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Evidence-Based Practice Attributes Among Specialist Nurses in Acute Care: A Cross-Sectional Study

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Received: 21 August 2025 | **Revised:** 31 December 2025 | **Accepted:** 19 February 2026

ABSTRACT

Background and Aims: Evidence-based practice (EBP) is central to high-quality acute care, yet evidence on how specialist nurses engage with EBP remains limited. This study aimed to examine EBP beliefs, organisational culture, and self-reported implementation among specialist nurses working in acute care, and to assess associations with professional characteristics, including specialist certification and academic qualifications.

Design: A descriptive cross-sectional study.

Methods: Data were collected between June and November 2023. Participants were specialist nurses employed in acute care roles, including critical care, emergency and urgent care, specialist medical and surgical units, and advanced practice positions. Validated instruments were used to measure EBP beliefs, organisational culture, and implementation. Analyses included descriptive statistics, group comparisons, and multivariable regression models.

Results: A total of 510 specialist nurses were included. Overall, nurses reported strong beliefs in EBP, moderately positive perceptions of organisational culture, and variable levels of implementation. Specialist certification was consistently associated with higher EBP implementation (standardised $\beta = 0.24$, 95% CI 0.15–0.33) and more positive organisational culture perceptions ($\beta = 0.19$, 95% CI 0.07–0.31), independent of experience and academic qualification. A clear pattern across clinical areas was observed, with higher EBP engagement reported in adult critical care and advanced practice roles, and lower organisational culture scores in emergency care settings.

Conclusion: Among specialist nurses working in acute care, positive beliefs about EBP are widespread, but implementation varies and is associated with specialist certification and organisational context rather than years of experience or academic attainment. These findings highlight the importance of certification pathways and supportive organisational environments in strengthening EBP in high-acuity settings.

1 | Introduction

Evidence-based practice (EBP) is widely recognised as central to safe, effective, and person-centred healthcare delivery, particularly in acute care environments where clinical decisions are time-sensitive and complex [1, 2]. For nurses, EBP involves the integration of best available research evidence with clinical expertise and patient values to inform care decisions [3]. Despite sustained policy emphasis and professional endorsement, consistent use of EBP in acute settings remains uneven, with well-documented challenges related to workload pressures, limited time, and variable organisational support [4, 5].

Abbreviations: EBP, evidence-based practice; EBPB, evidence-based practice beliefs scale; OCRSIEP, organisational culture and readiness for system-wide integration of evidence-based practice.

Saunders et al. [6] note that most empirical research on EBP uptake in nursing has focused on general nursing populations or mixed professional groups, often drawing on international samples. While this literature has advanced understanding of broad barriers and facilitators, it provides limited insight into the experiences of specialist nurses working within the English National Health Service (NHS). Specialist nurses occupy distinct clinical and professional positions characterised by advanced expertise, expanded scope of practice, leadership responsibilities, and expectations to influence service development and quality improvement [7, 8]. These roles are shaped by specific regulatory, organisational, and workforce structures within England, including formal recognition of specialist practice through the Nursing and Midwifery Council (NMC) and NHS policy frameworks.

However, empirical data specific to specialist nurses in English acute care settings remain sparse. Consequently, there is a clear knowledge gap regarding whether specialist nurses, who are often positioned as leaders of evidence-informed care, experience the same facilitators and constraints as general nurses, or whether their advanced roles confer greater capacity for EBP engagement. Addressing this gap is important for workforce planning, professional development, and policy initiatives that increasingly emphasise specialist and advanced practice as levers for improving care quality in acute services.

For the purposes of this study, a specialist nurse is defined as a registered nurse employed in a formally recognised specialist role within an acute care setting in England [9]. This includes, but is not limited to, advanced nurse practitioners, clinical nurse specialists, and specialist nurses working in defined clinical areas such as adult critical care, emergency and urgent care, perioperative services, and specialist medical or surgical units. These roles are characterised by advanced clinical responsibility, enhanced decision-making authority, and explicit expectations for leadership, education, or service development within their organisations [7]. Specialist certification refers to the possession of an NMC approved specialist practice qualification or other formally recognised specialist credential that is acknowledged within NHS employment frameworks [9]. While academic qualifications reflect educational attainment, specialist certification denotes role-specific preparation and professional recognition linked to defined standards of specialist practice [10]. Distinguishing between these constructs is essential, as they may differentially influence nurses' engagement with EBP and their positioning within organisational cultures.

This study is conceptually informed by implementation and determinants perspectives that view EBP as shaped by interacting individual and organisational factors [4]. Within this perspective, beliefs, organisational culture, and implementation represent interrelated but distinct attributes of EBP [11]. Beliefs reflect nurses' attitudes toward the value, relevance, and feasibility of EBP, and their confidence in using evidence [12]. Organisational culture encompasses shared norms, leadership behaviours, and structural supports that enable or constrain evidence use within clinical settings [13]. Implementation refers to the actual enactment of EBP activities, such as searching for evidence, appraising research, and integrating findings into clinical decision-making [3].

The conceptual assumption underpinning this study is that positive beliefs about EBP are necessary but not sufficient for implementation. Elsheikh et al. [5] argue that organisational culture is expected to act as a critical enabling or constraining mechanism that influences whether positive beliefs translate into practice. Specialist certification is hypothesised to strengthen both implementation and perceptions of organisational culture, as certified nurses are more likely to occupy roles with explicit expectations for evidence use, leadership influence, and access to professional development resources [14]. Years of experience and academic qualifications are expected to show weaker or inconsistent associations with implementation once organisational and role-related factors are taken into account [10]. These relationships are conceptualised as associative rather than causal.

Recent evidence continues to show variability in EBP uptake in acute care settings, with some studies reporting mixed or null associations between experience, education, and implementation [15]. In particular, high-acuity environments such as emergency and urgent care have been identified as settings where EBP is especially challenging due to unpredictable workflows, rapid decision-making demands, and limited opportunities for reflective engagement with evidence [16]. Studies of emergency nurses have reported lower perceptions of organisational support for EBP and reduced engagement in evidence-based activities compared with colleagues in other acute specialities, despite comparable levels of professional commitment [14]. These findings suggest that variation in EBP attributes across specialist groups is likely to reflect contextual and organisational influences rather than individual motivation alone. However, empirical data specific to specialist nurses in English acute care settings remain sparse. There is therefore a need for a national examination that explicitly compares EBP beliefs, organisational culture, and implementation across specialist roles, and that evaluates the relative contribution of certification, education, and experience within this workforce. Findings of this study may inform both workforce policy and professional development strategies, ensuring that specialist nurses are adequately supported to fulfil their roles as leaders of evidence-based care.

2 | The Study

2.1 | Aim

This study aimed to examine key attributes of EBP among specialist nurses working in acute care settings, with a specific focus on beliefs about EBP, perceptions of organisational culture, and self-reported implementation. Specific research questions include:

1. What are the levels of EBP beliefs, organisational culture, and implementation among specialist nurses working in acute care settings?
2. How do these attributes vary across different specialist nursing roles and clinical areas within acute care?
3. What associations exist between demographic and professional characteristics and the three EBP attributes?
4. To what extent do specialist certification and academic qualifications predict variation in EBP implementation and perceptions of organisational culture?

3 | Methods

3.1 | Research Design

A descriptive cross-sectional survey design was employed in this study. Cross-sectional designs are appropriate for estimating prevalence and for examining associations between professional, organisational, and demographic characteristics at a single point in time [17, 18]. This design has been widely used in EBP research involving nursing populations, including specialist and advanced practice roles [15]. The study was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies [19].

3.2 | Participants and Recruitment

Participants were registered nurses employed in specialist clinical roles within acute care settings. Acute care was operationally defined as hospital-based services providing high-acuity, including adult critical care and high dependency units, emergency and urgent care departments, perioperative and theatre services, and specialist medical or surgical units. Eligible nurses were required to be in active clinical employment at the time of data collection. Eligible specialist roles included advanced nurse practitioners, clinical nurse specialists, and specialist nurses working in defined acute clinical areas. Nurses holding diploma-level qualifications were included only where they occupied a formally recognised specialist post, reflecting the composition of the specialist workforce in practice. Eligibility was confirmed through self-reported role title and certification status, assessed against the predefined operational criteria at enrolment.

Recruitment was undertaken using a multi-channel strategy. Invitations were disseminated through professional nursing networks, specialist nursing associations, and internal circulation within trusts. Electronic invitations included a participant information sheet and a secure survey link. Printed flyers containing a QR code linking directly to the survey were also distributed within acute care settings to facilitate participation. As recruitment occurred through professional networks and internal circulation, the total number of invitations distributed could not be enumerated.

3.2.1 | *Sampling Aim and Coverage*

A non-probability sampling approach [18] was adopted to maximise coverage across pre-specified strata relevant to EBP implementation. Response patterns were monitored throughout the recruitment period to ensure representation across the seven specialist groups reported in the Results section. Recruitment remained open until sufficient numbers were achieved within each group to support planned between-group analyses.

3.2.2 | *Sample Size Determination*

Sample size estimation was conducted a priori using G*Power version 3.1 [20]. The primary planned comparison was differences in EBP implementation across specialist nursing groups. A one-way analysis of variance was specified as the test family. Parameters were set at a two-tailed significance level (α) of 0.05, statistical power of 0.80, and a medium effect size ($f = 0.25$). Under these assumptions, the minimum required sample size was 196 participants. To allow for subgroup analyses across up to seven specialist groups and to account for incomplete or unusable responses, the recruitment target was inflated to at least 500 participants.

3.2.3 | *Recruitment Flow and Missing Data*

A total of 532 responses were received. Survey platform settings restricted multiple submissions from the same device and browser session and used cookies to reduce the likelihood of duplicate entries, consistent with recommended practice for online surveys [21]. Responses were screened for completeness and duplication during data cleaning. Twenty-two cases with substantial missing demographic or scale data were excluded, resulting in a final analytic sample of 510 participants. Percentages are calculated using non-missing denominators, and outcome-level missingness is reported in the Results section.

3.3 | Data Collection

Data were collected between June and November 2023 using Qualtrics, a secure web-based survey platform with encrypted data storage. The survey was accessible via mobile and desktop devices to accommodate varied work patterns and shift schedules common in acute care nursing. Participants accessed the survey via a secure link or QR code and were required to review the participant information sheet and provide electronic informed consent before proceeding. The survey was self-administered and could be completed in a single sitting, with respondents able to pause and return using the same device. Survey activity was monitored throughout the data collection period to identify technical issues and ensure continued accessibility. Reminder messages were circulated midway through the data collection period to support response rates. No incentives were offered for participation. Data were anonymised at the point of collection, and no personally identifiable information was retained.

3.3.1 | *Measures*

This study employed two previously validated instruments and did not involve the development of new measurement items. Evidence-Based Practice Beliefs (EBPB) Scale: EBP beliefs were measured using the 16-item EBPB Scale [22]. Items assess attitudes toward the value, relevance, and feasibility of EBP, as well as confidence in applying evidence. Responses were recorded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Scale scores were calculated as the mean of completed items, with higher scores indicating stronger positive beliefs. Internal consistency in the current sample was considered high (Cronbach's alpha = 0.86), consistent with previous validation studies.

Organisational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) Scale: Perceptions of organisational culture and readiness for EBP were measured using the OCRSIEP Scale [3]. Items assess leadership support, infrastructure, and organisational readiness for evidence integration using a 5-point Likert response format. Mean scores were calculated,

with higher values reflecting more supportive organisational cultures. Internal consistency in the present sample was strong (Cronbach's alpha = 0.88).

Cases with more than 20% missing items on any scale were excluded. For retained cases, mean scores were calculated using available items, an accepted approach where internal consistency is high and missingness is limited [18].

3.4 | Analysis Plan and Statistical Procedures

The analysis plan was specified prior to data analysis. Descriptive statistics were defined as primary analyses to estimate levels of EBP beliefs, organisational culture, and implementation across the sample. Comparisons across specialist roles and clinical areas were also pre-specified primary analyses aligned with the study aims. Associations between demographic and professional characteristics and EBP attributes were examined using Pearson's correlation, independent-samples *t*-tests, and one-way analysis of variance with Tukey post hoc tests where appropriate. These analyses were treated as explanatory rather than exploratory. Given the focused set of hypotheses and outcomes, no formal adjustment for multiple comparisons was applied; instead, effect sizes were reported alongside p-values to support interpretation of practical significance.

Multiple linear regression models were conducted separately for EBP implementation and organisational culture. Covariates entered simultaneously included age, gender, ethnicity, highest academic qualification, years of clinical experience, specialist role, clinical speciality, prior EBP training, and NMC specialist certification status. Categorical variables were dummy coded, with non-certified nurses and bachelor's degree holders used as reference categories. Regression diagnostics included variance inflation factors to assess multicollinearity, inspection of residual plots to evaluate linearity and homoscedasticity, and normality checks using graphical methods and Kolmogorov–Smirnov tests [17]. Given the low proportion of missing data, multiple imputation was not undertaken; sensitivity checks comparing included and excluded cases showed no meaningful differences in key demographic characteristics.

Statistical reporting followed SAMPL recommendations and contemporary guidance on transparent reporting of effect sizes and uncertainty [23]. Statistical analyses included descriptive statistics, Pearson correlations, independent-samples *t*-tests, one-way ANOVA with Tukey post hoc comparisons, and multiple linear regression. All tests were two-sided with an a priori significance level of $\alpha = 0.05$. Analyses were conducted using SPSS version 27.

4 | Results

4.1 | Participant Characteristics

A total of 532 nurses responded to the survey, with 510 complete cases retained after data cleaning (response rate 29%). Table 1 presents the demographic characteristics. Most respondents were female ($n = 424$, 83.1%) with a mean age of 42.7 years (SD = 10.2). Over half held a master's degree (52.5%), while 42.3% held a bachelor's degree and 5.2% a doctorate. A minority reported a diploma (8.4%), though these individuals were employed in formally recognised specialist posts. Two-thirds of participants (69%) reported holding an NMC-approved specialist practice certification. Mean clinical experience was 17.4 years (SD = 8.9). Complete data were available for 506 participants for EBP beliefs, 503 for organisational culture, and 501 for EBP implementation; outcome-level missingness did not exceed 2.0% for any scale.

TABLE 1 | Participant characteristics.

Characteristic	*n* (%)
Female	424 (83.1)
Male	86 (16.9)
Highest qualification	
Diploma in Nursing	43 (8.4)
Bachelor's degree	215 (42.3)
Master's degree	268 (52.5)
Doctorate	27 (5.2)
NMC-approved specialist practice certification	352 (69.0)
Mean years of experience	17.4 (SD = 8.9)

TABLE 2 | Descriptive statistics for continuous variables.

Variable	Mean	SD
Age (years)	42.7	10.2
Years of experience	17.4	8.9
EBP beliefs	4.23	0.71
Organisational culture	3.68	0.79
EBP implementation	3.91	0.75

Table 2 provides an overview of the included studies, highlighting variation in study design, populations, and outcome measures across the evidence base.

4.2 | EBP Beliefs, Organisational Culture, and Implementation Across Specialist Groups

Descriptive comparisons across clinical roles are shown in Table 3. Adult critical care nurses reported the highest EBP belief scores ($M = 4.38$, SD = 0.72), while emergency and urgent care nurses scored lowest ($M = 4.12$, SD = 0.74). The mean difference between these groups was 0.26 (95% CI 0.07–0.45), corresponding to a small-to-moderate effect (Cohen's $d = 0.36$). Perceptions of organisational culture were most positive among specialist surgical nurses ($M = 3.76$, SD = 0.85) and advanced nurse practitioners ($M = 3.74$, SD = 0.71), and lowest among emergency and urgent care nurses ($M = 3.55$, SD = 0.79). Differences across specialist groups were small in magnitude ($\eta^2 = 0.02$), indicating limited practical separation between groups. Implementation scores followed a similar pattern, with adult critical care nurses reporting the highest scores ($M = 4.05$, SD = 0.78) and perioperative nurses the lowest ($M = 3.62$, SD = 0.81). The mean difference between these groups was 0.43 (95% CI 0.21–0.65), representing a moderate effect ($d = 0.54$).

Figure 1 illustrates mean EBP implementation scores across specialist nursing roles with 95% confidence intervals. Implementation scores were highest among adult critical care nurses and advanced nurse practitioners and lowest among perioperative and

TABLE 3 | Mean EBP beliefs, organisational culture, and implementation scores across specialist nursing roles.

Specialist group	*n*	Beliefs (M, SD)	Culture (M, SD)	Implementation (M, SD)
Adult critical care	132	4.38 (0.72)	3.70 (0.82)	4.05 (0.78)
Emergency & urgent care	91	4.12 (0.74)	3.55 (0.79)	3.88 (0.75)
Perioperative & theatre	62	4.20 (0.68)	3.60 (0.77)	3.62 (0.81)
Specialist medical	83	4.18 (0.70)	3.66 (0.80)	3.70 (0.79)
Specialist surgical	78	4.25 (0.69)	3.76 (0.85)	3.95 (0.76)
Clinical nurse specialist	49	4.16 (0.73)	3.59 (0.77)	3.78 (0.80)
Advanced nurse practitioner	75	4.32 (0.71)	3.74 (0.71)	3.90 (0.77)

Note: Values are mean (SD). Group differences were examined using one-way ANOVA. Selected pairwise mean differences and effect sizes (Cohen's *d*) are reported in-text where omnibus tests were statistically significant. Overall effect sizes were small ($\eta^2 \approx 0.02$), indicating modest between-group separation.

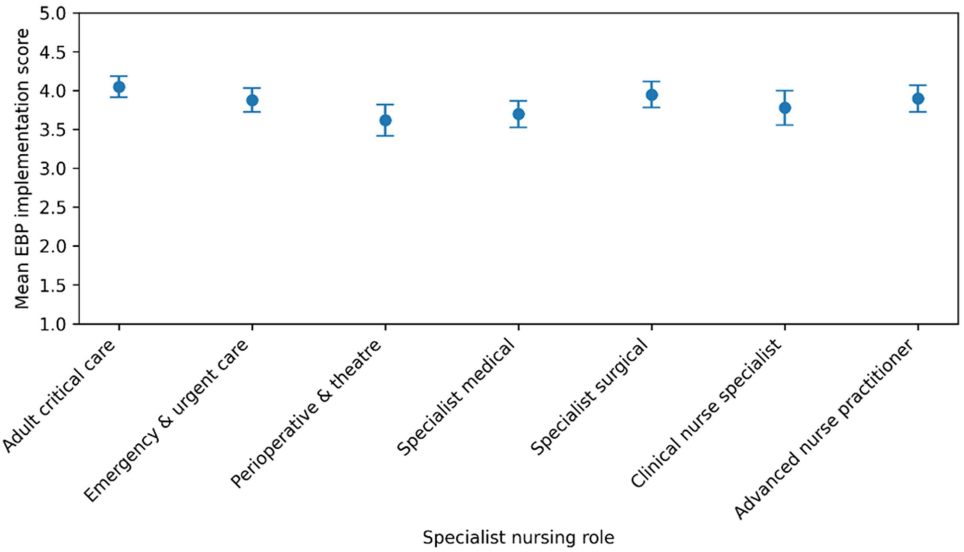

FIGURE 1 | Mean EBP implementation scores across specialist nursing roles.

emergency and urgent care nurses. Confidence intervals overlapped across groups, indicating modest between-group differences consistent with small effect sizes.

4.3 | Relationships Between EBP Dimensions and Professional Characteristics

Years of clinical experience showed a modest positive association with EBP beliefs ($r = 0.16$, 95% CI 0.06–0.25, $p = 0.002$), indicating that greater experience was associated with slightly stronger beliefs. Associations between experience and organisational culture ($r = 0.07$, 95% CI −0.02–0.16, $p = 0.082$) and implementation ($r = 0.05$, 95% CI −0.04–0.14, $p = 0.144$) were small and not statistically significant.

Independent-samples *t*-tests indicated that nurses with NMC-approved specialist certification reported higher implementation scores ($M = 4.09$, SD = 0.72) than those without certification ($M = 3.81$, SD = 0.80), mean difference = 0.28 (95% CI 0.15–0.41), t (508) = 4.21, $p < 0.001$, corresponding to a small-to-moderate effect ($d = 0.37$). Certified nurses also reported more positive organisational culture scores ($M = 3.78$, SD = 0.74) compared with non-certified nurses ($M = 3.49$, SD = 0.83), mean difference = 0.29 (95% CI 0.11–0.47), t (508) = 3.25, $p = 0.001$, $d = 0.32$.

One-way ANOVA showed no significant differences in EBP beliefs across educational groups, F (3, 506) = 1.97, $p = 0.118$. Significant but small differences were observed for organisational culture, F (3, 506) = 3.29, $p = 0.021$, $\eta^2 = 0.02$. Post hoc comparisons indicated that nurses with doctoral qualifications reported higher organisational culture scores than those with a diploma (mean difference = 0.41, 95% CI 0.07–0.75).

4.4 | Multivariable Associations With EBP Implementation and Organisational Culture

Multiple linear regression models examined multivariable associations with EBP implementation and organisational culture after adjustment for demographic and professional characteristics (Table 4). Specialist certification showed the strongest association with EBP implementation in the regression model ($\beta = 0.24$, $B = 0.31$, 95% CI 0.18–0.44, $p < 0.001$). The model explained 18% of the variance in implementation scores (adjusted $R^2 = 0.18$).

For organisational culture, specialist certification ($\beta = 0.19$, $B = 0.27$, 95% CI 0.10–0.44, $p = 0.002$) and academic qualification ($\beta = 0.12$, $B = 0.15$, 95% CI 0.01–0.29, $p = 0.03$) were associated with more positive perceptions, though effect sizes were small. This model explained 14% of the variance in organisational

TABLE 4 | Multivariable linear regression models for EBP implementation and organisational culture.

Predictor	*B*	SE	*β*	95% CI for *B*	*p*
Outcome: EBP implementation					
Specialist certification (yes vs. no)	0.31	0.07	0.24	0.18–0.44	< 0.001
Academic qualification (higher vs. bachelor)	0.08	0.05	0.06	−0.02–0.18	0.129
Years of clinical experience	0.01	0.01	0.05	−0.01–0.03	0.212
Outcome: Organisational culture					
Specialist certification (yes vs. no)	0.27	0.09	0.19	0.10–0.44	0.002
Academic qualification (higher vs. bachelor)	0.15	0.07	0.12	0.01–0.29	0.031
Years of clinical experience	0.01	0.01	0.04	−0.01–0.02	0.287

Note: Model statistics: EBP implementation: adjusted $R^2 = 0.18$; Organisational culture: adjusted $R^2 = 0.14$. B = unstandardised coefficient; SE = standard error; β = standardised coefficient.
All models adjusted for age, gender, ethnicity, clinical speciality, prior EBP training, and specialist role. Reference categories: non-certified nurses; bachelor's degree.

culture scores (adjusted $R^2 = 0.14$). All models met key assumptions. Variance inflation factors ranged from 1.12 to 1.84, indicating no problematic multicollinearity. Residual plots showed no evidence of heteroscedasticity, and residual distributions approximated normality.

4.5 | Multiplicity and Sensitivity Analyses

Primary analyses focused on between-group differences across specialist roles and on predictors of EBP implementation and organisational culture. Between-group comparisons across specialist roles and multivariable regression models were pre-specified as primary analyses; all other subgroup analyses were treated as explanatory. Given the small number of pre-specified outcomes, formal adjustment for multiple comparisons was not applied; effect sizes and confidence intervals are therefore emphasised to support interpretation. Sensitivity analyses comparing complete case models with alternative coding of specialist roles and certification status yielded comparable estimates, indicating that findings were robust to analytic specification.

4.6 | Summary of Findings

Specialist nurses across acute care reported strong EBP beliefs, moderately positive perceptions of organisational culture, and variable implementation. Adult critical care nurses and advanced nurse practitioners consistently demonstrated higher scores across dimensions, while emergency and perioperative nurses reported lower implementation. Specialist certification emerged as the most consistently associated factor with both implementation and organisational culture, with academic qualification showing a smaller association with culture. Years of experience were weakly associated with beliefs but were not associated with organisational culture or implementation.

5 | Discussion

The findings of this study provide a national snapshot of EBP beliefs, organisational culture, and self-reported implementation among specialist nurses working in acute care. Overall, nurses demonstrated strong beliefs in the value of EBP, with mean scores clustered at the upper end of the scale. Given the cross-sectional design, these findings should be interpreted as associations rather than evidence of causal relationships. The observed differences in implementation and organisational culture across specialist roles were modest in magnitude, with small-to-moderate effect sizes and overlapping confidence intervals, suggesting meaningful but limited practical separation between groups.

The high mean scores observed for beliefs indicate a readiness within the workforce to engage with evidence-based processes, consistent with previous international findings that positive attitudes are an essential antecedent for behaviour change [24]. The modest positive association between years of experience and EBP beliefs ($r = 0.16$, 95% CI 0.06–0.25) indicates that more experienced nurses tended to report slightly stronger beliefs in the value of EBP; however, the small effect size suggests limited practical impact, and experience alone was not associated with higher levels of implementation.

Organisational culture showed greater variability across specialist groups, although effect sizes were small. Specialist surgical nurses and advanced nurse practitioners reported more favourable cultural perceptions, while emergency and urgent care nurses reported lower scores. These patterns are consistent with some prior studies highlighting the role of leadership support and resources in enabling EBP, but contrast with mixed and null findings reported in high-acuity settings where structural constraints limit opportunities for evidence use despite positive attitudes [6, 25]. The finding that doctoral-level nurses perceived a stronger organisational culture may reflect their greater involvement in research activities or their positioning in roles that provide more access to leadership forums. However, these perceptions did not necessarily translate into higher implementation levels, which were most strongly predicted by formal specialist certification.

Specialist certification showed the most consistent associations with both EBP implementation and organisational culture perceptions, with small-to-moderate effect sizes observed in multivariable analyses. As these data are cross-sectional and self-reported, certification should not be interpreted as causing higher implementation; rather, certification may co-occur with roles, expectations, and organisational supports that are more conducive to evidence use. Certified nurses reported greater engagement with evidence-based activities, supporting the argument that structured, role-specific preparation fosters confidence and competence in applying evidence [26, 27].

Certification may also function as a signal within organisations, prompting greater expectations of evidence use and aligning support systems accordingly. The practical implication is that certification can serve as both a motivator and enabler of EBP. This is an important finding for the NHS, where specialist practice certification has been increasingly promoted as a workforce development strategy [28].

The finding that years of experience did not predict implementation aligns with prior studies showing that clinical longevity does not necessarily equate to evidence integration [29, 30]. Knowledge translation requires more than accumulated practice wisdom; it depends on structural and educational reinforcements that sustain evidence application. Similarly, academic qualification alone was not sufficient to predict implementation, although it did predict perceptions of organisational culture. This may reflect differences in the extent to which advanced academic pathways embed critical appraisal and evidence application skills compared with professional certification routes, which tend to be tightly linked to clinical practice standards. Interpretation of effect sizes should also consider potential sources of inflation. Implementation and culture were measured using self-report Likert scales, which may overestimate engagement due to social desirability, particularly among specialist nurses for whom EBP is a professional norm. Ceiling effects were evident for EBP beliefs, limiting variability and potentially attenuating associations with other variables. In addition, the modest response rate raises the possibility of selection bias, whereby nurses with stronger interest in EBP may have been more likely to participate. These factors suggest that the observed associations may represent upper-bound estimates of engagement and should be interpreted cautiously.

Methodologically, the use of validated short-form EBP scales strengthened the reliability of findings, with high Cronbach's alpha values consistent with published reports [23–31]. The pilot survey confirmed clarity and usability of the instruments without altering their core structure, ensuring that psychometric properties remained applicable. The application of multiple regression modelling provided robust evidence of predictors of implementation and culture, extending beyond descriptive accounts commonly reported in EBP research [32, 33, 34].

The external validity of these findings is limited to specialist nurses working in acute care within the country, where professional roles, certification pathways, and organisational structures are distinct. Substantial contextual heterogeneity was observed across acute settings, particularly between emergency, perioperative, and critical care environments, underscoring the importance of local context in shaping EBP engagement. Future research should move beyond cross-sectional designs to longitudinal or quasi-experimental evaluations of specialist certification and organisational supports. Such studies should incorporate preregistered mediation and moderation analyses to examine whether organisational culture, leadership support, or role expectations explain observed associations, and to identify which mechanisms are most amenable to intervention in high-acuity settings [35, 36].

6 | Limitations

A few limitations should be considered when interpreting these findings. First, the cross-sectional design precludes causal inference, and all reported relationships should be understood as associations observed at a single time point. Second, the use of non-probability, convenience sampling and a modest response rate introduces the potential for selection and non-response bias, whereby nurses with a stronger interest in EBP may have been more likely to participate. Third, outcomes were measured using self-reported Likert-type scales, which are subject to social desirability bias and may overestimate actual engagement in evidence-based activities. Ceiling effects were evident for EBP beliefs, limiting variability and potentially attenuating associations with other variables, while floor effects may have constrained discrimination at lower levels of implementation. Fourth, although multiple outcomes were examined, the analytic strategy prioritised effect sizes over formal multiplicity adjustment, which may increase the risk of type I error for secondary analyses. Finally, while internal consistency was high in this sample (Cronbach's alpha = 0.86 for EBP beliefs and 0.88 for organisational culture), these measures capture perceptions rather than observed behaviour. These limitations are likely to bias estimates towards higher reported engagement in EBP rather than underestimation.

7 | Practice Implications

The findings indicate that improving EBP among specialist nurses requires targeted support beyond fostering positive professional attitudes. Lower implementation scores observed in emergency and perioperative settings point to the need for context-sensitive strategies that acknowledge the constraints of high-pressure clinical environments. Feasible actions include allocating protected time for evidence-based activities, establishing local knowledge brokers or EBP champions within specialist teams, and ensuring ready access to evidence resources at the point of care. Measurable indicators, such as participation in EBP activities, use of clinical guidelines, and engagement in audit or service improvement initiatives, could be incorporated into unit-level performance metrics to monitor progress and guide quality improvement efforts.

8 | Policy Implications

The consistent association between specialist certification and higher levels of EBP implementation supports continued investment in structured certification pathways within the NHS. Health Education England and NHS trusts could expand funded access to specialist certification programmes, with explicit attention to equitable availability across specialities and regions. Recognition of certification within career progression frameworks and role expectations may further embed evidence use within specialist practice. Policy initiatives should also prioritise organisational culture by supporting leadership development, strengthening infrastructure for evidence use, and introducing accountability mechanisms that align certification with workplace support, particularly in settings where implementation scores were lowest. Attention to equitable access across specialities, regions, and career stages will be essential to avoid widening existing workforce disparities.

9 | Conclusion

This study provides national evidence on EBP among specialist nurses working in acute care in England, demonstrating strong

beliefs in the value of EBP alongside more variable organisational culture and implementation. The observed associations indicate that specialist certification and organisational context are linked to higher levels of self-reported EBP engagement, while years of experience and academic qualification showed weaker relationships. Given the cross-sectional design, these findings should be interpreted as associative rather than causal. Future research should prioritise longitudinal or quasi-experimental evaluations of certification pathways and organisational supports, with attention to mediating and moderating mechanisms that may explain variation in implementation across acute care settings.

Author Contributions

Jude Ominyi: conceptualization, methodology, software, data curation, validation, formal analysis, supervision, visualization, project administration, resources, writing – original draft, writing – review and editing. **Aaron Nwedu:** conceptualization, methodology, investigation, writing – original draft, writing – review and editing. **David W. Agom:** methodology, investigation, writing – original draft, writing – review and editing. **Uchenna Chima:** investigation, writing – review and editing. All authors have read and approved the final version of the manuscript.

Acknowledgments

We wish to thank all the nurses who participated in this study.

Funding

The authors received no specific funding for this work.

Ethics Statement

The study was conducted in accordance with the guidelines of the Declaration of Helsinki and was approved by the University Research Ethical Approval System (Reference ID: #001192), ensuring compliance with national regulations.

Consent

Written informed consent to participate was obtained from all participants. Participant information sheets and consent forms were provided in advance via email.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Confirm that any data utilised in the submitted manuscript have been lawfully acquired in accordance with The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilisation to the Convention on Biological. The data that support the findings of this study are available from the corresponding author upon reasonable request.

Transparency Statement

The lead author Jude Ominyi affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.
STROBE checklist v4 cohort HSR.