Original Article

Outpatient Nursing Care (IONC) Model Effect on Self Care Patients with Pain in Outpatient Hospital

Iin Inayah*

*Lecturer, High School of Health Science Jenderal Achmad Yani Cimahi, Indonesia

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Corresponding author

Iin Inayah*
High School of Health Science Jenderal Achmad Yani Cimahi, Indonesia
Jl. Terusan Jend. Sudirman, Cibeber, Kec. CImahi Sela., Kota Cimahi, Jawa Barat
Phone : 022 – 6656190
e-mail: driininayahmkep@gmail.com

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Abstract

Background: Supporting self-care and managing pain effectively are critical elements of nursing practice in outpatient settings. Despite their importance, structured care models aimed at enhancing self-care behaviors among patients with pain are still underutilized in many outpatient environments.
Objective: This study aimed to assess the effectiveness of the Inayah Outpatient Nursing Care (IONC) Model in improving self-care abilities among patients experiencing pain in a hospital outpatient setting.
Methods: A quasi-experimental approach with a non-equivalent control group design was employed. The study was conducted at a public outpatient hospital in Bogor, West Java, Indonesia. A total of 200 patients were selected through purposive sampling, with 100 participants each in the intervention and control groups. Those in the intervention group received nursing care guided by the IONC Model, while the control group received standard outpatient nursing care. The impact on self-care was evaluated using a paired t-test to compare pre- and post-intervention scores.
Results: Participants who received care based on the IONC Model showed a statistically significant improvement in self-care abilities for pain management ($p = 0.0001$). The control group did not exhibit a comparable change ($p = 0.172$). A significant difference was also observed between the post-test scores of the two groups ($p = 0.0001$), indicating the model's effectiveness.
Conclusion: The IONC Model demonstrates strong potential for enhancing self-care among outpatients dealing with pain. Incorporating this model into routine nursing practices could lead to improved health outcomes in outpatient care settings.

Keywords: IONC Model, nursing process, outpatient care, pain management, quasi-experimental study, self-care

INTRODUCTION

As community-based hospital outpatient satellites, outpatient nursing services are currently in demand. The Ministry of Health's Strategic Plan for 2015-2019 emphasizes promotion and prevention over curative and rehabilitative care. Outpatient services, according to this definition, are health services that are directly related to public health services and are the first door, a marketing development and target program that focuses on public health that is very important and will determine the brand image of a hospital in providing client satisfaction as a frontline at home sick (1,2) .

Preliminary research on outpatient clients was conducted at several hospitals in West Java through observation and interviews. Patients reported a lack of health information from nurses, unclear nursing actions, nurses who are less friendly and responsive to client complaints, and a long wait for the examination (3). The client claims that she has not seen the nurse's role in outpatient care; the nurse's job is to call the client and take blood pressure. Outpatient health education provided by nurses is uncommon. Outpatient nurses, according to the majority of clients, were less responsive to client problems. The client also expressed concern about the recurrence of the same health problem as a result of his inability to care for himself following hospitalization. This is in contrast to the concept of primary care as a hospital frontline, where nurses must always be prepared, respond quickly to each client's problem, and assume that each client is important (4,5).

Preliminary study of outpatient nurses in several hospitals in West Java. The nurse said that she had not yet provided nursing care in outpatient care. Nurse job description in outpatient installation, just call the client, client administration and measure the client's blood pressure and weight (6). Outpatient nurses carry out their duties according to hospital job descriptions, while on outpatient nurse job descriptions set by the RI Ministry of Health in them health counseling. Based on the above, the role of professional nurses in outpatients is not optimal (7,8).

During the preliminary study in the outpatient installation of public hospitals, according to the Y Hospital nursing training, from the head of nursing Y Hospital said some nurses who want outpatient care because they only want morning service (9,10). Outpatient nurses are required to provide nursing care based on their accreditation and job description, but this is often not done. Nurses are generally confused in providing and documenting nursing care that is very complicated, difficult to put together on the client card, and frequently lost and rejected in the medical record. Y Hospital employs 10% of its outpatient nurses with an S1 degree, 3% with an SPK degree, and 87% with a D3 degree (11–13).

From this description it can be perceived that nursing management in ambulatory care has not yet run, so that it can make nursing services in ambulatory care less optimal and can reduce nurse competence. While the clinical authority of nurses in each unit is to carry out nursing care.

Nursing care for outpatients in hospitals that have been developed is Inayah Outpatient Nursing Care (IONC) Model. Where nursing care services are based on self care and patient satisfaction (14–16). Based on this, it is very good if outpatient nursing services use the IONC Model. In several studies that have been carried out in the outpatient diagnosis of nursing priority 90% of patients experience pain. Likewise in other studies in hospitalization, 90% of the priority nursing diagnoses were pain. This is in accordance with National and International Hospital Accreditation Standards (JCI), where Pain is one indicator of quality assessment. The purpose of the study was to identify the effect of the Inpatient Outpatient Nursing Care (IONC) Model on the Self Care of Patients with Pain in hospital outpatients.

METHODS

Study Design

This study employed a quantitative quasi-experimental design with a non-equivalent control group approach to evaluate the effectiveness of the Inayah Outpatient Nursing Care (IONC) Model in enhancing self-care among patients experiencing pain. The design was chosen to compare changes in outcomes between a group receiving the IONC intervention and a control group receiving standard care without random assignment (17).

Sample

The study population comprised outpatients experiencing pain at a public hospital in Bogor, West Java, Indonesia. A purposive sampling technique was used to select participants based on eligibility criteria. A total of 200 patients were included, divided equally into two groups: 100 in the intervention group and 100 in the control group.

Inclusion criteria were: adult patients aged 18 years and older, experiencing mild to moderate pain (as assessed by the Numerical Rating Scale), able to communicate effectively in Bahasa Indonesia, and willing to provide informed consent.

Exclusion criteria included patients with cognitive impairments, those undergoing palliative or end-of-life care, or patients who had

received specialized pain management interventions in the past month.

The minimum required sample size was calculated using G*Power software with a power of 0.80, a significance level (α) of 0.05, and an effect size of 0.5, resulting in 64 participants per group. To enhance statistical reliability and account for potential dropouts, the sample size was increased to 100 participants per group, resulting in a total of 200 participants.

Instrument

The primary instrument used to measure patient self-care was a Self-Care Ability Assessment Tool adapted from the Self-Care of Chronic Illness Inventory (SCCII) developed by Riegel et al. (18). The instrument comprises 20 items categorized into three domains: self-care maintenance, self-care monitoring, and self-care management. Each item is rated using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with total scores ranging from 20 to 100. Higher scores indicate greater self-care ability.

The original SCCII demonstrated strong internal consistency, with Cronbach's alpha coefficients of 0.83 for self-care maintenance, 0.76 for monitoring, and 0.88 for management(18). The instrument was translated and adapted into Bahasa Indonesia following standard translation and cultural adaptation procedures.

Procedure

The intervention group received nursing care based on the Inayah Outpatient Nursing Care (IONC) Model, which integrates holistic, family-oriented, and culturally sensitive nursing interventions aimed at enhancing self-care practices. The IONC model included structured education, pain management counseling, and self-monitoring techniques delivered over a series of three outpatient visits. The control group received routine nursing care, limited to vital sign monitoring and standard documentation. Pre-test measurements were conducted for both groups using the self-care instrument prior to the intervention. Post-test measurements were taken after the completion of the third outpatient visit. The intervention was implemented over a period of four weeks.

Data Analysis

Statistical analysis was conducted using SPSS version 25.0. Descriptive statistics (mean, standard deviation, frequency) were used to summarize demographic data and baseline characteristics. The paired t-test was used to compare pre- and post-intervention scores within each group. The independent t-test was used to compare post-test scores between the intervention and control groups. Statistical significance was set at $p < 0.05$.

Ethical Considerations

This study received ethical approval from the Health Research Ethics Committee. Written informed consent was obtained from all participants. The study adhered to the ethical principles outlined in the Declaration of Helsinki, ensuring participant confidentiality, voluntary participation, and the right to withdraw at any time.

RESULTS

The findings of this study demonstrated a statistically significant effect of the Inayah Outpatient Nursing Care (IONC) Model on improving self-care among outpatients experiencing pain. In the intervention group, a significant increase in self-care scores was observed following the implementation of the IONC model ($p = 0{,}0001$), while no significant change was detected in the control group ($p = 0.172$). The comparison between the intervention and control groups also revealed a significant difference in post-intervention self-care scores ($p = 0{,}0001$), indicating the effectiveness of the IONC model in enhancing pain-related self-care abilities (Table 1).

Table 1. Comparison of Self-Care Scores Between Intervention and Control Groups

Group	Time Point	Mean Score	Standard Deviation (SD)	*p-value*
Intervention Group	Pre-intervention	36.84	8.75	–
	Post-intervention	75.26	6.45	**0.0001***
Control Group	Pre-test	35.92	9.12	–
	Post-test	36.20	8.98	0.172
Between-Group Comparison	Post-test Scores	–	–	**0.0001***

Note. p-values calculated using paired t-test for within-group comparisons and independent t-test for between-group comparison.
*p < 0.001, statistically significant.

Although the intervention led to a notable improvement, the level of self-care competency did not reach the maximum score of 100 after a single outpatient visit. The highest post-intervention score recorded was 85, compared to a baseline high of 41. This indicates substantial progress in patients' self-care capacity, though further reinforcement through follow-up visits may be needed to achieve optimal competency. Among the specific self-care indicators, participants showed the greatest improvement in the ability to explain signs and symptoms of pain. However, the lowest post-intervention scores were observed in patients' ability to identify the conditions that require returning to the hospital. This suggests the need for ongoing education in recognizing critical signs that warrant follow-up care.

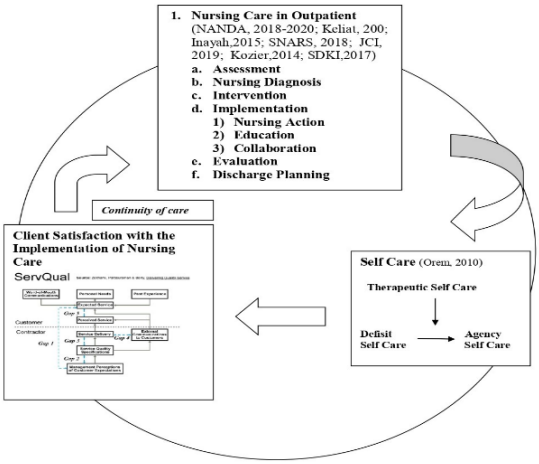
In the intervention group, prior to the application of the IONC model, the lowest score was 15, which pertained to the ability to reduce pain scores through relaxation techniques, distraction, and deep breathing. The highest pre-intervention score was 43, related to the ability to describe distraction techniques. Following the intervention, these scores increased significantly. The lowest score improved to 63, again related to pain reduction techniques, while the highest post-intervention score reached 85, in the domain of identifying pain-related signs and symptoms.

Table 2. Pre- and Post-Intervention Scores by Self-Care Indicator in the Intervention Group

Self-Care Indicator	Pre-Intervention Score	Post-Intervention Score	Change
Ability to explain signs and symptoms of pain	41	85	+44
Ability to describe distraction techniques	43	78	+35
Ability to identify conditions requiring return to hospital	35	64	+29
Ability to reduce pain using relaxation, distraction, and deep breathing techniques	15	63	+48

Note. Scores reflect maximum values recorded among participants in the intervention group for each self-care indicator.

These findings are illustrated in Figure 1, which shows the comparative self-care score distributions between the control and intervention groups before and after the intervention.



Picture 1. IONC Model

DISCUSSION

This study provides evidence that the implementation of the Inayah Outpatient Nursing Care (IONC) Model significantly improves the self-care abilities of outpatients experiencing pain. The findings demonstrate a substantial increase in overall self-care scores following the intervention, with the intervention group showing significantly higher post-intervention scores compared to the control group. These results highlight the effectiveness of the IONC Model as a structured, patient-centered nursing approach that supports patients in managing their pain independently (19).

A particularly noteworthy outcome was the marked improvement in patients' ability to identify and articulate the signs and symptoms of pain, which emerged as the highest-scoring domain after the intervention. This suggests that the educational and supportive components of the IONC Model effectively enhance patients' understanding of their condition, which is essential for timely and appropriate self-management. However, the lowest post-intervention scores were observed in the domain related to recognizing conditions that require a return visit to the hospital. This finding underscores a continuing gap in patient awareness regarding when to seek follow-up care—an area that may warrant further emphasis in future interventions (20).

The pre-intervention data revealed minimal self-care competence, particularly in the use of relaxation, distraction, and deep breathing techniques, which scored lowest before the IONC intervention. After receiving the model-based care, participants demonstrated significant improvements in these areas, reflecting the model's capacity to empower patients with practical pain-relief strategies. These outcomes are consistent with prior research emphasizing the importance of tailored nursing interventions in improving self-care capacity and health literacy in outpatient populations (18,21).

The implementation of the IONC Model aligns with global trends toward holistic, competency-based outpatient care. Given the chronic nature of pain and the shift of care responsibilities to patients and families, structured nursing models like IONC are especially relevant in outpatient settings where patients do not receive continuous supervision. Integrating this model into standard outpatient nursing practice can serve as a strategic response to address not only the clinical needs of patients but also to strengthen the role of nurses in leading self-care education and support (22).

The findings also carry implications for hospital administrators. It is recommended that outpatient nursing services routinely assess the most prevalent nursing diagnoses encountered in their settings. These insights can form the basis for developing standardized care pathways, clinical practice guidelines, documentation formats, and professional competency benchmarks. Furthermore, routine supervision and performance evaluation of

nurses providing outpatient care are essential to ensure adherence to best practices and consistent quality of care. In light of the ongoing challenges in managing pain in outpatient settings, there is also a critical need for continued innovation in nursing technologies. Future initiatives should explore the integration of digital tools, such as mobile apps and tele-nursing platforms, to enhance the reach and sustainability of pain management interventions (23).

CONCLUSION

The findings of this study affirm that the Inayah Outpatient Nursing Care (IONC) Model significantly enhances self-care abilities in outpatients experiencing pain. The structured, holistic approach provided by the IONC Model effectively improves patients' knowledge, coping strategies, and symptom recognition related to pain management. Although some aspects of self-care, such as recognizing when to return to the hospital, require further emphasis, the model demonstrated clear potential to empower patients in managing their health outside of clinical supervision. Given its demonstrated effectiveness, the IONC Model should be integrated into routine nursing practice within outpatient hospital settings, particularly for patients presenting with pain-related nursing diagnoses. Hospital administrators are encouraged to use these findings as a foundation for strengthening outpatient nursing care standards, improving clinical competencies, and developing evidence-based interventions. Continued innovation and supervision are essential to ensure the model's sustainability and to optimize the quality of pain management in outpatient care environments.

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Author Contributions
II was solely responsible for the conceptual design, data collection, data analysis, and writing of the manuscript. The author approved the final version of the manuscript for publication.

Conflict of Interest Disclosure
The author declares that there are no conflicts of interest related to this study or its publication.

Data Availability Statement
The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request, in accordance with ethical standards and participant confidentiality.

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