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■ Original Article

Analyzing the link between emotional intelligence, education level, and quality of life in women of reproductive age

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ABSTRACT

Background: Emotional intelligence (EI) and quality of life (QoL) are critical aspects of women's health that have received limited attention in previous studies. Most research on EI has focused on business leadership, while QoL studies have predominantly revolved around diseases. This study aims to bridge this gap by examining the relationship between EI, education level, and QoL among women in the reproductive health age group.

Methods: A quantitative, cross-sectional study was conducted, involving a total sample of N = 104 participants. Self-administered questionnaires designed and validated for EI and QoL assessment, were employed. The study utilized structured instruments, such as the SF-12 questionnaire, known for their reliability. Data analysis involved descriptive statistics, regression analysis, and one-way ANOVA tests.

Results: The findings revealed that there is a moderate correlation between EI and QoL among the studied population. However, this relationship did not attain statistical significance. On the other hand, education level demonstrated a positive association with EI but did not exert a significant influence on QoL in this particular study.

Conclusion: In conclusion, while EI did not exhibit a strong direct relationship with QoL, it remains a crucial skill for enhancing women's well-being. Also, education level plays a role in increasing EI, as it is a skill that can be learned and developed. Hence, interventions focusing on enhancing EI could potentially improve QoL among women. Further research and targeted interventions are recommended to empower women to experience a better QoL and overall well-being.

Keywords: emotional intelligence, education level, quality of life, women population, reproductive age, well-being intervention, public health

INTRODUCTION

The intricate relationship between emotional intelligence (EI) and quality of life (QoL) in the circumstance of reproductive age has gathered important attention [1-3].

In previous studies, many studies have demonstrated that high EI has a significant impact on QoL, life satisfaction, [1, 4, 5] and lower stress among women during reproductive [1, 2, 6-8]. A few studies have been conducted on it, but from a Nepalese perspective, the evidence is limited. Where women's roles during reproductive age are crucial, understanding the interplay between EI and QoL is paramount [1, 2, 9-11]. Cultural norms, family dynamics, and societal pressure shape women's experiences. Investigating this relationship can offer insights for tailored intervention to enhance their well-being and life satisfaction.

This study's main objective is to examine the complex link between EI education level and QoL among women in their reproductive years. By examining this relationship, the objective is to deliver understandings into schemes for enhancing the WB, education level and overall QoL for women during this crucial life stage.

METHODS

The study was conducted at selected organizations in Kathmandu Metropolitan City, Nepal, from June 2023 to August 2023. Adapted a cross-sectional study design among reproductive-age women. The total sample size for this study was $N = 104$ participants. The study population comprised reproductive-age women with diverse educational backgrounds. Purposeful research techniques were applied in this study.

Instruments

The study questionnaire consisted of three sections.

The first section gathered socio- demographic variables, including age, marital status, and education qualification.

The second section comprised an EI assessment tool, which consisted of 25 self-designed items. The validity and reliability of the assessment tool were tested, with responses measured on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

The EI reliability statistics demonstrated strong internal consistency in the data, with Cronbach's alpha values of .918 and .919, based on both original and standardized data, respectively. These values indicate a high degree of reliability across the 25 measures in the study.

The factor analysis results indicate that the communalities for the 25 EI items range from .462 to .863 after extraction through principal component analysis, suggesting varying levels of shared variance among the items. The rotated component matrix reveals distinct factor loadings for each of the 25 EI items. The use of varimax with Kaiser normalization helped identify a meaningful association between items and the six components extracted during principal component analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy demonstrated good sampling suitability at .774. Bartlett's test of sphericity indicated statistical significance ($\chi^2 = 1622.321$, $df = 300$, $p < .001$), affirming the appropriateness of factor analysis for the data. Hence, the reliability of the questionnaire was confirmed.

The third section involved measuring QoL using the SF-12 questionnaire, a standard instrument for assessing QoL. The SF-12 demonstrated excellent reliability, achieving high predictive accuracy with an R-square of 0.911 for the physical component summary. Test-retest correlations were strong, at 0.89 for the 12-item physical component summary and 0.76 for the 12-item mental component summary [12-17].

The inclusion criteria for participants were women aged between 15 and 45 years, while the exclusion criteria included significant cognitive impairment and severe physical or mental health conditions that could impact EI and QoL.

Ethical considerations were obtained from the Institutional Review Committee of YHSA. Participants were provided detailed information about the study and obtained their informed consent. Data collection took place from June 2023 to August 2023. Descriptive data analysis, inferential statistical analysis, regression analysis and, ANOVA tests, were employed for data analysis.

Hypothesis

H0. There is no significant relationship between EI and QoL in women of reproductive age.

H1. There is a significant positive relationship between EI and QoL in women of reproductive age.

H2. There is a significant difference in EI scores among various education levels

H02. There is no significant difference in EI scores among various education levels.

H3. There is a significant difference in QoL scores among various education levels among women in the reproductive health (RH) age group.

H03. There is a significant difference in QoL scores among various education levels among women in the RH age group.

RESULTS

Among women in the RH age group, the majority (76.9%) were aged 15-25 years, while 65.4% had a bachelor’s degree. Regarding marital status, 69% were married, and 31% were single. These demographic variables provide insights into the composition of the study population. Belongs in **Figure 1** we show the frequency and percentage of demographics Variables among Women in RH Age.

In the **Table 1** shows socio-demographic variables among women in RH age.

Table 1. Socio-demographic variables among women in RH age

Variable	Frequency (n)	Percentage (%)
Age group		
15-25	80	76.9
26-35	15	14.4
36-45	9	8.7
Education		
Certificate degree	18	17.3
Bachelor’s degree	68	65.4
Master	13	12.5
M.Phil	3	1.9
Ph.D.	2	2.9
Marital status		
Single	32	31.0
Married	72	69.0

The results indicate that the study’s null hypotheses (**H0**) cannot be rejected. The relationship between EI and QoL in women of reproductive age is not statistically significant (beta = .031, p = .323). Therefore, the alternative hypothesis (**H1**) proposing a significant positive relationship is not supported by this analysis. The coefficient for Mean_EI is not significant (p > .05), suggesting that variations in EI do not strongly predict variations in QoL among the studied population. The confidence interval ranging from -0.108 to 0.150 further supports the lack of a substantial effect. The constant term significantly affects the QoL mean score (beta = 2.375, p = .001), indicating its influence beyond EI. In the **Table 2** shows the summary of coefficient data regarding the relationship between EI and QoL in women of RH age.

Table 2. Summary of coefficient data regarding the relationship between EI and QoL in women of RH age

Model	Beta	SE	SC	t	Sig.	95% CI for beta	
			Beta			LB	UB
(Constant)	2.375	.251		9.468	.000	1.877	2.872
Mean_EI	.021	.065	.032	.323	.747	-.108	.150

Note. SE: Standard error; SC: Standardized coefficients; CI: Confidence interval; & Dependent variable: Mean_SF

In the **Table 3** shows the mean EI (Mean_EI) scores by education level in women of reproductive age. It illustrates that certificate degree: mean = 3.4694, standard deviation = 0.53091, 95% CI [3.2054, 3.7335]; bachelor degree: mean = 3.9288, standard deviation = 0.48139, 95% CI [3.8123, 4.0454]; master: mean = 3.6399, standard deviation = 0.51889, 95% CI [3.3263, 3.9534]; PhD: mean = 3.5800, standard deviation = 0.02828, 95% CI [3.3259, 3.8341]; M.Phil.: mean = 4.5467, standard deviation = 0.62011, 95%

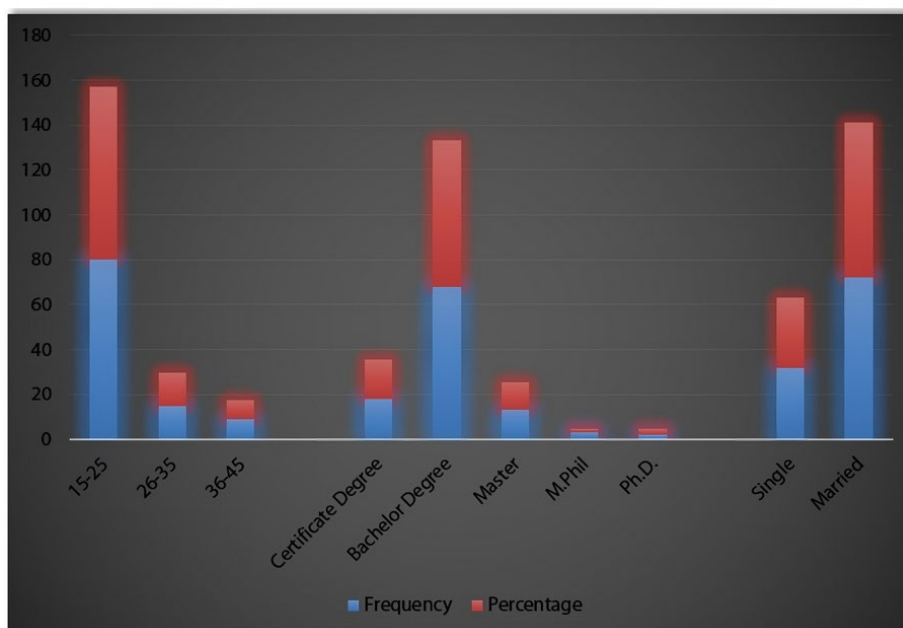


Figure 1. The frequency and percentage of demographics variables among women in RH age (Source: Authors’ own elaboration)

Table 3. Mean EI (mean EI) scores by education level in women of reproductive age

Mean EI	N	Mean	Standard deviation	Standard error	95% confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Certificate degree	18	3.4694	.53091	.12514	3.2054	3.7335	2.68	4.32
Bachelor's degree	68	3.9288	.48139	.05838	3.8123	4.0454	2.80	4.80
Master	13	3.6399	.51889	.14391	3.3263	3.9534	2.76	4.60
PhD	2	3.5800	.02828	.02000	3.3259	3.8341	3.56	3.60
M.Phil.	3	4.5467	.62011	.35802	3.0062	6.0871	3.84	5.00
Total	104	3.8243	.53477	.05244	3.7203	3.9283	2.68	5.00

CI [3.0062, 6.0871]; and total: mean = 3.8243, standard deviation = 0.53477, 95% CI [3.7203, 3.9283].

The one-way ANOVA in the **Table 4** shows the results indicate a significant relationship between EI and education levels of women of RH age ($F = 5.228, p = 0.001$). Variations exist among education levels, suggesting education's impact on EI in this demographic. Post-hoc tests (LSD and Bonferroni) were employed to assess the mean EI score difference among education groups. A statistically significant difference was detected between "certificate degree" and "bachelor's degree" and "PhD", and "M.Phil. degree" groups, with a p-value below 0.05. Conversely, there was no significant difference in mean EI scores between the Master group and the M.Phil. The Bonferroni correction was applied to account for multiple comparisons in the analysis.

Table 4. ANOVA test: EI and education level among women of RH age

Mean EI	SS	df	MS	F	Sig.
Between groups	5.137	4	1.284	5.228	.001
Within groups	24.319	99	.246		
Total	29.455	103			

Note. SS: Sum of squares & MS: Mean square

The results of **Table 5** show the displaying of the ANOVA results indicates that there is no significant difference between groups concerning mean SF ($F = 1.683, p = 0.160$). The majority of the variance is within groups.

Table 5. ANOVA test: QoL and education level among women of RH age

Mean EI	SS	df	MS	F	Sig.
Between groups	.808	4	.202	1.683	.160
Within groups	11.885	99	.120		
Total	12.693	103			

Note. SS: Sum of squares & MS: Mean square

A post-hoc (Tukey's HSD) test for mean QoL across different education levels found no significant difference, with all p-values exceeding 0.05. The confidence intervals often contained zero, indicating similarity. These results suggest that education level did not significantly affect mean QoL in this analysis.

DISCUSSION

Table 5 reveals that most age group women were 15-25 years old and held a bachelor's degree. Marital status included being married. These demographic factors influence the study's composition.

The study's focus on **H1** revealed a link between EI and QoL among reproductive-age women. This finding indicates a weak relationship. The positive regression coefficient (beta = .031, $p = .323$) highlights the limited explanatory role of EI in women's QoL during this life stage. The absence of support for **H1** underscores QoL's multifaceted determinants, with mean EI weakly predicting QoL ($p > .05$), suggesting other influential variables.

In line with existing studies, EI plays a pivotal role in life satisfaction, stress reduction, and social support among reproductive-age women [3], examined EI in 86 heterosexual couples, with females scoring higher [3]. Low EI partners indicated lower positive relationship quality and higher conflict, aligning with emphasizing external factors' role in shaping QoL [7].

Highlighted enduring family relationships' impact on well-being across adulthood [14], this study enriches the discourse on EI-QoL correlations, challenging their strengths. Drawing from prior research, our findings illuminate the limited role of EI in predicting QoL among reproductive-age women, encouraging further exploration of determinant interactions.

The findings from the **H2** one-way ANOVA align with previous research, emphasizing the effects of education on EI in women of reproductive age. Post-hoc tests furthered the highlighted specific group disparities, with the M.Phil. Degree demonstrating the highest EI and the "certificate degree" the lowest. This underscores the importance of educational attainment in shaping EI in this demographic. These results have practical implications for designing interventions and education programs aimed at enhancing emotion alignment in women of reproductive age.

Based on previous literature, a statistically significant positive relationship between EI and academic level was expected. The one-way ANOVA test revealed that education level positively impacts EI. High levels of education support self-management skills such as self-care, self-discipline, self-responsibility, self-trust, and self-adaptability, promoting a higher QoL [18]. Also found higher sexual function scores among those with a university degree [18]. Additionally, other studies suggest that higher EI predicts better academic grades by helping individuals cope with stress, practice self-care, and maintain self-discipline and motivation [19]. Emphasize the intertwined nature of EI and academic success, highlighting the importance of emotional competence for educators [19].

Table 5 illustrates QoL variations by educational level among women in the RH age group. ANOVA results indicate no significant mean QoL difference ($F = 1.683$, $p = 0.160$). Tukey's post-hoc test found no significant difference, suggesting education can improve QoL. While prior research has shown mixed results [11, 13], indicating no significant difference this suggests that education levels may not be a key indicator of QoL in this study [11]. However, it's important to consider other potential factors, such as socioeconomic status and access to healthcare that may influence QoL. Our research contributes to the ongoing dialogue on QoL and highlights the need for a more comprehensive understanding of the multifaceted factors affecting women's well-being in the RH age group. In recent years, various studies, articles, and papers have been presented at international conferences regarding the organizational characteristics and socio-psychological risks in public health services within educational institutions worldwide. Perceptions about COVID-19 vaccination of Women have greater fears about the side effects of vaccines [20]. These discussions have shed light on how these factors impact not only the employees but also the general population and the QoL of women of reproductive age [21-27]. It has been highlighted that authorities play a vital role in overseeing public health audit services and supporting the correlation between EI and education levels [28-33]. Employee dissatisfaction with their jobs, along with the necessity for further training and higher education among both male and female public health personnel, are crucial factors that influence the overall performance and provision of high-quality services to the community [21, 22]. The pressures stemming from political and administrative domains, exacerbated by urban and semi-urban environments, have been found to have detrimental effects on the delivery of public health services [23]. This was particularly evident during the global COVID-19 pandemic,

showcasing how these external pressures can hamper the effective functioning of public health services [27, 28]. Political agendas can significantly contribute to employee burnout within the public health sector. It has been emphasized that strong leadership within the service industry is essential in ensuring the smooth operation, transparency, and government oversight of administrative processes in Greece, with a specific focus on addressing the impacts of climate change [33, 34]. Ultimately, it is crucial to address these various challenges and implement strategic measures to enhance the efficiency and effectiveness of public health services in educational institutions on a global scale [35, 36]. The significance of utilizing machine learning in the detection of COVID-19 through data processing and analysis, to assist individuals afflicted by this virus, cannot be understated [37]. The climate crisis plays a vital role in shaping the environment, leading to extreme weather conditions and the depletion of traditional water sources [38, 39]. These factors can have a significant impact on public health and cleanliness [40, 41]. It is important to adhere to current regulations and practices, especially in areas like women's beauty regimens, to help reduce the threats to environmental hygiene [41, 42].

Suggestions

Due to its cross-sectional nature, the study cannot establish causality between EI, education, and QoL, suggesting longitudinal research to validate the relationship. Self-reported data on EI and QoL may be affected by participant biases, and the study sample sizes and demographics may not fully represent the diversity of the RH group. The study does not show a strong relationship between EI and QoL, leaving room for further investigation to provide a comprehensive understanding of these dynamics.

Implication

These outcomes emphasize the impact of education level on women's QoL in the RH age group. While education did not significantly affect mean QoL, it underscores the complexity of factors influencing well-being. Further research should explore the interplay of socioeconomic status and healthcare access on QoL outcomes. These facts can inform interventions and policies aimed at enhancing the well-being of RH-aged women.

CONCLUSION

In conclusion, this study sheds light on the demographic composition of reproductive-age women, with a predominant presence of individuals aged 15-25 years and possessing bachelor's degrees. This study highlights a

modest link between EI and QoL among reproductive-age women. The weak relationship ($\beta = 0.031$, $p = 0.323$) emphasizes EI's limited explanatory role. Based on existing literature, it emphasizes EI's impact on life satisfaction, stress management, family, and social support. By challenging assumptions, it enriches discussions on EI-QoL correlations, prompting further exploration of factors at play. The ANOVA test results align with existing research, emphasizing education's impact on EI in women of RH age. Post-hoc tests reveal specific group differences, underscoring the role of education in shaping EI. In this current study found no significant difference in QoL by educational level, aligning with prior research, suggesting education may not be a key factor. In this study, researchers encourage longitudinal research, standardized assessments, and diverse perspectives to deepen understanding of reproductive-age women's wellbeing. Foster interdisciplinary collaboration to address complex factors affecting QoL.

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Declaration of interest: Authors declare no competing interest.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

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