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Examination of Safety Protocols in Nursing: Evaluating Best Practices for Documenting Nutritional Assessments and Dermatological Treatments within Laboratory Environments

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Abstract

Background: The provision of secure and effective primary healthcare (PHC) is imperative globally, particularly highlighted by the COVID-19 pandemic. Primary healthcare nursing professionals (PHCNPs) have emerged as vital contributors in enhancing patient access and quality of care. Despite their significant role, there is a lack of comprehensive indicators for assessing their impact in various healthcare settings, particularly in nutritional assessments and dermatological treatments.

Methods: A systematic review was conducted, focusing on literature published from 2010 to 2023. Eight electronic databases were searched for relevant studies that examined the outcomes related to PHCNP interventions. The review analyzed indicators from patient, provider, and health system perspectives to evaluate the effectiveness of PHCNP roles.

Results: The findings revealed that PHCNPs contribute positively to various health outcomes, including improvements in activities of daily living, mental health, and chronic disease management. Statistically significant enhancements were noted in patient satisfaction, adherence to treatment protocols, and overall health perceptions. However, disparities in documentation practices and indicators were evident, suggesting a need for standardized metrics to fully capture the effectiveness of PHCNP interventions.

Conclusion: This review underscores the importance of establishing clear indicators for PHCNP practices to improve patient care and health outcomes. The implementation of standardized documentation practices is essential for optimizing the contributions of PHCNPs in nutritional and dermatological assessments, ultimately enhancing the quality of primary healthcare services.

Keywords: Primary healthcare, nursing professionals, health outcomes, systematic review, patient satisfaction.

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1. Introduction

The provision of secure, effective, and efficient primary medical care (PHC) is a worldwide need [1, 2]. System-level attributes such as availability, thoroughness, coordination and continuation of treatment, equality, system integration, as well as patient-centeredness are essential factors in delivering primary health care. The COVID-19 outbreak underscored the urgent need for workforce statistics to assess the contributions of non-physician providers in effectively addressing unmet patient care requirements globally [3-5]. Globally, primary- healthcare nursing professionals (PHCNPs) have been implemented to enhance access to care [6]. PHCNPs are graduate-level nurses with extensive clinical skills who operate in various healthcare environments (such as primary care, residential care, and long-term care) delivering PHC services to diverse populations [6–9].

A comprehensive evaluation of primary healthcare quality indicators conducted by Ramalho et al. [4] revealed 727 indicators, with over 75% about care procedures (e.g., therapy). Numerous systematic reviews have been conducted [10–12] to elucidate the role of PHCNPs in patient care. These assessments indicated that PHCNPs offer care that is comparable to or exceeds that of the comparable category, often doctors. Distinct patterns were seen regarding appointment durations, with extended appointments for PHCNPs benefiting the physician cohort. Moreover, comprehensive studies indicated a scarcity of findings on the effects of mental health care delivered by PHCNPs. In 2009, Laurant and associates observed that a precise delineation of nurses' tasks was absent in most assessments [13]. Following their examination of systematic reviews (n = 18 papers) on the efficacy of nonphysician clinicians, they investigated PHCNPs along with additional nursing roles. In 2014, Kilpatrick et al. [14] performed an umbrella review to assess the influence of graduate-prepared caregivers in advanced practice positions, including nursing practitioners (NPs) and clinical nursing specialists. This umbrella study found four systematic evaluations that evaluate outcomes for patients, providers, and healthcare systems in acute and primary care environments.

The extension of PHCNP roles into new domains such as residential and long-term care to facilitate patient-centered care has shown a significant gap in identifying indicators used to document the results of PHCNP practice based on established role definitions. To comprehend the contribution of PHCNPs to care and consolidate the existing information, we performed a study of systematic examination of research studies that included established definitions of the PHCNP function [15-19]. Our objectives were to evaluate the quality of systematic studies about the effects of PHCNP practice from the viewpoints of patients, providers, and health systems; and find indicators that are dependent on PHCNP activity from the perspectives of patients, providers, and health systems.

2. Methods

We restricted the search to the years 2010 through 2023 to identify the most current trends. Pieper et al. [20] contend that around fifty percent of published evaluations include obsolete material after five years. Minor modifications were implemented in the databases as stipulated in the protocol since some databases were unavailable during data collection [21-30]. We searched the following electronic databases: Web of Science Core Collection, MEDLINE, PubMed, Joanna Briggs Institute (JBI), Global Health, Embase, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). The search method included topic headings and keywords pertinent to basic healthcare, advanced training nursing, and other outcome categories.

3. Categories of patient indicators

Seven research investigations [27, 32–37] reported on activities of daily living, including assessments of health state and functional capabilities in older persons and children with particular needs. Donald [27] and Osakwe [37] saw substantial improvements in activities of daily living. Following the implementation of NP home care visits, parents of children with special needs had a reduction in job absenteeism, while the frequency of school attendance among these children improved, with a negligible increase in those missing

more than 20 days. Lovink [32], Morilla-Herrera [34], and Newhouse and Stanik Hutt [35, 36] reported mixed outcomes, with certain studies indicating statistically significant enhancements in Activities of Daily Living (ADLs), particularly basic ADLs, while other studies within their reviews demonstrated no discernible difference, such as in relationships, among the intervention and control groups.

Five investigations demonstrated adaptation to health situations [34-38]. This indication was analyzed using twelve distinct metrics. Notable enhancements in the NP group were observed in adaptation-related objectives, diminished marginalization during treatment, life review therapy for homebound elderly patients experiencing depression, decreased uncertainty for depressed women with cancer, alleviated distress in women with cancer and adolescents within the initial 24 months, empowerment for arthritis patients at 12 months, arranging care, and reduced caregiver distress [34]. No significant differences between groups were seen in overall goal accomplishment for long-term care inhabitants, advance directive measures and caregiver burden.

Clinical conditions were the predominant category of variables, to sum up. The indicators were classified: as medical care, heart disease, cancer treatment, diabetes, psychological wellness, kidney, respiratory, and rheumatoid arthritis outcomes. Clinical and health outcomes were identified in nine research [39-47], including health risk decrease, overall health, self-reported perceived health, SF-36 physical composite score, physiological measurements, and clinical outcomes. Milesky et al. [47] indicated that NPs enhanced mental health in almost one-fifth of their instances. No substantial variations between groups were seen in three evaluations [12, 35, 36]. Enhancements in medical results were seen in the NP group across three more evaluations [41, 45, 46], however, p-values were not disclosed in two studies [41, 47]. Van Vliet et al. emphasized that there is less knowledge on the impact of NP duties on emergency treatment [42].

Medical and cardiovascular results were assessed in ten studies [11, 32, 33, 35, 36, 48, 49, 50–52], encompassing blood pressure, lipid profiles, heart failure incidence, ejection fraction, N-terminal pro-brain natriuretic peptide amounts (a heart failure biomarker), functional exercise capacity (indicative of cardiac operates), left-ventricular end-diastolic volume measure, undetected hypertension, and vascular risk mitigation. Four evaluations [53-56] revealed substantial improvements in blood pressure results for the NP group. Studies by Carranza [56] and Smigorowsky [57] indicated trends toward enhanced metabolic outcomes and decreased vascular risk favoring the NP group (no p-value stated). Insignificant findings were seen in four trials [33, 39, 58, 59]. Lipids were assessed using cholesterol measurement, average total cholesterol levels, decrease in high-density lipoprotein and triglycerides. Investigations by Schadewaldt [39] and Newhouse and Stanik-Hutt [35, 36] revealed trends indicating a decrease in total cholesterol and an increase in high-density lipoprotein favoring the NP group, while three investigations [33, 39, 60] reported no significant changes. Schadewaldt et al. [39] observed variations in lipid regulation at 3, 6, 12, and 18 months. Two evaluations yielded mixed outcomes, with outcomes for the NP category being equivalent to or better [35, 36, 39]. Statistically substantial enhancements were seen in the ejection fraction and composite score for heart failing patients favoring the NP group [32].

Clinical and cancer treatment were noted in two reviews [31, 49]. Measures included clinical evaluation of cutaneous lesions, precision of skin lesion assessments, and post-treatment survivorship management. Loescher et al. [31] observed a trend of increased exams with a reduction in dermatologist referrals and biopsy procedures (no p-value provided). Smith and colleagues [49] emphasized their inability to locate studies incorporating NPs in their evaluation of post-treatment survival care.

Clinical and diabetes outcomes were emphasized in several research studies [32-36, 53, 59–61]. The markers comprised HbA1C, HbA1C at three months, two or more HbA1C assessments, glucose levels, diabetes management, foot examinations, retinal evaluations, and yearly ocular examinations. No notable changes in HbA1C levels were seen across groups in three evaluations [32, 36, 60], including a meta-analysis including four investigations [33]. One trial found inconclusive outcomes for HbA1C [61]. Two trials demonstrated improvements in HbA1C [53, 56], however, one evaluation did not provide a p-value [59]. Glucose regulation was seen in two trials [35, 36, 59], with Carranza [56] noting a tendency of enhancement in the NP group. Diabetes management was assessed in two trials [60, 61], revealing considerable

enhancements favoring the intervention group in one research [61], whereas the second study [60] revealed no changes. Retinal and foot examinations were performed more often in the NP group in one evaluation [60], but the second research [61] revealed no significant differences in requests for yearly ophthalmologist examinations.

Clinical and mental health outcomes were documented in eight reviews [14, 28, 35, 39, 44, 52, 55, 57]. Substantial decreases were seen in the NP group for anxiety recovery, psychological strain, and uncertainty among sad women with malignancy, sadness, and illicit drug usage [27, 44, 55]. NP-administered motivational interviewing resulted in a substantial improvement in patient self-management of depression in one study ($p < 0.001$) [44]. Trends indicating decreases in anxiety, cognitive impairment, and serious depressive disorders at 12 months were seen, however, p-values were provided inconsistently [44, 52]. No significant changes were seen in: anxiety and depression in long-term care; medical care at 1 and 4 years; the SF-36 mental composite score for individuals with heart failure; subjective medical condition; and the alcohol use disorder detection test scores [14, 35, 39, 44, 57]. Schadewaldt et al. [39] warned of a potential cross-over impact in the control group after four years, indicating reduced probabilities for sadness ($p = 0.001$).

Clinical and renal outcomes were observed in two trials [33, 60]. One research indicated substantial differences favoring the NP group in urinalysis findings, while another evaluation found no significant changes between groups in mean urine removal of salt as well as serum creatinine at six months [33, 60]. A trend indicating increased urine albumin excretion was seen in the control group; however, no p-value was provided. Clinical and respiratory outcomes were detailed in six reviews [27, 29, 33-36, 60]. No notable differences were observed between the control and intervention groups regarding changes in maximum peak flow in asthma, emergency nebulization, exacerbation frequency, 6-month follow-up, breathing problems severity, asthma symptoms, absenteeism from work or school because of asthma, forced expiration volume at one second (FEV1), peak velocity, airway hyper-reactivity assessed via PD/PC20 methacholine/histamine, and lung function at 12 and 24 months. Inconsistent outcomes are seen for asthma management. No substantial change was seen by Donald et al. Substantial decreases in nocturnal symptoms, oral corticosteroids, improved compliance with medication, and degree of control were seen in one study [53].

Outcomes related to clinical and rheumatoid arthritis were seen in two trials [56, 59]. A study analyzed disease activity in rheumatoid arthritis, revealing substantial decreases in the NP group across all trials included. A study evaluated disease progression and severity, revealing patterns indicative of improvements [59]. One evaluation assessed morning stiffness, revealing substantial improvements in the NP group [56]. Diagnosis was established in three trials [60, 63, 64], including diagnostic accuracy, prevalent diagnoses, and nurse-initiated X-rays and therapies. The predominant diagnosis in the emergency department encompassed soft tissue wounds and injuries. Enhancements were seen in neoplasia detection, diagnosis, and treatment within the NP group.

The Education-Patient category included seven research [11, 34, 41, 59–62], all of which reported favorable developments for the NP group in this indicator category. Measures encompassed patient information, health education, pharmacological treatment, symptom alleviation, discharge instructions, provision of written documentation as a strategy, enhancement of knowledge, contact information for assistance, dietary and activity recommendations including sodium reduction, moderation of alcohol intake, and weight management and reduction. Statistical significance favoring the NP group was achieved in four assessments [11, 34, 60, 61].

Mortality was analyzed in eleven trials [10, 27-30, 34–36, 39, 52, 56, 63]. Seven evaluations [27, 30, 32, 34–36, 52, 56] identified no substantial disparities in death rates, both at 90 days and 24 months, across the groups. Substantial decreases were seen for the NP group in three investigations [28, 52, 59] regarding mortality and death at 12 months. Two reviews yielded mixed outcomes; one review indicated that 1 out of 4 studies reported a decreased mortality risk in the control group [10], while the other review [39] demonstrated statistically significant reductions in overall mortality for the NP group at the 4-year follow-

up (p = 0.038). This tendency lost significance during the 10-year follow-up due to the potential for a cross-over impact among individuals [39].

Patient adherence was analyzed in three trials [12, 27, 29]. Results favored NP care [27], demonstrating enhanced patient adherence to beta-blockers, statins, as well as angiotensin-converting enzyme blockers, as well as greater participation at cardiac rehabilitation programs. These estimations failed to achieve statistical significance. Swan and colleagues indicated that patient compliance to follow-up was greater in the NP group, although they did not provide a p-value [12].

Quality of Life (QOL) was recognized in twelve evaluations [27, 29, 32, 34, 37, 39, 41, 55, 57, 59–61]. Three evaluations indicated statistically significant enhancements favoring NPs in physical and mental quality of life over time, diabetes, quality of life, and overall health perception [39, 60]. No disparities were seen between groups for asthma or respiratory quality of life, mental quality of life, quality of life at 18 months and four years, quality-adjusted life years, and health-related quality of life post-cardiac surgery [27, 29, 39, 57, 60]. Kuethe [29] conducted a meta-analysis of two trials and found no significant difference in quality of life between the groups. Three reviews demonstrated findings on quality of life that were equal to or better than previous results [34, 41, 61]. One evaluation noted a substantial decline in physical quality of life in the NP group [60].

The satisfaction of patients and families was assessed in 18 reviews [11-13, 34–38, 45, 52–54, 59, 60, 64–67]. Consistently highlighted were improvements in family and patient satisfaction across all evaluations. Statistical significance and p-values are stated inconsistently. Four studies [11, 27, 40, 67] indicated substantial enhancements benefiting the NP group. Patel et al. [38] observed conflicting results on patient satisfaction with standard treatment (control group) in U.S. jurisdictions characterized by the least vs the most restricted nurse practitioner scope of practice regulations.

Signs and symptoms encompassed nine reviews [27, 29, 34, 39, 40, 56, 59, 61, 68], which included: symptom management, symptom improvement, urinary tract infections, pain, fatigue, the impact of arthritis, symptom-free days, dementia symptoms, cognitive and behavioral changes, angina symptoms, post-treatment continence, urinary symptoms at three and six months, daytime and nocturnal leakage, leakage extent at three months, total symptom count at three months, overall signs at six months, and handling of asymptomatic urinary tract infections. Marked disparities favoring the NP group were observed in symptom management, dementia symptom management, all urinary symptoms, total urinary symptom count, and daytime leakage severity at three months, as well as in the management of asymptomatic urinary tract infections through increased fluid intake, frequent toileting, and cranberry juice consumption [34, 40, 59]. Results indicating a significant advantage for the NP group regarding pain and exhaustion were observed [56]. All other results indicated no substantial differences across the groups.

4. Categories of provider indicators

Compliance with best practices among providers was noted in six studies [12, 27, 32, 39, 44, 61]. Nurse practitioners were shown to enhance compliance with optimal medication recommendations, comprising beta-blockers, statins as well angiotensin-converting enzyme inhibitors, and aspirin, at the one-year follow-up [27, 32, 39, 61]. No substantial changes were seen for medicines such as clopidogrel and aspirin [27]. No substantial differences were seen regarding nurse practitioners delivering guideline-recommended mental health treatment, including medication management, counseling, cognitive behavioral therapy, problem-solving therapy, patient monitoring, and motivational interviewing for older persons in one study [44]. Inconsistent results were noted in one analysis concerning long-term care [32] and another about primary care [12]. Lovink et al. [32] observed no substantial disparities in adherence and compliance with standards, including yearly obligatory histories and physical exams, in long-term care. Notable results supporting the NP group were seen in the care of vulnerable elderly, second-line prevention, people with dementia, urinary tract infections, and compliance to care and collaboration [32, 61]. Swan and colleagues [12] discovered that, in primary care, nurse practitioners (NPs) excelled in delivering disease-appropriate treatment, educating patients on the etiology of their illness, alleviating symptoms, and discussing the

likelihood of sickness relapse in two out of three trials, with no notable differences seen in the third research.

The Education-Provider encompassed five studies [31, 32, 64, 69, 70]. The expertise of providers was evaluated through the Australasian Triage Scale, patient counseling on obesity, skin cancer diagnosis and schooling, early skin cancer detection, and orientation in long-term care. Two evaluations [31, 70] revealed that training enhanced understanding of the clinical evaluation of skin lesions, however, no p-value was provided. Stratton et al. [70] determined that didactic courses for dermatological clinicians lasted 14 minutes, whereas clinical apprenticeships extended up to six months; however, no information about scheduling or frequency was specified. The methods of delivering the instructional interventions were either in-person or via expert observations.

Illness prevention was recognized in seven investigations [27, 39, 49, 55, 56, 59, 60]. Indicators for illness prevention encompassed health behaviors (physical activity, diet/nutrition, tobacco use withdrawal, and cessation within one year), weight/body mass index and weight reduction, depression screening for women, health assessments, cancer screenings (cervical, breast, colorectal), and human papillomavirus (HPV) vaccination. Four evaluations indicated substantial differences favoring the NP group [49, 55, 56, 60]. One trial indicated that NPs were advantageous for weight reduction, however, no p-value was found [59]. Another study indicated comparable to substantial results for smoking cessation lasting up to one year [39]. Smith and colleagues [49] emphasized that no research investigated the HPV vaccine administered by nurse practitioners and that two of four studies indicated doctors reported higher rates of colorectal cancer screening compared to nurse practitioners and physician assistants [49].

The functioning of interprofessional teams was analyzed in four reviews [32, 44, 52, 69]. Providers indicated favorable views of high-functioning interprofessional groups [69] and improved interaction McParland [52]. Lovink et al. noted in their analysis of long-term care that no provider outcomes were discovered [32]. In mental health, nurse practitioner-led collaborative treatment resulted in substantial improvements in patients' depression symptoms [44]. A collaborative practice paradigm involving nurse practitioners (NPs) and NPs specializing in mental health augmented the monthly case reviews from 5 to 15 and diminished referrals to the specialist mental health NP from 19 to 5 (no p-value found) [44].

5. Categories of Health System indicators

Access to care was identified in five evaluations [47, 59, 65, 69, 70]. Enhanced access to care was seen with open access scheduling for the NP group [65]. The incorporation of pediatric nurse practitioners increased the percentage of urgent consultations and facilitated access between visits [59]. The establishment of an NP-led monitoring clinic enhanced access to therapy for precancerous lesions by 18.3%, with 6.2% receiving treatment for non-melanoma skin cancer [70]. Yang et al. [69] indicated comparable to substantial enhancements in primary care access, whereas Milesky [47] observed that the topic of augmented health care access was present in 10.3% of these occurrences.

Consultations were documented in 11 research [11, 12, 27, 29, 31, 32, 42, 56, 58–60]. The results demonstrated substantial decreases in both the quantity and length of consultation calls in rehabilitation, as well as the overall number and duration of consultation calls for the NP group. A markedly increased number of visits and referrals to doctors was seen when constraints on the scope of practice were imposed [56, 58]. Referrals for echocardiography in patients with suspected congestive heart failure were significantly higher in the NP group. Numerous evaluations indicated that consultation durations were extended for nurse practitioners [11, 56, 60]. A meta-analysis including 2500 patients indicated an increase of 4.1 minutes in the intervention group [11]. Research indicated that patients with chronic diseases, such as diabetes and hypertension, saw an average consultation time increase of 11 minutes. One study did not give a comparison of consultation times; however, it noted a reduction in consultation times between the first and third visits [29]. Another review did not disclose any measurements of consultation times [59]. No substantial intergroup variations were seen in the number of referrals across three evaluations [11, 12, 42]. Unnecessary dermatological referrals and biopsies decreased [31], but unplanned visits for acute diseases in long-term care considerably escalated in the NP group [32].

6. Summary

Our analysis of systematic reviews revealed 44 systematic reviews. The results from the reviews consistently indicate equivalent or improved results for those receiving primary healthcare, home care, and long-term care environments for the PHCNP cohort. Identifying metrics that reflect the daily activities of PHCNPs from the viewpoints of patients, providers, and the healthcare industry will enable patients, healthcare professionals, scholars, and decision-makers to comprehend the impact of these providers on care outcomes. Comprehending the patient viewpoint is crucial in the realm of patient-centered treatment and in tailoring services to meet the requirements of vulnerable groups, such as long-term care residents, those with mental health disorders, or those of poor socio-economic status. Primary Health Care Nurse Practitioners, other physicians, and decision-makers may monitor these indicators to assess if the responsibilities of PHCNPs are used effectively in addressing patient care requirements.

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فحص بروتوكولات السلامة في التمريض: تقييم أفضل الممارسات لتوثيق التقييمات الغذائية والعلاجات الجلدية داخل بيئات المختبرات

الملخص

الخلفية :يُعد توفير رعاية صحية أولية (PHC) آمنة وفعالة أمرًا ضروريًا على مستوى العالم، وهو ما برز بشكل خاص خلال جائحة-COVID 19.ظهر الممرضون المهنيون في الرعاية الصحية الأولية (PHCNPs) كمساهمين حيويين في تحسين وصول المرضى وجودة الرعاية. ومع ذلك، لا تزال هناك فجوة في المؤشرات الشاملة لتقييم تأثيرهم في مختلف بيئات الرعاية الصحية، وخاصة في التقييمات الغذائية والعلاجات الجلدية

الطرق :تم إجراء مراجعة منهجية ركزت على الأدبيات المنشورة بين عامي 2010 و2023. تم البحث في ثمانية قواعد بيانات إلكترونية عن دراسات ذات صلة تفحص النتائج المتعلقة بتدخلات .PHCNP وحللت المراجعة المؤشرات من منظور المرضى، ومقدمي الرعاية، والنظام الصحي لتقييم فعالية دور الممرضين المهنيين في الرعاية الصحية الأولية.

النتائج :أظهرت النتائج أن الممرضين المهنيين في الرعاية الصحية الأولية يساهمون بشكل إيجابي في تحسين مختلف النتائج الصحية، بما في ذلك الأنشطة اليومية، والصحة النفسية، وإدارة الأمراض المزمنة. لوحظت تحسينات ذات دلالة إحصائية في رضا المرضى، والالتزام ببروتوكولات العلاج، والإدراك العام للصحة. ومع ذلك، ظهرت تفاوتات في ممارسات التوثيق والمؤشرات المستخدمة، مما يشير إلى الحاجة إلى مقاييس موحدة لقياس فعالية تدخلات PHCNP بشكل كامل.

الخلاصة :تؤكد هذه المراجعة على أهمية إنشاء مؤشرات واضحة لممارسات الممرضين المهنيين في الرعاية الصحية الأولية لتحسين رعاية المرضى والنتائج الصحية. يُعد تنفيذ ممارسات توثيق موحدة أمرًا أساسيًا لتعظيم مساهمات الممرضين المهنيين في التقييمات الغذائية والجلدية، مما يؤدي في النهاية إلى تحسين جودة خدمات الرعاية الصحية الأولية.

الكلمات المفتاحية :الرعاية الصحية الأولية، الممرضون المهنيون، النتائج الصحية، مراجعة منهجية، رضا المرضى.