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Original Article

Study the Relationship between Cultural Intelligence and Academic Vitality with Self-Directed Learning among Nursing Students

Samah Abo-Elenein Abdallah[1], Sara Abdel-Mongy Mostafa [2]

[1, 2] Lecturer of Nursing Administration, Faculty of Nursing, Tanta University.

ABSTRACT

Background: Cultural intelligence has been described as an essential intelligence for the 21st century that can increase students' adaptability, problem-solving skills, and influence their performance and learning vitality. **Aim** of this study was to investigate the relationship between cultural intelligence and academic vitality with self-directed learning among nursing students. **Design:** Descriptive, correlational study design was adopted. **Setting:** The study was conducted at Faculty of Nursing, Tanta University. **Subjects:** All fourth year nursing students (n=295) were included. **Tools:** Three tools for data collection were used to achieve the aim of this study; Cultural Intelligence Scale, Academic Vitality Questionnaire and Self-Directed Learning Instrument (SDLI). **Results:** As a result of the conducted study revealed that there is a high level of culture intelligence and academic vitality with moderate level of self-directed learning among nursing students. There were significant positive correlation between self-directed learning (r= 0.33) and its aspects including, self-management (r= 0.72), desire for learning (r= 0.58) and self-monitoring (r=0.52) with cultural intelligence and academic vitality (P<0.01). **Conclusion:** Self-directed learning seems to be a phenomenon that is influenced by many factors such as cultural intelligence and academic vitality. **Recommendations:** this study suggests that academic vitality and culture intelligence should be considered together when self-directed learning is conducted to improve nursing students' academic performance. Workshops should be held in order to promote self-directed learning among students.

Keywords: Academic Vitality, Cultural Intelligence, Self-Directed Learning, Nursing Students.

Introduction

Currently, healthcare institutions are in constant motion under various challenges, where new health problems continuously emerge, new knowledge must be applied, and cost-effective interventions are required (Ahmed et al., 2016). The rapid pace of globalization is also exposing both individuals and organizations to conditions of cultural heterogeneity in which they must function effectively (Lee & Hong, 2021 & Al-Dossary, 2016). As a leader, manager, or educator, it is important that they demonstrate both mastery of intercultural dealings as intercultural misunderstandings have a significant impact on the organization, as well as increasing cultural diversity. Thus, individuals and organizations must demonstrate culturally intelligent behavior in order to overcome cross-cultural challenges (Andresen & Bergdolt & Solomon & Steyn, 2017).

Culture is the element that binds societies together and reflects their social behavior. It passes over national boundaries and enhances our ability to function at a global level (Şenel, 2020). In the new millennium, managing and guiding students with differences in cultural backgrounds presents a major educational challenge (Vural & Peker, 2019).

Cultural intelligence refers to the ability to engage in behaviors that are tuned appropriately to the cultural values and attitudes of the people with whom one interacts, using skills (e.g. language or interpersonal skills) and qualities (e.g. tolerance for ambiguity, flexibility). Also, it is the ability to collect and process messages, to make decisions and the various approaches needed in order to adjust to a new environment. It is a set of skills and traits that allow one to interact effectively with a new cultural setting (Wang & Presbitero, 2016).

Cultural intelligence is an individual's ability to function efficiently in culturally diverse situations. It consists of four interrelated capabilities: metacognitive, cognitive, motivational, and behavioral (Azevedo, 2018). A metacognitive intelligence is a set of mental processes that enable individuals to acquire and understand cultural knowledge, including knowledge of and control over their own thought patterns in order to learn about intercultural situations (Ott & Michailova, 2018). Cognitive intelligence describes knowledge of norms, practices, and customs in different cultures based on formal education and personal experience. The knowledge of economic, legal, and social systems of different cultures and subcultures, as well as the knowledge of basic frameworks of cultural values, are included in this category (Brancu et al., 2016).

Motivational intelligence refers to how well a person is able to direct attention and energy toward learning about and functioning in situations characterized by cultural differences as well as how it affects their cognition and their behaviors that facilitate goal achievement (Barzykowski et al., 2019).

As a final measure, behavioral intelligence includes the ability to interact with people from different cultural backgrounds in an appropriately respectful and thoughtful manner. In order to demonstrate cultural understanding and motivation, appropriate verbal and nonverbal behaviors must be demonstrated, based on the cultural values of the particular setting. This involves having a wide repertoire of behavioral options. Together, these capabilities contribute meaningfully to behavioral flexibility across cultural differences (Bucker et al., 2015).

A health care organization can benefits from culture intelligence through increase profitability and cost savings due to adoption of more innovative methods, greater expansion into international markets, good service that is tailored to the specific needs of different groups of customers and more effective health care practices attracting and manage talent within the context of an increasingly diverse workforce (Bartel-Radic & Giannelloni, 2017). As well as, cultural intelligence can apply to different educational setting, so it helps students and teachers to improve academic performance in highly diverse or global educational settings (Fang et al., 2018).

Furthermore, students with high cultural intelligence may effectively operate in culturally different contexts, such as working on a given assignment with culturally diverse coworkers. Individuals and teams with high cultural intelligence will benefit from psychological outcomes such as effective intercultural adjustment, improved cultural judgment, and greater interpersonal trust, as well as behavioral and academic outcomes such as improved decision making, higher levels of idea-sharing and creative collaboration among teams (Azevedo, 2018 & Aziz, 2016).

In addition, educational issues cause hurdles in students' everyday academic lives, such as poor grades, anxiety, mistrust as a result of poor performance, lack of desire and interaction, and so on. Some students are

effective in dealing with these problems and obstacles by adapting and positive solutions, while others are not [18]. As a result, academic life is one of the most essential stages of a person's life because it influences their talents, scientific breakthroughs, and academic vitality. Academic vitality, in this regard, is a critical issue for students to achieve more success in their examinations and eventual professional lives (Vural & Peker, 2019 & Abbasi et al., 2016).

Academic vitality is defined as the ability to respond positively, constructively, and adaptively to a variety of challenges and impediments that arise during the course of one's education. As a result, educational scholars should pay close attention to learning how to demonstrate adaptability in the face of a variety of problems. Academic vitality is seen as a source of empowerment for learners' educational adaptation (Narimani et al., 2019). Academic vitality has demonstrated the ability to respond positively, productively, and adaptively to a variety of educational obstacles and impediments. It is one of the key factors that influence an individual's productive and successful education and learning, as well as where qualities and skills are developed and scientific advancement is made (Amiri1 & Alhosein, 2020 & Rashid & Asghar, 2016).

Lack of academic vitality, on the other hand, is one of the most important and prevalent educational challenges that students face, and it manifests itself in the following ways: There is a disconnect between educational aspirations and expectations, as evidenced by a lack of interaction with teachers and friends, failure to complete homework and poor grades, poor academic performance and academic burnout, and a kind of inconsistency between educational aspirations and expectations (Akhlaghi & Ganji, 2019).

Also, lack of vitality would result in behavioral problems such as sadness, aggression and depression.

As a result, in order to overcome these obstacles, learners must possess a high level of self-control and self-discipline prior to entering the educational environment. Select, manage, and evaluate their own learning activities, directing their own learning process that may be pursued at any time, in any place, by any methods, and at any age. Because students must cope with cultural change and self-development, educational institutions must place a greater emphasis on supporting self-directed learning (Akhlaghi & Ganji, 2019 & Hassani, 2015).

Self-Directed Learning (SDL) is a teaching style that is defined by the learner's ability to accept primary responsibility for and control of his or her own learning. It is an active process in which learners take the lead in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, selecting and implementing appropriate learning strategies, and evaluating learning outcomes, with or without the assistance of others (Kokcu & Cevik, 2020 & Zhang et al., 2018).

It means that even after leaving formal education, learners have the freedom to recognize the significance of learning and to update their knowledge and competencies. Furthermore, self-directed learning fosters students' ability to control or manage their learning environment and processes, as well as their confidence in their ability to complete tasks successfully (Hwang & Oh, 2021 & Saeid & Eslaminejad, 2017).

In reality, self-directed learning emphasizes the importance of motivation so that students can set learning goals, select appropriate learning tactics, and improve their abilities in assessing their knowledge gaps. They are urged to look for materials to help them fill in the gaps in their knowledge (Matzat & Vrieling, 2015). As a result, self-directed learning is required not

only for acquiring nursing information in college, but also for performing adequately in one's obligations and achieving self-development in one's work after graduation (Cadorin et al., 2017).

Teacher and student preparation are required for the successful integration of self-directed learning into nursing course (Baars et al., 2017). Nursing students are encouraged to build talents in recognizing their own knowledge shortfalls and then dealing with them by going through related sources as part of the self-directed learning process. To solve specific difficulties, they may rely on their own knowledge, accessible resources, or conscious judgment (Yu et al., 2019).

To be able to perform self-directed learning, a student must be capable of self-observation, self-reflection, self-judgment, making their own objective, doing reactivation of existing knowledge, managing learning autonomy (e.g., time management), building motivation and concentration in learning autonomy to determine their own learning strategies and problem solving strategies, understanding when to seek a help from a friend or tutor (Cheraghi &Yousefi, & Koç, 2019).

There are six fundamental principles for self-directed learning to determine what the student needs to learn on his or her own. First, students choose where they will learn, what they will learn, how they will learn, and when they will learn. Second, students must assess the context of their learning, diagnose what they need to learn, find the appropriate learning materials, and select when they should study and when they wish to relax. Thirdly, students can take part in the planning of their own education. Fourthly, each student may have a desire to learn, and each individual's character may differ depending on what the lecturer wants and what the student needs to learn. Fifthly, students' learning should be aided by the provision of suitable

learning resources and a well-prepared study guide. The sixth, faculty function shifts from that of a lecturer or information conductor to that of a learning process manager (Khalid et al., 2020, Saeid & Eslaminejad, 2017 & Rashid & Asghar, 2016).

Significance of this study:

Because of the necessity for self-study, which is vital in today's active and altered world of knowledge, most civilizations are undergoing educational reform today. Knowledge life has become very brief as a result of increased creation of knowledge, information, and technological advancements. It also necessitates the complexity of modern life and the unexpected new difficulties, as well as the tremendous need for pupils to study for the rest of their lives and take rapid action. To overcome these obstacles, students must become self-directed learners who are current in their learning, independent, and autonomous in the field of science and knowledge, rather than receiving a set of instructions. Furthermore, few researches have examined the impacts of cultural intelligence and academic vitality on self-directed learning using structural causality (Lee & Hong, Hoseinpanah & Moghadam, 2021 & Andresen & Bergdolt, 2017). Accordingly, this study aims to investigate the relationship between cultural intelligence and academic vitality with self-directed learning.

Aim of the study

This study aimed to investigate the relationship between cultural intelligence and academic vitality with self-directed learning among nursing students.

Research questions:

-What are the levels of culture intelligence, academic vitality and self-directed learning among nursing students at faculty of nursing?

- Is there a significant relationship between culture intelligence, academic vitality and self-directed learning among nursing students at faculty of nursing?

- Can cultural intelligence and academic vitality influence self-directed learning among nursing students at faculty of nursing?

Subjects and method

Study design

Descriptive, correlational study design was operated for this study. This design is used to describe the variables and the relationships that occur naturally between and among them (Lau & Kuziemsky, 2016).

Study setting

The study was conducted at Faculty of Nursing, Tanta University.

Subjects

All nursing students in their fourth year (n=295) who agreed to participate in the study during the current academic year (2020-2021) were included.

Tools of data collection for study:

Three tools were used to collect data for this study.

Tool (1): Cultural Intelligence Scale (CIS)

This tool was adopted by researchers guided by **Khan and Hasan (2016)** and **Bucker et al. (2015)** to assess nursing students' perception about cultural intelligence. The tool included two parts: **Part (1):** personal characteristics including age, gender, residence, marital status and attendance of training programs. **Part (2):** cultural intelligence questionnaire to assess nursing' students' perception about cultural intelligence through (20 items) distributed into 4 sub-dimensions which are in-metacognitive (4 items), cognitive (6 items), motivational (5 items) and

behavioral (5 items). Nursing students responses were measured in five point Likert type scale that takes values between 1 (strongly disagree) and 5 (strongly agree). Levels of cultural intelligence represented statistically based on the cut of value into ≥75% = scores from (75-100) as high level; 60% - <75% = scores from (60-74) as moderate level and <60% = scores from (20-59) denotes low level.

Tool (2): Academic Vitality Questionnaire

This tool reliant on **Klukas (2020)** and **Victoriano (2016)** to assess nursing students perception about academic vitality through (20) items. Every item was assessed on a five point Likert Scale where (1) reflect strongly disagree to (5) rate that mean strongly agree. In this questionnaire, the range of scores for this tool varies from (20 – 100), and the total score is 100, a higher score in this questionnaire indicates higher academic vitality level.

Tool (3): Self-Directed Learning Instrument (SDLI)

This tool was based on **Atwa (2018)**, **Cadorin et al. (2017)** and **Ayyildiz and Tarhan (2015)** that designed to assess nursing students' self-directed learning abilities. The instrument consists of (46 items) categorized in three dimensions of SDL learning: self-management (16 items), desire for learning (16 items) and self-monitoring (14 items).The metric is based upon a-five-point Likert-type scale (from 1 strongly disagree to 5 strongly agree). The total score of SDLI ranged from (46 – 230), which is the sum of all students responses. Scores from (46-137) points are considered as "low level", scores from (138-172) are denoted as "moderate level", and scores from (173-230) are considered as "high level "of SDL abilities.

Methods

Fieldwork

The data was collected by researchers from nursing students included in the study. The researchers met the subjects in small groups during their classroom day to distribute the questionnaires. The subjects recorded the answer in the presence of the researchers to ascertain all questions were answered. The questionnaire sheets were taken 30-45 minutes for each student to be filled. The data was collected over a period of three months from first March 2021 until the end of May 2021.

Ethical considerations:

The researchers obtained an official permission from the authoritative bodies at faculty of nursing before initiating the data collection. The schedule of classes was obtained from the officials of the education administration of the faculty to distribute the questionnaires at the appropriate time. The questionnaires were then distributed by the researchers among the students of faculty and in the classroom (the classes were randomly selected and necessary coordination was made with professors). First, the purpose of the research was explained and after obtaining their consent and assuring the students to keep personal information confidential, they participated in the study voluntarily and with full consent. In order to comply with ethical considerations, the student's name and surname were not asked.

Content Validity:

A jury composed of six nursing field experts to assess the study of the three tools to examine the validity of tools for clearance, relevance, and appropriateness. The experts were; 3 assistant professors of the psychiatric nursing department, 1 professor and 2 assistant professors of the nursing services administration department, all of them are from the Faculty of Nursing, Tanta University. The experts' responses were represented in three points rating scale ranging from (3-1); 3=strongly relevant, 2= relevant, and 1= not relevant. The modifications are done accordingly. The values of content validity for tool I, tool II, tool III (93%, 94 %, and 96%) respectively.

Testing Reliability:

All tools (I, II, and III) were tested for reliability using the Cronbach Alpha Coefficient factor test and were found to be (0.772) for tool I, (0.842) for tool II and (0.806) for tool III respectively.

Pilot study:

It was carried out to verify the clarity, feasibility, and applicability of the study three tools and to identify obstacles that might be faced during data collection. The pilot study was conducted on 10% of nursing students (n=32) students and excluded in the actual study subjects.

Statistical analysis:

Statistical analysis is performed by statistical Package SPSS in general (version 20), also Microsoft Office Excel is used for data handling and graphical presentation. Quantitative data were described using number and percent, while the qualitative data were described using mean, standard deviation and chi-square test was used to compare between variables. The significance of the obtained results was judged at the $\leq$ 0.05 level. Pearson's R was used to verify the correlation.

Results:

Table (1): Distribution of nursing students according to their personal data. The table illustrates that nursing students age ranged between 21 up to 27 years, and the highest percent (72.9%) of them had < 25 years old with mean 23.54±2.61and more than half (51.9%) of them were unmarried. As regard to residence, high percent (71.2%) of nursing students

were from urban. Majority of them (83.1%) not attend training programs on self-directed learning.

Figure (1): Level of culture intelligence, academic vitality and self-directed learning among nursing students. The figure shows high percent (76.6%, 60.6%) of nursing students had a- high level of culture intelligence and academic vitality respectively. Beside, around three quarter (73.9%) of them had a moderate level of self-directed learning. While, low percent 12.9%, 8.8% and 7.1% of nursing students had low level of academic vitality, self-directed learning and culture intelligence respectively.

Figure (2) Level of nursing student's perception of culture intelligence scale sub-dimensions. This figure shows high percent (80%, 77.3%) of nursing students had high level of motivational and cognitive intelligence respectively. Beside, more than two third (75.9%, 73.6%) of them had high level of metacognitive and behavioral intelligence respectively. While, few percent 10.5%, 8.5%, 5.8% and 3.4% of them had low level of behavioral, motivational, metacognitive and cognitive intelligence respectively.

Table (2): Nursing student's perception of academic vitality. The table shows that there was a-statistically significant difference between nursing student's perception of academic vitality. The most (76.6%, 76.3%, 74.9%, 73.9%, 70.8%, 70.2% and 68.5%) of nursing student's agreed that they are try to understand the goal of a task before attempt to answer, determine how to solve a- problem before begin, think through their mind the steps of a plan they have to follow, don't give up when a particular course becomes difficult, when they get a bad grade it just makes them want to work harder, clearly plan their course of action, ask questions about what a problem requires to do to solve it and good at managing the demands of coursework respectively.

Figure (3): Level of nursing student's perception of SDL subscales. The figure illustrates that around three quarter (74.9%, 73.6% and 72.9%) of nursing students had a moderate level of self-management, desire for learning and self-monitoring respectively. Only (21%, 18.3% and 12.9%) of nursing students had a high level of desire for learning, self-management and self-monitoring respectively.

Table (3): Correlation between nursing students' culture intelligence, academic vitality and their self-directed learning subscales The table shows that all self-directed learning subscales was highly statistically significant and positively correlated with culture intelligence and academic vitality at (p <0.001).

Table (4): Correlation between nursing students' characteristics and their culture intelligence, academic vitality and self-directed learning. The table confirmed that there weren't a- statistically significant correlations between all nursing students' characteristics and their culture intelligence, academic vitality and self-directed learning level at p ≥ 0.05.

Table(1): Distribution of nursing students according to their personal data (n=295)

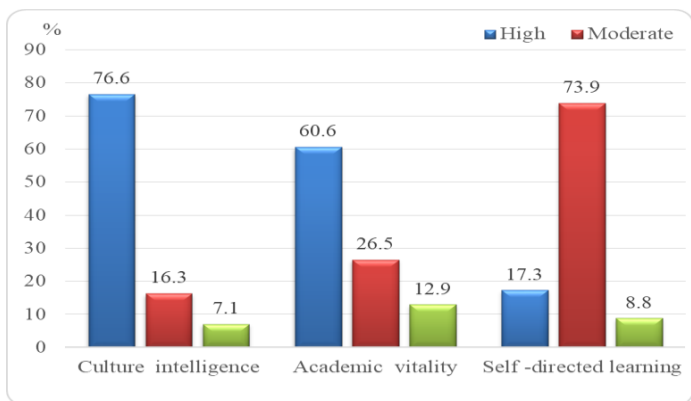| Variables	Nursing students	
	N	%
Sex		
-Females	218	73.9
-Males	77	26.1
Age (years)		
< 25	215	72.9
≥ 25	80	27.1
Range	**21-27**	
Mean±SD	**23.54±2.61**	
Marital status		
-Not married	153	51.9
-Married	142	48.1
Residence		
-Urban	85	28.8
-Rural	210	71.2
Attend previous training programs on self-directed learning		
- Yes	50	16.9
- No	245	83.1

Figure (1): Level of culture intelligence, academic vitality and self-directed learning among nursing students (N=295)
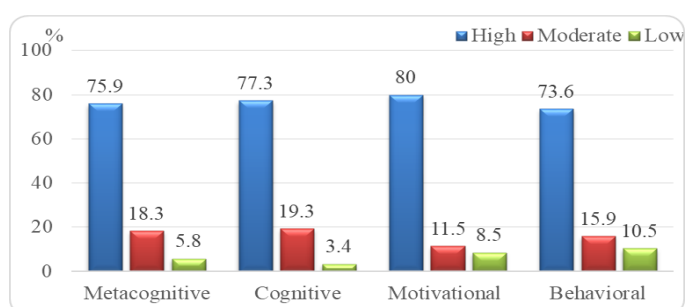

Figure (2): Level of nursing student's perception of culture intelligence scale sub-dimensions (N=295)

Table (2): Nursing student's perception of academic vitality (N=295)

Academic vitality items	Perception			X²	P-value
	Agree	Uncertain	Disagree		
	%	%	%		
1. I don't let study stress get on top of me.	64.4	25.1	10.5	206.369	<0.001**
2. I think I'm good at dealing with faculty work.	69.2	19.3	11.5	259.515	<0.001**
3. I don't let a bad mark affect my confidence.	39.0	38.6	22.4	23.929	<0.001**
4. I'm good at dealing setbacks at faculty.	34.6	41.7	23.7	21.732	<0.001**
5. I am good at handling negative feedback on assignments.	67.5	23.1	9.5	244.078	<0.001**
6. When I get a bad grade it makes me want to work harder.	70.8	19.3	9.8	286.210	<0.001**
7. I am good at managing the demands of my coursework.	68.5	22.7	8.8	258.722	<0.001**
8. I don't give up when a particular course becomes difficult.	73.9	14.6	11.5	328.281	<0.001**
9. I work hard to get excellent grades.	31.5	45.4	23.1	33.875	<0.001**

| Academic vitality items	Perception			X²	P-value
	Agree	Uncertain	Disagree		
	%	%	%		
10. When I struggle to understand a concept in class, I just accept that i will understand that concept.	64.7	23.1	12.2	204.295	<0.001**
11. When I do poorly on an assignment i often think to do my best on the course.	63.1	28.1	8.8	200.634	<0.001**
12. I able to successfully complete the goals I set faculty.	35.3	44.7	20.0	41.380	<0.001**
13. I can execute the strategies that my teacher calls for.	34.9	45.8	19.3	46.902	<0.001**
14. I can perform tasks and skills in my faculty better.	60.3	27.5	12.2	160.668	<0.001**
15. I determine how to solve a problem before I begin.	76.3	14.9	8.8	369.590	<0.001**
16. I think through my mind the steps of a plan to follow.	74.9	15.6	9.5	346.769	<0.001**
17. I try to understand the goal of a task before I answer.	76.6	14.6	8.8	375.142	<0.001**
18. I figure out my goals and what I need to do.	66.1	23.1	10.8	223.698	<0.001**
19. I clearly plan my course of action.	70.8	20.0	9.2	288.041	<0.001**
20. I ask myself questions about what a problem requires me to do to solve it, before I do it.	70.2	22.7	7.1	286.332	<0.001**

*Statistically significant at p ≤ 0.05
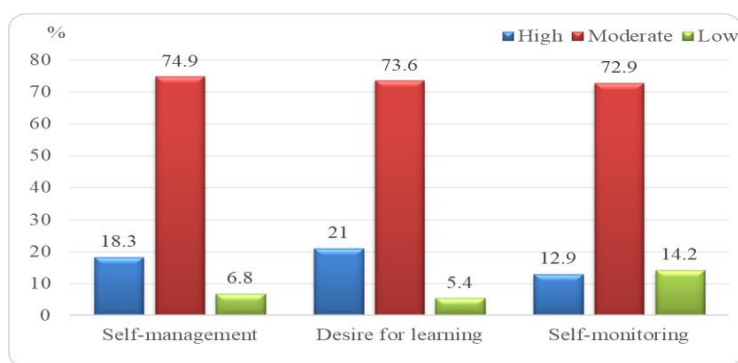
Figure (3): Level of nursing student's perception of SDL subscales (N=295)

Table (3): Correlation between nursing students' culture intelligence, academic vitality and their self-directed learning subscales (N=295)

SDL subscales	Culture intelligence		academic vitality	
	r	P-value	r	P-value
Self-management	0.727	<0.001**	0.672	<0.001**
Desire for Learning	0.584	<0.001**	0.425	<0.001**
Self-monitoring	0.525	<0.001**	0.656	<0.001**

*Statistically significant at p ≤ 0.05

Table (4): Correlation between nursing students' characteristics and their culture intelligence, academic vitality and self-directed learning

Factors	nursing students' characteristics							
	Age		Residence		Attendance of training program		Gender	
	r	P-value	r	P-value	r	P-value	r	P-value
Culture intelligence	0.129	0.201	0.026	0.799	0.247	0.440	0.019	0.948
Academic vitality	0.088	0.785	0.240	0.064	0.211	0.325	0.003	0.993
Self-directed learning	0.074	0.819	0.139	0.221	0.122	0.706	0.126	0.695

*Statistically significant at p ≤ 0.0

Discussion

The growing evidence available as well as the complexity of patients' problems, combined with the limited time given to teaching, has raised the demand for self-directed learning in the nursing discipline, Fujino-Oyama (2016). In order to be proactive about these challenging issues, self-directed learning abilities are considered a-prerequisite for both nursing students and nurses. Slater and Cusick (2017) report that how to develop and maintain a future workforce capable of dealing with these rapid changes is high on the agenda of both higher educational institutions and continuing educational programs. Therefore, the current study goal was to see if there were any associations between cultural intelligence and academic vitality with self-directed learning among nursing students.

Nursing students level of culture intelligence

The present study points that, high percent of nursing students had high level of culture intelligence. This result could be related to most of those nursing students have the ability to identify diversity within cultures and treat each multicultural interaction as unique and show a higher tolerance for otherness and take it as a source of knowledge and an opportunity to learn something new. As well as they are able to approach others in a more relaxed and gain their trust and communicate with them in a way that is not unpleasant or incomprehensible to them. They also can choose a- communicative approach that encourages them to be more open and to share their ideas, thoughts, or experiences.

The current study result was in line with Göl and Erkin (2019) who found that total scores in cultural intelligence scale were higher among those nursing students who had encounters with people with different cultural backgrounds for any reason. Majda et al. (2021) indicated that polish nursing students scored higher in terms of knowledge, attitudes, and commitment to knowledge acquisition, as well as in terms of their ability to use culturally appropriate behavior when interacting with people with different cultural backgrounds. Also, Rahimaghaee and Mozdbar (2017) found that the mean score of cultural intelligence was 88.02 ± 11, meaning that the mean of cultural intelligence among the participants was higher than the average of measurement indicator.

Nursing students level of academic vitality

The present study results reveled that, more than half of nursing students had high level of academic vitality. Actually most of those nursing students good at dealing with faculty work pressures, managing the demands of their coursework, determine how to solve a problem, clearly plan their course of action to solve problem and good at handling negative feedback on

their assignments. Abbasi et al. (2016) supports our study results and found high level of total mean scores of academic vitality among nursing students. In the same line, Koosha et al. (2020) noted that nursing students with high academic vitality positively evaluate their ability to solve problems and decision making. This could be a driving force to find solutions to difficult and complex problems with confidence and motivation.

Saeid and Eslaminejad (2017) suggests that it is important to increase the academic vitality of nursing students through self-directed learning to make students feel a-sense of accomplishment. The experience of success with SDL encourages nursing students to believe in their abilities and to motivate. Control their learning will help students in self-directed learning and increasing their intention to continue. Jafaripour et al. (2020) asserted that, in order to increase the quality of academic life of medical students, it is essential to teach the components of academic vitality to students which academic vitality is one of the most important factors affecting the health of the educational context of the educational institutions.

Nursing students level of self-directed learning

The present study results reveled that, high percent of nursing students had moderate level of all aspects of self-directed learning including self-management, desire for learning and self-monitoring. This result may be due to most nursing students can solve their study problems, prioritize their work, manage their time, plan their own learning activities, set their learning goals and enjoy the challenge. Moreover, they are open to new ideas, evaluate their assignment, and learn from mistakes with high personal expectations and self-discipline. Really, those nursing students always use internet and online courses for

learning purposes as a result of changes by Corona viruses and limited time for learning.

In the same vein, Zhang et al. (2018) and Kokcu and Cevik (2020) asserted that self-directed learning helps motivate the search for new data to evaluate and modify results achieved in the reflective judgment process. Khalid et al. (2020) added that, nursing students who can exert self-directed learning can control their own learning experience and positively evaluate their ability to conduct and organize their academic performance. Rodríguez and Mármol (2019) added that, nursing students who can exert self-directed learning control over their own learning experience can positively evaluate their ability to conduct and organize academic performance. Chen et al. (2019) indicated that self-directed learning is a very important ability of nurses to solve complex health problems in the fast-growing and knowledge-incentive healthcare sector.

Our study findings are consistent with the findings of Hwang and Oh (2021) who found that higher level of self-directed learning and problem-solving ability of nursing student. Also, Singh and Paudel (2020) found more than two-third of the nursing students were ready for self-directed learning. The mean score of self-control was higher than the mean score of self-management and desire for learning. Similar results from Saudi Arabia by Abu Assi (2016) were reported that the participants' level of readiness for SDL and the self-control was high.

Contrary, Ahmed et al. (2016) found the majority of the students had a-low self-directed learning level. Furthermore, Díaz, et al. (2016) has been shown that SDL is less effective compared to instructor-modeled-learning in some aspects of learning during clinical practice.

Correlation between nursing students' culture intelligence, academic vitality and their self-directed learning subscales

Results of the current study clarified that self-directed learning was positively correlated with culture intelligence and academic vitality. In fact culture intelligence and academic vitality are important factors affects how students face academic challenges, lack of preparation, and other undesirable experiences. Students with a high level of culture intelligence and academic vitality are able to maintain their motivation, perseverance, and effort at a high level despite obstacles and difficulties, and as a result, have a high academic performance.

Safari et al. (2016) asserted that, people with high academic vitality, even if they are not interested in an activity, such as acquiring knowledge, use strategies to turn these activities into more positive ones and enjoy doing them. They are committed and struggling, control over the events around them, independent and self-directed due to the characteristic of academic vitality in studying and acquiring science and knowledge.

Confirming to our study results Hoseinpanah and Moghadam (2021) showed statistically significant positive correlation between cultural intelligence, academic vitality, and academic procrastination with self-directed learning in their study results. Also, Saeid and Eslaminejad (2017) showed a significant relationship between self-directed learning, academic self-efficacy and academic vitality of Payam Noor University students.

In addition, Hassani (2015) found that the mean of self-directed learning were significantly higher in students with high cultural intelligence than students with low cultural intelligence. He concluded that higher a person's cultural intelligence is the higher self-

directed learning, self-management and willingness to learn will be.

Kim (2014) noted that cultural intelligence of nursing student is an influencing factor in the development of SDL skills. Thus, culture intelligence, with its varying components, could influence nursing education to encourage or perhaps promote SDL.

Correlation between nursing students' characteristics and their culture intelligence, academic vitality and self-directed learning

Current results revealed that there weren't a-statistically significant correlations between all nursing students' characteristics and their culture intelligence, academic vitality and self-directed learning level. This might be explained by the fact that all of nursing students are in same academic year and they are younger with their age ranged (21-27), as younger students are physically energetic and this extra energy keeps them moving and keeps on motivating them to go ahead in life. Moreover, may be able to deal with classroom requirements and fulfilling their assignment adequately without additional responsibilities.

Our study results were confirmed by Jafaripour et al., (2020) who support the present study finding and found no significant relationship between self-directed learning and academic vitality with age and gender. Moreover, EL Gilany and Abusaad (2013) reported no relationships between students' socio-demographic characteristics and total SDL scores.

This was contraindicated with result of, Singh and Paudel (2020) who revealed that, the level of self-directed learning was significantly associated with age (p=0.036). As well as, Alamurungan and Kumar (2015) showed significant differences in certain scores of self-directed learning according to demographic and personal characteristics of respondents.

Moreover, AbuAssi (2016) found that age and academic level influenced the SDL ability. Aljohani and Fadila (2018) and Stirling and Alquraini (2017) also, detected significant variations between some socio-demographic characteristics include age group, academic program, place of residence, marital status, academic level and SDL among nursing students.

Alotaibi (2016) asserted that the variation among students SDL level could be attributed to their individual demographical differences, which might affect their educational goals, motivation to learn, attitudes toward teaching and teachers, and responses to the classroom and clinical practice environments. These demographic factors may have different effects in diverse situations.

Conclusion

On the basis of the findings of our study it is concluded that there is a high level of culture intelligence and academic vitality with moderate level of self-directed learning among nursing students. Also, the self-directed learning was positively correlated with culture intelligence and academic vitality. Actually, self-directed learning is new in the field and will require time and effort to become established in nursing education. However, to enhance the academic vitality and performance of nursing students, self-directed efforts will be needed to develop curricula and teaching methods to establish self-directed learning in nursing education. Also, learners should be familiar with the method, and the educational environment must allow proper evaluation of the results of self-directed learning.

Recommendation

The findings of the present study directed to recommend the following:

- Establishment of curriculum and teaching methods for nursing students' self-directed learning so that self-directed learning can continue beyond graduation.

- Workshops should be held to help students improve their self-directed learning skills.

- New teachers should receive training in self-directed learning skills as well as varied teaching style

- Create a student-centered learning environment with online resources and adaptable curriculum to encourage students to learn on their own.

- Teachers should engage students in challenging assignments by considering incentives in order to increase their academic vitality.

- Establish good teacher-students relationship in order to enhance student's adaptation and develop their culture intelligence and academic vitality.

Future study in Egypt on the growth of nursing students' culture intelligence, academic vitality skills, and SDL abilities during their academic years and throughout their professions. More research is needed to replicate this result with a bigger sample size.

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