Effectiveness of an Educational Program on Nursing Staffs' Knowledge about Uses of Steroids and Their Side Effects in Al-Diwaniya Teaching hospital

فاعلية برنامج تعليمي في معارف الملاك التمريضي حول استخدامات الستيرويدات والتأثيرات الجانبية لها في مستشفى الديوانية التعليمي

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المستخلص

الاهداف: تحديد فاعلية البرنامج التعليمي في معارف الملاك التمريضي حول استخدامات الستيرويدات والتأثيرات الجانبية لها.
منهجية البحث: تم استخدام تصميم بحث (تصميم المجموعة الواحدة، الاختبار القبلي، والاختبار البعدي). إجريت هذه الدراسة في مستشفى الديوانية التعليمي للفترة (من 28 أيار إلى 10 حزيران 2020)، لمعرفة فاعلية البرنامج التعليمي في معارف الملاك التمريضي حول استخدامات الستيرويدات والتأثيرات الجانبية لها في وحدة الاورام، تم اختيار عينة غير احتمالية (غرضية) تكونت من (30 ممرض/ ة) يعملون في وحدة الاورام.
تم أستخدام أستبيان كأداة لجمع البيانات وتكونت من جزئين:
الجزء الأول: الخصائص الديموغرافية للملاك التمريضي (الجنس، العمر، مستوى التعليم، سنوات الخبرة في المستشفى، المشاركة في دورات تدريبة تتعلق بالرعاية التمريضية للمرضى الخاضعين للعلاج الستيرويدي).
الجزء الثاني: يتألف من محورين، يحتوي المحور الاول على (27) سؤال متعدد الخيارات حول تقييم معارف الملاك التمريضي فيما يتعلق بالستيرويدات واستخداماتها، بينما يحتوي المحور الثاني على (15) سؤال متعدد الخيارات حول تقييم معارف الملاك التمريضي فيما يتعلق بالآثار الجانبية للستيرويدات.
تم التحقق من مصداقية الاستبانة والبرنامج التعليمي من خلال عرضها على (14) خبير. اجريت للعينة اختبار قبلي، برنامج تعليمي، اختبار بعدي، وتم استخدام الاحصاء الوصفي والاستدلالي لتحليل نتائج الدراسة باستخدام الحقيبة الاحصائية الإصدار 25 وبرنامج ميكروسوفت اكسل (2010).
النتائج: أشارت نتائج الدراسة أن جميع استجابات عينة الدراسة في الاختبار القبلي كانت ضعيفة، بمتوسط إحصائي للدرجات (1.20) بخلاف الاختبار البعدي، يظهر أن (100٪) من عينة الدراسة لديها معرفة عالية بمتوسط الدرجات (1.91)، كما أظهرت النتائج فروق ذات دلالة إحصائية بين الاختبار القبلي والاختبار البعدي لعينة الدراسة بعد مشاركتها في البرنامج التعليمي بقيمة (P-value= 0.0001). خلص الدراسة إلى أن البرنامج التعليمي كان فعالا في تعزيز معارف الملاك التمريضي حول استخدامات الستيرويدات والتأثيرات الجانبية لها في وحدة الاورام.
التوصيات: أوصت الدراسة بضرورة تطوير برامج تعليمية مستمرة لتعليم وتدريب الممرضيين وجميع العاملين في مجال الرعاية الصحية فيما يتعلق بالستيرويدات.
الكلمات المفتاحية: البرنامج التعليمي، معارف الملاك التمريضي، الستيرويدات، الاستخدامات، الاثار الجانبية

Abstract

Objective: To determine the effectiveness of the educational program on nursing staffs' knowledge about uses of steroids and their side effects.
Methodology: A pre-experimental study design (one group design: pre-test and post-test) was used. This study was conducted in Al-Diwaniya Teaching Hospital for the period from (28th May to 10 th June, 2020) on a non-probability (purposive) sample consisting of (30 nurses) working in Oncology unit. A questionnaire was built as a data collection tool and consisted of two parts:
First part: The demographic characteristics of the nursing staff (gender, age, level of education, years of experience in hospital, participation in training courses related to nursing care for a patients undergoing to steroid therapy).
Second part: It consists of two domains. The first domain contains (27) multiple-choice questions about assessment of the nursing staffs` knowledge regarding steroids and their uses, while the second domain contains (15) multiple-choice questions about assessment of the nursing staffs` knowledge regarding side effects of steroids. The validity of the questionnaire and the educational program were verified by presenting it to (14) experts. The sample has received a pre-test, educational program, and post-test. Descriptive and inferential statistics were used to analyze the

results of the study using the Statistical Package of Social Sciences (SPSS) version 25 and Microsoft Excel (2010).

Results: The study indicates that all the study sample responses at the pre-test were poor knowledge with a statistical mean of scores (1.20), other than the post-test, shows (100%) of the study sample have high knowledge at the mean of scores (1.91). Also, the results revealed a highly significant difference between the pre-test and post-test of the study sample after participated in the educational program at the p-value (0.0001). The conclusion of the study that the educational program was effective in the enhancement of nursing staffs` knowledge about uses of steroids and their side effects in Oncology Unit**.**

Recommendations: The study recommended the necessity of developing continuous educational programs to educate and train nurses and all health care workers regarding steroids.

Keywords: Educational program, Nursing staffs' Knowledge, Steroids, Uses, Side effect

Introduction:

Since the identification of steroids in 1935, it has had wide areas of use. Initially, these isolates from adrenal glands were only used for patients with Addison's disease. However, today, they have many clinical uses such as in the treatment of inflammation and suppression of immunity. There are side effects that can be broadly divided into long-term and short-term that are problematic and their effects depend on the amount of dose given and the route of administration. These side effects range from a simple case of acne (short-term) to Cushing's syndrome (long-term) that can lead to diabetes and other life-threatening conditions like heart disease [(1)].

Steroids are chemical compounds that are naturally produced by the body. They are administered in several forms including injections, needles, and sprays. Some types are even used in the treatment of many serious diseases [(2)].

Both natural and synthetic steroids are at the forefront of anti-inflammatory and immunosuppressive therapies. They are used in the treatment of many acute and chronic inflammation. These include rheumatoid arthritis as well as being used in treatment of certain leukemia's and in immunosuppressive regimes following organ transplant [(3)].

Methodology:

A pre-experimental study design (one group design: pre-test and post-test) was used. This study was conducted in Al-Diwaniya Teaching Hospital for the period from (28th May to 10th June, 2020) on a non-probability (purposive) sample consisting of (30 nurses) working in Oncology unit. A questionnaire was built as a data collection tool and consisted of two parts:

First part: The demographic characteristics of the nursing staff (gender, age, level of education, years of experience in hospital, participation in training courses related to nursing care for a patient undergoing to steroid therapy).Second part: It consists of two domains, the first domain contains (27) multiple-choice questions about assessment of the nursing staffs` knowledge regarding steroids and their uses, while the second

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Ethical Considerations

The Institutional Review Board (IRB) at the University of Baghdad, College of Nursing approved the study to be conducted. The study protocol meets both the global & the Committee on Publication Ethics(COPE) standards of respecting humans subjects' rights.

Results:

Table (1): Distribution of the Sample (30) Nurse According to the Demographic Characteristics

Demographic Data	Rating And Intervals	Frequency	Percent
Gender	Male	12	40.0
	Female	18	60.0
	Total	30	100.0
Age / Years	20-24	17	56.7
	25 – 29	11	36.7
	30 – 34	2	6.7
	Total	30	100.0
Education Levels	Secondary Nursing School	13	43.3
	Technical Institute / Nursing	7	23.3
	College of Nursing	10	33.3
	Total	30	100.0
Years of Experience	1-3	26	86.7
	4 – 6	2	6.7
	7 – 9	1	3.3
	13+	1	3.3
	Total	30	100.0
Participation in a Training Sessions	No	30	100.0

Table (1) refers to an assessment of the nursing staff demographic data. The study results indicated that (60%) of the nursing staff are female, (56.7%) are 20-24 years old, (43.3%) graduated from secondary nursing school, and (86.7%) have 1-3 years of experience. (100%) of the nursing staff did not participate in the training courses.

Table (2): Overall Assessment of Nursing Staff Knowledge (Pre-Test)

Main studied domains	Levels	Frequency	Percent	Mean	Assessment
Steroids and their Uses	Fair	3	10	1.24	Poor
	Poor	27	90		
Side Effects of Steroids	Poor	30	100	1.13	Poor
Overall nursing staff knowledge	Fair	1	3.3	1.20	Poor
	Poor	29	96.7		

Good (mean of scores 1.68 and more), fair (mean of scores 1.34-1.67), poor (mean of scores (1-1.33), cut off point (0.33)

Table (2) explains that the overall assessment of the nursing staff knowledge before application of the program is poor at all the studied domains, even in the overall knowledge.

Table (3): Overall Assessment of Nursing Staff Knowledge (Post-Test)

Main studied domains	Levels	Frequency	Percent	Mean	assessment
Steroids and their Uses	Fair	1	3.3	1.91	Good
	Good	29	96.7		
Side Effects of Steroids	Fair	1	3.3	1.92	Good
	Good	29	96.7		
Overall nursing staff knowledge	Fair	1	3.3	1.91	Good
	Good	29	96.7		

Good (mean of scores 1.68 and more), fair (mean of scores 1.34-1.67), poor (mean of scores (1-1.33), cut off point (0.33)

Table (3) shows that the overall assessment of the nursing staff knowledge after application of the program is good at all the studied domains, even in the overall knowledge.

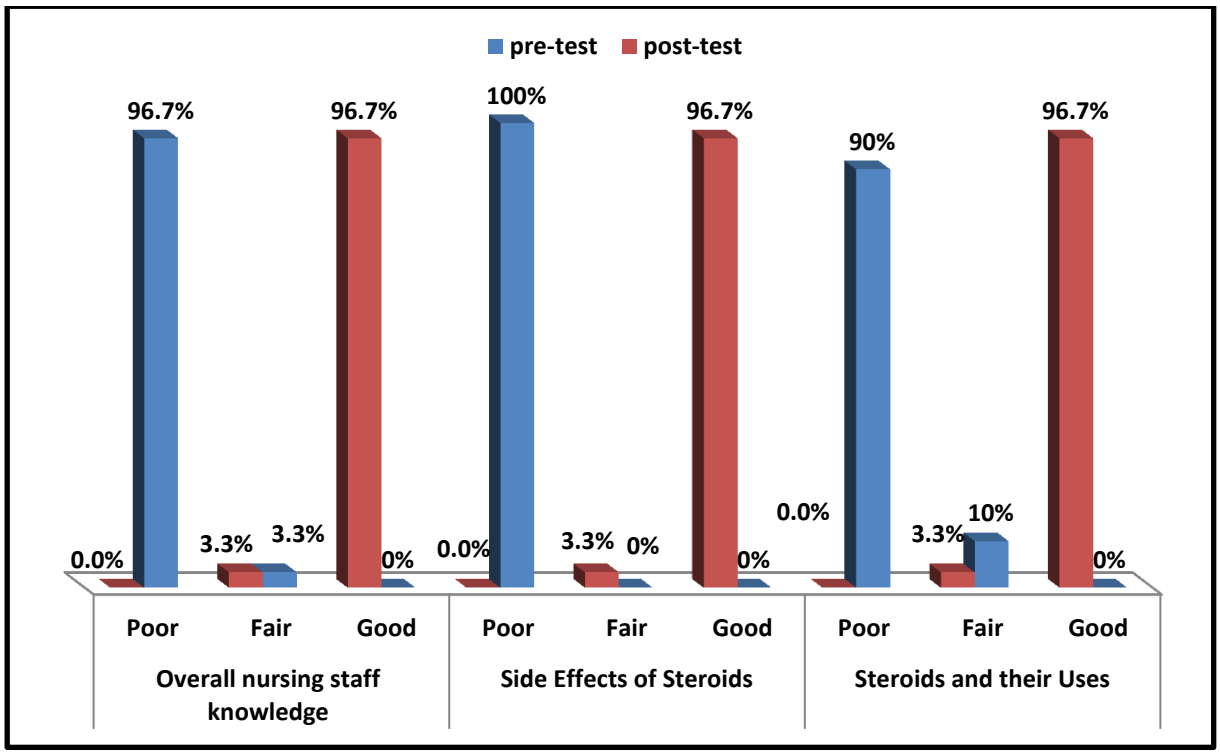

Figure (1): Overall Assessment of Nursing Staff Knowledge (Pre-test and Post-Test)

Table (4): Mean Difference (paired t-test) for the Overall Assessment of Nursing Staff Knowledge at Two Periods of Measurements (Pre and Posttests)

Main studied domains	Periods of Measurements	Mean	Std. Deviation	t-test Value	D.F.	P-Value
Steroids and their Uses	Pre-Test	1.24	.084	27.453	29	0.0001 HS
	Post-Test	1.91	.085			
Side Effects of Steroids	Pre-Test	1.13	.083	37.348	29	0.0001 HS
	Post-Test	1.92	.104			
Overall nursing staff knowledge	Pre-Test	1.20	.068	36.171	29	0.0001 HS
	Post-Test	1.91	.086			

The paired t-test analysis is conducted to determine the difference in nursing staff knowledge before and after the application of the program. The study results in table (4) shows that there is a high significant difference in the nursing staff knowledge after the application of the

program compared with their knowledge before the application of the program at p-value less than 0.01. Based on the statistical mean, the study results indicate that there is an improvement in nursing staff knowledge after application of the program.

Table (5): Association between the Overall Assessment of Nursing Staff Knowledge at the Post-Test and their Demographic Data

Demographic Data	Rating and Intervals	Nursing Staff Knowledge		Sig.
		Fair	Good	
Gender	Male	0	12	Chi-Square Value = 0.690 D.F. (1) P-Value (0.406) NS
	Female	1	17	
Age / Years	20-24	1	16	Chi-Square Value = 0.791 D.F. (2) P-Value (0.673) NS
	25 – 29	0	11	
	30 – 34	0	2	
Education Levels	Secondary Nursing School	0	13	Chi-Square Value = 2.069 D.F. (2) P-Value (0.355) NS
	Technical Institute / Nursing	0	7	
	College Of Nursing	1	9	
Years of Experience	1-3	1	25	Chi-Square Value = 0.159 D.F. (3) P-Value (0.984) NS
	4 – 6	0	2	
	7 – 9	0	1	
	13+	0	1	

Note: due to the majority of the cells the observed value less than 5, the test is corrected by Fisher's exact test.

Table (4) focused on determine the association between the overall nursing staff knowledge regarding the steroids at the post-test and their demographic data using chi-square test. The study results indicate that there is a non-significant association between the overall nursing staff knowledge and their demographic data at p-value more than 0.05.

Discussion:

PartI: Discussion of the Nursing Staffs' Demographic Characteristics of the Study Sample

Concerning nursing staffs' gender, the study findings revealed that more than half of the nursing staffs are female. This result was due to nursing colleges, institutes, and schools accepting females at a lower rate than males. In addition, colleges and institutes specify in the admission requirements the proportions of females to males in order to ensure that there are more females in the health field than males.

Regarding the age of nursing staff, the study found that more than half of the nursing staff are between the ages of 24 to 28. The researcher believes that these results can be explained by the Oncology unit's need for a younger task force to handle the difficult work nature of this unit.

With respect to the level of education, the study results indicate that less than half of the study sample (43.3%) graduated from secondary nursing school while the remaining graduated from college of nursing and technical institute of nursing. In the current study, it was shown that a high percentage of nursing staff graduated from nursing schools, which means nursing schools graduate the same number of females compared to graduates of nursing colleges and technical institutes of females annually.

Regarding years of experience in nursing, the study found that the majority of nursing staff (86.7%) have (1-3) years in relative nursing experience. The researcher believes that this result is due to a large number of newly graduated nursing staff who are just employed and the transfer of old nursing staff.

In regards to the training sessions about the nursing care plan for patients undergoing steroid therapy, the study findings indicate that all of the nursing staff have no training courses in this field. The research confirms that this result was due to not correctly activating the Continuous Medical Education Unit in the hospital in additional to not making courses related to steroid therapy in the hospital, especially for Oncology unit's nursing staff.

Part II: Discussion of Assessment of Nursing Staffs' Knowledge Regarding Uses of Steroids and their Side Effects at the Pre-Test and Post-Test Trials,

The study findings revealed that the nursing staffs' knowledge about uses of steroids and their side effects in the pre-test was poor as shown in table (2), and figure (1). In the post-test trials, nursing staffs' knowledge has been improved after the application of the educational program as shown in tables (3) and figure (1).

All nurses achieved a better mean of a score in knowledge after implementing the program than before it, and this is mirrored the effect of the program.

The study also finds that there was a highly statistically significant difference between the study sample overall responses in two periods of measurements (pre-test and post-test) at p-value (0.0001), these improvements were statistically significant.

The prominent improvement was in the knowledge about the uses and side effect of steroids which reached from (1.2) mean of score in pre-test to (1.9) mean of score immediately after the post-test; statistically significant (p –value 0.0001).These findings reflect that there is an enhancement in the knowledge of nursing staff at the post-test compared with pre-test scores as shown in table (4).

The researcher revealed that just mentioning of the steroidal drugs (exogenous steroids) requires to provide overall knowledge for nursing staff about important topics, such as how and for what cases it can be used, in addition to their side effects (long and short term). In addition to that nurses are the ones who responsible for administration and follow- up selective steroid therapy as well as the side effect management for patients, their perspectives on the effectiveness of their care are very important, thus, the present study is very important as it was directed to determine the effectiveness of an educational program on nurses knowledge about uses and side effects of steroid.

Several studies confirmed the importance of knowing the uses of steroids and their side effects, as they developed a scientific and practical guideline to observe and dealing with complications of corticosteroids [4, 5, and 6].

As well as patients which undergo steroid therapy need for nursing advice and instructions about it, so the nursing staff must receive knowledge about the uses and side effects of steroids [7].

Part III: Discussion the Association of the Overall Nursing Staffs' Knowledge at the post-test and their Demographic Data as

Concerning the association between the nursing staffs' gender and their knowledge about uses of steroid and their side effects the study showed that there was no significant association between nursing staffs' knowledge in post-test and their gender at (p-value=0.406), this result indicated that female and male nurses were affected by the same level of the educational program.

As per the association between nursing staffs' knowledge about the uses of steroids and their side effects and their age, the study revealed that there was no statistically significant association between nursing staffs' knowledge in post-test and their age at (p-value=0.673). This finding refers that most of the nursing staff in this study is from the youth category and their concentration is high during this age stage. Therefore, statistical analyzes have proven that there is no relationship between the educational program and the age of nursing staff knowledge, so this finding refers that the educational program was efficient for all age groups.

About the level of education, the study result detects that there was no significant association between nursing staffs' knowledge in post-test and the educational level at (p-value=0.355).Regarding the years of experience, the study findings presented that no statistically significant association at (p-value=0.984), this result indicates that the knowledge of nursing staff about uses of steroids and their side effects is not affected with years of experience. The results of the current study showed that there is no statistically significant relationship between the educational level of the nurses and their years of experience and the educational program due to the varieties of educational methods which used by the researcher as lectures, audiovisual materials and discussion as well as Arabic booklet which distributed to every nurse. In other words, even nurses who have experience of one to three years at work, and graduates from nursing schools, institutes, and nursing college were affected at the same level by the educational program

Recommendations:

The study recommended the necessity of developing continuous educational programs to educate and train nurses and all health care workers regarding steroids, as well as every hospital should established written guidelines which concerned with uses and side effect of steroids and drugs conduct future research programs with wide-range sample size to improve the knowledge of nursing staff about steroids.

References:

1. Ericson-Neilsen, W., & Kaye, A. D. (2014). Steroids: pharmacology, complications, and practice delivery issues. Ochsner Journal, 14(2), 203-207.
2. Patient.info. (2018) .Definition of steroids. Retrieved from https://patient.info/treatment-medication/steroids/steroid-injections.
3. Coutinho, A., & Chapman, K. (2011, March). The anti-inflammatory and immunosuppressive effects of glucocorticoids, recent developments and mechanistic insights. Molecular and Cellular Endocrinology, 335(1), 2-13.
4. Coondoo, A., Phiske, M., Verma, S., & Lahiri, K. (2014). Side-effects of topical steroids: A long overdue revisit. Indian dermatology online journal, 5(4), 416.
5. Liu, D., Ahmet, A., Ward, L., Krishnamoorthy, P., Mandelcorn, E. D., Leigh, R., & Kim, H. (2013). A practical guide to the monitoring and management of the complications of systemic corticosteroid therapy. Allergy, Asthma & Clinical Immunology, 9(1), 30.
6. Shaikh, S., Verma, H., Yadav, N., Jauhari, M., & Bullangowda, J. (2012). Applications of steroid in clinical practice: a review. ISRN Anesthesiology, 2012.
7. Pai, Y. C. (2010). The need for nursing instruction in patients receiving steroid pulse therapy for the treatment of autoimmune diseases and the effect of instruction on patient knowledge. BMC Musculoskeletal Disorders, 11(1),