Asiamah, *Cogent Business & Management* (2017), 4: 1280896
**http://dx.doi.org/10.1080/23311975.2017.1280896**

cogent business & management

MANAGEMENT | RESEARCH ARTICLE

# Enhancing nurses' emotional intelligence: Are tenure prolongation, education and in-service training applicable methods even when not specialized?

Nestor Asiamah[1]*

Received: 11 October 2016
Accepted: 08 January 2017
Published: 23 January 2017

*Corresponding author: Nestor Asiamah, Africa Center of Epidemiology, No. 100 Royal Palm Avenue, P. O. Box AN 18462, Accra North, Accra, Ghana
E-mails: nestorasiamah1984@gmail.com, nestor.asiamah@yahoo.com

Reviewing editor:
Tahir Nisar, University of Southampton, UK

Additional information is available at the end of the article

**Abstract:** *Background/objective*: Many health care institutions and employers have begun to realize the need for health professionals' emotional intelligence to be improved continuously. Education, in-service training and tenure prolongation have been the traditional methods for developing and enhancing competencies in the literature. This study attempts to ascertain whether or not these three traditional methods are applicable for enhancing the emotional intelligence of nurses if not specialized. *Design/methodology/approach*: A cross-sectional quantitative research design was used in this study. A self-reported questionnaire was used to collect data from 532 nurses in Accra North, who were selected using the simple random sampling method. Confirmatory Factor Analysis was used to test hypotheses. *Findings*: The resulting model is of good fit at 5% significance level [$\chi^2 = 0.805$, $p = 0.369$]. None of the three methods was found to serve as an effective method when not specialized, though each pair of them is positively correlated. It is concluded that none of the three methods can be used to enhance nurses' emotional intelligence if not specialized. The need for employers and institutions to design and implement the three methods for the specific purpose of enhancing nurses' emotional intelligence is therefore worth considering. *Originality/value*: This study is the first to verify whether or not in-service training, education and tenure prolongation improve the emotional intelligence of nurses when not specialized. Apart from its contributions to the literature, this study is expected to serve as a model for conducting similar studies in future.

**Subjects: Bioscience; Earth Sciences; Physical Sciences; Health and Social Care**

**Keywords: nurses; emotional intelligence; tenure prolongation; education and in-service training**

## ABOUT THE AUTHOR

Nestor Asiamah is a Public Health Researcher and Scientist who seeks to use research to contribute to quality of life. He has published novel papers in the areas of health care, health management, quality of life, physical activity, ageing, and health psychology. He is currently undertaking several research projects aimed at improving the quality of health care in developing African countries. He is also working on establishing the Africa Center for Epidemiology (ACE), a center for public health research excellence.

## PUBLIC INTEREST STATEMENT

Being emotionally intelligent is a requirement for people's positive social inclusion. Many individuals share in this opinion on the basis of available empirical evidences. Nonetheless, critics think emotional intelligence is merely a moral attribute that does not deserve the attention it receives from academics in recent years. Yet if I have my way, I would impel critics to rethink emotional intelligence as a cognitive ability that is real and is critically needed to improve the world.

© 2017 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

## 1. Introduction

Nurses play a central role in the delivery of health care across the world. They focus on the care of individuals, families and communities to maintain optimal health and quality of life (Diab & Ajlouni, 2015; Kalisch, Lee, & Rochman, 2010). According to Egenes (2009), nurses are expected to develop a plan of care and work in partnership with physicians, therapists, patients, families of patients and other team members, with the basic goal of treating diseases to improve quality of life. Nurses may therefore be considered mediators of the relationship that exists between patients or/and their relations and physicians.

Their intermediary role in health care possibly makes nurses the commonest points of contact for patients, family members of patients, and other health workers. In practice, a patient would have to see a nurse prior to consulting a physician or specialist. It could thus be argued that nurses interact with patients more frequently than many categories of health professionals such as physicians and pharmacists in a hospital. That being the case, they need suitable relationship-building skills to develop the best possible relationship with patients, other health professionals, and members of the general public. A good number of researchers (e.g. Freshman & Rubino, 2002; Tyczkowski et al., 2015; Ünal, 2014) shared in this idea when they opined that Emotional Intelligence (EI) is relevant to nursing.

The consortium for research on emotional intelligence in organizations described EI as "…social and emotional abilities that previous research has shown to be linked to successful performance in the workplace." (Freshman & Rubino, 2002) EI is also defined as "… the ability to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer, Salovey, & Caruso, 2004). In other words, emotional intelligence is an ability that enables an individual to perceive and understand emotions of self as well as those of others, and be able to regulate these emotions in a manner than engenders positive results for those involved. Based on these definitions, Brackett, Mayer, and Warner (2004) is right to have said acceptable behavior in society is facilitated by EI.

Proponents of the concept of EI (e.g. Bar-On, 1997; Goleman, 1995; Salovey & Mayer, 1989) have conceptualized EI as a relationship-building skill. To be specific, Salovey and Mayer (1989) coined a four-skill framework that recognizes EI as a skill that health workers must possess to provide health care. Their framework postulates that EI encompasses four skills: the accurate perception, appraisal, and expression of people's motions; generating feelings on demand when they can facilitate understanding of self or persons; understanding emotions and the knowledge that can be derived from them; and regulation and control of emotion to promote emotional and intellectual growth.

On daily basis, nurses encounter individuals or patients who are emotionally numb and frail. EI researchers and psychologists (e.g. Freshman & Rubino, 2002; Nwankwo, Obi, Sydney-Agbor, Agu, & Aboh, 2013) contend that the kind of interpersonal relationship to which patients are exposed in a health care environment could partly serve as a remedy for their morbid condition or can contribute to their recovery. According to Freshman and Rubino (2002), EI application by health professionals facilitates care and its expected effect on patients. A plethora of studies (e.g. Kalyoncu, Guney, Arslan, Guney, & Ayranci, 2012; Nwankwo et al., 2013; Özer, Hamarta, & Deniz, 2016) has also confirmed the positive effect of EI application on the performance and satisfaction of health professionals. This being the situation, researchers such as Freshman and Rubino (2002) have good reasons to have emphasized the need for health workers, especially nurses, to continuously enhance their EI. The question worth answering therefore is: *which methods can be used to enhance the EI of health workers such as nurses?*

In-service training (IST), education, and tenure prolongation are possibly the most suitable methods for improving the competencies of employees. Researchers (e.g. Khan, Abbasi, & Waseem, 2016;

Ng & Feldman, 2009) have also uncovered that these three methods are those mostly applied by employers and organizations based on the idea that they make positive or incremental effect on competencies. Yet before any of these methods is used as a means of enhancing the EI of nurses, empirical evidence is needed on whether or not it can predict nurses' EI significantly even if not specialized.

The term "not specialized" or "non-specialized" in this study is used to describe IST, tenure prolongation, and education that are not specially designed or modelled in a health care institution to enhance EI competencies. In other words, these three methods are non-specialized when a health care institution designs and implements them without recognizing the need to advance workers' EI. On the other hand, any of these methods are specialized when the health care institution is aware of the relevance of EI to health service delivery and therefore employs EI-focused resources (e.g. training models, trainers, policies) to build the EI of workers over time.

Sadly, many health organizations, especially those in African countries (Nwankwo et al., 2013), are unaware of the relevance of EI to health care delivery. Human resource practices (e.g. training and development, research, etc.) and organizational policies in most health organizations in Africa are not designed to recognize and support the relevance of EI to health care and its continuous enhancement (Freshman & Rubino, 2002; Nwankwo et al., 2013). In Ghana, some banks are beginning to incorporate EI development in in-service training models, but some sectors such as health care seem to have no idea about EI and its relevance to health service delivery (Danquah, 2014). On a global scale, organizational policies and behavior do not support the specialization of health workers' career development programs (e.g. policies about workers' further education and tenure prolongation) for continuous EI enhancement (Freshman & Rubino, 2002; Özer et al., 2016). There is therefore no doubt that education, tenure prolongation and in-serving training are not specialized for enhancing EI within health organizations in Ghana and possibly other jurisdictions.

Emotional intelligence researchers and writers (e.g. Bar-On, 1997; Goleman, 1995; Mayer, 2008) however opined that specialized approaches are needed to enhance EI in an organizational setting. This opinion must have led to the development of several EI-focused training models, including the one developed by Bar-On (1997). A question that is worth answering is: *would the traditional methods of in-service training, education and tenure prolongation effectively enhance individuals' EI even if not specialized?* In this study, an attempt is made to answer this question by ascertaining the effect of these three methods on EI when not specialized. This study also attempts to identify the best method applicable, particularly if each of them positively predicts nurses' EI.

There is no doubt that the three methods can be used to enhance EI if they make a significant positive effect on it, and the best predictor of EI among them could be prioritized if the need arises. Since a significant correlation between each pair of the methods is possible, the best predictor would, at best, be identified in a Confirmatory Factor Analysis (CFA), which can simultaneously estimate correlations and effects. Moreover, to ensure its reliability in practice, the best predictor (method) would have to be consistently confirmed in the CFA context across populations. This study is therefore carried out to provide a basis for identifying effective methods for enhancing the EI of health professionals, particularly nurses. Moreover, an effort is made in this study to test and provide a CFA model that serves as a foundation for identifying which of the three methods best predicts nurses' EI through academic debate. Results of this study are therefore provisional.

## 2. Literature review

### *2.1. Key models of emotional intelligence*

Three theories of emotional intelligence have dominated the academic literature and informed the course of research in the last four decades. Among these theories is the model of Bar-On (1997), which conceptualizes emotional intelligence as a set of interrelated emotional and social competencies that determines how people understand and express themselves, understand others and relate

with them, and cope with the demands of daily life. This theory argues that EI is a cognitive skill that facilitates success in humans' daily relationship development. This viewpoint harmonizes with Brackett et al. (2004) conceptualization of EI, which premises that EI facilitates positive daily behavior. In addition, the theory of Bar-On (1997) is ideologically connected to the model of Salovey and Mayer (1989), who were the first to formally mention EI in the literature (Freshman & Rubino, 2002).

The theory of Salovey and Mayer (1989) explains EI as a bundle of four competencies identified earlier in this study. Researchers' knowledge of these four competencies have influenced modern research on EI and constituted the foundation of the research work of Goleman (1995), who popularized the concept of EI among academics (Bowen, Pilkington, & Rose, 2016; Freshman & Rubino, 2002). Apart from being the originator of a model that made the concept of EI popular and triggered the course of massive research on it, Goleman (1995) reconceptualized EI as an ability of five dimensions, which is today known as the *mixed model of emotional intelligence* (Freshman & Rubino, 2002).

The mixed model is one of the three EI frameworks, with the other two being the ability model and trait model (Mayer, 2008; Opuni, Opoku, & Oseku-Afful, 2014). The ability model considers emotions of self and others as useful sources of information that help one to make sense of the social environment and to navigate it (Bar-On, 1997; Goleman, 1998). It asserts that individuals are different with respect to the ability to process emotion-driven information and the capacity to relate emotional processing to a wider level of cognition. This model is entirely explained by the four EI competencies of Salovey and Mayer (1989), which have been identified in the introductory section of this study. Salovey and Mayer (1989) thus opined that the ability model has three goals, namely perceiving emotions; understanding emotions; and managing emotions.

The second model, the trait model, refers to an individual's self-perceptions of their emotional abilities (Freshman & Rubino, 2002; Goleman, 1998). This model of EI encompasses behavioral dispositions and self-perceived abilities of the individual. It is often measured using self-reported questionnaires, as opposed to the ability model that employs actual abilities (Freshman & Rubino, 2002). Moreover, the trait model is required to be investigated within a personality framework (Kernbach & Schutte, 2005).

The mixed model features a framework of five skills and competencies that enforce effective every day and leadership behavior (Goleman, 1998). These competencies, which were developed by Goleman (1995) based on the framework of Salovey and Mayer (1989), are self-awareness, self-regulation, social skill, social awareness, and self-motivation. Goleman (1995) views these competencies as learned capabilities that can be improved over time and are therefore not innate talents, though he posits that individuals are born with a general EI that determines their potential for learning and building emotional competencies.

The first skill of Goleman's (1995) model, *self-awareness*, means having sufficiently deep understanding of one's emotions, strengths, weaknesses, needs, and drives. This understanding is fundamental to deciphering the psychological and emotional conditions of others. Of course, a person who cannot sufficiently understand his own emotions, strengths, weaknesses, needs, and drives cannot understand those of others. *Self-regulation* is the capacity to adapt to changes and situations, and includes the ability to say no to impulsive urges (Goleman, 1998; Özer et al., 2016). It is generally perceived as an EI skill relevant to coping with or managing the negative aspects of other people's behavior. As health professionals, nurses would often encounter these negative and unpleasant behaviors, at least from traumatized patients.

*Self-motivation*, the third skill, is the ability to dare to achieve, being passionate over profession and work, and enjoying challenges and outcomes (Bowen et al., 2016; Goleman, 1998). Invariably, it is the passion exercised in performing a task so that challenges and both positive and negative outcomes enthuse the individual to persist on the task as long as possible. A self-motivated nurse will

therefore thrive on his or her job no matter the challenges faced, especially if he or she has social awareness.

Social awareness is the ability to thoughtfully consider others' feelings when interacting or relating with them (Goleman, 1995; Özer et al., 2016). People with appreciable level of social awareness are not hasty in dissenting people's expressions and conducts but rather take time to understand the basis of such expressions and conducts and take empathetic actions in a manner that engenders happiness for themselves and those they are interacting with. *Social skill* is the fifth trait of Goleman (1995) model and is the ability to move people in a desired direction (Freshman & Rubino, 2002; Goleman, 1995). People with this ability are capable of influencing others to take decisions that harmonize with their desire and goals.

### *2.2. The linkage between EI and each of in-service training, education, and tenure*

IST is a term used to describe human development programs designed to equip employees with new competencies or to enhance the competencies already possessed by a workforce (Khan et al., 2016; Tahir, Yousafzai, Jan, & Hashim, 2014). In this study, IST is operationally defined as on-the-job training programs, including seminars and conferences, in which nurses were involved in order to enhance and/or acquire competencies relating to their nursing profession. Basically, education is a measure of the highest formal educational level attained by a nurse. Tenure has been defined as the number of years an individual has spent on a job (Asiamah, Mensah, & Oteng-Abayie, 2016). In this study, it is a measure of how long a nurse had served on his or her job. Tenure prolongation is therefore a term used to describe human resource programs adopted in a health care institution for enabling nurses to serve on their jobs as long as possible.

A major argument of Goleman (1995) theory is that emotional intelligence is not an innate talent but a malleable skill that can be developed over time, though everybody is born with some level of EI that facilitates the individual's social success and balance. This view suggests that an individual's EI level can improve with time and age. For nurses who have the opportunity to use their profession to exercise their EI, age, and tenure may have an effect on emotional intelligence advancement. Corroborating this assertion is the fact that some studies (e.g. Lopes, Grewal, Kadis, Gall, & Salovey, 2006; Saddam-Hussain & Muhammad, 2010; Salehi, Zadeh, Ghaderi, & Tabasi, 2016) have found tenure to make a positive effect on emotional intelligence, though none of them was based on nurses. It is worth noting, however, that tenure prolongation policies were not specialized for EI enhancement in the populations of these previous studies. On the basis of this observation, the following null ($H_0$1) and alternative ($H_a$1) hypotheses are tested:

$H_0$1- The emotional intelligence of nurses is not significantly increased as they spend more years on the job.

$H_a$1- The emotional intelligence of nurses is increased as they spend more years on the job.

Contrary to the opinion of Goleman (1995), this study argues that tenure will not necessarily influence emotional intelligence development if nurses are unaware of what EI is and are unable to seize opportunities to facilitate the enhancement of their EI level. For instance, if a nurse is unaware about the fact that EI is one of his or her skills and that this skill can be developed over time, tenure may not positively influence his or her EI level. In other words, individuals cannot necessarily improve their EI over time if they fail to exercise their nature-given EI continuously. In view of the fact that the concept of EI is relatively new in the literature (Özer et al., 2016) and is not incorporated in the curriculum of nursing education in many countries like Ghana, the majority of nurses would be unaware of EI and may therefore not exercise it in the passing of time. Coupled with the issue of health care institutions in Africa not having specialized approaches for enhancing EI, this study may fail to support the first alternative hypothesis, $H_a$1.

The second null ($H_0$2) and alternative ($H_a$2) hypotheses tested in this study are as follows:

$H_0$2- Nurses' educational level does not make a significant effect on their emotional intelligence.

$H_a$2- The higher the educational level of nurses, the higher their level of emotional intelligence.

Education is also a process of learning in which knowledge and skills are acquired. Depending on the curriculum used, a formal educational endeavor will enhance the individual's competencies. In the literature, some researchers (e.g. Danquah, 2014; Nwankwo et al., 2013) confirmed a positive effect of education on EI, though outside the health care sector. The second alternative hypothesis (i.e. $H_a$2) is expected to be confirmed from this point of view. On the contrary, some studies have not found support for this relationship (Lopes et al., 2006). In essence, there are mixed evidences with respect to the effect of education on emotional intelligence enhancement. In this study therefore, it is argued that education will not make a positive effect on EI if it is not characterized by curricula that expose students to EI-related exercises and job tasks. Invariably, if a nurse decides to take a higher degree that is not sufficiently enriched with EI exercises and lessons, it is likely this educational effort will not yield an improvement in his or her EI level. Considering the fact that educational curricula do not include special lessons on EI in Ghana, the second alternative hypothesis may therefore not be supported in this study.

In Ghana and many other parts of the world, health professionals, including nurses, are exposed to various forms of career development programs. Apart from education and tenure prolongation, in-service training is another career development method applied by institutions, employers and governments. In addition, research has confirmed that in-service training makes a positive effect on job knowledge and performance (Jehanzeb & Bashir, 2013; Mozael, 2015). Studies have also confirmed that in-service training has a positive effect on emotional intelligence (Freshman & Rubino, 2002), though none of these studies were focused on nurses. On the basis of these arguments, the following null and alternative hypotheses are also tested in this study:

$H_0$3- Nurses' emotional intelligence is not significantly influenced by in-service training.

$H_a$3- Nurses' emotional intelligence increases with the level of in-service training accessed by them.

The third alternative hypothesis (i.e. $H_a$3) could be rejected in this study if the training programs in which nurses partook were not designed to equip them with emotional competencies. Some researchers (e.g. Danquah, 2014; Opuni et al., 2014) have revealed that EI is not yet known by employers in many jurisdictions like Ghana and is therefore not incorporated in in-service training programs. This revelation even increases the likelihood of in-service training not making a positive effect on EI in this study.

Traditionally, formal educational programs are enriched with various forms of human development activities, including academic training, coaching and mentoring. Though these education-driven activities of human development may not be designed to address nurses' specific job roles, they can enhance their general level of competency, enabling them to better carry out job tasks. Hence, if formal education and its expected impact on nurses increase, this situation can overshadow the need for nurses to participate in in-service training. From this viewpoint, which is labelled PH1, education would make a negative effect on in-service training (IST) so that increased level of education decreases the level of IST engaged in. On the contrary, IST can be used to empower employees to enhance job security through high performance. This assertion is based on the fact that high performing employees are more likely to spend more years on the job and consequently obtain support (e.g. funding) from their organizations to pursue higher education. From this second perspective, which is labelled PH2, IST would make a positive effect on educational level. The study therefore tests the following fourth null and alternative hypotheses:

$H_0$4- Education makes no significant correlation with the level of IST received by nurses.
$H_a$4- Education makes a significant correlation with the level of IST received by nurses.

Primarily, the length of time a worker spends on the job is dependent on career development programs (e.g. further education, engagement in IST, etc.) made available to him by his employer. To explain, access to higher education as well as frequent in-service training can enable personnel to accomplish job roles better and consequently empower him to achieve job security. From this point of view, which is labeled PH4, tenure is positively influenced by educational level and IST. From another perspective, nurses who have spent more years on the job might be considered loyal to the organization, for which management may be willing to support their further education by providing scholarship, approving their study leave, to mention but a few. With respect to this scenario, which is labelled PH5, tenure would make a positive effect on educational level. On the basis of these understandings, the following last two pairs of hypotheses are tested in this study:

$H_0$5- There is no significant relationship between educational level and tenure.
$H_a$5- There is a significant relationship between educational level and tenure.
$H_0$6- There is no significant relationship between tenure and IST.
$H_a$6- There is a significant relationship between tenure and IST.

The last three alternative hypotheses (i.e. $H_a$4, $H_a$5 and $H_a$6) do not reflect their dependent variables (DVs) and independent variable (IVs). However, with respect to the perspectives (i.e. PH1, PH2, PH3, PH4 and PH5) from which these hypotheses are developed in this study, their DVs and IVs can be known depending on whether or not each of $H_a$4, $H_a$5 and $H_a$6 has a negative or positive correlation coefficient. The nature of the correlation coefficients of these last three hypotheses would help determine which of the three variables (i.e. education, tenure and IST) best predicts the EI of nurses.

## 3. Methods

This study adopted a cross-sectional quantitative research technique to be able to test the hypotheses using a CFA model. The study's population was made up of nurses serving in health care institutions (i.e. clinics, polyclinics, and hospitals) in Accra North, Ghana. The specific health care institutions used are those registered and controlled by Ghana Health Service (GHS). These health care organizations did not specialize employee educational programs, in-service training and career prolongation activities for EI enhancement. As a result, the participating health care institutions did not consider EI when designing models and policies for in-service training, employee education and tenure promotion. Nurses in institutions not controlled by GHS were not incorporated in the population because in most cases, they are not formally trained based on GHS standards and are not officially recognized as nurses in Ghana. The accessible population (i.e. nurses who were willing and available to respond at the time of data collection) was made up of nurses working in all ten GHS-approved institutions in the study area. As shown in Table 1, a total of 632 personnel made up the accessible population.

The researcher drew a sample of 532 personnel from the accessible population using the simple random sampling technique, which is applicable if research findings are to be generalized (Allwood, 2012; Williams, 2007). To explain, the simple random sampling process was used to select a representative number of nurses from each hospital (see Table 1) based on the standard sample size table of Krejcie and Morgan (1970). The researcher used the sample size table of Krejcie and Morgan because its sample sizes were originally calculated using a relatively large population proportion of 5% and therefore provides access to the most representative sample. In sampling from each health institution, the researcher simulated numbers in MS Excel 2013 and assigned them to nurses who constituted the accessible population. Simulated numbers were exported to SPSS Version 21, where the random sampling function was activated and used to select participants from each hospital. The overall sample size of 532 was reached by adding sample sizes of the ten health institutions.

**Table 1. Population and sample size across participating health care organizations**

| Name of health care institution | Population size | Sample size |
|---|---|---|
| Ridge hospital | 111 | 86 |
| 37 Military hospital | 87 | 73 |
| Iran clinic | 27 | 24 |
| Mamobi polyclinic | 51 | 44 |
| Adabraka polyclinic | 56 | 48 |
| Cocoa clinic | 59 | 52 |
| Holy trinity hospital | 89 | 73 |
| Kaneshie polyclinic | 61 | 52 |
| Achimota hospital | 62 | 52 |
| Total clinic | 29 | 28 |
| Total | 632 | 532 |

The 33-item scale of Schutte et al. (1998) was adopted to measure EI through a self-reported questionnaire. This scale was used because it has been thoroughly validated in previous studies and is consistent with the majority of EI scales available (Petrides & Furnham, 2000). Items of this scale were associated with five levels of response: (1) strongly disagree, (2) disagree, (3) not sure, (4) agree, and (5) strongly agree. "Not sure" was however assigned the numeric code *0* in data coding since it represents respondents' neutrality or uncertainty. Reliability of this scale was verified and confirmed to be appreciable. Evidences of data reliability are provided later in this paper. Education was measured in terms of the highest level of education acquired by a nurse, whereas IST was measured in terms of the number of training and development programs a nurse had participated in since he or she became a nurse. Tenure was measured in terms of how long a nurse had served on the job. All variables, except gender, were entered into the analysis software as quantitative/continuous variables.

Data was collected in twenty-eight (28) working days after management of participating health care institutions had endorsed the study. Each participant also formally agreed to participate by signing an informed consent form. The researcher collected data using hand delivery of the self-reported questionnaire and with the assistance of three hired persons. Within each health care institution, an administrative worker appointed by the head of administration guided and led questionnaire administration. Out of 532 questionnaires administered, 517 were returned by respondents. However 7 returned questionnaires had major response and non-response errors and were therefore discarded. Thus 510 questionnaires were analyzed. The researcher achieved fairly substantial representation of individuals at each level of gender (males = 236, and females = 274), tenure (up to 2 years = 217, 3–5 years = 159, 6–13 years = 62, and above 10 years = 68), and education (diploma = 153, degree = 249, and Master's degree = 102).

**Table 2. Reliability and validity statistics of the five theoretical factors of the EI scale**

| Factor | CA | CR | ICC | | | | AVE | MSV | ASV |
|---|---|---|---|---|---|---|---|---|---|
| | | | Single measure | 95%CI | | | | | |
| | | | | Lower limit | Upper limited | *p*-value | | | |
| Factor 1 | 0.709 | 0.700 | 0.398 | 0.361 | 0.436 | 0.000 | 0.663 | 0.114 | 0.1058 |
| Factor 2 | 0.732 | 0.750 | 0.422 | 0.384 | 0.459 | 0.000 | 0.654 | 0.055 | 0.0470 |
| Factor 3 | 0.711 | 0.700 | 0.401 | 0.364 | 0.438 | 0.000 | 0.699 | 0.123 | 0.0834 |
| Factor 4 | 0.803 | 0.761 | 0.449 | 0.415 | 0.482 | 0.000 | 0.705 | 0.123 | 0.0972 |
| Factor 5 | 0.901 | 0.843 | 0.412 | 0.386 | 0.439 | 0.000 | 0.733 | 0.212 | 0.0454 |

Notes: CA = Chronbach's alpha; CR = Composite reliability; ICC = Intra-class correlations; CI = Confidence interval; AVE = Average variance estimate; MSV = Maximum shared squared variance; AVS = Average shared squared variance.

In data analysis, the researcher used CFA to validate the EI scale and to analyze data. The validation process involved the estimation of the scale's validity and reliability statistics. Table 2 shows these statistics. In this table, each dimension or factor of EI has CA and CR values greater than the baseline value of 0.7 popularly recommended (Drost, 2011, Morse, 2002). Consequently, the EI scale is internally consistent. The ICC values and their corresponding $p < 0.05$ results also suggest that the EI scale is reliable. AVE is an indicator of convergent validity of the scale, while MSV and AVS statistics are used to assess its discriminant validity. With reference to Table 2, the AVE > 0.5, CR > AVE, MSV < AVE and ASV < AVE criteria recommended by researchers (e.g. Hurley et al., 1997; Schutte et al., 1998) are met for all factors. Therefore, the EI scale has an appreciable level of convergent and discriminant validity. Additionally, the CFA retains all 33 items of the scale, which are shown in Table 3. CFA was also used to screen the data for outliers at a more robust level. Results of the CFA showed that none of the p2 values associated with the Mahalanobis distance test is less than 0.05—the smallest of the p2 values is 0.765. Data normality was therefore confirmed.

**Table 3. Items of the EI scale and their respective codes**

| Code | Item |
|---|---|
| EI1 | I know when to speak about my personal problems to others |
| EI2 | When I am faced with obstacles, I remember times I faced similar obstacles and overcame them |
| EI3 | I expect that I will do well on most things I try |
| EI4 | Other people find it easy to confide in me |
| EI5 | I find it hard to understand the non-verbal messages of other people |
| EI6 | Some of the major events of my life have led me to re-evaluate what is important and not important |
| EI7 | When my mood changes, I see new possibilities |
| EI8 | Emotions are one of the things that make my life worth living |
| EI9 | I am aware of my emotions as I experience them |
| EI10 | I expect good things to happen |
| EI11 | I like to share my emotions with others |
| EI12 | When I experience a positive emotion, I know how to make it last |
| EI13 | I arrange events others enjoy |
| EI14 | I seek out activities that make me happy |
| EI15 | I am aware of the non-verbal messages I send to others |
| EI16 | I present myself in a way that makes a good impression on others |
| EI17 | When I am in a positive mood, solving problems is easy for me |
| EI18 | By looking at their facial expressions, I recognize the emotions people are experiencing |
| EI19 | I know why my emotions change |
| EI20 | When I am in a positive mood, I am able to come up with new ideas |
| EI21 | I have control over my emotions |
| EI22 | I easily recognize my emotions as I experience them |
| EI23 | I motivate myself by imagining a good outcome to tasks I take on |
| EI24 | I compliment others when they have done something well |
| EI25 | I am aware of the non-verbal messages other people send |
| EI26 | When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself |
| EI27 | When I feel a change in emotions, I tend to come up with new ideas |
| EI28 | When I am faced with a challenge, I give up because I believe I will fail |
| EI29 | I know what other people are feeling just by looking at them |
| EI30 | I help other people feel better when they are down |
| EI31 | I use good moods to help myself keep trying in the face of obstacles |
| EI32 | I can tell how people are feeling by listening to the tone of their voice |
| EI33 | It is difficult for me to understand why people feel the way they do |

Table 4 shows the descriptive statistics, including mean scores, associated with the indicators of EI. From this table, every item has a mean score within the range of the minimum and maximum values of the measurement scale, which are respectively 1 and 5. Moreover, the standard deviation associated with each indicator is small. These evidences potentially reflect the absence of outliers in the DV and support the normality of the distribution of its data. Moreover, the corresponding mean of each indicator in Table 4 is close to the maximum value of the measurement scale, 5. Hence the level of health professionals' EI is appreciably high.

Table 5 shows statistics associated with the first and only iteration of the EFA conducted on the EI scale. Moreover, beneath Table 2 are the Keisser-Meyer-Olklin (KMO) value and Bartlett's test of sphericity. According to Tipping and Bishop (2007), a significant Bartlett's test of sphericity (at 5% significance level) and a KMO value of at least 0.5 ought to be produced by a scale to meet sample

**Table 4. Descriptive statistics**

| | Mean | Std. dev. | *N* |
|---|---|---|---|
| EI1 | 4.073 | 1.144 | 510 |
| EI2 | 4.269 | 0.614 | 510 |
| EI3 | 4.337 | 0.698 | 510 |
| EI4 | 3.775 | 1.167 | 510 |
| EI5 | 2.982 | 1.037 | 510 |
| EI6 | 4.086 | 0.801 | 510 |
| EI7 | 3.816 | 1.050 | 510 |
| EI8 | 3.755 | 0.909 | 510 |
| EI9 | 3.943 | 1.054 | 510 |
| EI10 | 4.004 | 1.186 | 510 |
| EI11 | 3.420 | 1.028 | 510 |
| EI12 | 4.016 | 0.904 | 510 |
| EI13 | 3.686 | 1.065 | 510 |
| EI14 | 4.077 | 0.953 | 510 |
| EI15 | 3.771 | 0.997 | 510 |
| EI16 | 4.155 | 0.943 | 510 |
| EI17 | 4.104 | 1.171 | 510 |
| EI18 | 3.824 | 0.981 | 510 |
| EI19 | 3.820 | 1.026 | 510 |
| EI20 | 4.124 | 1.004 | 510 |
| EI21 | 3.912 | 1.006 | 510 |
| EI22 | 4.041 | 0.969 | 510 |
| EI23 | 4.020 | 1.020 | 510 |
| EI24 | 4.065 | 1.139 | 510 |
| EI25 | 3.629 | 1.033 | 510 |
| EI26 | 3.812 | 0.900 | 510 |
| EI27 | 3.675 | 1.001 | 510 |
| EI28 | 2.322 | 1.379 | 510 |
| EI29 | 3.437 | 0.989 | 510 |
| EI30 | 3.910 | 0.973 | 510 |
| EI31 | 4.110 | 0.731 | 510 |
| EI32 | 3.855 | 1.037 | 510 |
| EI33 | 3.120 | 1.137 | 510 |
| **EI** | **3.816** | **1.001** | **510** |

**Table 5. Communalities (Single iteration EFA)**

| Indicator | Extraction | Anti-image |
|---|---|---|
| EI1 | 0.660 | 0.66 |
| EI2 | 0.737 | 0.64 |
| EI3 | 0.871 | 0.61 |
| EI4 | 0.757 | 0.64 |
| EI5 | 0.932 | 0.93 |
| EI6 | 0.894 | 0.84 |
| EI7 | 0.902 | 0.94 |
| EI8 | 0.949 | 0.94 |
| EI9 | 0.831 | 0.92 |
| EI10 | 0.852 | 0.89 |
| EI11 | 0.823 | 0.91 |
| EI12 | 0.886 | 0.86 |
| EI13 | 0.847 | 0.88 |
| EI14 | 0.865 | 0.89 |
| EI15 | 0.976 | 0.89 |
| EI16 | 0.926 | 0.92 |
| EI17 | 0.781 | 0.91 |
| EI18 | 0.870 | 0.94 |
| EI19 | 0.868 | 0.95 |
| EI20 | 0.850 | 0.89 |
| EI21 | 0.818 | 0.95 |
| EI22 | 0.768 | 0.92 |
| EI23 | 0.812 | 0.94 |
| EI24 | 0.808 | 0.89 |
| EI25 | 0.961 | 0.94 |
| EI26 | 0.891 | 0.93 |
| EI27 | 0.962 | 0.91 |
| EI28 | 0.860 | 0.92 |
| EI29 | 0.807 | 0.96 |
| EI30 | 0.938 | 0.95 |
| EI31 | 0.962 | 0.93 |
| EI32 | 0.906 | 0.94 |
| EI33 | 0.773 | 0.80 |

Notes: KMO = 0.634; Bartlett's Chi-square ($\chi^2$) = 7,938.225; DF = 528; Sig. = 0.000; Total variance explained = 73.9%.

size requirements in EFA. With reference to statistics beneath Table 2, these criteria are met. In addition, a scale item must yield a communality value of, at least, 0.5 to be retained as an indicator variable of a construct in EFA (Ringnér, 2008). This criterion is also met (see Table 5). Generally, results of the EFA support statistics in Table 2 or the validity and reliability of the EI scale.

A Pearson's correlation matrix of all variables was developed (see Table 6). Depending on whether the correlation between two hypothesized variables was positive or negative, the IV and DV were identified for each pair of the three methods/predictors, enabling the researcher to specify the CFA model per the arguments on which the hypotheses were developed. To be able to test the hypotheses, the iterative CFA was started based on an over-identified model, enabling the researcher to reach a well fitted model. To avoid *under-identification* in the CFA, gender was introduced as a predictor of EI.

**Table 6. Pearson's correlation matrix**

| | | Gender | Education | Tenure | Training | EI |
|---|---|---|---|---|---|---|
| Gender | *R* | 1 | −0.125** | 0.164** | 0.040 | 0.157** |
| | *p*-value | | 0.005 | 0.000 | 0.370 | 0.000 |
| | *N* | | 510 | 510 | 510 | 510 |
| Education | *R* | | 1 | 0.095* | 0.272** | 0.018 |
| | *p*-value | | | 0.032 | 0.000 | 0.692 |
| | *N* | | | 510 | 510 | 510 |
| Tenure | *R* | | | 1 | 0.595** | 0.111* |
| | *R* | | | | 0.000 | 0.012 |
| | *N* | | | | 510 | 510 |
| Training | *R* | | | | 1 | 0.065 |
| | *p*-value | | | | | 0.144 |
| | *N* | | | | | 510 |
| EI | *R* | | | | | 1 |
| | *p*-value | | | | | |
| | *N* | | | | | |

*Significant at 5% significance level (2-tailed).
**Significant at 1% significance level (2-tailed).

## 4. Results

Table 6 shows a Pearson's correlation matrix of relevant variables. In this table, nurses EI is significantly correlated to gender (Pearson's $R = 0.157$, $p = 0.000$) and tenure (Pearson's $R = 0.111$, $p = 0.012$) at 5% significance level, though these correlations are weak. The correlation between nurses' EI and each of IST (Pearson's $R = 0.065$, $p = 0.144$) and education (Pearson's $R = 0.018$, $p = 0.692$) is however not significant at the same level of significance.

With reference to Table 7, *Discrepancy* stands for the $\chi^2$ value, the basic statistic of absolute model fit. For a well fitted model, this $\chi^2$ value should be as small as possible, and its *p*-value must be greater than the 5% cutoff value (Petrides & Furnham, 2000). On the basis of the fact that these criteria are met, the CFA has a good fit ($\chi^2 = 0.805$, $p = 0.369$). In addition, Schutte et al. (1998) indicated that the Random Mean Square Error of Approximation (RMSEA) and Tucker-Lewis Index (TLI) values are required to be less than 0.06 and greater than 0.95 respectively if the CFA model is of a good fit. In Table 4 these criteria are also met.

Table 8 shows the coefficients of the fitted model. In terms of the regression weights, only gender makes a significant effect on nurse's EI at 5% significance level ($\beta_{gender} = 4.38$; $p = 0.000$). Thus education, IST and tenure do not make a significant effect on nurses' EI. Hence, the first three alternative hypotheses (i.e. $H_a1$ $H_a2$ and $H_a3$) are not supported by the data. In terms of the covariance estimates, there is a significant positive correlation between the following pairs of variables at 5% significance level: tenure-IST (Estimate = 1.67, $p = 0.000$); education-IST (Estimate = 0.43, $p = 0.000$);

**Table 7. CFA fit statistics**

| Measure | Default | Independent |
|---|---|---|
| Discrepancy/($\chi^2$) | 0.805 | 30.704 |
| *p*-value | 0.369 | 0.000 |
| DF | 1 | 10 |
| TLI | 0.999 | 0.000 |
| RMSEA | 0.000 | 0.242 |

Note: Level of significance applied = 0.05.

**Table 8. Unstandardized regression estimates**

| Estimates | DV | Path | IV | Estimate | S.E. | C.R. | *P* |
|---|---|---|---|---|---|---|---|
| Weights | EI | <— | Gender | 4.38 | 1.331 | 3.292 | 0.000 |
| | EI | <— | Education | 0.559 | 0.933 | 0.599 | 0.549 |
| | EI | <— | Tenure | 0.905 | 0.606 | 1.495 | 0.135 |
| | EI | <— | Training | 0.015 | 0.363 | 0.042 | 0.967 |
| Covariances | Tenure | <-> | Training | 1.674 | 0.145 | 11.561 | 0.000 |
| | Education | <-> | Training | 0.425 | 0.070 | 6.067 | 0.000 |
| | Gender | <-> | Education | −0.045 | 0.014 | −3.154 | 0.002 |
| | Gender | <-> | Tenure | 0.086 | 0.022 | 3.876 | 0.000 |
| | Education | <-> | Tenure | 0.087 | 0.04 | 2.184 | 0.029 |

Notes: DV = dependent variable, IV = independent variable; S.E. = standard error; C.R. = critical ratio; P = *p*-value or level of significance; the DV and IV apply to only the "Weights" main row.

education-tenure (Estimate = 0.09, $p = 0.029$); and gender-tenure (Estimate = 0.09, $p = 0.000$). The strongest correlation exists between tenure and IST. The only significant negative correlation exists between gender and tenure. The data therefore supports the last three hypotheses (i.e. $H_a4$, $H_a5$ and $H_a6$).

## 5. Discussion

Results of this study show that education, IST and tenure do not significantly predict the EI of nurses. This finding, in terms of education, counteracts the study of Danquah (2014) in which education makes a significant positive effect on EI. Danquah (2014) however focused her study on service personnel in the banking sector, where specialization of education and tenure prolongation for EI enhancement is at a higher level (Opuni et al., 2014). Moreover with respect to the unconfirmed effect of tenure on EI, this study refutes the theoretical argument of Goleman (1995) that EI is a skill that develops over time. Hence depending on findings reached in similar future studies, Goleman's (1995) argument may be modified as follows: *EI is a skill that develops over time when the individual is exposed to specialized events or activities that support the improvement of EI*.

On the basis of empirical evidences in the literature (e.g. Diab & Ajlouni, 2015; Tahir et al., 2014), there is no doubt that IST serves as a human resource management tool for enhancing competencies and performance. However in harmony with the opinions of several researchers (e.g. Khan et al., 2016; Mozael, 2015), IST can only make a positive effect on competencies when they are effective and designed to develop well-identified skills and knowledge areas. This assertion is made in view of the fact that non-specialized training programs are less likely to have contents that support the development of EI competencies. From this point of view, failure of IST to predict EI in this study, which is a finding supported in the literature (Asiamah et al., 2016; Khan et al., 2016), could be attributed to the unspecialized nature of the in-service training programs in which nurses were involved. By implication, further education, tenure prolongation and IST are not necessarily effective methods for improving the emotional intelligence of nurses.

This study also confirms a significant positive correlation between education and in-service training. This result is consistent with the perspective labeled PH2 in the literature review and thus implies that in-service training contributes to access to higher education among nurses in Accra North and as a result empowers them to secure their job. Job security also enables nurses to access financial resources and other forms of employer-related support for acquiring higher education. This result buttresses the viewpoint of Tiraieyari and Uli (2011) that serving longer on the job offers an opportunity to acquire basic and secondary life needs, which include education. The same school of thought explains the confirmed positive correlation between tenure and in-service training, which

resonates with the perspective labeled PH4 and suggests that access to higher education enables a nurse to accomplish job roles better and consequently empowers him to prolong his job tenure.

A primary lesson drawn from this study is the fact that the three methods do not serve as means for enhancing the EI of nurses if not specialized for upgrading EI. Specialization of the three methods for EI improvement is therefore a requirement in an organizational context. By virtue of its findings therefore, this study argues in agreement with other studies (e.g. Khan et al., 2016; Mozael, 2015; Ng & Feldman, 2009) that in-service training, education and tenure do not necessarily make a positive effect on competencies.

## 6. Conclusion

The study finds that the emotional intelligence of nurses in Accra North is considerably high. It is thus possible that nurses in the region apply emotional intelligence in health care. It is also important to note that having adequate emotional intelligence does not necessarily mean it is applied in health care. In addition, none of the three methods positively predicts emotional intelligence of nurses. This result suggests that formal education, tenure prolongation and IST do not influence an increase in the EI of nurses if not specialized. As a result, employers and institutions would have to design the three methods for the specific purpose of advancing the EI of nurses.

A significant positive correlation is found between education and in-service training. With respect to the perspective represented by PH2 in the literature review, it is concluded that in-service training empowers employees to enhance job security and tenure through high performance. In addition, high performing employees likely spend more years on the job and consequently obtain support (e.g. funding) from their organizations to pursue higher education. The correlation between tenure and in-service training is also positively significant. This relationship supports the perspective represented by PH4 and suggests that access to higher education enables a nurse to accomplish job roles better and consequently empowers him to achieve job security and longer tenure.

It is concluded in this study that education, in-service training and tenure prolongation do not necessarily make a positive effect on nurses' EI. Therefore, their application does not guarantee an increase in the EI level of nurses. The likelihood of these three methods positively influencing EI can be increased by ensuring that they are purposely designed to enhance nurses' EI. Even so, replication of this study in other populations is highly recommended to ascertain the consistency of its findings. Researchers are also encouraged to investigate the effect of these methods on EI when specialized. Better still, future researchers should endeavor to compare specialized and non-specialized CFA models. A specialized CFA model is basically based on data collected in a study area where the three methods are designed for enhancing EI.

## 7. Study limitations

The researcher admits that testing potential confounding effects (i.e. the effects of lurking or confounding variables) was necessary for maximizing the fit of the CFA model and reaching more valid regression coefficients. Sadly, this study does not control for potential confounding variables. Future studies aimed at addressing this weakness are therefore needed.

**Acknowledgments**
I wish to acknowledge Panyan Bodong and his colleagues at New Ebirem Government Hospital for their assistance in data collection. I am also grateful to Ramson Etornam Ohene for proofreading my manuscript.

**Funding**
The author received no direct funding for this research.

**Author details**
Nestor Asiamah[1]
E-mails: nestorasiamah1984@gmail.com, nestor.asiamah@yahoo.com
ORCID ID: http://orcid.org/0000-0002-1157-6430
[1] Africa Center of Epidemiology, No. 100 Royal Palm Avenue, P. O. Box AN 18462, Accra North, Accra, Ghana.

**Citation information**
Cite this article as: Enhancing nurses' emotional intelligence: Are tenure prolongation, education and in-service training applicable methods even when not specialized? Nestor Asiamah, *Cogent Business & Management* (2017), 4: 1280896.

**References**

Allwood, C. M. (2012). The distinction between qualitative and quantitative research methods is problematic. *Quality & Quantity, 46*, 1417–1429. http://dx.doi.org/10.1007/s11135-011-9455-8

Asiamah, N., Mensah, H. K., & Oteng-Abayie, E. F. (2016). Health workers' emotional intelligence development: An examination of the potential roles of tenure. *Education and Training, International Journal of Research in Nursing, 7*, 24–34.

Bar-On, R. (1997). Development of the Bar-On EQ-i: A measure of emotional and social intelligence. *Paper presented at the 105th Annual Convention of the American Psychological Association*, Chicago, IL.

Bowen, P., Pilkington, A., & Rose, R. (2016). The relationship between emotional intelligence and well-being in academic employees. *International Journal of Social Science Studies, 4*, 1–9.

Brackett, M. A., Mayer, J. D., & Warner, R. M. (2004). Emotional intelligence and its relation to everyday behaviour. *Personality and Individual Differences, 36*, 1387–1402. http://dx.doi.org/10.1016/S0191-8869(03)00236-8

Danquah, E. (2014). The effect of elements of culture and personality on emotional intelligence levels in service delivery: A banking service provider perspective. *International Journal of Business Management & Research, 4*, 23–40.

Diab, S. M., & Ajlouni, M. T. (2015). The influence of training on employee's performance. *Organizational Commitment, and Quality of Medical Services at Jordanian Private Hospitals, International Journal of Business and Management, 10*, 117–127.

Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and Perspectives, 38*, 105–123.

Egenes, K. J. (2009). History of nursing. In J. Halstead & G. Roux (Eds.), *Issues and trends in nursing: Essential knowledge for today and tomorrow* (p. 2). Sudbury, MA: Jones and Bartlett.

Freshman, B., & Rubino, L. (2002). Emotional intelligence. *The Health Care Manager, 20*, 1–9. http://dx.doi.org/10.1097/00126450-200206000-00002

Goleman, D. (1995). *Emotional intelligence*. New York, NY: Bantam Books.

Goleman, D. (1998). *Working with emotional intelligence*. New York, NY: Bantam Books.

Hurley, A. E., Scandura, T. A., Schriesheim, C. A., Brannick, M. T., Seers, A., Vandenberg, R. J., & Williams, L. (1997). Exploratory and confirmatory factor analysis: Guidelines, issues, and alternatives. *Journal of Organizational Behavior, 18*, 667–683.

Jehanzeb, K., & Bashir, N. A. (2013). Training and development program and its benefits to employee and organization: A conceptual study. *European Journal of Business and Management, 5*, 243–254.

Kalisch, B., Lee, H., & Rochman, M. (2010). Nursing staff teamwork and job satisfaction. *Journal of Nursing Management, 18*, 938–947. http://dx.doi.org/10.1111/j.1365-2834.2010.01153.x

Kalyoncu, Z., Guney, S., Arslan, M., Guney, S., & Ayranci, E. (2012). Analysis of the relationship between emotional intelligence and stress caused by the organisation: A Study of Nurses. *Business Intelligence Journal, 5*, 335–346.

Kernbach, S., & Schutte, N. S. (2005). The impact of service provider emotional intelligence on customer satisfaction. *Journal of Service Marketing, 19*, 12–19.

Khan, A. A., Abbasi, S. O. B. H., & Waseem, R. M. (2016). Impact of training and development of employees on employee performance through job satisfaction: A study of telecom sector of Pakistan. *Business Management and Strategy, 7*, 29–46. http://dx.doi.org/10.5296/bms.v7i1

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607–610.

Lopes, P. N., Grewal, D., Kadis, J., Gall, M., & Salovey, P. (2006). Evidence that emotional intelligence is related to job performance and affect and attitudes at work. *Psicothema, 18*, 132–138.

Mayer, J. D. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59*, 507–536. http://dx.doi.org/10.1146/annurev.psych.59.103006.093646

Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Target articles: "Emotional intelligence: Theory, findings, and implications". *Psychological Inquiry, 15*, 197–215. http://dx.doi.org/10.1207/s15327965pli1503_02

Morse, J. M. (2002). Verification strategies for establishing reliability and validity in research. *Journal of Educational Research, 6*, 56–63.

Mozael, B. M. (2015). Impact of training and development programs on employee performance. *International Journal of Scientific and Research Publications, 5*, 37–42.

Ng, T. W. H., & Feldman, D. C. (2009). How broadly does education contribute to job performance? *Personnel Psychology, 62*, 89–134. http://dx.doi.org/10.1111/peps.2009.62.issue-1

Nwankwo, B. E., Obi, T. C., Sydney-Agbor, N., Agu, S. A., & Aboh, J. U. (2013). Relationship between emotional intelligence and job satisfaction among health workers. *IOSR Journal of Nursing and Health Science, 2*, 19–23. http://dx.doi.org/10.9790/1959

Opuni, F. F., Opoku, E., & Oseku-Afful, M. (2014). The effect of relationship marketing on service quality and customer satisfaction in the hospitality sector in Ghana: The moderating role of service providers' emotional intelligence. *British Journal of Marketing Studies, 2*, 1–16.

Özer, O., Hamarta, E., & Deniz, M. E. (2016). Emotional intelligence, core-self evaluation, and life satisfaction. *Psychology, 7*, 145–153.

Petrides, K. V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences, 29*, 313–320. http://dx.doi.org/10.1016/S0191-8869(99)00195-6

Ringnér, M. (2008). What is principal component analysis? *Nature Biotechnology, 26*, 303–304. http://dx.doi.org/10.1038/nbt0308-303

Saddam-Hussain, R., & Muhammad, I. (2010). Emotional intelligence & organizational performance: (A case study of banking sector in Pakistan). *International Journal of Business and Management, 5*, 191–197.

Salehi, M., Zadeh, M. A., Ghaderi, A., & Tabasi, A. Z. (2016). A study of the effect of education and academic environment on emotional intelligence on accounting students in Iran. *International Education Studies, 9*, 182–188.

Salovey, P., & Mayer, J. D. (1989). Emotional intelligence. *Imagination, Cognition, and Personality, 9*, 185–211. http://dx.doi.org/10.2190/DUGG-P24E-52WK-6CDG

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 25*, 167–177. http://dx.doi.org/10.1016/S0191-8869(98)00001-4

Tahir, N., Yousafzai, I. K., Jan, S., & Hashim, M. (2014). The impact of training and development on employees performance and productivity: A case study of United Bank Limited Peshawar City, KPK, Pakistan. *International Journal of Academic Research in Business and Social Sciences, 4*, 86–98.

Tipping, M. E., & Bishop, M. B. (2007). Probabilistic principal component analysis. *Journal of the Royal Statistical Society, Series B, 61*, 611–622.

Tiraieyari, N., & Uli, J. (2011). Moderating effects of employee gender and organizational tenure in competency-performance relationships. *African Journal of Business Management, 5*, 12898–12903.

Tyczkowski, B., Vandenhouten, C., Reilly, J., Bansal, G., Kubsch, S. M., & Jakkola, R. (2015). Emotional intelligence (EI) and nursing leadership styles among nurse managers. *Nursing Administration Quarterly, 39*, 172–180. http://dx.doi.org/10.1097/NAQ.0000000000000094

Ünal, Z. M. (2014). The contribution of emotional intelligence on the components of burnout: The case of health care sector professionals. *Electronic Journal of Business Ethics and Organization Studies, 19*, 27–34.

Williams, C. (2007). Research methods. *Journal of Business & Economic Research, 5*, 65–72.

**© 2017 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.**

You are free to:
Share — copy and redistribute the material in any medium or format
Adapt — remix, transform, and build upon the material for any purpose, even commercially.
The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:
Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.
You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

***Cogent Business & Management* (ISSN: 2331-1975) is published by Cogent OA, part of Taylor & Francis Group.**

**Publishing with Cogent OA ensures:**

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

**Submit your manuscript to a Cogent OA journal at www.CogentOA.com**