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Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_1656_22

# Predictors and influencing factors of emotional intelligence among nurses in the North East England, United Kingdom

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Received: 20-11-2022  
Accepted: 13-01-2023  
Published: 29-07-2023

## Abstract:

**BACKGROUND:** Recognising that high levels of emotional intelligence (EI) are required for involvement in the nursing practice, this study was conducted to assess the traits of emotional intelligence, perception of emotional intelligence and factors associated with emotional intelligence among nursing teams in Northeast England.

**MATERIALS AND METHODS:** For this descriptive cross-sectional study, a concurrent mixed method was employed (qualitative and quantitative method) using a convenience sampling technique. Data were obtained from one hundred and ten (110) staff nurses practicing with the National Health Service via a validated semi-structured questionnaire and in-depth interview. Data collected through questionnaires (online- Google form link) were retrieved via Ms excel spreadsheet and then imported to Statistics Package for Social Sciences (SPSS) version 25 for analyses. Interviews recorded were transcribed word for word as Nvivo software (version 12) was utilised for thematic analysis and rapid analysis was also adopted to validate the responses.

**RESULTS:** Majority (77%) of the respondents were females, and about half (46%) have work experience between one to five years. The mean emotional intelligence trait score for each domain was self-awareness (20.20), self-regulation (38.15), self-motivation (20.54), empathy (18.78), and social skills (29.60), as 82% of the nurses had high emotional intelligence trait. There was a statistically significant relationship between empathy, and race of the respondents ( $P = 0.040$ ). Also, from the qualitative data; cultural differences, personality traits, self-care, family support, and organisational structure are key predictors of emotional intelligence traits among nurses.

**CONCLUSION:** Enhancing emotional intelligence traits among nursing teams is significant, as it may serve as an intervention strategy to manage changes and still increase level of morale and productivity among nurses. Hence, creating a more supportive environment, encouragement from team leads or supervisors, and training on stress management strategies can help to reduce burnout, anxiety and stress in nurses.

## Keywords:

Emotional intelligence, emotional intelligence trait, nurse, United Kingdom

## Introduction

Emotional intelligence (EI) is the ability to identify one's emotions, understand and manage other emotional occurrences,

and encourage oneself when faced with difficult, unpleasant and cause internal and external conflicts.<sup>[1]</sup> The quality of the performance of a professional is influenced by their EI, which is expressed in their

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**How to cite this article:** AweAO, David-OlawadeAC, Ayodele-Awe I, Feng H, Odetayo A, Afolalu TD, *et al.* Predictors and influencing factors of emotional intelligence among nurses in the North East England, United Kingdom. J Edu Health Promot 2023;12:236.

behaviours and attitudes in various situations.<sup>[2]</sup> Nursing entails providing care for a variety of people, both ill and healthy, as well as health promotion to achieve an optimal patient outcome. The demand for nurses has considerably increased in order to meet the rapidly growing demand for health care, along with the substantial global expansion of the healthcare system,<sup>[3]</sup> and to meet patients' needs, more nurses are required.<sup>[4]</sup> However, there is a global shortage of approximately 13 million nurses,<sup>[5]</sup> of which about 38,000 are recorded in the United Kingdom (UK).<sup>[6]</sup> This has led to more workload on nurses, such as frequent overtime or working longer hours, resulting in a high level of stress and burnout.<sup>[4,5,7]</sup> EI is therefore essential for nurses, as it directly affects their ability to make decisions, clinical judgments and promotes nurses' psychological well-being, all of which have an impact on patient care and their families.<sup>[8-10]</sup>

EI has appeared across many disciplines and has gained attention in the past decade in the nursing field, applicable in different contexts ranging from organisational institutions, family, society, and academic learning.<sup>[8,9]</sup> Studies have reported that nursing performance and EI are strongly connected.<sup>[10-12]</sup> Furthermore, studies investigated the EI profile of successful staff nurses and discovered that there is a decline in EI with age in nursing practice and recommended that there should be strategies in place that can enhance EI among nurses.<sup>[13]</sup> Therefore, the risk of inadequate EI can range from low productivity, high level of medication errors, declining satisfaction in the job and intention to leave the job.<sup>[14]</sup>

Healthcare teams depend on effective communication and teamwork, which is essential to providing efficient and safe patient care, increased patient satisfaction, staff retention, decreased nursing and medical errors, and improved employee satisfaction.<sup>[15,16]</sup> Studies in the United States and Australia examined the concept of nursing teamwork and further emphasised the relationship between teamwork and its positive impact on nursing care and patient outcomes.<sup>[15,16]</sup> It has been noted that emotion is foundational to nursing practice, and EI is the tool for measuring the success of teamwork.<sup>[16]</sup> A survey revealed that there is poor emotional well-being among UK nurses, with statistics revealing that 29.2% and 50.8% of nurses who participated in the study were emotionally exhausted.<sup>[17]</sup>

Due to the global shortage of nurses, understaffing has been a recurring challenge. This has led to stress and burnout in nurses resulting from heavy workloads and consistent exposure to high job demands without adequate resources to compensate for it.<sup>[4,7,10]</sup> Additionally, it has led to a low level of care standard in the UK and may significantly influence

the retention of nurses.<sup>[14,18,19]</sup> Likewise in the USA, a study found that around 45% of nurses experience high levels of burnout.<sup>[10]</sup> Enhancing trait EI among nurses demands attention due to the numerous challenges arising from inadequate EI among the nursing teams and the decline of EI that happens with age.<sup>[13]</sup> To improve the quality of care, the EI of nurses as it is relevant to the nursing practice and critical to managing relationships between nurses and patients<sup>[3]</sup> and ensuring a higher level of satisfaction with the nursing care delivered.<sup>[9]</sup> Considering the threats inadequate EI in the nursing profession poses to the healthcare industry and the population, this research aimed to study the factors associated with EI among nurses in the UK. The idea of trait EI has been assessed majorly quantitatively using emotional scale assessments. However, to have a deep and thorough understanding of EI, there is a need to also explore the perception of the concerned individuals (nurses) about it, which corroborates the aim of the research. This is better achieved by simultaneously employing a qualitative and quantitative method for this study, as similar studies have emphasised and engaged.<sup>[20]</sup> Consequently, this study deployed a mixed method approach (quantitative and qualitative) to enhance and understand trait EI among nursing teams in Northeast England (United Kingdom).

## Materials and Methods

### Study design and setting

The study employed a cross-sectional study design using a concurrent mixed method (quantitative and qualitative approach). The study utilised a convenience sampling technique for both the quantitative and qualitative method.

### Study participants and Sampling

A total of 100 staff nurses for quantitative data and 10 staff nurses for qualitative data were recruited for the study using the convenience sampling method. The staff nurses recruited for this study were from the team of nurses practising in the National Health Service (NHS) in Northeast England and have experience (at least one year for quantitative and at least three years for qualitative) working in varying departments/wards.

### Data collection tools and technique

Data for this study were collected between March and May 2022. Quantitative data were collected online through the Google form created, and the link to the Google form was then shared with the nurses via group online platform (WhatsApp and Telegram) of the nursing team. For qualitative data, interviews were conducted with the nurses via phone calls; the conversations were recorded and transcribed accordingly.

### Instrument for data collection

In this research, both quantitative data were collected through the emotional assessment scale adopted, and qualitative data were collected through in-depth interviews of staff nurses concurrently to understand trait EI and factors associated with EI among nursing teams in the UK. For quantitative data, Schutte Self Report Emotional Intelligence Test (SREIT) was used in tandem with other similar studies.<sup>[21,22]</sup> The SREIT is a standardised and validated questionnaire that contains 33- items, with a 5-point Likert Scale questionnaire with higher responses proving higher EI scores.<sup>[21]</sup> The SREIT comprised of minimum scores and maximum scores of 33 and 165, then EI traits levels were grouped into three; Low EI traits level for a score below 78 ( $\leq 77$ ), Moderate EI traits level for a score between 78-121 and High EI traits level scores between 122-165 ( $\geq 122$ ), respectively.<sup>[22]</sup> The emotional assessment scale deployed for the questionnaire items was used to group EI status into five components: items 5, 28, and 33 were scored reversely. The five components were namely, self-awareness (items- 8,9,17,19,22), self-regulation (items- 1,6,7,12,14,16,20,21,27,31), self-motivation (items- 2, 3, 10, 23, 28), empathy (items-4,26,30,32,33), and social skills (items-5,11,13,15,18,24,25,29), respectively.<sup>[23]</sup>

For qualitative, a semi-structured interview guide was created based on the following: the investigator's reasonable degree of knowledge about trait EI from literature reviews, and responses from respondents captured based on the five categories of trait EI aforementioned. The semi-structured interview questions were critical for the interviewer to identify the domain of the topic under investigation; questions were critiqued and pre-tested to ascertain that the accurate responses were captured in detail.<sup>[23]</sup>

### Inclusion and exclusion criteria

1. Staff nurses who were practising with the National Health Service (NHS) in North East, England (United Kingdom) were included in the study while staff nurses who were not practising with the NHS in North East, England (United Kingdom) were excluded from the study.
2. Staff nurses who had at least one year experience working with the NHS were engaged to fill the questionnaire and staff nurses who had at least five years experience working with the NHS participated in the in-depth interviews. On the other hand, staff nurses who do not have at least one year experience working with the NHS were excluded from filling the questionnaire, and staff nurses who do not have at least five years experience working with the NHS were excluded from the in-depth interviews.

### Data analysis

The quantitative data were inputted into an Excel spreadsheet and analysed using the Statistical Package for Social Sciences (SPSS) version 25.0. Descriptive statistics, including frequency, percentage, mean, range, and standard deviation (SD), were used to analyse demographic characteristics and study variables. Chi-square test, and bivariate analysis, namely the independent sample t test, and the one-way analysis of variance (ANOVA) were used to examine the associations between study variables and emotional intelligence traits. Qualitative data to understand participants' perception of emotional intelligence traits and associated factors were transcribed, and responses were analysed using NVivo version 12. Rapid analysis was used to validate responses.

## Results

### Quantitative findings

Data from Table 1 reveals that the majority of the respondents (77%) were females, and 51% of the respondents were married. Also; 44% are Africans, 29% are Asian and 27% are White; 46% of the respondents have work experience between one to five years, 21% between six to ten years and 14% have work experience of sixteen years and above. The department/ward where the majority of the respondent was engaged with nursing practice was General Medicine (31%).

As shown in Figure 1, 18% of the respondents had Moderate EI traits status while 82% of the respondents had High EI traits status. From this study, Low EI traits status was not recorded with anyone in such a category. Traits of EI levels across various socio-demographic characteristics are reported in Table 1.

As reported in Table 2, emotional intelligence traits were categorised into five with their mean scores and

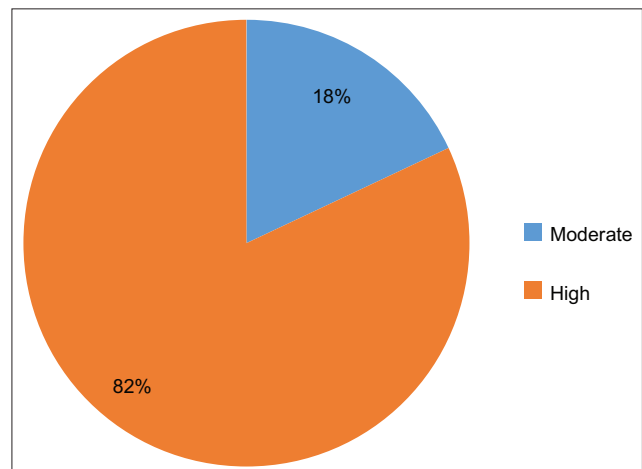


Figure 1: Levels of EI traits among respondents

**Table 1: Socio-demographic characteristics of respondents and traits of EI levels**

Variable	Description	Frequency	Traits of EI levels	
			Moderate	High
Sex	Male	23 (23.0%)	5 (21.7%)	18 (78.3%)
	Female	77 (77.0)	13 (16.9%)	64 (83.1%)
Marital status	Single	49 (49.0%)	12 (24.5%)	37 (75.5%)
	Married	51 (51.0%)	6 (11.8%)	45 (88.2%)
Race	African	44 (44.0%)	10 (22.7%)	34 (77.3)
	Asian	29 (29.0%)	7 (24.1%)	22 (75.9%)
	White	27 (27.0%)	1 (3.7%)	26 (96.2%)
Years of job Experience	1-5 years	46 (46.0%)	9 (19.6%)	37 (80.4%)
	6-10 years	21 (21.0%)	2 (9.5%)	19 (90.5%)
	11-15 years	19 (19.0%)	5 (26.3%)	14 (73.7%)
	16 years and above	14 (14.0%)	2 (14.3%)	12 (85.7%)
Department/Ward	General Medicine	31 (31.0%)	6 (19.4%)	25 (80.6%)
	Surgical	23 (23.0%)	7 (30.4%)	16 (69.6%)
	Emergency	16 (16.0%)	3 (18.8%)	13 (81.3%)
	Mental Health	7 (7.0%)	2 (28.6%)	5 (71.4%)
	Neonatal	6 (6.0%)	0 (0.0%)	6 (100.0%)
	Maternity	4 (4.0%)	0 (0.0%)	4 (100.0%)
	Geriatrics	3 (3.0%)	0 (0.0%)	3 (100.0%)
	Others	10 (10.0%)	0 (0.0%)	10 (100.0%)

standard deviations; self-awareness (20.20 ± 1.99), self-regulation (38.15 ± 3.22), self-motivation (20.54 ± 2.04), empathy (18.78 ± 2.12) and social skills (29.60 ± 3.29).

As reported in Table 3 above, there was no statistically significant association between sex, marital status and all EI traits categories at a 95% confidence interval. Hence, the *P* value was greater than 0.05 for all the categories.

At a 95% confidence interval, results from Table 4 showed that only empathy has a statistical significant relationship with the race of respondents (*P*-value = 0.040) while other EI traits categories do not. On the other hand, there is no statistically significant association between years of experience, department/ward of the practice of respondents and all EI traits categories.

From Table 5 above, there is no statistically significant difference between all social demographic characteristics (sex, marital status, race, years of job experience and department/ward) and EI traits levels (moderate and high) at a 95% confidence interval.

**Qualitative findings**

*Cultural factors*

Another important factor that influences the trait EI of nurses is cultural differences. Some of the participants highlighted that they experienced culture shock when it comes to the quality of care delivered. Aside from the fact that cultural differences affect trait EI of nursing teams, one of the participants stated the issue of distrust that comes with diverse cultural differences which affected her trait EI. It can be concluded from the respondents' responses that cultural background plays a key role in

**Table 2: Means and standard deviations of EI traits categories**

Variable	Mean	Std. Deviation
Self-awareness	20.20	1.99
Self-regulation	38.15	3.22
Self-motivation	20.54	2.04
Empathy	18.78	2.12
Social skills	29.60	3.29

**Table 3: Associations between selected socio-demographic characteristics (sex, marital status and years of job experience) and EI categories of respondents using independent sample t-test**

Associations between sex of respondents and EI traits categories				
EI traits categories	F	T	Df	P-value
Self-awareness	0.928	-0.547	98	0.585
Self-regulation	0.573	-0.400	98	0.690
Self-motivation	2.288	-0.396	98	0.693
Empathy	0.009	-0.453	98	0.651
Social skills	0.166	-0.273	98	0.785
Associations between marital status of respondents and EI traits categories				
EI traits categories	F	t	Df	P-value
Self-awareness	0.025	-1.810	98	0.073
Self-regulation	2.098	-1.330	98	0.187
Self-motivation	1.739	-0.926	98	0.357
Empathy	2.355	-0.869	98	0.387
Social skills	3.507	-0.036	98	0.971

the way nurses express their emotions within the nursing team. The impact culture plays are contextualised in how nurses relate within nursing teams, to patients, and by extension, to team formation within nurses.

**Table 4: Associations between selected socio-demographic characteristics (race, years of job experience, and department/ward of practice) and EI categories of respondents using ANOVA**

Associations between race of respondents and EI traits categories						
Variable	Description	Sum of Squares	df	Mean Square	F	P-value
Self-awareness	Between Groups	16.783	2	8.391	2.169	0.120
	Within Groups	375.217	97	3.868		
Self-regulation	Between Groups	4.652	2	2.326	0.220	0.803
	Within Groups	1024.098	97	10.558		
Self-motivation	Between Groups	7.687	2	3.844	0.920	0.402
	Within Groups	405.153	97	4.177		
Empathy	Between Groups	28.655	2	14.328	3.337	0.040*
	Within Groups	416.505	97	4.294		
Social skills	Between Groups	54.299	2	27.149	2.593	0.080
	Within Groups	1015.701	97	10.471		
Associations between years of job experience of respondents and EI traits categories						
Variable	Description	Sum of Squares	df	Mean Square	F	P-value
Self-awareness	Between Groups	5.963	3	1.988	0.494	0.687
	Within Groups	386.037	96	4.021		
Self-regulation	Between Groups	2.991	3	0.997	0.093	0.964
	Within Groups	1025.759	96	10.685		
Self-motivation	Between Groups	4.585	3	1.528	0.359	0.782
	Within Groups	408.255	96	4.253		
Empathy	Between Groups	11.451	3	3.817	0.845	0.473
	Within Groups	433.709	96	4.518		
Social skills	Between Groups	38.475	3	12.825	1.194	0.316
	Within Groups	1031.525	96	10.745		
Associations between department/ward of practice of respondents and EI traits categories						
Variable	Description	Sum of Squares	df	Mean Square	F	P-value
Self-awareness	Between Groups	20.377	7	2.911	0.721	0.655
	Within Groups	371.623	92	4.039		
Self-regulation	Between Groups	133.659	7	19.094	1.963	0.069
	Within Groups	895.091	92	9.729		
Self-motivation	Between Groups	17.674	7	2.525	0.588	0.764
	Within Groups	395.166	92	4.295		
Empathy	Between Groups	16.325	7	2.332	0.500	0.832
	Within Groups	428.835	92	4.661		
Social skills	Between Groups	100.812	7	14.402	1.367	0.229
	Within Groups	969.188	92	10.535		

**Table 5: Associations between socio-demographic characteristics of respondents and EI traits levels (moderate and high) using Chi-square test**

Variables	Chi-square value	df	P-value
Sex	0.283	1	0.757
Marital status	2.742	1	0.098
Race	5.145	2	0.760
Years of job experience	2.120	3	0.556
Department/Ward	8.033	7	0.321

### Personality trait factor

Considering the responses from the respondents, one of the factors associated with enhancing EI and managing stress is leaving work to work. Many of the respondents' acknowledged that the nursing environment is full of stress and one of the strategies for managing the stress is leaving "work to work." This shows that stress is a part of nursing practice. Most of the respondents have

found a way of dealing with stress hereby demonstrating a high level of trait EI based on personal principles that they live by. However, some other respondents stated they deal with stress by watching TV and doing other enjoyable things. The ability to deal with stress has a direct relationship with high levels of trait EI.

### Practicing self-care

Some of the respondents highlighted the need for self-care as it is not just enough that you leave work at work but leaving work at work to look after yourself. Different respondents varied in what they do to take care of themselves. However, some activities stood out and were captured by many of the respondents; while another respondent stated how sleep is a coping strategy to maintain the level of morale and productivity required. It is obvious from all the respondents that sleep, and good eating habits are essential to maintain

a good level of morale and productivity. Many of the respondents' responses reflected an appreciable level of trait happiness by practicing self-care.

### Family factor

Another factor that is associated with the trait EI of nurses is the mediating role family plays in the enhancement of trait EI among nursing teams in Northeast England.

### Family and moral support

In response to the question related to how participant deal with stress and failure, many of the respondents stated the importance of family. One of the respondents described one of the routines she keeps every day which affords her opportune time with family and friends to rejuvenate. Another respondent gave even more insight and explained that family provides therapeutic support for nurses as well. For some of the respondents, family is everything to them. Family plays an important role in the trait EI of nurses; it can be quite challenging to deal with stress at work without family support. Respondent I was more of a family person that believed that his ability to deliver in the health sector as a nurse is tied to his well-prioritised family life. He had an opinion that family is central to a strategic, purposeful nursing career in nursing practice. On the other end, a family has been observed to also impact the trait EI of nurses negatively. It is observed that family is an important associated factor that can either positively or negatively affects the trait EI of nurses in Northeast, England.

### Organisational factor

Organisational factor has been observed to influence trait EI. The respondents gave perspective on the framework of EI that exists within the health sector and how that positively or negatively affects the trait EI of nurses.

### Ward uniqueness

Some of the participants stated that the clinical ward constituted a factor that influences the trait EI of nursing teams because there is a varying degree of stress that exists in each of the clinical ward. Additionally, they highlighted the stress and emotional challenge that influences trait EI. This finding suggests that some of the respondents changed roles and worked in a different clinical ward where the emotional demand was low.

### Nursing teamwork

Teamwork is fundamental to nursing practice as it helps in giving quality care delivery. Many of the respondents were assertive about the fact that teamwork is essential in nursing practice. Many of the respondents stated underlining issues that impact on the trait EI of nurses. When asked what behaviour gets them annoyed or angry, some of the respondents stated issues related to lack of teamwork and how that impacted their emotional well-being. Furthermore, emotional frustration can

be the outcome of not working as a team. Some of the respondents stated that in dealing with issues surrounding a lack of team cohesiveness, they get ward managers or directors involved before it gets out of hand. Some of the respondents also raised issues regarding nurses working in isolation rather than as team players. They also stated that quality care delivery is about teamwork and not trying to be a superhero. Findings from the respondents have revealed that nursing teamwork does not only affect the trait EI of nurses, but it consequently affects the quality of care being delivered as well. One of the respondents also highlighted that in a team of nurses, there are different skills, experiences and strengths.

### Under-staffing

Understaffing is an operational challenge that triggers stress in nursing practice. Many of the respondents raised concerns about understaffing or short-staffing and how that affects the EI of nurses. The respondents explained that lack of motivation is traceable to understaffing. Conclusively, understaffing is an organisational issue that serves as an associated factor that affects the trait EI of nurses in Northeast England.

### Training and personal development

Another factor associated with trait EI among nurses is the mediating role of training and personal development. It is necessary that EI training is captured in organisational learning. One of the respondents supported this claim that the NHS trust has organisational learning in place. When asked about the achievements they were most proud of, some of them affirmed the role training and personal development played in enhancing their trait happiness.

## Discussion

The majority of respondents in this study are female (77%), married (51%), with work experience between one and five years (46%), and working in the department of General Medicine (31%). This finding is similar to other studies where the higher proportion of participants were female<sup>[3,11,24-26]</sup> married<sup>[25]</sup> and worked in general medical or surgical wards.<sup>[3,24]</sup> The high percentage of females in the nursing practice may be because nursing has always been portrayed as a feminine profession since the early nineties.<sup>[26]</sup> Interestingly, none of the respondents falls under the low EI level as all respondents have at least moderate EI levels. The majority (82%) had high EI levels, which is quite commendable among the nursing team in northeast England. This result agrees with previous studies in the USA, Turkey, and Nigeria.<sup>[13,24,25]</sup> The high prevalence of high EI levels among nurses in this study may be attributable to the quality work environment, good staff relationships, improved coping strategies for

stress management, and so on. Previous studies have revealed that high levels of EI lead to better clinical decision-making, planning and evaluation, knowledge utilisation, and relationship management.<sup>[27,28]</sup> Also, nurses with higher levels of EI were more likely to successfully deal with the stressors that a demanding career entailed.<sup>[11,13]</sup>

Gender differences have been largely ignored in nursing research since nursing practice tends to be a female-dominated field despite the fact that male nurses play a vital role in healthcare, as they bring diversity, valuable skills and unique perspectives to the nursing team.<sup>[26,29]</sup> Consequently, this is clearly reflected in this study, as most of the respondents were female nurses (77%). This is validated by a World Health Organization (WHO) report that only 10% of nursing professionals are male globally, although some differences in rates occur across regions and countries.<sup>[30]</sup> Also, females (83.1%) have more High EI trait levels than males when compared (78.1%) which is similar to a previous study.<sup>[31]</sup> This may be because the parts of the brain that deal with emotional processing are more highly developed in female brains than in male brains.<sup>[29]</sup> Also, there was no statistically significant relationship between gender and all the EI categories. This corroborates a similar study between two teaching hospitals in Nigeria.<sup>[32]</sup>

There was a statistically significant relationship between the race of respondents and their empathy. It has been noted that empathy enhances nurses' perception of the emotional actions of patients or family members, which in turn helps nurses in the delivery of quality care.<sup>[27]</sup> Also, some of the respondents during the interview noted how their race as it relates to culture shock influences their emotional intelligence, attitude to work and quality of care delivered. Conclusively, the influence of race and culture should not be undermined when determining nurses' emotional intelligence and quality of care.

Previous studies have reported that that is a significant relationship between the number of years of practice (experience) and EI trait categories as experiences gained would enhance nurses to relate with their work environment, colleagues and patients better.<sup>[32,33]</sup> Contrarily in this study, there was no statistically significant association between years of experience and all EI trait categories and EI levels. This agrees with other similar studies.<sup>[13,28]</sup> This may be because a higher number of years of experience categories was employed in the other studies. Also, this study's findings revealed no statistically significant association between the department/ward of practice and all EI trait categories and EI levels. This report agrees with the findings by Harper and Jones-Schenk<sup>[13]</sup> but disagrees with the report

from a study among Dutch nurses that nurses who practiced in mental health departments have higher EI levels than those in other departments.<sup>[34]</sup>

Findings from several studies have reported a significant association between the level of emotional intelligence and the use of coping strategies against stress at the workplace, attitude to work and overall job satisfaction.<sup>[11,12,35]</sup> As captured in this study from the qualitative data, respondents noted leaving work activities to the workplace, eating well, family support and having enough time to sleep as their coping strategies for trait emotional intelligence. Sleeping well and family support were the respondents' most emphasised coping strategies. A study reported poor quality sleep due to shift patterns and insufficient time to recover from night shifts as a primary concern for nurses.<sup>[36]</sup> Also in this study, some respondents noted that family support and time out with their family rejuvenates them. This corroborates a previous study that reported that family support gives nurses inner strength and motivation to carry on with their work schedules.<sup>[3]</sup> Cultural backgrounds and differences in this study impact how nurses' express emotions, which directly or indirectly affect their EI within their team, with their senior colleagues, or with patients. Although a study was done on hospitality students, the findings reported that cultural differences played a vital role in the EI of the students.<sup>[36]</sup> Besides from the findings in this study, there is a very sparse study on the impact of culture on the emotional intelligence of nurses, especially foreign-trained nurses.

Personality traits and intentionality with self-care have been reported in several studies to influence EI in nursing practice.<sup>[37,38]</sup> Findings from this study showed that emotional intelligence was related to the work stress of the nurses, which in turn influences their personality. Additionally, nurses with high EI in this study were able to manage work stress compared with those with lower EI. This agrees with studies from different countries like Taiwan and Spain.<sup>[39,40]</sup>

Social protective factors such as family and friends' relationships in this study were found to impact the EI of nurses positively or negatively. This corroborates with a previous study, where positive family ties, supportive communication networks and social supports improved EI and resilience in nurses, particularly in managing stressful situations in the workplace.<sup>[41]</sup> Additionally, organisational factors have been found in this study to positively influence EI, while understaffing triggers stress in nursing practice, negatively impacting nurses' EI. This agrees with various studies, where nurses with perceived organisational support reported a high level of dedication to work, high level of engagement,

self-efficacy, increased work satisfaction, employee trust in the organisation and decreased level of work stress, thereby increasing the EI of nursing staff.<sup>[42-45]</sup> On the other hand, occupational burnout as a result of staff shortage can increase psychological stress, causing anxiety or depression,<sup>[46]</sup> thereby decreasing EI in nurses.

### Limitations

The small sample size (100 respondents for quantitative data and 10 respondents for qualitative) and study location, as only Northeast England was considered, indicates that the results obtained from this study cannot be generalisable to other nurses across different regions of the United Kingdom and the world at large. Also, there was so much time consumed in getting responses from the survey, and to fix an appointment for the telephone interview with nurses was quite challenging.

### Conclusion

Based on the present findings, EI had an influence on the quality of nursing care (QoNC), empathy was found to be influenced by the race and culture of nurses, which in turn affected their EI, attitude at work and quality of care delivered. In view of our qualitative findings, family support, personality traits including emotions, perceived organisational support and work stress due to staff shortage and departments contributed positively or negatively to EI. Providing a more supportive environment, including encouragement from supervisors, rewards, and positive feedback, particularly for nurses with a lesser propensity to manage stress, will boost EI, self-efficiency and job performance. Welfare considerations such as allocating rest time for staff during work, assigning specific recreation days for staff and their families, and providing psychological support can create motivation and job satisfaction.

Enhancing EI traits among nursing teams is significant, as it may serve as an intervention strategy to manage changes and still increase the nursing level of morale and productivity. Nurses' EI should be evaluated yearly in healthcare institutions to help nurses identify and comprehend their emotional strengths and weaknesses for more efficient personal and organisational development. Job experience impacts EI; therefore, it is suggested that practicum training and EI-related competencies be incorporated into educational and assessment programmes for nurses and healthcare workers. Further studies on the EI of nurses need to be carried out among a larger and more diverse population sample, including nurses in private healthcare facilities.

### Data availability

Data set available on request from the corresponding author.

### Ethical approval

This study was granted ethical approval by Northumbria University Ethics and Review Committee with number 46593. The consent of the participants was obtained before data collection for both methods of data collection (qualitative and quantitative), and the participants were assured that all information supplied would be kept confidential and anonymous.

### Acknowledgments

The authors would like to acknowledge all the nurses who participated in and supported this research study.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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