

## Impact of Documentation Practice Training Program for Nurses: On The Job versus Off The Job

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### Abstract

Documentation is reported to take up to 50% of nurses' time per shift. Training, either on-the-job or off-the-job, is the only means that may improve such lack of competencies in documentation. **Aim of the study:** To investigate the impact of documentation practice training program for nurses: on-the-job vs off-the-job. Design: a quasi-experimental design was used. **The study was conducted** at Damanhour National Medical Institute. **Subjects:** 210 nurses took part in this study. **The questionnaire was used for data collection;** the first part related to demographic characteristics, the second part: This part to assess the nurse's knowledge gained from the training. The third part included the Audit sheet, which was intended to assess the nurse's practice of documentation. The intervention consisted of a 2-day training in nursing documentation. **Results:** high statistical significances differences between studied nurses at pre, post and follow up intervention related to in the knowledge and audit scores of the nurses in the on-the-job vs off-the-job. The Mean  $\pm$ SD knowledge score increased from  $38.9 \pm 9.81$  to  $78.32$ , and the Mean  $\pm$ SD total audit scores from  $15.3 \pm 4.8$  to  $39.98 \pm 8.57$ . Likewise, in the off-the-job group Mean  $\pm$ SD knowledge score rose from  $39.67 \pm 0.21$  to  $75.91 \pm 7.10$ , and the Mean  $\pm$ SD total audit scores from  $14.94 \pm 8.12$  to  $38.52 \pm 7.97$ . **Conclusion;** highly statistically significant improvement in total staff nurses' documentation knowledge and audit level during post and follow up phase as compared with preprogram phase. **Recommendations:** Continuous training programs or sessions must emphasize on all aspects of nursing documentation.

**Keywords:** Staff Nurses, Nursing, Training Program, Documentation Skills.

### Introduction

Documentation is reported to take up to 50% of nurses' time per shift (Gugerty et al., 2007). It serves several important functions, including communication amongst healthcare workers for continuity of care. Poor communication, in a broader sense, is known to contribute significantly to the occurrence of adverse events in healthcare (The Joint Commission 2012), therefore, an important target of initiatives to improve patient safety. Additionally, documentation is important for education, research, quality assurance and reimbursement by third-party claimants (DeLaune & Ladner 2011:216). According to (Wilson, et al., 2012) nursing documentation can serve as an indicator of quality nursing practice and used to predict mortality (Collins, et al., 2013).

Additionally, clear, accurate, and accessible documentation is an essential element of safe, quality, evidence-based nursing practice. Nurses practice across settings at position levels from the bedside to the administrative office; the registered nurse and the advanced practice

registered nurse are responsible and accountable for the nursing documentation that is used throughout an organization (American Nurses Association, 2010).

Consequently, nursing documentation is defined as any written or electronically generated information about a client that describes the care or service provided to that client including what occurred and when it occurred. It is a vital component of safe, ethical and effective nursing practice. Nursing documentation has been accepted as a very important aspect of professional practice to nurses since the emergence of nursing as a profession (Obioma, 2017). Moreover, nursing documentation is the record of nursing care that is planned and delivered to individual patients by qualified nurses or other caregivers under the direction of a qualified nurse. Nursing documentation is the principal clinical information source to meet legal and professional requirements. It is a vital component of safe, ethical and effective nursing practice whether done manually or electronically (Tasew, et al. 2019).

So, nurses document their work and outcomes for several reasons: the most important is for communicating within the health care team and providing information for other professionals, primarily for individuals and groups involved with accreditation, credentialing, legal, regulatory and legislative, reimbursement, research, and quality activities (**American Nurses Association, 2010**). Although keeping a patient record is part of their professional obligation, many studies identified deficiencies in the practice of documentation among nurses globally. It has been reported that nursing records are often incomplete, lacked accuracy and had poor quality. Poor documentation in nurses has been shown to have negative impacts on the health care of patients. The impact may lead to harmful consequences like exposing the care provider to a medication administration error. The quality of patient care can also be hindered by an absence of sufficient documentation of data (**Chelagat et al., 2013**).

Finally, documentation is an important function of professional nursing practice (**Elisha 2014**). So, given the significance of nursing documentation and the reality of poor documentation practices, it is not surprising that there have been resolute calls and subsequent efforts to improve its quality (**Whitcomb et al. 2013**). Training nurses to improve knowledge, skills and documentation practices has been a widely used strategy.

#### **Aim of the Study:**

To investigate the impact of documentation practice training program for nurses: on-the-job versus off-

#### **Research hypotheses:**

- The documentation practice training program for nurses, on-the-job, will have a positive impact.
- The documentation practice training program for nurses, on-off-job, will have a positive impact.

#### **Research design:**

A quasi-experimental research design was utilized.

#### **Setting**

The study was conducted at all inpatient units (medical and surgical) and critical care units

(N=15) at Damanhour National Medical Institute. (1) Medical units (N=6), surgical include general medical A & B; hepatology; renal; hematemesis and neurology; (2) surgical units (N=6) general surgical A, B, C, & D; neurosurgery; and E.N.T surgery; and critical care units (N=3): intensive care unit; coronary care unit and emergency recovery. The institute is affiliated with the General Organization for Teaching Hospital and Institutes and is considered the main teaching hospital in El-Beheira Governorate.

#### **Subjects**

All available nurses, who are working in the previously mentioned settings. Were included in the study (N= 210).

#### **Tools:**

The data was collected through a self-administered questionnaire containing three major parts:

**Part I:** This part included questions related to demographic characteristics of studied nurses such as age, gender, working unit, marital status, qualification and years of experiences.

**Part II:** This part assesses the nurse's knowledge gained from the training. It consists of (25) questions multiple-choice questions. The questions categorized into four dimensions, accuracy, signature, timing, and ethical issues. This was filled as pre-and post-tests and follow up. **Scoring system:** For the knowledge items, a correct response was scored one and the incorrect zero for each area of knowledge. These scores were converted into a percent score. The scores of the items were summed up and the total divided by the number of items giving a mean score for this part.

**Part III:** This part included the Audit sheet, which was intended to assess the nurse's practice of documentation. This concurrent audit checklist was contained eight dimensions involve (57) items represent the documentation skills. **Scoring system:** Performance scores were from "1" to "zero" for done/not done, respectively. The maximum possible total score was (fifty-seven). All items related to certain dimension are summed up and a mean score is calculated for each dimension, the total mean score of the observational checklist was calculated by summing up the score for all dimensions.

### Pilot Study

The pilot study was carried out on 21 nurses who represent (10%), rather than the study samples. It was conducted to assess the applicability, clarity, and feasibility of the study tools.

### Fieldwork

Data collection of the study was started at the beginning of October 2020 and was completed by the end of November 2020. Follow up phase started from the beginning of January 2021 with the first group received the program was in October 2020 to the end of February 2021 with the last group received the program in November 2020. The researchers contacted them at their workplace. The study was conducted through assessment, planning, implementation, and evaluation phases. Assessment phase: This involved the conduction of the pretests using the self-administered questionnaire and the audit checklist. Upon obtaining the official permissions, the researcher met with the nurses in the previously mentioned settings, explained to them the aim of the study, and invited them to participate. Then, for each of the recruited nurses, five records were randomly selected from the previous month. They were checked for completeness of documentation using the audit sheet. For each item of the audit sheet, the numbers of records with fulfilled item were calculated.

### Planning phase:

Based on the analysis of the assessment phase, and in the light of related literature, the researcher developed the training program. The programs' main objective was to improve nurses' knowledge and skills regarding nursing documentation. It was conducted and scheduled 2-full day's small group sessions. A handout was prepared to be distributed to participants by the end of the training.

### Implementation phase:

The researcher implemented the developed program in the selected setting for each of the two groups, namely on-the-job and off-the-job. Six training rounds were conducted for each of the on-the-job and off-the-job groups. The round consisted of two full-day sessions. The sessions covered topics such as the definition of nursing documentation, its objectives and

rules, as well as electronic registration and the responsibility of the nurse in the documentation practice.

### Evaluation phase:

The change in nurses' knowledge was assessed using the self-administered questionnaire as a post-test and follow up. The audit checklist was used to examine the change in their practice of documentation. This involved auditing five patient records for each nurse during the month that followed the training program.

### Ethical Consideration

- The research Approval was secured from the ethics committee in the Faculty of Nursing - Damanhour University.
- The researchers have clarified the aim of the study to nurses included in the study before starting.
- Oral consent was taken from each participant. They were informed that the data collected will be used for the research only, and confidentiality is assured.
- The nurses were informed that they have the right to withdrawal from the study at any time.

### Statistical design

Data collected from the studied sample was revised, coded and entered the Statistical Package for Social Sciences (SPSS) version 22. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and SD, for quantitative variables. Cronbach's alpha coefficient was used to assess the reliability of the developed scale through its internal consistency. Quantitative continuous data were used for the non-parametric Mann Whitney test. Qualitative categorical variables were compared using the chi-square test or for less than 5, Fisher exact test was used instead. Spearman rank correlation ( $r$ ) was used for the assessment of the inter-relationships among quantitative variables. Multiple linear regression analysis was used and analysis of variance for the full regression models done. Statistical significance was considered at the  $p$ -value  $<0.05$ .

## Results

**Table (1):** The mean age of the participants was  $36.54 \pm 8.91$  year, 28.6% of the studied nurses their age ranged between 25-35 years. As regard to gender and marital status, 68.1 and 76.7% of the studied nurses were female and married, respectively. About the educational level of nurses under study, it was found that 78.16% of them had Diploma nursing degree. Regarding the working place, 50.9% of the studied nurses were working at Intensive and critical care units. Also, 56.7% of the nurses under study their years of experience ranged between 5 - 15 years with mean  $14.6 \pm 8.31$  years. The vast majority of nurses – 52.4% were not attendance training about documentation; however, 95.8% reported attend a training about recording & reporting.

As shown in **Table (2)**, there were statistically significant improvements in the knowledge and audit scores of the nurses in the on-the-job group after implementation of the intervention ( $p < 0.001$ ). The Mean  $\pm$ SD knowledge score increased from  $38.9 \pm 9.81$  to 78.32, and the Mean  $\pm$ SD total audit scores from  $15.3 \pm 4.8$  to  $39.98 \pm 8.57$ . Likewise, in the off-the-job group, there a statistically significant improvement of the knowledge and audit scores after implementation of the intervention ( $p < 0.001$ ). The Mean  $\pm$ SD knowledge score rose from  $39.67 \pm 0.21$  to  $75.91 \pm 7.10$ , and the Mean  $\pm$ SD total audit scores from  $14.94 \pm 8.12$  to  $38.52 \pm 7.97$ .

**Table (3):** Illustrates statistically significant improvements among the nurses in the on-the-job group after implementation of the intervention. This was evident in their satisfactory knowledge in post & follow up intervention ( $p < 0.001$ ). However, there was no improvement in total audit time. Similarly, in the off-the-job group, the post-intervention phase showed statistically significant improvements. This was noticed in their knowledge ( $p < 0.001$ ) of an audit.

**Table (4)**, illustrated that the nurses' knowledge scores had a statistically significant moderate positive correlation with their audit scores in the total sample ( $r = 0.698$ ). Conversely, the knowledge (post) and audit (pre/post/total) scores had weak negative correlations with their age. Meanwhile, all their knowledge scores had statistically significant weak negative correlations with their experience years.

Variables entered and excluded: age, gender, qualification, courses, a group in multivariate analysis **Table (5)**, the study intervention was the only statistically significant independent positive predictor of nurses' knowledge score. On the other hand, they're being married and their experience years were negative predictors. As evident from the value of the standardized coefficient, the study intervention was the most influential predictor. The model explains 81% of the variation in the knowledge score.

**Table 1:** Distribution of Nurses regarding their demographic characteristics. (N= 210).

Characteristics	Categories	No	%
Age	20 - <25	55	26.2
	25 - <30	60	28.6
	30 - < 35	47	22.3
	35 or more	48	22.9
S.D		$36.54 \pm 8.91$	
Year in nursing profession	5 < 15 years	119	56.7
	15 - <25 years	49	23.3
	>25 years	42	20.0
S.D		$14.6 \pm 8.31$	
Gender	Male	67	31.9
	Female	143	68.1
Marital status	Married	161	76.6
	Unmarried	49	23.3
Education	BSN	14	31.7
	Diploma	167	78.16
	Higher education	72	5.7
Working place	Intensive & critical care units	107	50.9
	Surgical unit	48	22.9
	Medical units	55	26.2

**Table (2):** Total knowledge and audit scores among study nurse in the two study samples pre, post & follow up -intervention (n=210)

Items	Scores (max=100)						On-the-Job	Off-the-Job
	Pre		Post		Follow up		Mann Whitney Test P	Mann Whitney Test P
	On-the-Job (n=105)	Off-the-Job (n=105)	On-the-Job (n=105)	Off-the-Job (n=105)	On-the-Job (n=105)	Off-the-Job (n=105)		
Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD			
Knowledge	38.9- ± 9.81	39.67 ± 0.21	79.0 ±9.88	76.01 ±8.10	78.32 ±7.91	75.91 ±7.10	110.55 <0.001*	105.57 <0.001*
Audit :								
Accuracy	15.61 ± 6.81	15.51 ±9.95	43.4 ± 1.13	43.3 ±13.88	41.38 ±3.01	40.29 ±12.90	103.51 <0.001*	91.35 <0.001*
Timing	9.5 ± 7.31	8.76 ±5.98	34.91 ±14.21	24.04 ±15.31	33.98 ±13.71	32.98 ±12.89	81.56 <0.001*	<0.001*
Signature	8.0 ± 6.01	87.41 ±5.98	22.01 ±9.94	21.01 ± 8.91	21.53 ± 9.96	20.09 ±8.81	73.09 <0.001*	44.78 <0.001*
Ethical issues	19.4 ± 6.42	22.18 ±9.47	52.45 ±11.51	59.32 ±4.31	50.78± 10.57	49.92 ±9.91	104.66 <0.001*	88.56 <0.001*
Total audit	15.3 ± 4.8	14.94 ±8.12	40.65 ±9.25	42.71 ±13.13	39.98 ±8.57	38.52 ±7.97	105.50 <0.001*	96.59 <0.001*

(\*) Statistically significant at p<0.05

**Table (3):** Comparison of knowledge and audit time among study nurses in the on-the-job vs off-the-job training groups Pre, post & follow up -intervention (n=210)

Items	Time						On-the-Job	Off-the-Job
	Pre		Post		Follow up		X 2 P	X 2 P
	On-the-Job (n=105)	Off-the-Job (n=105)	On-the-Job (n=105)	Off-the-Job (n=105)	On-the-Job (n=105)	Off-the-Job (n=105)		
NO %	NO %	NO %	NO %	NO %	NO %			
Total knowledge: (Satisfactory knowledge (60%+)								
Satisfactory	1 0.95%	1 0.95%	101 99.0%	101 99.0%	98 93.3%	100 95.23%		
Unsatisfactory	104 98.7%	104 98.7%	4 3.8%	4 3.8%	7 6.67%	5 4.76%	130.88 0.001**	130.88 0.001**
Audit:								
Accuracy	0 0.00%	0 0.00%	100 95.23%	102 97.14%	90 85.91%	98 93.3%	Fisher 0.50	Fisher 0.006*
Timing	0 0.00%	0 0.00%	90 85.91%	101 99.0%	75 71.42%	96 91.42%	1.00 1.00	Fisher 0.24
Signature	0 0.00%	0 0.00%	104 99.04%	105 100.0%	98 93.3%	102 97.14%	0.00 1.00	Fisher 0.24
Ethical issues	0 0.00%	1 0.95%	95 90.48%	101 99.0%	80 76.19%	90 85.91%	24.42 0.001**	52.39 0.001**
Total audit								
Adequate	0 0.00%	3 2.86%	100 95.23%	103 98.1%	95 90.48%	100 95.23%		
Inadequate	105 100.0%	102 97.14%	5 4.76%	2 1.90%	10 9.52%	5 4.76%	0.00 1.00	Fisher 0.24

(\*) Statistically significant at p<0.05

**Table (4):** Correlations between nurses' knowledge and audit scores and their characteristics (n=210)

	Spearman's rank correlation coefficient							
	Pre (n=210)		Post (n=210)		Follow Post (n=210)		Total (n=210)	
	Knowledge	Audit	Knowledge	Audit	Knowledge	Audit	Knowledge	Audit
Audit	-0.137		0.10				698**	
Age	-0.156 0.961	-.212 0.000**	-.235 0.000**	-.228 0.000**	-.271 0.000**	-.231 0.00**	-0.114 0.874	-.124 0.001*
Qualification	0.114 0.874	0.115 0.875	0.111 0.872	0.00 0.968	-0.12 0.678	-0.031 0.871	-0.062 0.884	-0.031 0.871
Experience	-0.180 0.001	-0.135 0.002	-0.319 0.000**	0.12 0.699	-.321 0.000**	-0.34 0.961	-.135 0.001*	-0.062 0.884

(\*) Statistically significant at p<0.05

**Table (5):** Best fitting multiple linear regression model for the knowledge score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	SE				Upper	Lower
Intervention	36.87	1.03	0.89	35.687	<0.001**	38.90	34.84
Married	-5.91	1.92	-0.08	3.097	0.002**	-2.15	-9.71
years of experience	-0.34	0.07	-0.12	4.865	<0.001**	-0.20	-0.51
R2 = 0.81							

r-square =0.81

model anova: f=434.91

p= &lt;0.001

## Discussion

Good documentation improves the credibility of the institution and makes the nursing profession visible. This means that the situation may lead to the extent that can affect the status of the health care facilities because health care facilities are evaluated by the quality of documents they keep in most cases (Molla, 2014). Documentation also provides valuable data for research in Nursing, which have the potential to improve health outcomes. In addition to these, it may form the basis of teaching plans and the level of contributions nurses do in the health care system can be witnessed through proper documentation of their roles (Gizaw, et al., 2018). This study was conducted to investigate the impact of documentation practice training program for nurses: on-the-job vs off-the-job.

The present study depicts that, about a third of the study sample aged from 25 to less than 35-year-old, the majority of them were female, about two-third of them married and have diploma of nursing school, slightly less than half of them their experience from 15 to less than 25 years, and most of them reported no previous training program attended to documentation. The present study indicated that there were high statistical significances differences between studied nurses at pre, post and follow up intervention related to the knowledge and audit scores of the nurses in the on-the-job group ( $p < 0.001$ ). This result agrees with the results of (Saker, et al., 2019) they revealed that, there is a highly statistically significant improvement in nurses' knowledge and performance as regard documentation skills at immediately post-program and follow up intervention when compared with pre-program intervention. So, that reflects improvement staff nurses' knowledge and performance of documentation skills after training program

intervention. This result disagrees with the results of (Tasew, 2019) who revealed that despite its non-significant an association, knowledge has shown association with documentation practice in other studies. The knowledge level of participants was 43% in this study which contradicts the finding from the University of Gondar hospital (58.3%), South Africa (74.9%), Iraq (59%) and Indonesia (82.7%). These inconsistencies might be related to socio-demographic variability of the study participants or difference in familiarity to the documentation guideline.

The same table show that in the off-the-job group, there a statistically significant improvement of the knowledge and audit scores after implementation of the intervention ( $p < 0.001$ ). This results in consistency with (Safey El- Din, 2012) revealed that slightly more than two fifths of them had a high level of knowledge regarding total documentation dimensions in preprogram phase, while all staff nurses had a highly knowledge in post phase and slightly decline at follow up phase with highly statistically significant improvement in all phases of intervention. That means improvement of nurses' level of knowledge after implementation of the program. This might be due to the documentation skills program included effective ways to learn new information. Also, feel a sense of responsibility toward patient records.

Also, the present study found that satisfactory knowledge in post & follow up intervention ( $p < 0.001$ ). & there was no improvement in the total audit time. Similarly, in the off-the-job group, the post-intervention phase showed statistically significant improvements. these findings support by, (Ahmed & Rafiq, 2019) they found that, after the initial phase, once nurses would get familiarize with this format, it would further aid in achieving reducing time

spent on the documentation. And agreed with (Gizaw, et al., 2018) they found that, a satisfactory level of effective documentation was reported to be practiced in Jamaica 98% (Evaluation of registered nurses' knowledge and practice of documentation at a Jamaican hospital", no date), The result of the present study revealed that, knowledge scores had a statistically significant moderate positive correlation with their audit scores. This result may be due to staff nurses after the training program implements the nurses' documentation knowledge and audit scores were improved after implementation of the program at all periods of assessment. There was a statistically significant moderate positive correlation with their audit scores of the nurses' documentation immediately after implementation of the skills. Also, the same table showed that the knowledge (post) and audit (pre/post/total) scores had weak negative correlations with their age. This result may be due to the staff nurses old age were more mature in identifying the different types of nurses' documentation knowledge and audit scores and how can decrease it.

Additionally, the study found that knowledge scores had statistically significant weak negative correlations with their experience years. This result may be due to the staff nurses with more experiences have abilities to evaluate and determine responsible for accurate documentation and that they must protect the patient from adverse events. These findings are in agreement with the study conducted by (Huber, 2018) who reported that highlighted when making decisions nurses know that they are responsible for accurate documentation and that they must protect the patient from adverse events; however, they must also protect themselves by showing fully what actions they took in response to a change in the patient's status.

Moreover, the result of the present study revealed that, statistically significant independent positive predictor of nurses' knowledge score. This might be due to the documentation skills program included effective ways to learn new information. Also, feel a sense of responsibility toward patient records.

### Conclusion:

High statistical significances differences between studied nurses at pre, post and follow up intervention related to the knowledge and audit

scores of the nurses in the on-the-job vs off-the-job. There was a highly statistically significant improvement in total staff nurses' documentation knowledge and audit level during the post and follow up phase as compared with the preprogram phase. Satisfactory knowledge and adequate audit in post & follow up intervention as compared with the preprogram phase. Knowledge (post) and audit (pre/post/total) scores had weak negative correlations with their age. Knowledge scores had statistically significant weak negative correlations with their experience years.

### Recommendations:

- The training programs should include both on-the-job and off-the-job training in order to combine the benefits of the two approaches
- Continuous training programs or sessions must emphasize all aspects of nursing documentation.
- Orientation program for all new nurses and in-services training program for experienced nurses about documentation.
- Periodic audit of nursing documentation should be done, with constructive feedback to nurses on their performance in the documentation.

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