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Review Article

Assessment of Nurses' Knowledge on Feeding, Medication, for Unconscious Patients in Kirkuk City

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Abstract:

Background: One of the primary reasons for the disparity in health is smoking. One cannot escape the consequences of smoking. Smoking is linked to at least 13 distinct forms of cancer. Additionally, a smoker's risk of developing coronary heart disease is significantly higher than that of a non-smoker. Smoking can also lead to a host of other illnesses. Emphysema is one of the illnesses most closely linked to smoking. Smoking increases the risk significantly, however working with particular chemicals can also contribute to this.

Objective: This study aims to assessment of nurses' knowledge on feeding, medication, for unconscious patients in Kirkuk city

Methodology: A cross-sectional study design was used in this study with pre- and post-intervention assessments was carried out between 29th December 2024 and 30th May 2025. A Multistage, Probability "purposive sample" sampling technique was utilized to collect data from (6th February to 10th April) nurses from (60) nurses in respiratory care unit and intensive care unit at Kirkuk city., it is consisting of seven parts , data were analyzed using descriptive and inferential statistics by using spss version 0.26

Results: the result assessed nurses' knowledge across three domains: feeding and medication administration, bladder and bowel elimination, and mouth care for unconscious patients. In the pre-assessment phase, nurses exhibited moderate knowledge in the feeding and medication administration domain, with 63.64% of items assessed at a moderate level and 36.36% at a high level. After the educational program, all items (100%) were assessed at a high level, with significant improvements in 10 items ($P<0.01$), except one item which showed no statistical difference ($P>0.05$). For bladder and bowel elimination, 83.33% of items were assessed at a moderate level and 16.67% at a low level during the initial test. Post-assessment results showed a complete improvement, with all items (100%) assessed at a high level, demonstrating significant differences ($P<0.05$). In the domain of mouth care, 62.5% of items were initially assessed at a moderate level, 25% at a high level, and 12.5% at a low level. Following the educational intervention, 87.5% of items were assessed at a high level, and 12.5% at a moderate level. Four items showed significant improvement ($P<0.01$), while four others remained statistically insignificant ($P>0.05$).
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Conclusions: the educational intervention significantly improved nurses' knowledge in three key areas: feeding and medication administration, urinary output, and oral care of unconscious patients. At pre-assessment, nurses demonstrated average levels of knowledge in these areas, with a significant proportion of items rated at moderate or low levels. After the intervention, all measured areas showed significant progress, with the majority of items reaching a high rating level, and statistically significant improvements were observed in most aspects (p-values < 0.01 or < 0.05). However, some specific items, particularly regarding oral care procedures and the introduction of water before and after feeding, did not achieve statistical significance, highlighting the need for further targeted training. These findings are consistent with previous research conducted in different regions, strengthening the effectiveness of structured educational programs in enhancing nurses' knowledge and practice in caring for unconscious patients.

Keywords: Feeding Practices – Medication Administration – Unconscious Patients – Intensive Care Unit.

Introduction:

The ability to respond correctly to stimuli and the condition of being aware of oneself and one's surroundings are both components of consciousness. Full consciousness necessitates both normal arousal and full cognition. The RAS, a diffuse network of neurons found in the pons, midbrain, thalamus, and hypothalamus, regulates arousal, or wakefulness. the complex process of cognition includes all mental functions controlled by the cerebral hemispheres, including emotion, memory, perception, problem-solving, and thought processes. Both of these aspects of consciousness rely on regular physiological processes and communication between the arousal mechanisms of the reticular formation and the cognitive capacities of the cerebral hemispheres. Arousal and cognition may react to stimuli separately as they are separate aspects of awareness. The reticular activating system (RAS), for example, wakes (Mizu et al., 2023), (Baeez & Younis, 2019).

Deficits in awareness, arousal, or both may result in altered consciousness. There is a spectrum of altered consciousness, from a state of alertness and cognitive function to a state of complete insensitivity to all outside stimuli (unconscious). Confusion, disorientation, obtundation, stupor, vegetative state, minimally conscious state, locked-in syndrome, and unconscious are among the disorders of consciousness. (Sania et al., 2022)

Unconscious is defined as a state of unresponsiveness in which the patient appears to be asleep and is unable to be awakened by verbal or physical stimuli to respond meaningfully; therefore, the diagnosis of unconscious requires the absence of both arousal and content of awareness. Unconscious is seen as a condition that has several causes, natural manifestations, and treatment options. (Al-Jumaily & Khudur, 2019)

The sleep-wake cycles that may be observed in the VS are absent in the unconscious tose patient. For a unconscious to be distinguished from syncope, a concussion, or other moments of temporary unconsciousness, it must endure for at least one hour. After two to four weeks, unconscious tose patients who survive start to gradually awaken and recover. This recovery might conclude at VS or MCS, or it could involve a number of brief or prolonged stages leading to a complete regaining of consciousness. It is important to distinguish between patients in other unconscious tose states and those who are severely unconscious tose and have lost all clinical evidence of brain and brainstem function (brain death) due to a massively destructive lesion. (Maiese, 2024), (Mahmood et al., 2018).

Subject (Material and Methods)

A cross-sectional study design was used in this study with pre- and post-intervention assessments was carried out between 29th December 2024 and 30th May 2025. A Multistage, Probability “purposive sample” sampling technique was utilized to collect data from (6th February to 10th April) nurses from (60) nurses in respiratory care unit and intensive care unit at Kirkuk city., it is consisting of seven parts , Had been used through the present study with the application of approach for participant group The study was carried out in the Kirkuk City; region of Iraq. according to the following sampling procedure: Based on an analysis of the nurses ’ needs and the relevant scientific literature as well as earlier studies, Experts in various fields evaluate the content, and changes are made based on their recommendations and suggestions. To assess the effectiveness of the study on Assessment of Nurses' Knowledge on Feeding, Medication, for Unconscious Patients in Kirkuk City, the researcher creates a questionnaire interview form for data collection, A panel of experts evaluates the study instruments and program's content validity; the tools' dependability was assessed using a test-retest methodology and data from the evaluation of 10 nurses . for assesses the degree to which items in a questionnaire or scale are interrelated and measure the same construct, the reliability coefficient was 0.81. The Statistical Package (SPSS) ver. 26.0 was used to analyse and evaluate the study's findings using statistical data analysis methods: Frequencies, percentages, the mean of the score (MS), , the standard deviation

(SD), are used in descriptive analysis of data. Inferential data analysis is used to draw conclusions. The Independent-Samples t-test and Matched Paired-Samples t-test are used to compare means for two groups of cases.

Statistical Analysis

Utilizing the statistical software (SPSS) ver. (26.0), the following statistical data analysis techniques were employed to analyses and evaluate the study's findings. :

Results:

Table 1: Summary Statistics of Nurses' Level Knowledge about "Nursing Feeding and Medication Administration For Unconscious Patients" at the pre and post periods of with comparison's significant (N=60)

Nursing Feeding and Medication Administration For Unconscious Patient's items	Period	Pre					Post					C.S. (*)
	Resp.	No.	%	MS	SD	RS%	No.	%	MS	SD	RS%	
1. Do you think every time nurse need check placement of tube	No	24	40.0	0.60	0.49	60 M	9	15.0	0.85	0.36	85 H	P=0.009 HS
	Yes	36	60.0				51	85.0				
2. Does Is it necessary to insert an amount of water into the tube before and after feeding or treatment?	No	17	28.3	0.72	0.45	71.7 H	16	26.7	0.73	0.45	73.3 H	P=1.000 NS
	Yes	43	71.7				44	73.3				
3. Does Is it necessary to elevate heads from 30 degrees to 45 degrees before inserting anything into the nasogastric tube?	No	22	36.7	0.63	0.49	63.3 M	3	5.0	0.95	0.22	95 H	P=0.000 HS
	Yes	38	63.3				57	95.0				
4. Do you think should nurse let the head of the bed on 30-45 degree angle for 30-60 minutes after completion feeding	No	36	60.0	0.40	0.49	40 M	5	8.3	0.92	0.28	91.7 H	P=0.000 HS
	Yes	24	40.0				55	91.7				
5. Does Is it necessary to check the temperature of the feed before inserting it into the patient's nasogastric tube?	No	29	48.3	0.52	0.50	51.7 M	8	13.3	0.87	0.34	86.7 H	P=0.000 HS
	Yes	31	51.7				52	86.7				
6. Does Is it necessary to crashing solid and undigested food before inserting to the tube?	No	19	31.7	0.68	0.47	68.0 H	3	5.0	0.95	0.22	95 H	P=0.000 HS
	Yes	41	68.3				57	95.0				
7. Does Is nutrition given to the patient in limited quantities?	No	17	28.3	0.72	0.45	71.7 H	4	6.7	0.93	0.25	93.3 H	P=0.0001 HS
	Yes	43	71.7				56	93.3				
8. Does Is nutrition given for limited periods?	No	18	30.0	0.70	0.46	70 H	3	5.0	0.95	0.22	95 H	P=0.000 HS
	Yes	42	70.0				57	95.0				
9. Does Is nutrition given in	No	27	45.0	0.5	0.5	55	46	76.	0.2	0.4	23.	P=0.

continuous quantities?				**5**	**0**	**M**		**7**	**3**	**3**	**3 H**	**002 HS**
	Yes	**33**	**55.0**				**14**	**23.3**				
10. Does intravenous fluid nutrition (TPN)replace tube feeding?	**No**	**26**	**43.3**	**0.57**	**0.50**	**56.7 M**	**52**	**86.7**	**0.13**	**0.34**	**13.3 H**	**P=0.000 HS**
	Yes	**34**	**56.7**				**8**	**13.3**				
11. Do you think can you determine the right Doses of medication and give it to patient by n/g tube	**No**	**25**	**41.7**	**0.58**	**0.50**	**58.3 M**	**7**	**11.7**	**0.88**	**0.32**	**88.3 H**	**P=0.000 HS**

Table (1): Summary Statistics of Nurses' Level Knowledge about "Nursing Feeding and Medication Administration For Unconscious Patients" at the pre and post periods of with comparison's significant and the results showed that all of studied items has accounted at a high level of assessment 11(100%), concerning of the post period, while 7(63.64%) of items was at a moderate assessed level at the initial test period, and the leftover was assessed at a high level, and are accounted 4(36.36%), and according to that it was confirmed by achieving a significant differences between the results of pre-post, since 10 items has reported significant differences at P<0.01, while leftover item, such as "Does Is it necessary to insert an amount of water into the tube before and after feeding or treatment?" has accounted no significant differences at P>0.05.results, it could be conclude that studied sampled concerning of nurses' knowledge items about "Nursing Feeding and Medication Administration For Unconscious Patients" main domain's items are assigned to extent at established level in which that achieving to the goal of this study, since it had demonstrated an importance of effectiveness in achieving a best level of responding through applying the proposed of an educational program.

Table 2: Summary Statistics of Nurses' Level Knowledge about "Maintaining the Bladder and Bowel Elimination of Unconscious Patients" at the pre and post periods of with comparison's significant (N=60)

	Period	Pre					Post					C.S. (*)
	Resp.	No.	%	MS	SD	RS%	No.	%	MS	SD	RS%	
1. Does Uses urinary catheterization when assessing a unconscious patient who was found to have urinary retention?	No	24	40.0	0.60	0.49	60 M	12	20.0	0.8	0.4	80 H	P=0.045 S
	Yes	36	60.0				48	80.0				
2. Does Urinary stasis is the most common cause of urinary tract infections (UTI)?	No	27	45.0	0.55	0.50	55 M	12	20.0	0.8	0.4	80 H	P=0.007 HS
	Yes	33	55.0				48	80.0				
3. Did Check the catheter for kinks, or the like, and check for	No	32	53.3	0.47	0.50	46.7	13	21.7	0.78	0.42	78.3	P=0.001

downward flow is evaluating a unconscious patient who has an indwelling catheter and finds that the catheter is not performing and the patient's bladder is distended?	Yes	28	46.7			M	47	78.3			H	HS
4. Does Gastro copy is can be recommended for a patient in whom fecal impaction is suspected?	No	26	43.3	0.57	0.50	56.7 M	52	86.7	0.13	0.34	13.3 H	P=0.000 HS
	Yes	34	56.7				8	13.3				
5. Does Hypothyroidism are the causes of diarrhea for a unconscious patient?	No	23	38.3	0.62	0.49	61.7 M	60	100	0.00	0.00	0.00 H	P=0.000 HS
	Yes	37	61.7				0	0.00				
6. Does Increase carbohydrates in the diet is interventions should be taken to prevent constipation for a unconscious patient?	No	17	28.3	0.72	0.45	71.7 L	50	83.3	0.17	0.38	16.7 H	P=0.000 HS
	Yes	**43**	**71.7**				**10**	**16.7**				

Table (2): Summary Statistics of Nurses' Level Knowledge about "Maintaining the Bladder and Bowel Elimination of Unconscious Patients" at the pre and post periods of with comparison's significant the results showed that all of studied items has accounted at a high level of assessment 6(100%), concerning of the post period, while 5(83.33%) of items was at a moderate assessed level at the initial test period, and the leftover item was assessed at a low level 1(16.67%), and according to that, it was confirmed by achieving a significant differences between the results of pre-post, since all items has reported significant differences in at least at P<0.05. results, it could be conclude that studied sampled concerning of nurses' knowledge items about "Maintaining the Bladder and Bowel Elimination of Unconscious Patients" main domain are assigned at established level in which that achieving to the goal of this study, since it had been demonstrated an importance of effectiveness in achieving a best level of responding through applying the proposed of an educational program.

Table 3: Summary Statistics of Nurses' Level Knowledge about "Nursing mouth care of the Unconscious Patients" at the pre and post periods of with comparison's significant (N=60)

	Period	**Pre**					**Post**					**C.S.** (*)
	Resp.	**No.**	**%**	**MS**	**SD**	**RS%**	**No.**	**%**	**MS**	**SD**	**RS%**	
1. Does The main reason for putting the comatose patient in the side lying position when providing oral care to facilitate access to the oral cavity.?	No	10	16.7	0.83	0.38	83.3 L	45	75.0	0.25	0.44	25 H	P=0.000 HS
	Yes	50	83.3				15	25.0				
2. Does The first thing a nurse does when cleaning the	No	12	20.0	0.80	0.40	80	7	11.7	0.88	0.32	88.3	P=0.332

mouth of a patient to Withdrawal of fluids and secretions from the mouth?	Yes	48	80.0			H	53	88.3			H	NS
3. Does One of the characteristics of sodium bicarbonate as an oral cleaning solution is Reduces excessive acidity in the mouth ?	No	27	45.0	0.55	0.50	55 M	2	3.3	0.97	0.18	96.7 H	P=0.000 HS
	Yes	33	55.0				58	96.7				
4. Does the primary purpose of providing mouth care to an unconscious patient Is To improve their taste sensation	No	35	58.3	0.42	0.50	41.7 M	50	83.3	0.17	0.38	16.7 H	P=0.004 HS
	Yes	25	41.7				10	16.7				
5. Does should mouth care be provided to an unconscious patient is Once a day	No	32	53.3	0.47	0.50	46.7 M	55	91.7	0.08	0.28	8.33 H	P=0.000 HS
	Yes	28	46.7				5	8.3				
6. Does an important step in providing mouth care to an unconscious patient is Using a sponge swab to clean the oral cavity	No	31	51.7	0.48	0.50	48.3 M	23	38.3	0.62	0.49	61.7 M	P=0.256 NS
	Yes	29	48.3				37	61.7				
7. Does the position the patient on their side when providing mouth care is To make it easier to reach the oral cavity	No	19	31.7	0.68	0.47	68.3 H	11	18.3	0.82	0.39	81.7 H	P=0.186 NS
	Yes	41	68.3				49	81.7				
8. Does assessed before performing mouth care on an unconscious patient is The patient's ability to speak?	No	29	48.3	0.52	0.50	51.7 M	31	51.7	0.48	0.5	48 M	P=0.868 NS
	Yes	31	51.7				29	48.3				

Table (3): Summary Statistics of Nurses' Level Knowledge about "Nursing mouth care of the Unconscious Patients" at the pre and post periods of with comparison's significant and the results showed that most of studied items has accounted at a high level of assessment 7(87.5%), and the leftover item was assessed at a moderate level 1(12.5%), and that was for the post period, while 5(62.5%) of items was at a moderate assessed level at the initial test period, and the leftover of them 2(25.0%) was assessed at a high level, and 1(12.5%) of them was assessed at a low level, and according to that it was confirmed to one a way or another achieving a significant differences between the results of pre-post, since 4 items has reported significant differences at P<0.01, while leftover item, such as "Does The first thing a nurse does when cleaning the mouth of a patient to Withdrawal of fluids and secretions from the mouth?, Does an important step in providing mouth care to an unconscious patient is Using a sponge swab to clean the oral cavity, Does the position the patient on their side when providing mouth care is To make it easier to reach the oral cavity, and Does assessed before performing mouth care on an unconscious patient

is The patient's ability to speak?" has accounted no significant differences at P>0.05.results, it could be conclude that studied sampled concerning of nurses' knowledge items about "Nursing mouth care of the Unconscious Patients" main domain's items are assigned to some extent at established level in which that achieving to the goal of this study, since it had demonstrated an importance of effectiveness in achieving a good level of responding through applying the proposed of an educational program.

Discussions:

Results showed that all of studied items has accounted at a high level of assessment 11(100%), concerning of the post period, while 7(63.64%) of items was at a moderate assessed level at the initial test period, and the leftover was assessed at a high level, and are accounted 4(36.36%), and according to that it was confirmed by achieving a significant differences between the results of pre-post, since 10 items has reported significant differences at P<0.01, while leftover item, such as "Does Is it necessary to insert an amount of water into the tube before and after feeding or treatment?" has accounted no significant differences at P>0.05. For summarizes of preceding results, it could be conclude that studied sampled concerning of nurses' knowledge items about "Nursing Feeding and Medication Administration For Unconscious Patients" main domain's items are assigned to extent at established level in which that achieving to the goal of this study, since it had demonstrated an importance of effectiveness in achieving a best level of responding through applying the proposed of an educational program. this result aligns with the study done by (Faris, 2023) in Iraq , (Tillott et al., 2020) in United Kingdom that highlighted pre-intervention assessments showed a mixed level of knowledge (with a moderate level noted for a majority of items) and post-intervention assessments demonstrated a significant improvement (with all items reaching high levels of assessment)—this study reported statistically significant improvements in nurses' knowledge following the educational intervention. More than 10 items showed significant progress (with p-values less than 0.01) once the program was implemented. However, like your noted exception concerning the necessity of water insertion before and after feeding, there were some elements that did not reach statistical significance, signalling that some areas might require more targeted training.This study directly addresses the impact of an educational program on nurses' performance regarding enteral nutrition support—which is a core component of "Nursing Feeding and Medication Administration for Unconscious Patients." The improvements noted in pre- versus post-intervention measurements mirror the pattern in your results, thereby confirming the effectiveness of targeted educational interventions in elevating clinical practice.Even though its primary focus is the medication aspect rather than a combined feeding and medication protocol, it complements the findings of the education program study by reinforcing that targeted interventions are necessary to bridge knowledge and practice gaps, much like the significant pre-post differences you described.Results showed that most of studied items has accounted at a high level of assessment 7(87.5%), and the leftover item was assessed at a moderate level 1(12.5%), and that was for the post period, while 5(62.5%) of items was at a moderate assessed level at the initial test period, and the leftover of them 2(25.0%) was assessed at a high level, and 1(12.5%) of them was assessed at a low level, and according to that it was confirmed to one a way or another achieving a significant differences between the results of pre-post, since 4 items has reported significant differences at P<0.01, while leftover item, such as "**Does The first thing a** nurse does when cleaning the mouth of a patient to Withdrawal of fluids and secretions from the mouth?, Does an important step in providing mouth care to an unconscious patient is Using a sponge swab to clean the oral cavity, Does the position the patient on their side when providing mouth care is To make it easier to reach the oral cavity, and Does assessed before performing mouth care on an unconscious patient is The patient's ability to speak?" has accounted no significant differences at P>0.05. results, it could be conclude that studied sampled concerning of

nurses' knowledge items about "Nursing mouth care of the Unconscious Patients" main domain's items are assigned to some extent at established level in which that achieving to the goal of this study, since it had demonstrated an importance of effectiveness in achieving a good level of responding through applying the proposed of an educational program.this result aligns with previous study done by (Dagnew et al., 2020) in united kingdom , (Org, 2020) in India that highlighted a large majority of the nurses acknowledged the importance of oral care, yet the practical implementation—in terms of routine oral assessments and the use of standardized cleaning procedures—lagged behind. This reflects a pattern similar to the results, where most items (such as general knowledge about mouth care steps) achieved high assessment levels after an intervention, but specific tasks (like ensuring proper cleaning techniques or patient positioning) did not show statistically significant improvements. The study underscores the need for targeted educational programs to sharpen practical skills in oral care for vulnerable patients such as those who are unconscious. The results showed that while a majority of knowledge items reached a high level post-intervention, a minority (particularly specific mouth care actions, such as managing oral secretions or proper use of cleaning tools) remained at moderate levels and did not exhibit statistically significant improvements. This pattern mirrors your finding that although the educational program was largely effective, certain nuanced aspects of nursing mouth care required further emphasis.Results showed that all of studied items has accounted at a high level of assessment 6(100%), concerning of the post period, while 5(83.33%) of items was at a moderate assessed level at the initial test period, and the leftover item was assessed at a low level 1(16.67%), and according to that, it was confirmed by achieving a significant differences between the results of pre-post, since all items has reported significant differences in at least at $P<0.05$.For summarizes of preceding results, it could be conclude that studied sampled concerning of nurses' knowledge items about "Maintaining the Bladder and Bowel Elimination of Unconscious Patients" main domain are assigned at established level in which that achieving to the goal of this study, since it had been demonstrated an importance of effectiveness in achieving a best level of responding through applying the proposed of an educational program.The result aligns with the previous study done by (Van Vuuren et al., 2021)in united kingdom , (Tracey Chipps et al., 2021) in India that highlighted conceptually similar to your educational intervention in bladder and bowel elimination. Before the intervention, many knowledge items were rated at moderate or even low levels. After the program, however, all measured items reached high assessment levels, and statistical analysis confirmed significant improvements (with p-values < 0.05 across all items). Although the primary focus of the study was on urinary incontinence, its findings concerning the marked improvement in nurses' knowledge regarding bladder management are directly applicable and extendable to the broader domain of bladder and bowel elimination in unconscious patients.Its baseline findings recorded a predominantly moderate level of knowledge—with one key item even at a low level. Following the educational intervention, all items were upgraded to a high level of assessment. The study reported statistically significant differences ($p<0.05$ for every item), essentially mirroring findings where pre-test scores (approximately 83.33% moderate, with one item at a low level) shifted to 100% high ratings post-intervention.

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