The Effect of Growth Mindset on Self Efficacy Among Nursing Staff

Amani B. Ayoub [1] and Selman H. Faris [1]

[1] Community Health Nursing, College of Nursing, Kerbala, Iraq

Corresponding author Email: amani.b@s.uokerbala.edu.iq

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Abstract

Background:

Growth mindset is a concept that is extensively discussed in the literature in function of different other psychological concepts, such as self-efficacy. While international research supported the interplay between these concepts, there remains a lack of evidence in the literature regarding this association in the context of Iraq. Thus, the main objective of this study is to assess the levels of growth and fixed mindsets in nursing staff and their levels of self-efficacy. Moreover, this study aimed to examine the correlation between these concepts, especially in Kerbala City, Iraq.

Methodology:

Using a retrospective quantitative approach, the present study was done from October 2024 till July 2025, over the given duration the data was collected among nurses working in private and public hospitals in the chosen city. The data was collected using a questionnaire having scales to assess growth mindset and self-efficacy highlighting some demographic variables of the participants. To analyze data, SPSS software was utilized.

Results:

The results of this research showed that 52.5% of nurses had growth mindset, compared to 47.5% who had fixed mindset. In addition, self-efficacy was shown to be high, with a mean score equals to 39.20+/-6.33 over 50. In addition, age and gender were found to be significantly associated with self-efficacy, with older nurses and male nursing having higher scores too. Correlation analysis showed that nurses with fixed mindset reported higher self-efficacy levels compared to nurses with growth mindset.

Conclusion:

The results of this current study confirm the direct association between mindset and self-efficacy. Further research is needed to explore these dynamics in a longitudinal way and across different regions.

Keywords: Growth Mindset, Fixed Mindset, Self-Efficacy.

1. Introduction

In today's healthcare sector, the dynamic and demanding environment is becoming increasingly stressful. Within this context, healthcare professionals, especially nurses are responsible to deliver high-standards quality of care(Babapour et al., 2022). During their practices, nurses are affected by a group of psychological and behavioral factors, among which growth mindset and self-efficacy are of major importance. These concepts, studies separately within the context of healthcare, showed important impact on workplace resilience, learning adaptability, and effective caregiving (Chen et al., 2024). Growth mindset, a notion established and introduced by Carole Dweck, showed that the mindset of an individual focuses on the belief that his/her ability and intelligence can be cultivated through efforts, persistence, and learning from previous experiences of failure (Yeager & Dweck, 2020). Individuals who have a growth mindset usually tend to delve through challenges, present a perseverance during times of downturns, and understand the efforts as a path to mastery. On the other hand, individuals who have a fixed mindset often tend to avoid taking risks and give up easily when challenges. Moreover, these individuals also perceive efforts as fruitless (Wyllie et al., 2021). Hence, the framework of "Growth Mindset" has begun to be applied in different professional environments, and here, institutions who have employees with growth-oriented mindsets showed a greater adaptability, teamwork successes, and higher leadership potentials (Burnette et al., 2020). Albert Bandura developed self-efficacy as a concept referring to the ability or capacity of an individual to perform tasks and handle prospective situations (Bandura, 1988). For instance, high-self-efficacy was shown to be associated with a person's increased motivation, resilience, as well as productivity, specifically in environments characterized by high-stress like the healthcare environment (Lee & Bong, 2022). Therefore, nurses and healthcare professionals who have a high sense of self-efficacy are generally more confident in situations that need decision-making, communication with patients, and emergency responses. Hence, evidence show that these nurses can have a better patient care and satisfaction (Abu Sharour et al., 2021). With the evolution of the nursing profession, a greater attention was given to nurses' work behaviors, especially with what it concerns the emotional and cognitive constructs that shape it (He et al., 2024). Hence, different authors were interested in investigating the interplay between growth mindset and self-efficacy, especially in professions with high-pressure like nursing (Kondratowicz & Godlewska-Werner, 2023) ; yet there remains a scarcity of evidence regarding this connection in healthcare professions.

The sector of healthcare in Kerbala city, like much of whole Iraq country, has faced important challenges, including but not limited to resources, understaffing, high loads of patients, and social as well as political instability (Al Janabi, 2023). In such contexts, the necessity of fostering growth culture and self-belief becomes crucial, and this to improve the endurance and quality of services provided by nurses. Moreover, studies conducted in Iraq lack focus on psychological factors when addressing nurses' needs and determinants of job performance and outcomes. For example, a recent study conducted in Kerbala City examined the link between the safety climate of the workplace and the job performance of nurses, and found that a positive safety environment can increase the performance of nurses within their jobs (Al-Hasnawi & Aljebory, 2023). On the other hand, another study conducted in Najaf province examined the relationship between the performance of nurses and their demographic characteristics, but didn't find any significant differences based on the studied factors (Mahdi & Faris, 2024). In addition, (Kazim & Al Tamimi, 2024) investigated nurses' self-efficacy and general wellbeing

and found that nurses have, on average, high self-efficacy (Kazim & Al Tamimi, 2024). Overall, the mentioned studies show the growing interest of researchers to study these concepts in Iraq contexts, yet no research has specifically evaluated how the nurses' mindset influence self-efficacy and job performance, which emerges as an important literature gap to be considered.

When conducted, this investigation will be valuable on different perspectives. First, through exploring the relationship between growth mindset and self-efficacy, this study will help uncover the psychological factors that can affect the effectiveness of nurses' work. It will also help leaders, and healthcare stakeholders recognize and understand the importance of creating a supportive work environment, as well as positive mental frameworks to support nurses' growth mindset, and thus to enhance self-efficacy of this taskforce. Second, this study will contribute to fil the existing empirical gap in the Iraqi context by showing local relevant data that can be used by institutions to guide future research and inform the policies and interventions that specifically tackle the healthcare system in Iraq. Third, if this study showed a positive correlation between the two concepts of, then it can support the development of low-cost, non-technical interventions, including but not limited to mindset training programs, workshops, or coaching mechanisms. The objective of the study is Assessing the level of growth mindset among nursing staff, determining the level of self-efficacy among nursing staff, identifying the effect of growth mindset on job performance and self-efficacy among nursing staff and investigating the association between self-efficacy among nursing staff with their socio-demographic variables.

2. Methodology

The study of association was carried out on 408 nurses from both public and private hospitals (January,2025). Data collection was carried out through Google Forms, which was distributed to participants via hospital administrative channels and professional nursing networks. Participants accessed the questionnaire through a secure link and were given adequate time to complete it at their convenience. Regular reminders were issued to maximize response rates. The required sample size was determined using Cochran's formula to ensure statistical significance. Based on the estimated nursing population in Kerbala City and a confidence level of 95% with a margin of error of 5%, the final sample size was 408 nurses. Participants were selected through convenience (non-probability sampling).The inclusion criteria were by first nurses employed in either public or private hospitals in Kerbala City, with a minimum of one year of work experience in a clinical setting and for sure they are willing to participate in the study by completing the self-administered questionnaire. The exclusion criteria who were excluded from the study are those without formal employment, on extended leave during the study period, and nurses who declined participation or provided incomplete responses. Data collection was conducted using a self-administered questionnaire distributed electronically via Google Forms. The self-administered questionnaire consisted of two main sections, each targeting one of the study's primary variables:

- Sociodemographic and Professional Characteristics: Age, sex, marital status, years of experience, educational level, and workplace type (public/private).

- Growth Mindset Assessment: The tool used in this study was adapted from Carol Dweck's Growth Mindset Scale and comprised a total of 20 items. These items evaluate individuals' beliefs about the malleability of intelligence, abilities, and personality traits, categorizing respondents into growth or fixed mindset types. The scale includes a combination

of statements reflecting ability-related beliefs (e.g., intelligence and talent) and personality-related beliefs (e.g., whether people can change fundamental aspects of who they are). Participants respond using a Likert scale, indicating their level of agreement, with higher agreement on growth-oriented statements denoting a stronger growth mindset orientation (Rammstedt et al., 2024).

• Self-Efficacy: Measured using the Generalized Self-Efficacy Scale (GSES), a 10-item scale assessing confidence in handling workplace challenges (Schwarzer, 2012). The scale demonstrated excellent internal consistency, with a Cronbach's Alpha coefficient of 0.886. The KMO value was 0.903, which is considered superb and indicates high sampling adequacy. Bartlett's Test of Sphericity was also significant ($\chi^2 = 1861.270$, $df = 45$, $p < 0.001$), confirming that the item correlations were suitable for factor extraction.

Data analysis was conducted using IBM SPSS version 26. Descriptive statistics were performed to summarize the data, with categorical variables presented as frequencies and proportions, and continuous variables expressed as means, medians, standard deviations, and range values. To assess the relationships between study variables, various statistical tests were used. The Chi-square test was employed to determine associations between two categorical variables, such as mindset type and self-efficacy. A statistical significance level of $p < 0.05$ was applied to all analyses.

3. Results

Table 1 displays the demographic and professional characteristics of the study participants. The majority of nurses (77.9%) were between the ages of 20 and 35 years, while 20.1% were aged between 36 and 50 years, and only 2.0% were 51 years or older. Regarding sex distribution, 55.9% of the sample were male, and 44.1% were female.

In terms of marital status, 52.5% of participants were married, 44.1% were single, and 3.4% were divorced. When examining years of experience, 42.6% had between one and five years of experience, 24.5% had six to ten years, and 32.8% had more than ten years of experience.

Educational attainment varied among the respondents, with the majority (64.2%) holding a bachelor's degree, while 24.5% had secondary school degree, 6.4% had a nursing diploma, and 4.9% had a master's degree or higher. Workplace distribution was relatively balanced, with 46.6% working in public hospitals and 53.4% employed in private clinics.

Table 1: Demographic and professional characteristics of the study participants (N = 408)

		Frequency	Percent
Age	20-35 years	318	77.9
	36-50 years	82	20.1
	51 years and above	8	2.0
Sex	Male	228	55.9
	Female	180	44.1
Marital status	Single	180	44.1
	Married	214	52.5

	Divorced	14	3.4
Years of experience	1 to 5 years	174	42.6
	6 to 10 years	100	24.5
	More than 10 years	134	32.8
Higher educational level	Secondary school	100	24.5
	Diploma	26	6.4
	Bachelor	262	64.2
	Master and above	20	4.9
Workplace type	Public hospital	190	46.6
	Private clinics	218	53.4

Table 2 presents the mindset assessment of the nursing staff, categorizing responses into fixed mindset and growth mindset across ability and personality domains.

For the ability fixed mindset, responses indicate that 52.5% of participants agreed with the statement that intelligence is a basic trait that cannot change significantly, while 47.5% disagreed. A notable 72.1% of nurses rejected the idea that being good at sports is an innate trait, suggesting a belief in skill development. Similarly, 66.7% disagreed with the notion that math ability is influenced by gender or cultural background. Avoidance of trying new things was rejected by 86.3% of participants, highlighting a general openness to new experiences. Additionally, 82.4% disagreed with getting angry when receiving feedback, indicating receptiveness to constructive criticism. However, 27.0% still believed that intelligence cannot be fundamentally altered, though a majority disagreed.

In contrast, responses to the ability growth mindset statements reflected a stronger belief in personal development. The majority (63.2%) agreed that intelligence can be changed, and 58.8% supported the idea that intelligence can be substantially altered. However, only 18.1% believed that musical talent could be learned by anyone, suggesting that specific domains may be viewed differently in terms of skill development. Encouragingly, 87.7% agreed that effort directly improves performance, and 76.5% appreciated receiving feedback from mentors. While 41.7% believed that all individuals are capable of the same amount of learning, 58.3% disagreed, indicating some skepticism toward equal learning potential.

For personality fixed mindset, 77.9% disagreed with the idea that one's personality is unchangeable, while 22.1% believed that fundamental personal traits remain static. Additionally, 54.4% disagreed with the belief that people's goodness or kindness is fixed, suggesting openness to behavioral change. However, 49.0% agreed that highly intelligent people do not need to put in effort, showing some lingering perceptions of innate ability.

Responses to personality growth mindset statements further supported a belief in change. A majority (68.1%) agreed that individuals can change significantly, while 64.7% supported the idea that people can alter basic aspects of their character. Additionally, 54.9% believed that

people are inherently good but may make poor decisions, reinforcing a nuanced understanding of human behavior.

Table 2: Mindset assessment among nursing staff (N = 408)

	Disagree [a] (%)	Agree [b] (%)
I- Ability mindset – FIXED		
1- Your intelligence is something very basic about you that you can't change very much	47.5	52.5
2- Only a few people will be truly good at sports – you have to be "born with it."	72.1	27.9
3- Math is much easier to learn if you are male or may become from a culture that values math	66.7	33.3
4- Trying new things is stressful for me and I avoid it.	86.3	13.7
5- I often get angry when I get feedback about my performance	82.4	17.6
6- You can learn new things, but you can't really change how intelligent you are	73.0	27.0
II- Ability mindset – GROWTH		
1- No matter how much intelligence you have, you can always change it quite a bit.	36.8	63.2
2- You can always substantially change how intelligent you are.	41.2	58.8
3- Music talent can be learned by anyone.	81.9	18.1
4- The harder you work at something, the better you will beat it	12.3	87.7
5- I appreciate when parents, coaches, teachers give me feedback about my performance.	23.5	76.5
6- All human beings without a brain injury or birth defect are capable of the same amount of learning	58.3	41.7
7- An important reason why I do my schoolwork is that I like to learn new things.	36.3	63.7
III- Personality/character mindset – FIXED		
1- You are a certain kind of person, and there is not much that can be done to really change that.	77.9	22.1
2- Some people are good and kind, some are not – it is not often that people change	54.4	45.6
3- You can do things differently, but the important part of who you are can't really be changed.	62.3	37.7
4- Truly smart people don't need to try hard	51.0	49.0
IV- Personality/character mindset – GROWTH		

1- You can always change basic things about the kind of person you are.	64.7	35.3
2- No matter what kind of person you are, you can always change substantially.	31.9	68.1
3- Human beings are basically good, but sometimes make terrible decisions	45.1	54.9

Figure 1 provides an overall classification of the mindset tendencies among the nursing staff. The findings indicate that 52.5% of participants exhibited a growth mindset but with some elements of fixed mindset beliefs. Meanwhile, 44.1% demonstrated a fixed mindset with certain growth-oriented ideas, and a small proportion (3.4%) exhibited a strong fixed mindset, indicating a rigid belief that abilities and traits are largely unchangeable. When further categorizing participants into predominant mindset groups, 52.5% were classified as having a growth mindset, while 47.5% fell into the fixed mindset category. This distribution suggests that while the majority of nurses in Kerbala City believe in the potential for learning and self-improvement, nearly half still hold some degree of belief in innate limitations regarding intelligence, skills, and personality traits.

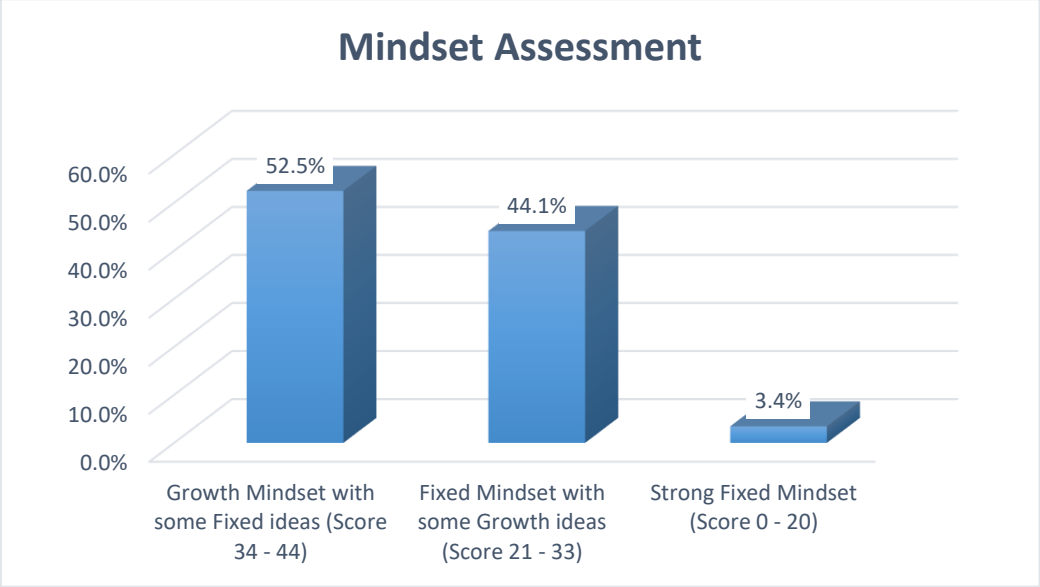

Figure1. Overall mindset assessment among nursing staff

3.1 Self-Efficacy

Table 3 presents the self-efficacy levels among the nursing staff, highlighting their confidence in problem-solving, resilience, and ability to handle challenging situations. The majority of participants exhibited high self-efficacy, with 77.9% agreeing that they can manage to solve difficult problems if they put in enough effort. Similarly, 77.9% believed that they could solve most problems when investing the necessary effort, reinforcing a strong sense of personal competence.

Confidence in goal setting and perseverance was also notable, as 64.7% agreed that they could stick to their aims and accomplish their goals, while 70.6% felt resourceful enough to handle

unforeseen situations. Additionally, 68.1% reported being confident in their ability to efficiently deal with unexpected events, reflecting a proactive approach to managing uncertainty in the workplace.

Regarding coping mechanisms and problem-solving, 70.1% stated that they remain calm when facing difficulties due to their ability to cope effectively. A majority (77.0%) expressed confidence in finding multiple solutions when confronted with problems, while 78.9% believed that they could think of something to do when faced with a difficult situation. Furthermore, 73.5% agreed that they were capable of handling whatever challenges came their way.

However, 39.2% of participants disagreed with the statement that they can find ways to achieve their goals when opposed by others, indicating a relative weakness in navigating interpersonal or systemic barriers. Similarly, 35.3% expressed doubt about their ability to consistently stick to their aims and accomplish their goals.

Overall, the results indicate strong self-efficacy among the nursing staff in Kerbala City, with most participants demonstrating confidence in their ability to solve problems, manage unexpected challenges, and persist through difficulties.

Table 3. Self-Efficacy among nursing staff (N = 408)

N	Items related to Self-Efficacy	Disagree [a] (%)	Agree [b] (%)
1	**I can always manage to solve difficult problems if I try hard enough.**	22.1	77.9
2	**If someone opposes me, I can find means and ways to get what I want.**	39.2	60.8
3	**It is easy for me to stick to my aims and accomplish my goals.**	35.3	64.7
4	**I am confident that I could deal efficiently with unexpected events.**	31.9	68.1
5	**Thanks to my resourcefulness, I know how to handle unforeseen situations**	29.4	70.6
6	**I can solve most problems if I invest the necessary effort**	22.1	77.9
7	**I can remain calm when facing difficulties because I can rely on my coping abilities.**	29.9	70.1
8	**When I am confronted with a problem, I can usually find several solutions.**	23.0	77.0
9	**If I am in a bind, I can usually think of something to do**	21.1	78.9
10	**No matter what comes my way, I am usually able to handle it**	26.5	73.5

a: *Disagree: includes the descriptive analysis of strongly disagree, disagree.*

b: Agree: includes the descriptive analysis of strongly agree, agree and somehow agree.

Note: The descriptive analysis was computed in two categories to facilitate the interpretation and to show the prevalence of agreement. This categorization is just for descriptive analysis purposes and does not affect the score.

Table 4 presents the descriptive statistics for self-efficacy scores among the nursing staff. For self-efficacy, which was measured using a 10-item Likert-scale questionnaire with a maximum possible score of 50, the mean score was 39.20 (SD = 6.33), with a median of 39.50. The scores ranged from 20 to 50, with the 25th percentile at 35.00, the 50th percentile at 39.50, and the 75th percentile at 44.00 (figure 2). These results indicate that while self-efficacy levels varied, the majority of nurses demonstrated moderate to high confidence in their ability to handle challenges and problem-solving in the workplace.

Table 4: Self-Efficacy among nursing staff

		Generalized Self-Efficacy Scale
N		408
Mean		39.20
Median		39.50
Std. Deviation		6.33
Minimum		20
Maximum		50
Percentiles	**25**	35.00
	50	39.50
	75	44.00

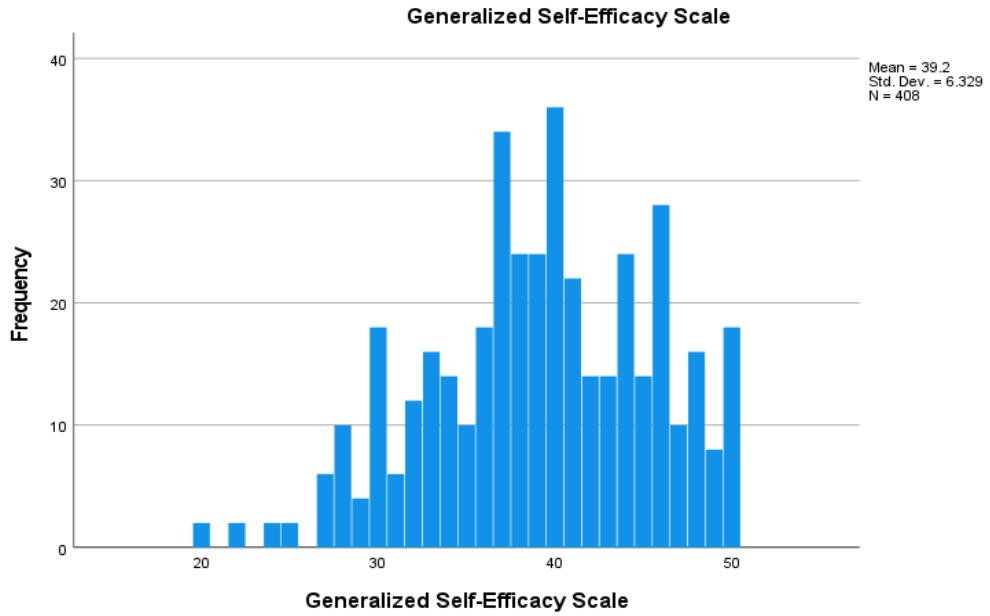

Figure 2: Descriptive statistics of self-efficacy scores.

3.2 Factors Affecting Self-Efficacy

Table 5 presents the relationship between various demographic and professional factors and self-efficacy scores among the nursing staff. The analysis reveals that age was the only factor significantly linked with self-efficacy (p = 0.006), while other variables, including gender, marital status, years of experience, education level, department, and workplace type, did not show statistically significant effects.

Age demonstrated a significant association with self-efficacy, with nurses aged 36 years and above reporting a higher mean self-efficacy score (M = 40.82, SD = 4.44) compared to those aged 20-35 years (M = 38.74, SD = 6.70, p = 0.006). This finding suggests that self-efficacy tends to increase with age, likely due to accumulated experience, increased confidence in handling workplace challenges, and greater exposure to complex problem-solving situations.

Gender did not show a statistically significant effect on self-efficacy (p = 0.165), though male nurses had a slightly higher mean score (M = 39.59) compared to female nurses (M = 38.71). Similarly, marital status was not significantly associated with self-efficacy (p = 0.081), though married nurses exhibited slightly higher confidence (M = 39.83) compared to their single (M = 38.60) and divorced counterparts (M = 37.29).

Regarding years of experience, there was no statistically significant difference (p = 0.147), although nurses with more than 10 years of experience had the highest self-efficacy scores (M = 39.97), followed by those with 6 to 10 years (M = 39.30) and those with 1 to 5 years (M = 38.55). This suggests that longer professional exposure may contribute to increased self-confidence, but the effect was not statistically strong in this sample.

Education level showed a near-significant trend (p = 0.053), where nurses with a master's degree or above had the highest self-efficacy scores (M = 41.30, SD = 5.31), followed by nurse aides (M = 40.22) and practical nurse diploma holders (M = 39.92). Nurses with bachelor's degrees had the lowest self-efficacy (M = 38.58). While not statistically significant, this trend suggests that higher education attainment may contribute to greater self-efficacy, potentially due to enhanced theoretical knowledge and advanced training.

Table 5: Factors affecting self-efficacy

		N	Mean	Std. Deviation	Minimum	Maximum	P.value
Age	**20-35 years**	318	38.74	6.70	20	50	**0.006**
	36 years and above	90	40.82	4.44	30	50	
Gender	**Male**	228	39.59	6.27	22	50	0.165
	Female	180	38.71	6.38	20	50	
Marital status	**Single**	180	38.60	6.34	24	50	0.081

	Married	214	39.83	6.33	20	50	
	Divorced	14	37.29	5.34	30	46	
Years of experience	**1 to 5 years**	174	38.55	6.46	24	50	0.147
	6 to 10 years	100	39.30	6.52	20	50	
	More than 10 years	134	39.97	5.96	22	50	
Higher educational level	**Nurse aid**	100	40.22	6.67	22	50	0.053
	Practical nurse diploma	26	39.92	5.40	31	50	
	Bachelor's degree	262	38.58	6.29	20	50	
	Master's degree and above	20	41.30	5.31	33	49	
	General medicine, Surgical, Pediatrics	328	39.19	6.30	20	50	
Workplace type	**Public hospital**	190	39.59	6.63	20	50	0.248
	Private clinics	218	38.86	6.05	22	50	

3.3 Correlation between mindset and self-efficacy

Table 6 presents the results of multiple linear regression analysis examining the correlation between mindset and self-efficacy among nursing staff. The Enter model includes independent variables, the Stepwise model keeps self-efficacy as a significant predictor.

In the Enter model, mindset assessment emerged as strong predictor of self-efficacy, with a highly significant positive association ($B = 4.160$, $p < 0.001$). This shows that nurses with a growth mindset show significantly higher self-efficacy levels compared to those with a fixed mindset. The standardized Beta coefficient (0.329) suggests that mindset plays a moderate to strong role in predicting self-efficacy, emphasizing the importance of psychological beliefs in shaping confidence in professional capabilities.

In the Stepwise model, mindset assessment remained significant predictors, with mindset assessment ($B = 4.138$, $p < 0.001$) continuing to have the strongest impact on self-efficacy.

Table 6: Multiple linear regression for the factors affecting self-efficacy

Enter Model									
	Unstandardized Coefficients		Standardized Coefficients	t	P.value	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	32.309	1.559		20.719	0.000	29.244	35.375		
Mindset Assessment	4.160	0.590	0.329	7.046	0.000	2.999	5.320	0.992	1.008
Stepwise Model									
(Constant)	31.075	1.213		25.628	0.000	28.691	33.459		
Mindset Assessment	4.138	0.591	0.327	7.007	0.000	2.977	5.299	0.993	1.007
a. Dependent Variable: Generalized Self-Efficacy Scale									

3.4 Comparison of self-efficacy scores by mindset type

Table 7 presents the comparison of generalized self-efficacy scores between nurses with a growth mindset and those with a fixed mindset.

For generalized self-efficacy, a significant difference was also observed between mindset groups (p = 0.000). Nurses with a fixed mindset had a higher self-efficacy score (M = 41.43, SD = 4.96) compared to those with a growth mindset (M = 37.18, SD = 6.76) (Figureure 3). The difference in self-efficacy scores suggests that nurses with a fixed mindset perceive themselves as more confident in handling challenges and problem-solving, despite having a less adaptive approach to learning and development.

Table 7: Comparison of self-efficacy scores by mindset type

		N	Mean	Std. Deviation	Minimum	Maximum	P.value
Generalized Self-Efficacy Scale	**Growth Mindset**	214	37.18	6.76	20	50	0.000
	Fixed Mindset	194	41.43	4.96	31	50	
	Total	408	39.20	6.33	20	50	

**Tests done using independent t-test*

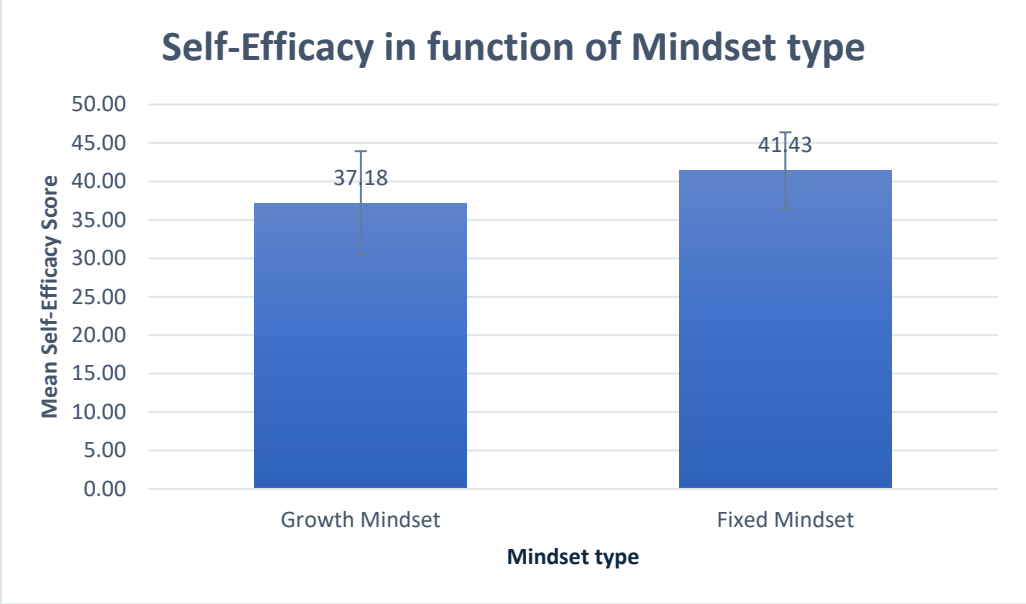

Figure 3: Comparison of self-efficacy scores by mindset type.

4. Discussion

Among 408 participating nurses, the majority (77.9%) were aged between 20 and 35 years, from both genders, noting, males (55.9%) and females (44.1), with a total year of experience being between one and 10 years (67.1%). The participants were almost equally divided between married (52.5%) and not married (44.1% single and 3.4% divorced), with a majority holding a bachelor degree of nursing (64.2%), working either in private (53.4%) or public hospitals (46.6%). These characteristics show a heterogeneity among the study participants, which can be valuable in understanding differences in their mindset and self-efficacy levels (Schwarzer, 2012). The descriptive analysis of these characteristics helped us understand the background and the work contexts of individuals in order to be able to further delve into the objectives of this study.When assessing the mindsets among nurses, it was found that 52.5% of the nurses had a growth mindset compared to 47.5% who had a fixed mindset, which indicate that there exists a duality or a kind of equilibrium in the mindsets of the nursing staff in Kerbala city. For instance, these results seem to be concordant with the Theory of Dweck, that explains that mindsets cannot be binary, but rather it is a continuum (Williams, 2020). As seen in the results, nurses had openness to feedback, effort-driven improvement, and a remarkable willingness to try new things, all of which reflects the principals of growth mindset discussed in the literature, especially in profession with high-stress such as the nursing profession (Cao et al., 2025; Xue et al., 2024). These results are aligned with the study of (Yeager & Dweck, 2020) that showed that growth mindsets is associated with a higher resilience and task engagement in environments with challenges (Yeager & Dweck, 2020). On the other hand, the results also showed that there remains a persistence of fixed mindset beliefs among nurses, including skepticism about altering intelligence or the belief that highly intelligent individuals require little efforts. This suggest that the culture and the education can influence yet reinforce the innate ability of individuals. These results are somehow aligned with X who showed that educational and socioeconomic backgrounds of individuals can affect their personal beliefs about intelligence and the way they perceive intelligence and learning potentials (King & Trinidad, 2021; Silverman et al., 2023). In addition, it is worth mentioning that in Iraq, where the educational systems are rigid and the workplace highly depend on hierarchy, nurses might

tend to internalize their beliefs that performance results more from fixed characteristics than from effort or strategy, and this can account for the ambivalence shown in the musical ability and overall learning capacity of nurses (Shakir et al., 2018). Furthermore, it was shown that while most of the participants reject the idea that the personality is a fixed trait, others believe that intelligence, as a trait of personality, is associated with less efforts needed, and this can reflect a tension between the existing theoretical beliefs in change due to lived experiences and the traditional environments and cultural concepts. These results seem to be aligned with the study of Thomas & Sernacka (2015) who showed same beliefs among individuals from the general population (Thomas & Sarnecka, 2015).

Nonetheless, the participating nurses showed an overall moderate to high level of self-efficacy, with a mean score being equals to 39.20 +/- 6.33 over 50. These results seem be aligned with another study conducted in Iraq by Naeem & Jasim (2022) who showed that nurses working in critical care settings had either a moderate self-efficacy (55.2%) or a high self-efficacy (43.7%) (Naeem & Jasim, 2022). Therefore, the levels of self-efficacy highlighted in Iraq seem to be higher than those found in Iran, where Soudagar et al. (2015) found a mean self-efficacy score equals to 29.78 +/- 5.82 among nurses working in clinical settings (Soudagar et al., 2015). These results indicate that nurses in Iraq have a strong belief in their ability to handle challenges and solve upcoming problems effectively. This confidence remains very important in the nursing professions because nursing is considered to be a demanding job, where nurses need to be engaged in proactive health behaviors and they always need to effectively manage their stress and demonstrate greater competence in clinical skills (Garfield & McCarthy, 2005).

Finally, when investigating the factors associated with self-efficacy, the results showed that mindset is a significant predictor to self-efficacy ($p < 0.001$), which also confirm earlier results. Moreover, age was also shown to be a factor significantly associated with self-efficacy ($p = 0.020$), showing that older nurses have higher self-efficacy levels, and this might be due to their accumulated experience. For instance, the literature showed that age and experience of nurses is important within their practical work. Shorey & Lopez (2021) showed a positive correlation between age and self-efficacy, highlighting that nurses with longer tenure in their work have higher self-efficacy due to the extensive clinical exposure they have and the ability to develop coping strategies, which increases their competence with more years working in the nursing profession (Shorey & Lopez, 2021).

5. Conclusion

This study explored the relationship between mindset and self-efficacy among nurses in Kerbala, Iraq. While most nurses showed a growth mindset, those with a fixed mindset reported higher self-efficacy. These findings highlight a complex relationship between the two concepts and suggest the need for further research across different regions and over time to better understand these dynamics in the Iraqi healthcare context.

Recommendations

The study suggests the need for ongoing research to track changes in mindset, self-efficacy across diverse nursing environments and over time.

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Ethical Approval

The study adhered to ethical research guidelines and received approval from University of Kerbala/ College of Nursing before data collection commenced. Since this study involved human participants, informed consent was obtained from all nurses before they completed the questionnaire. Participation was entirely voluntary, and respondents had the right to with draw at any time without consequences. Confidentiality and anonymity were strictly maintained by ensuring that no personally identifiable information was collected. Each participant was assigned a unique study code, and all responses were stored securely, accessible only to authorized researchers.

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