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Knowledge and practice of the nurses regarding usage of Glasgow coma scale for assessment of patient's level of consciousness

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Abstract: **Alteration in brain and neuronal functions may result in altered level of consciousness (LOC), Glasgow coma scale (GCS') accuracy is very important especially in critical sitting and in special areas. Therefore, systemic and careful application of the scale is fundamental for assessment and establishment measures of the patient care to guarantee reliability, which is critical to follow up the progress of such patient. In this regard, evaluation of nurses' knowledge and skill is indispensable for improving GCS's accuracy, and in consequence, enhancement of the nursing care quality and patient outcome.**

Method: A descriptive correlational cross-sectional design was used in this study. The current study conducted at Prince Sultan Military Medical City, in Riyadh Tools of Study Tool 1: Socio-demographic characteristics of the study participants, Tool 2: Nurses Knowledge and Assessment of GCS questionnaire. This questionnaire developed by the researcher after a thorough reviewed of current related literature and studies Tool 3 is the practice of GCS observation sheet utilized by Prince Sultan Military Medical City, in Riyadh, which developed by Teasdale and Jennett in 1974.

Result: Pearson correlation was used in this study and results showed that there is a moderate statistically significant correlation between nurses' knowledge and the practice of GCS assessment for patients (r = .33, p = .03). This indicates that with good level of knowledge, the practice of nurses is more likely to be good. In another meaning, the higher the nurses' level of the knowledge, the better their practice regarding GCS assessment is. regarding the overall level of knowledge the result showed that 71% of the total participant were having good level of knowledge and 29% were fair level of knowledge, and a total score for practice was calculated and result showed that 89.3% of the participant reported good practice 8% reported fair practice and 2% reported poor practice regarding GCS .**

Conclusion: The current study aimed at examining nurses' level of knowledge and practice regarding GCS assessment for unconscious patients. The study reported a good level of knowledge among 3 quarters of nurses and fair level of knowledge among one quarter, inadtion Level of practice in this study was good among majority of nurses and results showed significant association between knowledge and practice. For this reason, providing continuous in-service education, incorporating GCS assessment in nursing curriculum, and further research assessing self-efficacy and self-confidence were recommended by the current study.

Keywords: **Knowledge, practice, nurses, Glasgow coma scale, patient's, level of consciousness.**

1. INTRODUCTION

The brain is the central unit that controls all the functions of the body. The neuron is the basic working unit of the brain that allows it to collect, process, and respond appropriately to the sensory input through unique intercellular networks. Traumatic brain injury (TBI) is damage to the brain caused by an external physical force such as a motor vehicle accident, assault, or a fall. The causes of TBI are diverse including open head injury, closed head injury, deceleration injuries,

chemical/toxic injuries, hypoxia, tumors, infections and stroke. According to the World Health Organization, TBI is a major cause of death and disability worldwide and deserves the attention of the world's health community [1].

The neurological consequences of an acquired brain injury (ABI), of traumatic or nontraumatic origin, are caused by an alteration of neuronal activity that compromises physical integrity or function of one or more areas of the brain[2]Alteration in brain and neuronal functions may result in altered level of consciousness (LOC), which is a measurement of a person's reusability and responsiveness to stimuli from the environment. From a medical point of view, LOC is a valuable measure of a patient's medical and neurological status as it can help to detect intra-cranial injuries without visible damage to the head. Symptoms of a TBI may not appear until days or weeks following the injury. Therefore, rapid and accurate neurological assessment is very important and crucial, as it help in early detection of neurological abnormalities, minimizes the neurological complications, eliminate the incorrect diagnostic procedures and reduce morbidity and mortality.

Altered LOC on the other hand, describe when a person either has decreased cognitive function or cannot be easily aroused [3]. Altered LOC can be divided into different stages with progressive severity including confusion, delirium, lethargy, obtundation, stupor, dementia, hypersomnia, vegetative state, akinetic mutism, locked-in syndrome, coma, and brain death. Therefore, it is helpful to have a standard scale by which one can measure levels of consciousness. This proves advantageous for communication among health care personnel; guidelines for diagnostic and therapeutic intervention; and in some situations, a rough estimate of prognosis.

Nurses providing care for severe cases may require an easy tool that is able to quickly identify neurological disorders and changes in neurologic parameters. A cognitive scale should be easy to remember and administer since it will be used by medical and nursing staff in many different places. For such a scale to be useful it must be simple to learn, understand, and implement, as well as it must be reproducible among observers. Many tools have been developed in attempts to determine LOC and to predict outcome after traumatic and non-traumatic brain injuries. The Glasgow Coma Scale (GCS) is by far the most widely used and has been the gold standard for assessing the level of consciousness in patients with brain injury [4].The GSC was first introduced by Teasdale and Jennett in 1974 as a simple tool for consistent clinical communication between hospitals and specialist units to assess states of impairment within the consciousness continuum[5].The scale was globally adopted by neurological units after being endorsed by an editorial in the Journal of Neurosurgery[6]

The use of scale was further promoted in 1980 in the first edition of the Advanced Trauma and Life Support (ATLS), in 1988 by the World Federation of Neurosurgical Societies (WFNS) for grading patients with a subarachnoid hemorrhage[7]and again by ATLS in 2018 (American College of Surgeons, 2018). The scale has been extended to be used in other disease and condition that can alter consciousness and progressively occupied a central role in clinical guidelines and received much input from junior doctors and nurses due to its simplicity and ease of communication [7]

The GCS has been criticized during the last decade despite its reliability and simplicity. Many studies reported variability and lack of agreement between the GCS measured by nurses and clinicians and in different clinical setting, leading to inaccurate and unreliable score measurements, which negatively affected the patients' prognosis and follow up. Several studies showed that educational and work experience are correlated to knowledge about the scale, which may reduce scale's accuracy and limit its clinical usefulness [8,9,10]in addition, correct assessment of the GCS shows variability among providers and its assessment has been shown to be difficult with variable implications on treatment, especially in out-of-hospital setting.[11,12]

The GCS is utilized in many clinical settings by broad range of specialists with different background knowledge and practical experience. Importantly, this widespread use has not been accompanied by sufficient training and satisfactory level of knowledge needed to consistently and reproducibly use this tool. So, it is crucial to continuously evaluate both nurses' knowledge and application of GCS to enhance the quality of provided patient's care.

GCS's accuracy is very important especially in critical sitting and in special areas such as emergency department, intensive care unit and neurology department. Therefore, systemic and careful application of the scale is fundamental for assessment and establishment measures of the patient care to guarantee reliability, which is critical to follow up the

progress of such patient[13].In this regard, evaluation of nurses' knowledge and skill is indispensable for improving GCS's accuracy, and in consequence, enhancement of the nursing care quality and patient outcome.

The aim of the present study was to assess the level of knowledge and practice of nurses regarding the usage of GCS in assessing the patients' level of consciousness. A descriptive correlational cross-sectional design was used in this study. Descriptive design was chosen due to many reasons; it is considered a pre-cursor to future research because it is helpful in identifying the variables under study. Data collection in descriptive research allows for gathering in-depth information that allows for a multidimensional approach to data collection and analysis. The survey used for data collection in descriptive is suitable for assessing knowledge, beliefs, attitudes, behaviours and habits on large scale of people. In addition, descriptive research saves time, effort and money when randomization is not the choice.[14] In addition, correlational design is used to figure out what kind of relationships naturally occurring among variables and in what way. In this study, the researcher examines the association between nurse's knowledge and practice of GCS, as well the effect of some demographic variables.

2. MATERIAL AND METHODS

Setting

The current study conducted at Prince Sultan Military Medical City, in Riyadh, previously known as the Riyadh Military Hospital, it is one of the largest hospitals which provide tertiary care. (statement about the neurological work up in our hospital)

Study Population and Sampling

A convenience sample of all available nurses who are working in the ICU, emergency department and neurology words (about 300 nurses according to the hospital census).

Inclusion criteria

- Nurse who have no less than 3-months of experiences.

- Working in any of the following units: (ICU, ER, and Neurology).

- Welling to participate in the study

-school degree (college, diploma, Bachler, master, PHD)

Study tools

Three tools were used for data collection for the present study as follow:

Tool 1: Socio-demographic characteristics of the study participants that include data such as age, gender, marital status, educational level, working unit, years of experience, previous training on GCS, type of GCS training received, and frequency of application of GCS per day or week.

Tool 2: Knowledge of GCS questionnaire. This questionnaire developed by the researcher after a thorough review of related literature and studies that share similar objectives with the current study, the developed questionnaire consisted of 19 questions that measure the level of knowledge regarding GCS assessment. Responses included multiple choices and true and false. Responses for the multiple choices were coded as (2) correct answer, (1) wrong answer and (0) do not know. The total scores range from 0 to 38, the higher the score the better the level of knowledge regarding GCS.

Tool 3: Tool 3 is the practice of GCS observation sheet utilized by Prince Sultan Military Medical City, in Riyadh

Procedure of the data collection

The approval to conduct the study was obtained from King Saud University and Prince Sultan military medical city for data collection and analysis.

- The researcher met the eligible participants in each unit separately at their convenience. For each eligible nurse in each unit, the purpose of the study was explained, and they were told that their participation is voluntary.

- Those who were eligible and agreed to participate were asked to sign a consent form.

- For each department, the researcher scheduled a time to interview them at their convenience and without interference with their work schedule.

- At the time of the meeting, the researcher distributed the survey for nurses and she was available to answer questions and clarify any concerns regarding to the survey.

- For observation of practice, the researcher did not notify the nurses that they will observed to avoid bias. To validate the observed performance, the researcher checked the observed and reported score by the nurses from the patients' records and compared it by the observed and reported GCS done by the charge nurse and by the physicians.

- The survey took 15 to 20 minutes to complete and there were no reported major concerns from the nurses regarding the survey.

Statistical analysis:

Descriptive statistical using means, standard deviations, number and percentages were used to describe the demographic variables and the study variables and to answer research questions 2and 3.

Pearson Product Moment Correlation was used to answer research questions 4, 5 and 6 and to capture the magnitude of the relationships between the study variables.

Independent sample t-test was used to test the differences in the mean scores of knowledge and practice for the dichotomous variable of gender. A p-value of < 0.05 was chosen to denote statistical significance. Data is analysed using SPSS software

3. RESULT

Three hundred nurses were surveyed to collect data on their level of knowledge and 224 nurses were observed for the practice. To achieve the aim of the study, Results showed that a majority (84%) of the nurses were in the age group 22 to 35 years old, 12.7% were in the age group 36 to 45 years old and 3.3% were older than 45 years old. Regarding sex, of the study participant, also 84.3% were female and 15.7% were males.

In relation to the level of education 87.3% have bachelor's in nursing, 9.7% have either high school or diploma in nursing and 3% had post graduate studies mainly Master of Nursing. Regarding the working units, 48.3% were working in ICUs, 19% were working in A/E, 18.7% were working in neurological and neurosurgery wards and 14% were working in medical surgical wards. While Years of experiences were reported as 46.3% have experiences of 1 to 5 years, 44% have more than 5 years of experience and 9.7% have experience from 6 months to one year. The total results of nurses' knowledge regarding GCS showed that. 71% of the total participant were having good level of knowledge and 29% were fair level of knowledge. The total results of nurses practice regarding GCS was calculated and showed that and results showed that 89.3% of the participants reported good practice, 8% reported fair practice and 2.7% reported poor practice regarding GCS.

Results of correlation among demographic variables showed that there was a moderate statistically significant correlation between age and years of experience ($r = .25^{**}$, $p = .000$) indicating that the older the age, the more the years of experience the nurses have. Age also reported a strong statistically significant correlation with marital status ($r = .35^{**}$, $p = .000$) meaning that the older the nurses 'age, the more likely to be married.

Regarding the relationship between demographic characteristics of the sample and their level of knowledge, results of correlation showed that there were a moderate statistical significant correlation between knowledge and the working unit ($r = .26^{**}$, $p = .000$) indicating that nurses who were working in the ICUs had higher level of knowledge than those who were working in the other regular wards (A/E, neurological, neurosurgery and medical surgical).

Knowledge also reported moderate statistically significant and negative correlation with years of experience ($r = -.25^{**}$, $p = .000$). This indicated that the more the year of experiences the lower the level of knowledge the nurses have.34

In addition, Knowledge reported moderate statistically significant correlation with education (r = .29**, p = .005) meaning that the higher the level of education, the more the knowledge among nurses regarding GCS assessment.

To test if knowledge differ by gender, independent sample t-test was done. Results showed that the test was statistically significant (t = 2.17, p = .002, df = 298). The groups mean indicate that female nurses (Mean = 2.26, SD = .44) reported higher level of knowledge than male nurses (Mean = 2.42, SD = .49).

Pearson correlation was conducted between demographic variables and total score of practice of GCS assessment. Results showed that there were moderate statistical significance relationship between practice and years of experience (r = .28**, p = ,000) specifying that the more the years of experience, the better the level of practice among nurses regarding GCS assessment for unconscious patients.

Also, there was a strong statistical significant relationship between practice and working unit (r = .31**, p =, 001) which postulate that nurses who were working in ICUs were more likely to have a good level of practice of GCS assessment than those who were working in the other regular units.

In addition, practice reported a strong statistically significant correlation with education (r =.32**, p =, 002) indicating that the higher the level of education, the better the level of practice among nurses participated in this study.

To test if practice of GCS assessment differs by gender, independent sample t-test was conducted. Results showed that the test was statistically not significant (t = .416, p = .427, df = 222). The groups mean indicate that male nurses (Mean = 2.89, SD = .39) reported no difference in level of practice than female nurses (Mean = 2.86, SD = .41).

Pearson correlation was used in this study and results showed that there is a moderate statistically significant correlation between nurses' knowledge and the practice of GCS assessment for patients (r = .33**, p = .03). This indicates that with good level of knowledge, the practice of nurses is more likely to be good. In another meaning, the higher the nurses' level of the knowledge, the better their practice regarding GCS assessment is.

4. DISCUSSION

Knowledge regarding assessment of level of consciousness using the GCS is important to detect any deterioration in the patient's level of consciousness and intervene to avoid any complications. Accurate practice on the other hand is critical for quality monitoring and assessment.

Glasgow coma scale (GCS) is a tool that used worldwide to identify neurologic dysfunction and level of consciousness for those patients who have brain trauma injuries and other neurologic conditions that can alter consciousness. Total score ranges from 3 to 15 and it is obtained by observation of spontaneous activities and use of verbal and/or painful stimulus. Nurses needs to be skilled to accurately utilize GCS tool. The current study observed the performance of 224 nurses while doing assessment of unconscious patients using the GCS. Results showed that majority of participants had a good practice of GCS to assess unconscious patients. There was also a strong significant association between practice, knowledge, working unit and years of experience among nurses participated in the current study. The available data on nurses' level of practice regarding GCS were limited. All the published researches examined knowledge, self-efficacy and confidence in using GCS. The current study was concerned mainly on examining knowledge and practice.

Nursing care of critically ill patients such as those with neurological problems who requires contentious monitoring, assessment and evaluation specify that nurses should be skilled and competence in performing neurological assessment using GCS. Practice go hand in hand with knowledge and the current study results showed association between both. Juarez and Lyons (1995) done a study to examine performance of GCS assessment among nurses and physicians who have varying degree of education and years of experience in the ICUs. They used a convenience sample and participants were asked to assess 7 patients using GCS and their performance was recorded and then evaluated against a standard by experts in the field. Their results showed that nurses reported high level of accuracy than physicians and the inter-ratter reliability between nurses and physicians was statistically significant. They concluded that the GCS is a reliable tool that could be used by both health care providers. Their study did not report demographic association with performance.

In the same context, Holdgate et al. [9] conducted a study to assess the inter-rater reliability in performing assessment using GCS in the emergency department among senior doctors and nurses in a tertiary hospital. Patients with altered level of

consciousness were assessed separately by nurses and doctors using GCS within 15 minutes of each other and both nurses and doctors were blinded to avoid bias and confounding factors. Results showed that both nurses and doctors performed very well with better performance reported among more experienced nurses and doctors than those with low experience.

The current study findings reported that nurse having a good level of knowledge and good level of practice. Knowledge and practice reported statistical significance association with education, working unit and years of experience. Many reasons could have contributed to the good level of knowledge and practice among nurses in the current study.

First, majority of nurses in our study were young (in the age of 22 to 34). Being young might have increased the efficacy toward acquiring knowledge. This was in accordance with Phipps, et al. (2003) have showed that the level of knowledge was highest among nurses aged 30-40 years old and lowest among nurses who were older.

Second, more than half of the nurses in this study sample were singles. Being single with no or limited responsibility might provide enough time and more chances to study and improve professional status. Such professional development amenable to improve awareness, performance and career development.

Third majority of nurses participated in this study had a BSN degree ,(Bachler) (explain the degree)Previous studies reported that high educational status contribute to good knowledge and positive effect on the quality and quantity of acquired knowledge and skills[15]., Educational level is considered as main factor contributing to knowledge and knowledge in turn needed for quality practice of assessing the GCS as reported also by Heron et al.[16]

Forth, near to half of the nurses in this study reported having 1 to 5 years of experience and have more than 5 years of experience. Experience has showed positive effect on knowledge and practice in many situations. This was supported by Ihsan et al. [17] who reported that nurses with longer years of experience had scored higher on the knowledge scale than nurses with lower years of experience regarding the use of GCS.

Fifth, about half of the nurses in the current study were working in ICUs followed by A/E and neurological wards. The special environment in the ICUs requires nurses to be equipped with good and up to date knowledge which in turn will allow them to practice well and take correct decisions while providing care for critically ill patients. Matter et al. [18] did a study to investigate nurses' knowledge in using the GCS. They used a correlational observational method in an acute care hospital in Singapore. Their results showed that nurses in the neonatal intensive care unit scored the highest mean scores, while nurses from the general medicine wards scored the lowest mean scores. Their study concluded that educational interventions and guidelines in performing GCS assessment are important to maintain and improve knowledge in performing assessment using GCS.

It is important for nurses working in high specialty areas to have a good and up to date knowledge to enable them to provide good practice. For this reason, providing continuous in-service education, incorporating GCS assessment in nursing curriculum, and further research assessing self-efficacy and self-confidence were recommended by the current study.

Limitations

The current study assessed the level of knowledge and practice regarding GCS among nurses. Although the relationship was statistically significance, some other factors that have not been studied such as self-confidence and self-efficacy would have contributed to the results of our study.

5. CONCLUSION

The current study aimed at examining nurses' level of knowledge and practice regarding GCS assessment for unconscious patients', education, working unit and years of experience reported significance association with knowledge and practice of GCS. Many factors in the current study have been contributed to having a good level of knowledge and practice among nurses participated in this study. These factors were being young, have BNS degree, have long time of experience and working in ICUs.

Response rate is a common concern about adequacy of the sample [19] suggest in this study that a response rate greater than 60% is probably sufficient for most purposive – in this study the response rate of nurses regarding assessment of their knowledge about GCS was 100%, about observation was 74.6%, even

Though the sampling method was men- probabilistic, however, sample was new presentative for the proportion of different units.

Conflict of interest and Funding:

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APPENDICES - A

List of Table:

Table 1: Frequency distribution of the Demographic characteristics of the study sample

Items	Number (%) N= 300	%
Age		
22-34 years old	252 38	84
35- 45 years old	10	12.7
More than 45 years old		3.3
Total	300	
Gender		
Male	47	15.7
Female	253	84.3
Total	300	
Marital Status		
Single	179	59.7
Married	119	39.7
Divorced	2	0.6
Total	300	
Education		
High school/Diploma	29	9.7
BSN	262	87.3
Post graduate	9	3
Total	300	
Years of experience		
6 months to 11 months	29	9.7
1 - 5 years	139	46.3
More than 5 years	132	44
Total	300	
Working unit		
ICUs	30	48.3
ER	72	19
Neurological wards	80	18.7
Medical surgical wards	118	14
Total	**300**	**100%**

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Table 2: Number and percentage of nurses' knowledge regarding GCS.

No.	Items	Number (%) N = 300		
		Correct	Wrong	Don't know
1	GCS was initially devised to	285(95)	13(4.3)	2(0.7)
2	vital signs are components of GCS	204(68)	96(32)	0
3	on asking a patient "do you know where you are no, the patient states he is at his daughter's condominium, he	263(87.6)	35(11.7)	2(0.7)
4	On assessing the patients' motor response, he is unable to comply, you inflect a pain stimulus and he pulls his arm away, he....	226(75.3)	69(23)	5(1.7)
5	The 3 indicators of GCS are?	285(95)	13(4.3)	2(0.7)
6	the best score for the GCS is	298(99.3)	2(0.7)	0
7	the worse score for GCS is	278(92.7)	20(6.7)	2(0.7)
8	GCS score that indicates critical situation and that examiner should be alert to is	184(61.3)	113(37.3)	4(1.3)
9	GCS interval that indicates moderate severity is between	226(75.3)	66(22)	8(2.7)
10	During the use of GCS, the most adequate response for score is?	221(73.7)	78(26)	1(0.3)
11	To assess eye opening, the examiner should begin with?	123(41)	170(56.7)	7(2.3)
12	To assess best verbal response, the examiner should begin with?	289(96.3)	11(3.7)	0
13	To assess best motor response, examiner should begin with?	256(85.3)	42(14)	2(0.7)
14	The GCS cannot assess intubated patients' level of consciousness?	281(93.7)	18(6)	1(0.3)
15	When testing the best motor response, you?	251(83.7)	46(15.3)	3(1)
16	To test motor response in a tetraplegia patient, you?	213(71)	72(24)	15(5)
17	Which part of the brain is being assessed when you are assessing eye opening	227(75.7)	72(24)	1(0.3)
18	Which part of the brain is being assessed when you are assessing verbal response?	141(47)	152(50.7)	7(2.3)
19	Which part of the brain is being assessed when you are assessing motor response?	210(70)	87(29)	3(1)
Overall level of knowledge		**Good**	**Fair**	**Poor**
		71%	21%	8 %

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Table 3: Frequency distribution of nurses' practice of GCS assessment

T.Coma scale	Response Assessment scale		Done correct # (%)	Done incorrect # (%)	Not done # (%)
a. Eye opening	Spontaneously To speech To pain None	**4** **3** **2** **1**	**186(83)**	32(14.3)	6(2.7)
b. Best verbal response	Oriented Confused Inappropriate wards Incomprehensive sound None	**5** **4** **3** **2** **1**	**190(84.8)**	28(12.5)	6(2.7)
c. Best motor response	Obey commands 6 Localize to pain Withdraw to pain Flexion to pain Extension to pain None	**6** **5** **4** **3** **2** **1**	**184(82)**	34(15.2)	6(2.7)
II. Pupils (Rt & Lt)	Size Reaction	**2**	**180(80.4)**	27(12)	17(7.6)
III. Limb movement a. Upper Limbs movement	Normal power Mild weakness Sever weakness Spastic flexion Extension No response	**2**	**186(83)**	30(13.4)	8(3.6)
b. Lower limbs movement	Normal power Mild weakness Sever weakness Spastic flexion Extension No response	**2**	**171(76.3)**	45(20)	8(3.6)
			Good	**Fair**	**Poor**
Total practice			89.3%	8%	2.7%

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Table 4: Correlations between Nurses' knowledge and practice regarding GCS assessment

Knowledge N = 300	Practice N 224
Pearson Correlation	.33**
Sig. (2-tailed)	.03

Table 5: Correlation between level of knowledge and demographic characteristics of the study sample

		Age	Marital status	Work Unit	Years of Experience	Level of Education
Knowledge	Pearson Correlation	.077	.086	** **.261**	** **-.251**	**29****
	Sig. (2-tailed)	.181	.138	**.000**	**.000**	**.005**
	N	300	300	300	300	300
Age	Pearson Correlation		** **.353**	-.045	* * **.252**	.107
	Sig. (2-tailed)		**.000**	.439	**.000**	.064
	N		**300**	300	300	300
Marital	Pearson Correlation			.024	* * **.161**	-.084
	Sig. (2-tailed)			.678	**.005**	.149
	N			300	300	300
Unit	Pearson Correlation				-.020	-.091
	Sig. (2-tailed)				.731	.117
	N				300	300
Experience	Pearson Correlation					-.001
	Sig. (2-tailed)					.980
	N					300

** Correlation is significant at the 0.05 level (2-tailed).

Table 6: Result of independent Sample t-test for mean differences of knowledge and gender

Levene's Test		T-test for equality of means					95% Confidence Interval of the differences	
F	Sig.	t	df	Sig. (2 tailed)	Mean differences	Std. error diff.	Lower	Upper
9.96	.002	2.178 2.008	298	.03 .04	.156 .156	.071 .078	.0150 .0006	.298 .312

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Table 7: Correlation between demographic characteristics of the study sample and practice of GCS.

		Age	marital	unit	experience	education	practice
Age	Pearson Correlation	1	**.353****	.045	**.252****	.107	-.034
	Sig. (2-tailed)		**.000**	.439	**.000**	.064	.614
	N	300	300	300	300	300	224
Marital Status	Pearson Correlation			.024	**.161****	-.084	-.057
	Sig. (2-tailed)			.678	**.005**	.149	.396
	N			300	300	300	224
Unit	Pearson Correlation				-.020	-.091	**.31****
	Sig. (2-tailed)				.731	.117	**.001**
	N				300	300	224
Experience	Pearson Correlation					-.001	**.28****
	Sig. (2-tailed)					.980	**.000**
	N					300	224
education	Pearson Correlation						**.33****
	Sig. (2-tailed)						**.002**
	N						224

**. Correlation is significant at the 0.05 leve l (2-tail ed).

Table 8: Result of independent Sample t-test for mean differences of level of practice and gender

Levene's Test		T-test for equality of means					95% Confidence Interval of the differences	
F	**Sig.**	**t**	**df**	**Sig. (2 tailed)**	**Mean differences**	**Std. error diff.**	**Lower**	**Upper**
.634	**.42**	..416	222	.67	.030	.074	-.116	.178
		.433		.66	.030	.071	-.113	.174