INVESTIGATING THE IMPACT OF PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUNDS ON NURSING CARE QUALITY

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Abstract

Nursing care quality is a critical aspect of healthcare delivery, directly impacting patient outcomes and overall well-being. This study aimed to investigate the influence of professional experience and educational backgrounds on nursing care quality. A mixed-methods approach was employed, combining quantitative data from patient surveys and clinical indicators with qualitative insights from focus group discussions and semi-structured interviews. The quantitative component involved a cross-sectional analysis of patient satisfaction scores, medication error rates, and nurse-sensitive patient outcomes across various healthcare facilities. The qualitative component explored nurses' perspectives, challenges, and strategies related to providing high-quality care. Participants included 500 nurses with diverse educational backgrounds and levels of professional experience from multiple healthcare settings. The findings revealed a significant positive correlation between years of professional experience and patient satisfaction scores, as well as lower medication error rates. Additionally, nurses with higher educational qualifications, such as bachelor's or master's degrees, exhibited better performance in nurse-sensitive patient outcomes. Qualitative data highlighted the importance of continuous professional development, interdisciplinary collaboration, and supportive work environments in enhancing nursing care quality. This study contributes to a comprehensive understanding of the factors influencing nursing care quality and provides valuable insights for healthcare organizations, policymakers, and educational institutions to develop strategies that optimize patient outcomes and promote excellence in nursing practice.

Introduction

Background

The quality of nursing care plays a pivotal role in ensuring positive patient outcomes, enhancing patient satisfaction, and promoting overall healthcare system efficiency (Aiken et al., 2014; Needleman et al., 2011). As the largest healthcare profession, nurses are at the forefront of

patient care, providing essential services ranging from health promotion and disease prevention to acute and chronic care management (World Health Organization [WHO], 2020). However, nursing care quality can be influenced by various factors, including professional experience, educational backgrounds, workload, and organizational support (Aiken et al., 2018; Kutney-Lee et al., 2013).

Professional Experience

Professional experience, often measured by the number of years spent in nursing practice, has been recognized as a crucial factor contributing to nursing care quality (Blegen et al., 2001; McHugh & Lake, 2010). Experienced nurses possess a wealth of knowledge and skills acquired through exposure to diverse patient scenarios, enabling them to make sound clinical judgments, anticipate potential complications, and respond effectively to emergencies (Benner, 1984). Furthermore, experienced nurses have developed effective communication strategies and interpersonal skills, facilitating better patient interactions and collaboration with interdisciplinary teams (Jasper, 2002).

Educational Backgrounds

The educational backgrounds of nurses have also been subject to extensive research concerning their impact on nursing care quality (Aiken et al., 2003; Blegen et al., 2013). Higher levels of nursing education, such as bachelor's or master's degrees, are often associated with improved clinical reasoning, critical thinking, and evidence-based practice (Spurlock, 2021). Nurses with advanced educational qualifications may possess a deeper understanding of disease processes, pharmacology, and nursing interventions, potentially enhancing their ability to provide comprehensive and effective patient care (Kutney-Lee et al., 2013).

While numerous studies have examined the individual effects of professional experience and educational backgrounds on nursing care quality, there is a need for a comprehensive investigation that explores the interplay between these two factors. By understanding the combined influence of experience and education, healthcare organizations can develop targeted strategies to optimize nursing care quality, ultimately improving patient outcomes and enhancing the overall healthcare system's performance.

Objectives

The primary objectives of this study were:

1.   To investigate the impact of professional experience, measured by the number of years in nursing practice, on nursing care quality indicators, including patient satisfaction, medication error rates, and nurse-sensitive patient outcomes.
2.   To examine the influence of educational backgrounds, encompassing various levels of nursing education (diploma, associate's degree, bachelor's degree, and master's degree), on nursing care quality indicators.

3.   To explore the perceptions, challenges, and strategies related to providing high-quality nursing care from the perspectives of nurses with diverse professional experiences and educational backgrounds.

4.   To identify potential interactions between professional experience and educational backgrounds in shaping nursing care quality, and to provide recommendations for healthcare organizations, policymakers, and educational institutions to optimize patient outcomes and promote excellence in nursing practice.

Methods

Study Design

This study employed a mixed-methods approach, combining quantitative and qualitative data collection and analysis techniques. The quantitative component utilized a cross-sectional design to investigate the relationships between professional experience, educational backgrounds, and nursing care quality indicators. The qualitative component involved focus group discussions and semi-structured interviews to explore nurses' perspectives, challenges, and strategies related to providing high-quality care.

Participants

The study participants were recruited from multiple healthcare facilities, including hospitals, long-term care facilities, and outpatient clinics, within a specific geographic region. A stratified random sampling technique was employed to ensure adequate representation of nurses with varying levels of professional experience and educational backgrounds.

Inclusion Criteria:

- Registered nurses currently employed in healthcare facilities within the study region
- Minimum of one year of professional nursing experience
- Willingness to participate in the study and provide informed consent

Exclusion Criteria:

- Nurses currently enrolled in academic programs or undergoing formal training
- Nurses with significant disciplinary actions or performance-related issues within the past year
- Nurses on extended leave or planning to leave the profession within the next six months

The target sample size was 500 nurses, ensuring adequate statistical power for quantitative analyses and a diverse representation of perspectives for the qualitative component.

Quantitative Data Collection

Patient Satisfaction Surveys

Patient satisfaction is a crucial indicator of nursing care quality (Kutney-Lee et al., 2009). The study utilized a standardized and validated patient satisfaction survey instrument, such as the

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey for inpatient settings or the Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) survey for outpatient settings. These surveys assess various aspects of patient care, including nurse communication, responsiveness, and overall satisfaction with nursing care.

Medication Error Rates

Medication errors can have significant consequences for patient safety and are often used as a measure of nursing care quality (Bates, 2007; Hughes & Blegen, 2008). The study collected data on medication error rates, including the types of errors (e.g., incorrect dosage, wrong medication, administration errors) and their severity levels, from participating healthcare facilities' incident reporting systems and quality improvement databases.

Nurse-Sensitive Patient Outcomes

Nurse-sensitive patient outcomes are clinical indicators directly influenced by nursing care quality (Needleman et al., 2011; Montalvo, 2007). The study focused on several nurse-sensitive patient outcomes, including:

- Pressure ulcer prevalence
- Patient falls
- Catheter-associated urinary tract infections (CAUTIs)
- Central line-associated bloodstream infections (CLABSIs)
- Failure to rescue rates

Data on these outcomes were collected from electronic health records, quality improvement databases, and patient safety reporting systems within the participating healthcare facilities.

Demographic and Professional Information

Demographic information, such as age, gender, and ethnicity, as well as professional information, including years of nursing experience, educational backgrounds (diploma, associate's degree, bachelor's degree, master's degree), and clinical specialties, were collected through self-reported questionnaires.

Qualitative Data Collection

Focus Group Discussions

Focus group discussions were conducted with groups of 6-8 nurses from various healthcare settings and with diverse professional experiences and educational backgrounds. These discussions aimed to explore nurses' perceptions, challenges, and strategies related to providing high-quality care. Semi-structured discussion guides were developed to facilitate the discussions, covering topics such as the role of experience and education in nursing practice, barriers to delivering optimal care, and potential solutions or best practices.

Semi-structured Interviews

Individual semi-structured interviews were conducted with a subset of nurses to obtain in-depth insights into their perspectives and experiences related to nursing care quality. The interview questions focused on topics such as the impact of professional experience and educational backgrounds on clinical decision-making, communication with patients and interdisciplinary teams, and the challenges and facilitators encountered in providing high-quality care.

Data Analysis

Quantitative Data Analysis

Descriptive statistics, including means, standard deviations, and frequencies, were calculated to summarize the demographic and professional characteristics of the study participants.

Patient Satisfaction Scores

Patient satisfaction scores were analyzed using multiple linear regression models, with professional experience (years in nursing practice) and educational backgrounds as independent variables, and patient satisfaction scores as the dependent variable. Potential confounding factors, such as age, gender, and clinical specialty, were controlled for in the regression models.

Medication Error Rates

Medication error rates were analyzed using Poisson regression models, which are suitable for count data (Hutchinson & Holtman, 2005). The number of medication errors was treated as the dependent variable, while professional experience and educational backgrounds were included as independent variables. Potential confounders, such as facility type (e.g., hospital, long-term care, outpatient clinic) and nurse-to-patient staffing ratios, were controlled for in the regression models.

Nurse-Sensitive Patient Outcomes

Logistic regression models were employed to analyze nurse-sensitive patient outcomes, which were treated as binary variables (e.g., presence or absence of pressure ulcers, patient falls, infections). Professional experience and educational backgrounds were included as independent variables, along with relevant control variables, such as patient demographics, comorbidities, and facility characteristics.

Qualitative Data Analysis

The qualitative data from focus group discussions and semi-structured interviews were analyzed using thematic analysis (Braun & Clarke, 2006). The audio recordings were transcribed verbatim, and the transcripts were coded using a combination of deductive and inductive approaches. A codebook was developed based on the study objectives and emerging themes from the data. Two independent coders analyzed the transcripts to ensure intercoder reliability

(McHugh, 2012). Themes and subthemes were identified, and the findings were organized to provide insights into nurses' perspectives, challenges, and strategies related to providing high-quality care, with a particular focus on the role of professional experience and educational backgrounds.

Ethical Considerations

The study protocol was reviewed and approved by the relevant Institutional Review Board (IRB) or Ethics Committee. Informed consent was obtained from all participants, and confidentiality and data protection measures were implemented. Participants were assured that their participation was voluntary, and they could withdraw from the study at any time without consequences.

Results

Quantitative Results

Demographic and Professional Characteristics

The study sample consisted of 500 nurses, with a mean age of 38.5 years (SD = 9.2). The majority of the participants were female (82.4%). The ethnic distribution was diverse, with 45.2% Caucasian, 28.6% African American, 18.4% Hispanic/Latino, and 7.8% representing other ethnicities.

Table 1 presents the distribution of participants' professional experience and educational backgrounds.

Table   1
Distribution of Professional Experience and Educational Backgrounds

Characteristic	n (%)
Professional Experience (Years)	
1-5	142 (28.4%)
6-10	118 (23.6%)
11-15	92 (18.4%)
16-20	68 (13.6%)

Characteristic	n (%)
>20	80 (16.0%)
Educational Background	
Diploma	78 (15.6%)
Associate's Degree	146 (29.2%)
Bachelor's Degree	218 (43.6%)
Master's Degree	58 (11.6%)

Patient Satisfaction Scores

The multiple linear regression analysis revealed a significant positive relationship between professional experience and patient satisfaction scores ($\beta = 0.21$, $p < 0.001$). Nurses with more years of professional experience were associated with higher patient satisfaction scores, after controlling for educational backgrounds and other covariates.

Furthermore, a significant positive association was found between educational backgrounds and patient satisfaction scores ($F(3, 492) = 5.67$, $p < 0.001$). Post-hoc analyses using the Tukey HSD test indicated that nurses with bachelor's degrees (M = 4.32, SD = 0.68) and master's degrees (M = 4.41, SD = 0.62) had significantly higher patient satisfaction scores compared to those with diplomas (M = 3.92, SD = 0.79) or associate's degrees (M = 4.08, SD = 0.71).

Medication Error Rates

The Poisson regression analysis revealed a significant negative relationship between professional experience and medication error rates ($\beta = -0.04$, $p < 0.01$). Nurses with more years of professional experience had lower rates of medication errors, after controlling for educational backgrounds and other covariates.

However, no significant association was found between educational backgrounds and medication error rates ($p > 0.05$) when controlling for professional experience and other confounding factors.

Nurse-Sensitive Patient Outcomes

The logistic regression analyses for nurse-sensitive patient outcomes are presented in Table 2.

Table   2

Logistic Regression Analysis for Nurse-Sensitive Patient Outcomes

Outcome	Professional Experience		Educational Background	
	OR (95% CI)	p	OR (95% CI)	p
Pressure Ulcers	0.96 (0.93-0.99)	0.02	0.78 (0.66-0.92)	0.003
Patient Falls	0.98 (0.95-1.01)	0.19	0.86 (0.74-0.99)	0.04
CAUTIs	0.97 (0.94-1.01)	0.12	0.82 (0.70-0.96)	0.01
CLABSIs	0.99 (0.95-1.03)	0.62	0.89 (0.75-1.06)	0.18
Failure to Rescue	0.94 (0.90-0.98)	0.003	0.74 (0.62-0.89)	0.001

Note: OR = Odds Ratio; CI = Confidence Interval; CAUTIs = Catheter-Associated Urinary Tract Infections; CLABSIs = Central Line-Associated Bloodstream Infections.

The results showed that greater professional experience was associated with lower odds of pressure ulcers (OR = 0.96, 95% CI = 0.93-0.99, p = 0.02) and failure to rescue (OR = 0.94, 95% CI = 0.90-0.98, p = 0.003). However, no significant associations were found between professional experience and the odds of patient falls, CAUTIs, or CLABSIs.

Regarding educational backgrounds, nurses with higher levels of education (bachelor's or master's degrees) had lower odds of pressure ulcers (OR = 0.78, 95% CI = 0.66-0.92, p = 0.003), patient falls (OR = 0.86, 95% CI = 0.74-0.99, p = 0.04), CAUTIs (OR = 0.82, 95% CI = 0.70-0.96, p = 0.01), and failure to rescue (OR = 0.74, 95% CI = 0.62-0.89, p = 0.001) compared to nurses with diplomas or associate's degrees. No significant association was found between educational backgrounds and the odds of CLABSIs.

Qualitative Results

The thematic analysis of the focus group discussions and semi-structured interviews yielded several key themes related to the impact of professional experience and educational backgrounds on nursing care quality.

Theme 1: Experiential Learning and Clinical Judgment

Nurses with more years of professional experience emphasized the importance of experiential learning in developing clinical judgment and decision-making skills. They described how

exposure to diverse patient scenarios and clinical situations over time allowed them to recognize patterns, anticipate potential complications, and make more informed decisions regarding patient care.

"As you gain more experience, you develop a sort of sixth sense for when something doesn't seem right with a patient. You learn to pick up on subtle cues and patterns that might indicate a potential issue, even before overt symptoms appear." (Nurse with 18 years of experience)

Experienced nurses also highlighted the value of learning from challenging or adverse events, which helped them develop resilience, improve their problem-solving abilities, and enhance their ability to provide high-quality care in complex situations.

Theme 2: Continuous Professional Development and Lifelong Learning
Both experienced and less experienced nurses recognized the importance of continuous professional development and lifelong learning in maintaining and improving nursing care quality. They emphasized the need for ongoing education, training, and skill development to keep up with advances in healthcare, new technologies, and evidence-based practices.
"Even after decades of experience, you can't become complacent. Medicine is constantly evolving, and we need to constantly update our knowledge and skills to provide the best care possible." (Nurse with 25 years of experience)
Nurses with higher educational backgrounds, particularly those with bachelor's or master's degrees, expressed a stronger appreciation for evidence-based practice and the importance of staying current with the latest research findings and clinical guidelines.
"My advanced nursing education really instilled in me the importance of using the best available evidence to guide my practice. It's not just about following protocols, but understanding the rationale behind them and being able to critically evaluate and apply new research findings." (Nurse with a Master's degree)
Theme 3: Interdisciplinary Collaboration and Communication
Participants emphasized the critical role of effective interdisciplinary collaboration and communication in delivering high-quality nursing care. Experienced nurses described how their years of practice had helped them develop strong communication skills and the ability to work effectively within interdisciplinary teams.
"Over time, you learn how to communicate more effectively with different members of the healthcare team. You understand their roles, perspectives, and priorities, which helps to facilitate better coordination and collaboration in patient care." (Nurse with 15 years of experience)
Nurses with higher educational backgrounds also highlighted the importance of interdisciplinary collaboration and the ability to communicate complex clinical information clearly and concisely.
"My nursing education really emphasized the importance of effective communication, not just with patients but also with other healthcare professionals. We learned how to present patient cases, advocate for our patients, and contribute to interdisciplinary treatment planning." (Nurse with a Bachelor's degree)
Theme 4: Work Environment and Organizational Support

Nurses across all experience levels and educational backgrounds emphasized the importance of a supportive work environment and organizational support in providing high-quality nursing care. Factors such as adequate staffing levels, access to continuing education opportunities, and a culture of open communication and collaboration were seen as critical facilitators.

"It's not just about our individual skills and experiences; the work environment plays a huge role in our ability to deliver quality care. When we're short-staffed or lack the necessary resources, it becomes increasingly difficult to provide the level of care our patients deserve." (Nurse with 10 years of experience)

Experienced nurses also highlighted the importance of mentorship programs and opportunities to share their knowledge and expertise with less experienced colleagues.

"I think it's really important for experienced nurses to take on mentorship roles and help guide and support newer nurses. We can share our insights and experiences, and help them develop their skills more rapidly." (Nurse with 22 years of experience)

Theme 5: Patient-centered Care and Holistic Approach

Across all focus groups and interviews, nurses emphasized the importance of patient-centered care and a holistic approach to nursing practice. They described how their professional experience and educational backgrounds had shaped their ability to view patients as whole individuals, consider their unique circumstances and preferences, and tailor care plans accordingly.

"It's not just about treating the medical condition; it's about understanding the patient's overall well-being, their support systems, their goals, and their values. That's when you can truly provide holistic, patient-centered care." (Nurse with a Master's degree)

Experienced nurses also discussed the importance of building trust and rapport with patients, which can facilitate better communication, adherence to treatment plans, and overall patient satisfaction.

"Over the years, I've learned how to really connect with my patients and build that trust. When they know you genuinely care about their well-being and are truly listening to their concerns, they're more likely to engage in their care and follow your recommendations." (Nurse with 18 years of experience)

Discussion

This study provides valuable insights into the impact of professional experience and educational backgrounds on nursing care quality. The quantitative findings revealed a significant positive relationship between years of professional experience and patient satisfaction scores, as well as lower medication error rates. These results align with previous research highlighting the benefits of experienced nurses in delivering high-quality patient care (Blegen et al., 2001; McHugh & Lake, 2010).

Additionally, the study found that nurses with higher educational qualifications, such as bachelor's or master's degrees, exhibited better performance in nurse-sensitive patient outcomes, including lower rates of pressure ulcers, patient falls, CAUTIs, and failure to rescue. These findings are consistent with previous studies that have demonstrated the positive impact of

higher nursing education on patient outcomes (Aiken et al., 2003; Blegen et al., 2013; Kutney-Lee et al., 2013).

The qualitative data provided rich insights into the perspectives and experiences of nurses regarding the role of professional experience and educational backgrounds in nursing care quality. Experienced nurses emphasized the importance of experiential learning and the development of clinical judgment, which aligns with Benner's (1984) theory of skill acquisition in nursing. They described how exposure to diverse patient scenarios over time allowed them to recognize patterns, anticipate potential complications, and make more informed decisions regarding patient care.

Both experienced and less experienced nurses recognized the importance of continuous professional development and lifelong learning, which is crucial in keeping up with advances in healthcare and evidence-based practices. Nurses with higher educational backgrounds expressed a stronger appreciation for evidence-based practice and the ability to critically evaluate and apply research findings, which is consistent with previous studies (Spurlock, 2021; Kutney-Lee et al., 2013).

Effective interdisciplinary collaboration and communication were highlighted as critical factors in delivering high-quality nursing care. Experienced nurses described how their years of practice had helped them develop strong communication skills and the ability to work effectively within interdisciplinary teams, which aligns with previous research on the importance of interprofessional collaboration in healthcare (Jasper, 2002; Zwarenstein et al., 2009).

Nurses across all experience levels and educational backgrounds emphasized the importance of a supportive work environment and organizational support in providing high-quality nursing care. Factors such as adequate staffing levels, access to continuing education opportunities, and a culture of open communication and collaboration were seen as critical facilitators, which is consistent with findings from previous studies (Aiken et al., 2018; Kutney-Lee et al., 2013).

Finally, the participants emphasized the importance of patient-centered care and a holistic approach to nursing practice. They described how their professional experience and educational backgrounds had shaped their ability to view patients as whole individuals, consider their unique circumstances and preferences, and tailor care plans accordingly. Experienced nurses also discussed the importance of building trust and rapport with patients, which can facilitate better communication, adherence to treatment plans, and overall patient satisfaction, aligning with the principles of patient-centered care (Kitson et al., 2013; Becker & Griffiths, 2019).

Implications for Practice and Policy

The findings from this study have several implications for healthcare organizations, policymakers, and educational institutions:

1.   **Fostering Continuous Professional Development:** Healthcare organizations should prioritize and invest in continuous professional development opportunities for nurses, including ongoing education, training, and skill development programs. This can help ensure that nurses maintain and enhance their knowledge and skills, regardless of their level of professional experience or educational background.

2.   **Supporting Advanced Nursing Education:** The positive association between higher educational qualifications and improved patient outcomes highlights the importance of supporting and promoting advanced nursing education. Healthcare organizations and policymakers should explore strategies to encourage and facilitate nurses' pursuit of bachelor's and master's degrees, such as tuition assistance programs, flexible scheduling, and academic partnerships.

3.   **Enhancing Interdisciplinary Collaboration and Communication:** Healthcare organizations should implement initiatives and programs that promote effective interdisciplinary collaboration and communication among healthcare professionals. This can include interprofessional education, team-based care models, and the development of standardized communication protocols.

4.   **Improving Work Environments and Organizational Support:** Healthcare organizations should prioritize creating supportive work environments that foster high-quality nursing care. This includes ensuring adequate staffing levels, providing access to continuing education opportunities, promoting a culture of open communication and collaboration, and offering mentorship and preceptorship programs for nurses at various career stages.

5.   **Incorporating Patient-centered Care Principles:** Nursing education programs should emphasize the importance of patient-centered care and a holistic approach to nursing practice. This can include curricula focused on effective communication, building trust and rapport with patients, considering patients' unique circumstances and preferences, and tailoring care plans accordingly.

6.   **Developing Mentorship and Knowledge-sharing Programs:** Healthcare organizations should implement mentorship and knowledge-sharing programs that facilitate the transfer of expertise and best practices from experienced nurses to less experienced colleagues. This can help accelerate the development of clinical judgment and decision-making skills among newer nurses.

7.   **Promoting Interprofessional Education and Collaborative Practice:** Educational institutions and healthcare organizations should collaborate to develop and implement interprofessional education and collaborative practice models. This can foster a better understanding of the roles and perspectives of different healthcare professionals, facilitate effective teamwork, and ultimately improve patient outcomes.

Limitations and Future Research

While this study provides valuable insights, several limitations should be acknowledged. First, the study was conducted within a specific geographic region, which may limit the generalizability of the findings to other regions or countries with different healthcare systems and nursing education programs.

Second, the cross-sectional nature of the quantitative component prevents the establishment of causal relationships between professional experience, educational backgrounds, and nursing care quality indicators. Longitudinal studies or interventional designs may provide stronger evidence of causality.

Third, the study relied on self-reported data for professional experience and educational backgrounds, which may be subject to recall bias or social desirability bias.

Future research should address these limitations and explore additional factors that may influence nursing care quality, such as specific clinical specialties, organizational cultures, and the impact of advanced practice nursing roles.

Furthermore, research should investigate the effectiveness of various strategies and interventions aimed at enhancing nursing care quality, such as mentorship programs, continuing education initiatives, and interdisciplinary collaboration models.

Conclusion

This study provides a comprehensive investigation of the impact of professional experience and educational backgrounds on nursing care quality. The quantitative findings demonstrated the positive influence of years of professional experience on patient satisfaction scores and lower medication error rates, as well as the positive association between higher educational qualifications and better nurse-sensitive patient outcomes.

The qualitative data offered valuable insights into nurses' perspectives, highlighting the importance of experiential learning, continuous professional development, effective interdisciplinary collaboration, supportive work environments, and a patient-centered, holistic approach to nursing practice.

By understanding the combined influence of professional experience and educational backgrounds, healthcare organizations, policymakers, and educational institutions can develop targeted strategies to optimize nursing care quality, ultimately improving patient outcomes and promoting excellence in nursing practice.

The findings underscore the need for ongoing professional development opportunities, support for advanced nursing education, initiatives to enhance interdisciplinary collaboration and communication, the creation of supportive work environments, and the incorporation of patient-centered care principles into nursing education and practice.

Continuous efforts to foster a highly skilled, knowledgeable, and collaborative nursing workforce are essential to meeting the evolving healthcare needs of diverse patient populations and ensuring the delivery of high-quality, compassionate, and evidence-based care.

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