I hope the app can be clearer and simpler... allowing patients to make informed choices, rather than having the visiting nurse handle all the communication."

Platform fees also affected patient acceptance. N7: "Some patients find the platform prices expensive... In addition to the service fee and travel fee, they have to pay for materials." N11: "With the platform, there are visit fees, treatment fees, and other charges—it adds up to quite a lot."

3.3 Theme 3: Professional Value Experiences and Improvement Needs

3.3.1 Enhanced Professional Identity and Sense of Value

Participants believed that home visits provided convenience for patients with limited mobility and expanded the scope of nursing practice. N4: "Some severely ill elderly patients cannot easily come to the hospital... I felt this was very meaningful, so I registered."

Improvements in patients' conditions or wounds brought a sense of accomplishment. N8: "Seeing that the wound is better than last time—that gives me a sense of achievement." Beyond professional value, additional income was also a reason for some participants' involvement.

3.3.2 Participation Willingness Shaped by Practical Constraints

Most participants expressed willingness to continue home visits but needed to balance these with regular work duties and personal time. N4: "Personally, I have more free time now—when I'm off duty, I can use that time productively. It's also a way to generate extra income."

Patient demand and extra income also influenced continued participation. N11: "Patients need you and you can increase your income—a double benefit." Some participants believed long-term participation also depended on personal initiative. N7: "If you want to do it, you'll find ways to make it work."

3.3.3 Training and External Support Needs

Participants believed that home care providers should have appropriate qualifications and receive standardized training and assessment before participation. N1: "The hospital provides unified training. Depending on your qualifications—for gastric tubes, urinary catheters—you need to pass assessments before you can accept online orders."

Beyond technical skills, nurses needed support from patients' families, hospitals, and teams. Inexperienced nurses could benefit from mentorship to familiarize themselves with home visit procedures. N11: "Experienced nurses who have done more visits can mentor new nurses... helping them grow gradually."

4. Discussion

4.1 Gender Has Dual Effects on Male Nurses' Home Care Practice

Participants perceived advantages in moving patients with limited mobility, carrying equipment, providing evening visits, and managing emergencies. Home care is typically conducted independently with limited on-site assistance, making physical strength, adaptability, and safety awareness conducive to smooth service delivery. Previous research has also noted that physical strength and endurance are favorable conditions for some male nurses in high-intensity nursing work [9]. However, these advantages are not determined solely by gender but are also related to clinical experience, specialized competence, and risk management skills.

Some male patients preferred male nurses for intimate procedures such as urinary catheterization, indicating that male nurses can meet patients' gender preferences in specific services. Patients' choices regarding nurse gender are influenced by their own gender and the nature of care required [10], with some patients showing high acceptance of care provided by male nurses [11]. Previous research further found that patients are more likely to prefer same-gender care in procedures involving body exposure or intimate areas [12]. However, the same gender identity can become a barrier when caring for female patients, as male nurses providing physical contact care may be subject to privacy concerns and gender stereotypes [13]. In this study, some female

patients or their families refused male nurses due to privacy concerns, and some patients questioned their identity and competence during initial meetings. Thus, male nurses' gender identity can both facilitate and constrain service delivery, with specific effects varying by patient gender, type of procedure, and service context.

4.2 Professional Competence and Communication Help Alleviate Gender-Related Concerns

Gender-related questioning experienced by participants occurred most often during initial contact or upon first arrival at patients' homes. Because patients lacked familiarity with the visiting nurse, and nursing has historically been female-dominated, some patients had concerns about male nurses' identity, professional competence, and the convenience of procedures [9]. However, after identity verification, understanding of service content, and observation of actual practice, patients' attitudes generally improved.

Compared with in-hospital care, home services lack the trust support provided by the hospital environment and team presence, requiring nurses to independently explain their identity, qualifications, and procedures. Studies have shown that when caring for opposite-gender patients, explaining the purpose of care in advance, obtaining patient consent, respecting privacy, and maintaining appropriate communication boundaries help reduce misunderstandings and facilitate trust-building [14]. Additionally, nurses' professional knowledge, standardized behavior, and timely response to patient needs are important factors in building patient trust. Participants typically gained trust through advance communication, patient explanation, standardized practice, and privacy protection. Thus, while gender may influence patients' initial judgment of the nurse, whether trust is ultimately established depends primarily on the nurse's professional performance and communication approach [10]. Platforms could display nurses' qualifications and clearly indicate nurse gender before assignment, allowing patients to receive this information in advance and reducing last-minute refusals upon arrival.

4.3 Home Care Risk Prevention and Improvement of Platform Support Mechanisms

This study found that some difficulties faced by male nurses during home visits are not directly caused by gender but rather reflect risks inherent to the home care setting itself. Patients' homes varied in spatial conditions, hygiene, and supply readiness. After entering unfamiliar environments, nurses needed to independently assess patient condition, operational conditions, and potential risks, and determine whether it was appropriate to proceed with care. Previous research has noted that home environments are not specifically designed for medical care, and limited space, insufficient equipment, lack of on-site colleague support, and sudden changes in patient condition may increase uncertainty in home care [15]. Therefore, pre-visit assessment should not be limited to checking requested procedures but should include understanding patient condition, home environment, supply readiness, and family assistance availability, while also identifying situations in which home visits are not appropriate.

Beyond on-site risks, participants also noted insufficient platform promotion, limited order volume, and inadequate communication regarding supply costs, fee structures, and patient informed choice. These findings reflect the actual experiences of study participants and suggest that platforms should not function solely for

scheduling and assignment, but should strengthen pre-service communication about service items, fee structures, and supply usage to reduce disputes upon arrival. A survey of healthcare institutions in China found that "Internet+" home care still had deficiencies in information platform development, responsibility attribution, and safety management systems [16]. Hospitals and platforms could accordingly improve pre-service risk screening, supply verification, operational protocols, and emergency response procedures, while establishing real-time communication mechanisms between nurses and hospitals to support on-site consultation, referral, and emergency management.

4.4 Organizational Support Is Essential for Male Nurses' Sustained Participation

Home care enabled participants to experience the value of nursing services extending from hospitals to families. Through independent clinical judgment, solving patients' practical problems, and receiving patient recognition, they gained professional fulfillment. Additional income was also a practical motivator for some participants. Previous qualitative research similarly found that IPNS helps expand nurses' professional roles, enhance professional competence and identity, while also exposing nurses to safety risks and increased workload [17]. Research on male nurses' work engagement further showed that professional identity, job satisfaction, and social support all influence work engagement levels [6]. This suggests that while professional value can promote participation, its effect depends on corresponding organizational conditions.

In this study, participants' continued participation was constrained by heavy workloads, limited personal time, travel distance, insufficient orders, and unstable income. When home visits conflicted with clinical scheduling, nurses typically used their rest time to accept orders, creating additional time and energy burdens. Zhang et al. [18] found that availability of free time influenced nurses' willingness to participate in IPNS; qualitative research on nurses' experiences of home visit difficulties also identified work coordination, safety assurance, and service support as important factors affecting nurse participation [19].

In the community home care context, nurses' work autonomy has been associated with higher work engagement and lower turnover intention [20]. Therefore, sustained participation cannot rely solely on nurses' sense of responsibility or personal willingness, but depends on whether scheduling coordination, work autonomy, and organizational support meet their practical needs.

Hospitals and platforms should integrate online nurse management into nursing human resource allocation, rather than treating home visits simply as additional work during nurses' rest time. Flexible scheduling and autonomous order acceptance mechanisms could be established without disrupting clinical work, with differentiated compensation based on service distance, time required, technical difficulty, and risk level, along with transportation, safety, and emergency communication support. National policies also require healthcare institutions to provide pre-service training for home-visiting nurses and to improve price management, risk prevention, and medical safety guarantee mechanisms [21]. Training content could further include home risk assessment, nurse-patient communication, privacy protection, and emergency management. For services involving intimate care, platforms could inquire about patients' gender preferences before assignment, allowing some degree of mutual choice between nurses and patients and reducing last-minute refusals or cancellations due to gender mismatch.

4.5 The Role of Gender Depends on the Specific Care Context

This study found that the effects of gender identity on male nurses' home care practice are not fixed. During evening visits, moving patients with limited mobility, or entering unfamiliar homes independently, participants more frequently mentioned advantages in physical strength and safety. When caring for female patients or performing intimate care, they were more likely to encounter refusals and questioning. Previous research has shown that male identity can both provide advantages in physical tasks and expose male nurses to gender stereotype limitations in physical contact and intimate care [9]. Patients' gender preferences for nurses also vary by patient gender and type of care [10]. As patients learn more about the nurse's qualifications and professional performance, some gender-related concerns may gradually diminish.

Thus, male nurses' gender-related advantages and limitations vary with care recipient, service type, home environment, and pre-visit communication. It would be inappropriate to categorically characterize male identity as either an advantage or a disadvantage in home care. Research has shown that male nurses remain susceptible to social bias and gender stereotypes associated with the nursing profession [22]. From the perspective of social role theory, patients' initial concerns can be understood as perceived incongruity between traditional gender role expectations and male nurses' professional identity [23], although this study did not directly test this theory. Rather, through male nurses' actual experiences, this study presents how gender identity operates across different home care contexts, providing empirical evidence for understanding the gendered experiences of male nurses participating in IPNS.

4.6 Limitations

This study interviewed only 11 male nurses from multiple hospitals in Henan Province, China. The sample size and geographic scope are limited, and findings may not reflect the experiences of male nurses in other regions. Participants' cumulative service volumes ranged from approximately 10 to 300 cases, with considerable variation in experience, but the sample size precluded further comparison across different experience levels. Additionally, this study did not include female nurses, patients, family members, or platform administrators, and therefore cannot offer gender comparisons or perspectives from service recipients and managers. Future research could expand the geographic scope and participant sample, and include diverse stakeholder groups, to gain a more comprehensive understanding of this phenomenon.

5. Conclusions

Through semi-structured interviews with 11 male nurses, this study explored their work experiences in Internet-based home nursing services. The findings indicate that male nurses' gender identity in the home care context is neither a fixed advantage nor a barrier; its effects vary depending on patient gender, type of nursing procedure, and service context. Uncertainty in the home environment, inadequate supplies and equipment, and incomplete platform support further amplify the challenges of independent practice.

Based on these findings, it is recommended that healthcare institutions and platforms collaboratively strengthen support mechanisms in three areas: training, safety assurance, and staffing allocation. Public education should progressively weaken the association between the nursing profession and gender. Future research could expand the sample scope and include diverse perspectives from patients and managers to further examine the moderating mechanisms of gender in home care.

Declarations

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Author Contribution

BH and QC contributed to the study conception and design. BH and SS conducted the semi-structured interviews and performed data transcription. BH performed the data analysis using NVivo software. BH and QC reviewed and confirmed the thematic findings. ST, WY, WB, and FR contributed to data interpretation and critically revised the manuscript for important intellectual content. The first draft of the manuscript was written by BH. All authors provided critical feedback on previous versions, read and approved the final manuscript, and agreed to be personally accountable for their own contributions. QC served as the corresponding author and supervised the entire research process. All authors meet the authorship criteria of the International Committee of Medical Journal Editors (ICMJE), and no others who meet these criteria have been omitted.

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