

## Healthcare Professionals' Routine Practice Documentation And Its Associated Factors In Hospital

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### Abstract

**Background:** Proper documentation improves the continuity of patient care and enhances communication with the healthcare team. Documenting routine practice is significant for better diagnosis, treatment, continuity of care and medico-legal issues. However, healthcare professionals' (HCP's) routine practice documentation is poorly practiced. Therefore, this study aimed to assess healthcare professionals' routine practice documentation and associated factors in hospital setting. **Methods:** An institution-based cross-sectional study design was used from January to April 2023. Self-administered questionnaire were used among 423 samples. SPSS version 28 software were used for data entry and analysis. Descriptive statistics and a logistic regression model were employed to describe the study subjects and to measure the strength of association between dependent and independent variables, respectively. A variable with a p value of <0.2 in bivariate logistic regression was considered for multivariable logistic regression. In multivariable logistic regression, ORs with 95% CIs and a p value of <0.05 were considered to determine the strength of association between dependent and independent variables. **Results:** Health professionals' documentation practice was 51.1% (95% CI: 48.64 to 53.1). Lack of motivation (adjusted OR (AOR): 0.41, 95% CI: 0.22 to 0.76), good knowledge (AOR: 1.35, 95% CI: 0.72 to 2.97), taking training (AOR: 4.18, 95% CI: 2.99 to 8.28), using electronic systems (AOR: 2.19, 95% CI: 1.36 to 3.28), availability of standard documentation tools (AOR: 2.45, 95% CI: 1.35 to 4.43) were statistically associated factors. **Conclusions:** HCPs' documentation practice is good. Lack of motivation, good knowledge, taking training, using electronic systems and the availability of documentation tools were significant factors. Stakeholders should provide additional training, and encourage HCPs to use an electronic system for documentation practices.

### Introduction

Documentation is the process of creating a text record that summarizes the interaction between patients and HCPs during clinical encounters <sup>(1)</sup>. The quality of clinical documentation is important as it impacts quality of patient care, patient safety, and the

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number of medical errors<sup>(2-4)</sup>. Furthermore, clinical documentation is increasingly used for other purposes, such as quality measurement, finance, and research. Additionally, regulatory requirements regarding documentation have increased<sup>(5-6)</sup>. Consequently, physicians are spending more and more time on documentation<sup>(7)</sup>.

Additionally, in routine healthcare practice, evidence about the care and treatment of patients, progress notes, assessments and care plans<sup>(8)</sup>, laboratory tests and results, medication and drug prescription information, patient education and counseling<sup>(9)</sup> are some of the routine practices of health professionals. Therefore, documenting the health professionals' routine practices is important for various purposes. Documentation is a standard way of keeping ongoing patient care information. It is the relevant facts of routine health information and patient care plans<sup>(10)</sup>, such as professionals' evaluation and judgment about the patients, evaluation charts, tests, reports, subjective notes or professionals' reflections<sup>(11)</sup>.

Documenting routine practices is essential for the continuity of patient care, legal defense, and reimbursement, communication among healthcare professionals and better patient diagnoses and treatments<sup>(12)</sup>. Maintaining routine practice is part of the health professional obligation. Healthcare facilities' by-laws or policies should require health professionals to complete patient records<sup>(13)</sup>. Whether the documentation is a paper-based or electronic system, it should be patient-focused, accurate, relevant, clear, permanent, confidential and timely. Electronic patient record systems are better for reducing the time spent on documenting patient information and enhancing the quality of documentation<sup>(14)</sup>.

Poor documentation practice affects patient management, continuity of patient care and medico-legal issues, which arise from incomplete and inadequate documentation, lack of accuracy and poor quality<sup>(15)</sup>. It leads to adverse patient outcomes, medication errors and patient deaths<sup>(16)</sup>. Distorted health information may influence health professionals' decision-making capabilities due to inappropriate and misleading documentation practices<sup>(17)</sup>. Globally, poor communication between health professionals is a reason for medical error and patient mortality<sup>(16)</sup>. Many health professionals' documentation practice is incomplete, inaccurate and of poor quality. According to evidence from the USA, documentation errors are a cause of at least one death and 1.3 million injuries annually<sup>(18)</sup>. Moreover, health professionals' documentation practice is inadequate such as 33.3% in Indonesia<sup>(19)</sup>, 47% in England<sup>(20)</sup> and 50% in Iran<sup>(21)</sup>.

In the low-income and middle-income regions, a qualitative study undertaken in Uganda stated that documentation practice is limited by constraints and poor support from the administration<sup>(22)</sup>. In Ghana, 46% of care is provided, and progress notes are not documented after the first day of patient admission<sup>(23)</sup>. In Nigeria, only 44% of health professionals had good documentation knowledge and practice<sup>(24)</sup>. In Ethiopia, documentation is poorly practiced and has been reported as being left undone<sup>(10)</sup>. Several researches reported that health professionals' documentation practice is 47.8% in the Tigray<sup>(25)</sup> and 37.4%<sup>(10)</sup> in Amhara regions. Unexpectedly, 88% of the medication provided has been wrongly documented<sup>(26)</sup>.

A study report in the Amhara region states that 87% of the medications had documentation errors<sup>(26)</sup>. Age, sex, experience, income, levels of education, health professionals' knowledge and attitude<sup>(10, 19, and 25)</sup>, motivation, workload and training about documentation<sup>(27)</sup> are factors associated with routine practice documentation. Documenting health professionals' routine activities is valuable for sharing knowledge and learning from history. This has a significant impact on better decision-making and accuracy in patient diagnosis and treatment. As per our literature review, studies have not been undertaken in the current study setting. Few studies in similar settings have been carried out with only nursing as a study participants, education and counseling given to the patient were not assessed.

Therefore, assessment of documentation practice in both medical and non-medical practices, including all healthcare professionals is crucial. So, this study aimed to determine healthcare professionals' routine practice documentation and associated factors.

## Methods

A cross-sectional study design was employed among healthcare professionals working in public health facilities in KSA, from February to May 2022. Study population and eligibility criteria all healthcare professionals working in the public health facilities of and those who were found during the data collection period were the sources and study population, respectively. Healthcare professionals who were not permanently employed those who were not present during the study period and who worked as data clerks were excluded.

A sample size (n) was determined by using a single population proportion formula,  $N = (Za/2)^2 \times P(1-P)/d^2$ , where n=the required sample size,  $(Za/2)^2$  = the value of standard normal distribution or 1.96, P= the prevalence of documentation practice among health professionals and so the default maximum value of 50% was used for P, d=degree of precision or 0.05. Taking this, the required sample size was calculated to be 384. After adding a 10% non-response rate, a total of 423 healthcare professionals participated in this study. A stratified simple random sampling method was used included two hospitals directly and three randomly selected health centers. Once the sample was stratified based on the types of randomly selected health facilities, the sample was allocated to each stratum proportionally. Then, a simple random sampling technique was used to select the study subjects in each public health facility. The list of health professionals was taken from human resource departments.

In the healthcare system, patient status, medical diagnoses, planned care, medical interventions or treatments, laboratory tests, result confirmations, medications, patient education and counseling, communication and delivering service are activities of health professionals. All the mentioned activities of health professionals are either medical or non-medical activities (patient education and counseling), but all are routine activities for health professionals. As a result, health professionals use standard documentation tools such as manual records and/ or electronic systems to document their routine activities correctly and on time while respecting the rules of ethics<sup>(28)</sup>. HCPs' routine practice documentation was assessed by using (12 'yes' and 'no' questions)<sup>(10, 29)</sup>. The level of health professionals' routine practice documentation was determined using the mean value as a cut-off point. Hence, the level of HCPs' routine practice documentation is good if the score is above or equal to the mean value, and otherwise poor documentation practice.

The study participants' level of knowledge was measured by using 10 'yes' and 'no' options. HCPs that scored above or equal to the mean score were considered to have good knowledge, and those who scored below the mean value had poor knowledge<sup>(10)</sup>. The study participants' level of attitude was measured by using nine Likert scale questions with responses ranging from 1 'strongly agree' to 5 'strongly disagree'<sup>(10, 25)</sup>. HCPs that scored above or equal to the mean score were considered to have a good attitude, otherwise, poor attitude.

The tool used was developed based on reviewing similar studies<sup>(10, 25, and 29)</sup>. A pretested, self-administered questionnaire was used. A pretest was done outside the study area with 10% of the study subjects to check the readability and consistency of the questionnaire. The data obtained from the pretest were used to check the validity and reliability of the tool. The Cronbach's alpha was used to check the reliability of the tool with a value of 85. The data entry and analyzed was performed and analyzed using SPSS version 28 software. Descriptive statistics were computed to describe the socio-demographic characteristics of the HCPs, their knowledge and their attitudes towards

routine practice documentation.

Bi-variable and multi-variable binary logistic regression analyses were conducted to measure the association between the dependent and independent variables. In the bi-variable regression analysis, variables with a p value of  $<0.2$  were considered for further multi-variable logistic regression analysis. The OR with a 95% CI level was assumed to assess the strength of the association between dependent and predictor variables. For all significantly associated variables, a p value  $<0.05$  was used as a cut-off point. A variance inflation factor was performed. Consequently, its value for all predictors was between one and three. This revealed that there was no correlation between the variables. The Hosmer-Lemeshow test was performed to assess the model fitness, and so model was fitted ( $p=0.271$ ).

## Results

Description of study subjects from 423 participants, 415 responded to a questionnaire with a 98.11% response rate. The mean age of the study subjects was 29.28 (SD $\pm$ 2.21) years with a minimum age of 21 years and a maximum age of 59 years. Half (51.1%) of the study subjects were male. The majority (66.7%) of study subjects were BSc degree holders or below. Of the total respondents, around 6–10 (62.4%) of the study participants had up to 5 years of working experience.

**Table (1)** shows that less than half (32.3%) of the study subjects were trained in routine practice documentation, and 8–10 (80.2%) health professionals responded that standard documentation tools were available in the working area. One hundred twenty-five (54.22%) health professionals used manual forms for documentation purposes.

**Table (2)** shows that overall, 51.1% (95% CI: 46.29% to 53.55%) of HCPs had good routine practice documentation; 6.99% of different laboratory test request forms were not completed and documented; 6.025% of the physicians' pre-diagnosis was completed and documented; 5.54% of drug prescription and laboratory result forms were not completed and documented. Documentation incompleteness accounted for 32.52% of health professionals' poor routine practice documentation.

**Table (3)** shows that bivariate and multivariate logistic regressions were used to measure the association between dependent and independent predictors. In the bivariate logistic regression,  $p<0.2$  was used and sex, age, training, knowledge, attitude, types of documentation tools, availability of standard documentation tools, workload and motivation of study subjects were the candidate variables for the multivariable regression analysis. In the multivariable regression model, knowledge, training, motivation, types and availability of the standard documentation tools were significant factors for routine practice documentation.

Moreover, table (3) shows HCPs who lack motivation were 59% (adjusted OR (AOR): 0.41, 95% CI: 0.22 to 0.76) less likely to document routine practices. Health professionals who had good knowledge of routine practice documentation were 1.4 (AOR: 1.35, 95% CI: 0.72 to 2.97) times more likely to document routine practice than those who had poor knowledge. Health professionals who were trained in routine practice documentation were 4.2 (AOR: 4.18, 95% CI: 2.99 to 8.28) times more likely to document routine practices than those who were not trained. Health professionals who used electronic systems for routine practice documentation were 2.2 (AOR: 2.19, 95% CI: 1.36 to 3.28) times more likely to document their routine practices than those who used manual forms for documentation. The availability of standard documentation tools were 2.5 (AOR: 2.45, 95% CI: 1.35 to 4.43) times more odds for health professionals to document their routine practices.

**Table (1):** Socio-demographic characteristics of healthcare professionals

Socio-demographic characteristics	Frequency	Per cent
<b>Sex</b>		
Female	199	48.0
Male	216	52.0
<b>Educational status</b>		
Degree and below	277	66.7
Master and above	138	33.3
<b>Age (in years)</b>		
21–25	65	15.7
26–30	244	58.8
31–35	59	14.2
>35	47	11.3
<b>Experience (in years)</b>		
1–5 years	259	62.4
Between 6 and 10 years	88	21.2
>10 years	68	16.4
<b>Training for standard documentation tools</b>		
Yes	134	32.3
No	281	67.7
<b>Availability of standard documentation tools</b>		
Yes	333	80.2
No	82	19.8
<b>Types of documentation tools used</b>		
Electronic system	190	45.78
Manual form	225	54.22

**Table (2):** Checklists examine healthcare professionals' routine practice documentation reform implementation guidelines

	Content of items for routine practice documentation	Yes (%)	No (%)
1	Patients' admission assessment is documented or attached for the patient admitted	17 (4.10)	13 (3.13)
2	Physicians' pre-diagnosis is completed and documented	14 (3.37)	25 (6.02)
3	Different laboratory test request forms completed and documented	19 (4.58)	29 (6.99)
3	The nursing care plan is completed and attached to the patient's card	28 (6.75)	15 (3.61)
4	Laboratory request accepted and attached to patient card	21 (5.06)	14 (3.37)
5	Laboratory results from filling out (completed) and documented	15 (3.61)	23 (5.54)
6	Laboratory results attached to patient cards	12 (2.90)	11 (2.65)
7	Final diagnosis and treatment results documented	10 (2.41)	24 (5.78)
9	Drug prescription forms completed and documented	20 (4.82)	23 (5.54)
10	Maternal and child health service forms completed and	22 (5.30)	12 (2.89)

	Content of items for routine practice documentation	Yes (%)	No (%)
	documented		
11	Follow-up form (form for chronic patients) completed and documented	18 (4.34)	8 (1.93)
12	Progress report documented including education and counseling given to the patients	16 (3.86)	6 (1.45)
	Overall health professionals' routine practice documentation	212 (51.1)	203 (48.9)

**Table (3) :** Bivariate and multivariate analysis of factors associated with HCPs' routine practice documentation (n=415)

Variables	Routine practice documentation		OR (95% CI)			
	Poor practice n	%	Good practice n	%	COR (95% CI)	AOR (95% CI)
<b>Sex</b>						
Male	107	25.	103	24.	0.95 (0.65 to 1.40)*	0.93 (0.60 to 1.44)
	80		80			
Female	96	23.	109	26.	1	1
	10		30			
<b>Knowledge</b>						
Good	123	29.	148	35.	1.50 (1.00 to 2.26)*	1.35 (0.72 to 2.97)†
	64		66			
Poor	80	19.	64	15.	1	1
	28		42			
<b>Age (in years)</b>						
26–30	120	28.	124	29.	0.83 (0.48 to 1.44)*	1.10 (0.58 to 2.08)
	92		88			
31–35	23	5.5	36	8.6	1.26 (0.62 to 2.58)	1.20 (0.52 to 2.77)
	4		7			
>35	31	7.4	16	3.8	0.42 (0.19 to 0.90)	0.51 (0.21 to 1.34)
	7		6			
21–25	29	6.9	36	8.6	1	1
	9		7			
<b>Motivation</b>						
No	171	41.	163	39.	0.62 (0.38 to 1.02)*	0.41 (0.22 to 0.76)†
	21		28			
Yes	32	7.7	49	11.	1	1
	1		80			

Variables	Routine practice documentation				OR (95% CI)	
	Poor practice		Good practice		COR (95% CI)	AOR (95% CI)
	n	%	n	%		
<b>Attitude</b>						
Good	165	39.	182	43.	1.40 (0.83 to 2.36)*	1.09 (0.71 to 2.04)
	76		86			
Poor	38	9.1	30	7.2	1	1
	5		3			
<b>Training on documentation</b>						
Yes	32	7.7	102	24.	4.96 (3.12 to 7.88)*	4.18 (2.99 to 8.28)†
	1		57			
No	171	41.	110	26.	1	1
	21		51			
<b>Availability of documentation sheet</b>						
Yes	147	35.	186	44.	2.73 (1.63 to 4.55)*	2.45 (1.35 to 4.43)†
	42		82			
No	56	13.	26	6.2	1	1
	50		6			
<b>Types of tool used for documentation</b>						
Electronic system	119	28.	80	19.	2.34 (1.58 to 3.47)*	2.19 (1.36 to 3.28)†
	67		28			
Manual form	84	20.	132	31.	1	1
	24		81			
<b>Workload</b>						
Yes	130	31.	151	36.	0.67 (0.33 to 1.36)*	0.48 (0.21 to 1.10)
	33		39			
No	64	15.	70	16.	1	1
	42		86			
Reference category=1. *Significant in COR. †Significant in AOR. AOR, adjusted OR; COR, crude OR.						

## Discussion

This study assesses HCPs' routine practice documentation and associated factors. HCPs that had good knowledge about routine practice documentation, training on documentation, using electronic systems for documentation, the availability of standard documentation tools and a lack of motivation towards routine practice documentation were statistically

significant factors associated with HCPs' routine practice documentation. This study revealed that HCPs' routine practice documentation was good (51.1%). This finding is higher than previous similar studies, which found 44.2% in Nigeria<sup>(24)</sup>, 33.3% in Indonesia<sup>(19)</sup> and 37.4%–48.8% in different parts of Ethiopia<sup>(10, 25, and 30)</sup>. However, the finding is lower than the study done in Jamaica, which reports that health professionals' documentation practice is 98%<sup>(31)</sup>.

This might be due to the utilization of technologies such as the electronic medical record and district health information system, the accessibility of required tools for documentation and HCPs' good commitment to using data<sup>(26)</sup>. Additionally, this variation might be due to the information difference, the time gap between studies, the high patient flow, the shortage of time and the workload of HCPs. Healthcare professionals who lack motivation were 59% less likely to have documentation practices when compared with those who had gained motivation. This finding is inconsistent with studies done in Ethiopia<sup>(30, 32)</sup>. This might be poor professional encouragement, poor financial support, less opportunities for further educational development, poor infrastructures and low hospital management support<sup>(32)</sup>.

Healthcare professionals for whom standard documentation tools were available were 2.5 times more likely to document routine practices than those for whom standard documentation tools were not available. This finding is consistent with a study done in Australia<sup>(33)</sup>, Tigray<sup>(25)</sup> and Amhara regions<sup>(30)</sup>. This might be due to familiarization with standard documentation sheets, and the accessibility of integrated routine health information forms for recording and reporting<sup>(34)</sup>. HCPs who had good knowledge of routine practice documentation were more likely to document their routine practice. This result is supported by studies done in Ethiopia<sup>(10)</sup>, the USA<sup>(35)</sup> and Australia<sup>(36)</sup>.

This might be due to health professionals' familiarity with documentation guidelines and manual forms that improve HCPs' knowledge of routine practice documentation<sup>(10)</sup>. Additionally, the reason might be that HCPs understand the importance of documenting routine practice, the viability of reading materials, know that record-keeping is required for medico-legal issues and have good competency in the area of documentation<sup>(36)</sup>. Moreover, spending on documentation courses may promote health professionals' knowledge<sup>(37)</sup>.

HCPs that were trained in routine practice documentation were 4.2 times more likely to document routine practices than those who were not trained. This evidence is supported by studies done in Ethiopia<sup>(10)</sup> and Iran<sup>(37)</sup>. This might be due to training, which might enhance HCPs' knowledge and motivation for documentation and provide team-based learning, intrapersonal skills sharing and consultation gained from colleagues. Plus, training may force health professionals to develop a positive attitude towards routine practice documentation<sup>(10)</sup>.

Health professionals who used electronic systems for routine practice documentation were 2.2 times more likely to document their routine practices than those who used manual forms. This study is supported by a study done in Ethiopia<sup>(27)</sup> and a study done about maintaining practices and record-keeping<sup>(8)</sup>. This might be due to the capability of electronic systems to reduce the time spent documenting patient care<sup>(14)</sup>. Additionally, record-keeping in the light of recent public inquiries, national interests in shifting from paper to digital storage of data, the capability of electronic health records to generate a complete record of an episode of care and the longitudinal nature of the electronic system might be possible reasons<sup>(8)</sup>. Moreover, a need for real-time access to health information when and where it is needed might be reason why an electronic system could be more likely to be good for documentation<sup>(30)</sup>.

## Conclusions



In this study, healthcare professionals have good routine practice documentation. Knowledge, training, using an electronic system, availability of standard documentation tools and lack of motivation are statistically significant factors for routine practice documentation. Health policy formulators and stakeholders give additional training to HCPs, and encourage them to use an electronic system for documentation. Stakeholders should improve HCPs' knowledge and motivation of routine practice documentation. Additional high-quality studies are required on a similar topic.

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