

Research Article

The Characteristics of Sick Leave Holders at the Primary Healthcare Setting: A Cross-Sectional Study

Salma Rashid Al-Kalbani* , Anwaar Al-Lawati

Directorate General of Health Services, Muscat, Ministry of Health, Oman

Abstract

Introduction: Sick leave certification is an ongoing challenge at primary healthcare settings, influenced by various factors: patient, physician, and healthcare system. This study examined the determinants of sick leave certification at North Al-Khuwair Health Centre (NKHC), and the association between physicians' level of training and the justification of sick leave. **Methods:** An analytical, observational cross-sectional study was conducted among all patients issued sick leave certificates at NKHC between December 1 and 31, 2023. Univariate analysis was conducted to investigate the association between patient, doctor, healthcare setting factors, and sick leave justification. A multivariate, binary logistic regression analysis was conducted to investigate the association between levels of training (the exposure variable) and justification of sick leaves (the outcome of interest) after adjustment for possible confounders. **Results:** A total 683 sick leaves were issued during the study period. Most sick leaves were issued to young patients (n = 587, 85.9%), female patients (n = 392, 57.4%), and those attending general practitioner clinics (n = 660, 96.6%). Over half of sick leaves were issued to patients with acute upper respiratory tract illnesses (n = 348, 51.0%). Univariate analysis showed significant association between age, sex, type of clinic attended, and sick leave justification. Family physicians (FMs) (n = 1, 4.3%, p < 0.001) issued fewer unjustified sick leaves than general practitioners (GPs) (n = 48, 7.3%, p < 0.001). Multivariate logistic regression analysis, and after controlling for possible confounders, showed no significant association between doctor training level and sick leave justification. **Conclusions:** The study found that young, female patients are more likely to receive sick leaves. FMs were less likely to issue sick leave than GPs. No significant association between justification of sick leave and amount of training in this population. More research is required to better understand the possible factors that contribute to issuing sick leaves in primary care settings.

Keywords

Sick Leave, Training Level, Primary Health Care, Oman

1. Introduction

Sick leave certification is an ongoing challenge at primary healthcare setting that contributes significantly to the burdens in general practice as well as the financial impact on society as a whole [1]. The process of issuing sick leave is determined by doctors' evaluations and patient explanations of their medical

conditions. However, many health disorders lack objective findings, and doctors face challenges in confirming or refuting the presence of sickness [1]. Several factors can influence sick leave certification, including doctor factors, patient factors, healthcare setting factors, and wider societal factors [2].

*Corresponding author: rashidsalma053@gmail.com (Salma Rashid Al-Kalbani)

Received: 29 March 2025; **Accepted:** 7 April 2025; **Published:** 19 May 2025



Doctors' factors, such as age, sex, level of postgraduate training, and number of patients seen, were found to influence the issuance of sick leave [3-5]. Some studies found no sex variation in issuing sick leaves [5] while others found female doctors are more likely to issue sick leaves compared to male doctors [4]. Specialists were less likely to issue sick leaves and less likely to give longer periods of sick leaves [5]. Long-term experience and part-time work as a family physician increased the likelihood of issuing sick leave certificates [5]. Among patient factors, age, sex, having an acute medical disease, and the existence of comorbidity (including mental and physical illnesses), some factors that may trigger seeking a sick leave certificate [5]. Self-perceived poor health, self-efficacy, and self-prediction to return to work were also studied as risk factors for issuing sick leaves [6]. Reports on a direct relationship between the severity of the medical condition and sick leave are scarce. However, it is important to acknowledge that sick leave certificates can go beyond medical assessments, considering work capabilities, workplace knowledge, and social security systems in place, all of which are difficult to assess as primary healthcare physicians [2, 6]. Limited communication between healthcare sectors and other sectors can lead to unnecessarily issued sick leave, potentially causing productivity loss [2]. However, the main basis for sick leaves should be the patient's medical situation, as 'medical' does not necessarily mean the same to the patient as the physician [5]. Overall, it is important to report both medical and social reasons for the inability to work when issuing sick leave.

The requirement of balancing clinical judgments with societal expectations presents challenges for primary care physicians issuing sick leave certification. In Oman, the sick leave certificate policy was released in 2011 as a guideline for health care professionals in issuing sick leave; nonetheless, sick leave is granted completely based on the physician's assessment [7]. The International Classification of Functioning, Disability, and Health (ICF) is a tool used to assess the level of functioning in a medical context when assessing impaired work capacity [8]. Primary care physicians face difficulties in justifying sick leaves due to the lack of an objective tool to balance clinical opinions with socio-economic demands [9]. Up to the author's knowledge, limited studies looked at the sociodemographic and health-related factors of sick leave holders and the method used to justify sick leave at the primary healthcare setting in Oman. This study aims to examine factors that contribute to sick leave certifications among patients attending North Al Khuwair Health Centre (NKHC) and specifically examine the association between level of physician training and justification of sick leave.

2. Materials and Methods

2.1. Study Setting

The study was conducted in one of Muscat governorate's

primary health care settings, the North Al Khuwair Health Centre (NKHC). The health centre serves the Omani population and government employees within its catchment area. The centre has one triage room, eight general practitioner rooms, one vaccination room, two speciality rooms, one laboratory, one x-ray room, and one pharmacy. The health centre employs a total of fourteen clinicians (four qualified family physicians and ten general practitioners). As a recognised training centre for family medicine residents, trainees in family medicine rotate on a regular basis in the health centre.

2.2. Study Population

The study population consisted of all patients who received sick leaves from family physicians or general practitioners who work at North Al Khuwair Health Centre between December 1 and 31, 2023. The inclusion criteria were all patients who received sick leaves from family physicians or general practitioners who work at NKHC. The exclusion criteria included patients who received sick leaves from visiting doctors and trainees attending NKHC.

2.3. Study Design

This was an observational, analytical, cross-sectional study.

2.4. Ethical Approval

Ethical approval was obtained from the Regional Research Committee at the Ministry of Health in Oman in June 2024 (proposal ID: MoH/CSR/24/28321). Routine health care data were retrieved from the AISHifa system at North Al Khuwair Health Centre (NKHC) between 1/12/2023 and 31/12/2023. The data was managed according to the quality control ethics.

2.5. Data Collection and Study Instrument

The study instrument comprised a set of variables that were collected by the investigator from the AISHifa system in 3+ at NKHC. Access to these data was granted by the NKHC. The study instrument consists of four main sections: patient's sociodemographic variables (including age, sex, and nationality), patient's health-related variables (including presence of past medical illnesses, type of medical illnesses the patient presented with, and clinical diagnosis when issuing sick leaves), healthcare setting variables (including type of clinic where sick leave was issued, clinician designation issued sick leaves), and sick-leaves variables (including duration of last sick leave issued, frequency of sick leave issued within the time frame of study period, and justification of sick leave).

The primary outcome of interest was defined as the justification of sick leave being issued which was based of the sick leave policy in Oman that was enacted in 2011. For the purpose of this study, justified sick leave was defined as sick leave issued for acute health-related problems. Unjustified sick leave refers to leave given to patients attending scheduled

appointments at specialty clinics (e.g., chronic disease clinic, antenatal (ANC), postnatal (PNC), birth spacing, or asthma), those visiting the fast-track clinic for blood tests or medication refills, and those seeing a general practitioner only to follow up on lab results. To guarantee consistency in the data being collected, data collection was done by one staff.

2.6. Statistical Analysis

The categorical variables were represented as numbers and percentages (n%). Initially, descriptive baseline characteristics of the patient's sociodemographic, health-related, and health care setting variables were reported. Univariate analysis was then performed using the Chi square (χ^2) test and Fisher's exact test to examine the association between the justification of sick leaves issued and the patient sociodemographic, patient health-related, and healthcare setting variables. Binary categories were created for binary logistic regression analysis to investigate the association between justification of sick leave and doctor training level after adjusting for possible confounders. The adjusted odds ratio (AOR), 95% confidence interval (95% CI), and p-value were provided. The data was analyzed using the Statistical Package for Social Sciences, version 27. This analysis used a two-tailed t-test with a level of significance set at $p < 0.05$.

3. Results

The baseline characteristics of patients who received sick leaves at North Al Khuwair Health Centre are shown in Table 1. A total of 683 sick leaves were issued by doctors working in NKHC, with the age groups of 18–24 ($n = 171$, 25.0%) and 25–39 ($n = 294$, 43.0%) accounted for two-thirds of total sick leave granted. Most of the sick leaves were issued for Omani patients ($n = 621$, 90.9%). The age group 25-39 has the highest frequency of sick leave issued, with adult females accounting for over two-thirds ($n = 179$, 60.9%) of all sick leave issued within that category.

The characteristics of sick leave issued to patients are presented in Table 1. Most patients ($n = 556$, 81.4%) received one-day sick leave, and a comparable proportion ($n = 562$, 82%) received sick leave once during the study period. Over one-third ($n = 276$, 40.4%) of individuals granted sick leaves had less than four visits to AlShifa records at NKHC. Most sick leaves were issued at GP clinics ($n = 658$, 96.3%), with females receiving sick leaves at a higher rate than males ($n = 367$, 55.8%, and $n = 291$, 44.2%, respectively). Majority of sick leaves were issued by general practitioners, $n = 660$, 96.6%.

Table 1. Baseline characteristics of patients who received sick leaves in North Al Khuwair Health Center in December 2023, $n=683$.

Variable	Total		Male		Female	
	n	%	n	%	n	%
Age (Year)						
Younger than 18	122	17.9%	63	51.6%	59	48.4%
18-24	171	25.0%	75	43.9%	96	56.1%
25-39	294	43.0%	115	39.1%	179	60.9%
40 year and older	96	14.1%	38	39.6%	58	60.4%
Nationality						
Omani	621	90.9%	277	44.6%	344	55.4%
Non-Omani	62	9.1%	14	22.6%	48	77.4%
Duration of sick leave given						
1 day	556	81.4%	228	41.0%	328	59.0%
2 days	115	16.8%	56	48.7%	59	51.3%
3 days	12	1.8%	7	58.3%	5	41.7%
Frequency of Sick leaves						
1 time	562	82.3%	229	40.7%	333	59.3%
2 times	93	13.6%	46	49.5%	47	50.5%
≥ 3 times	28	4.1%	16	57.1%	12	42.9%
Number of visits in NKHC						

Variable	Total		Male		Female	
	n	%	n	%	n	%
< 4 visits	276	40.4%	115	41.7%	161	58.3%
≥ 4 visits	407	59.6%	176	43.2%	231	56.8%
Clinic type						
GP ¹	658	96.3%	291	44.2%	367	55.8%
ANC/PNC/BS ²	23	3.4%	na	na	23	100.0%
Chronic diseases ³	2	0.3%	0	0.0%	2	100.0%
Training level of doctor						
Family physician	23	3.4%	7	30.4%	16	69.6%
General practitioner	660	96.6%	284	43.0%	376	57.0%

¹ General practice clinic, ²antenatal /post-natal /birth spacing clinic, ³including diabetic, hypertension, asthma and, other chronic medical illnesses.

Figure 1 illustrates the medical diagnosis of patients who received sick leave from NKHC in December 2023. More than half (n = 348, 51.0%) of sick leaves were issued to pa-

tients with acute upper respiratory tract illnesses (URTI), followed by musculoskeletal disorders (n = 57, 8.3%) and acute gastroenteritis (n = 51, 7.5%).

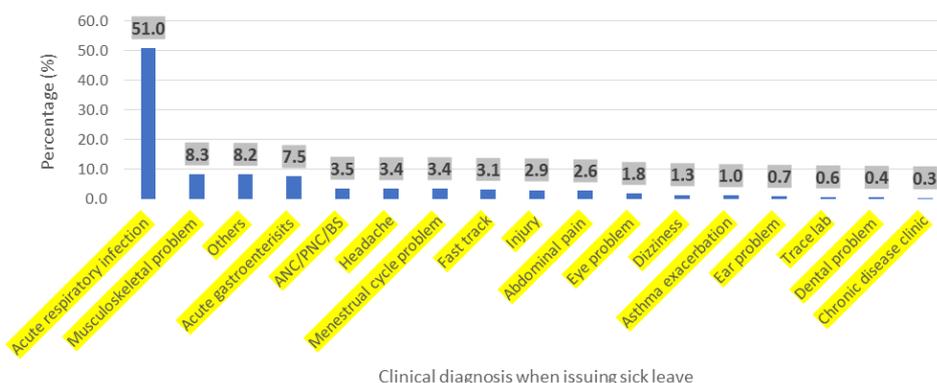


Figure 1. Reason for issuing sick leave (SL) for patients at North Al-Khuwair Health Centre (NKHC) in December 2023, (n = 683).

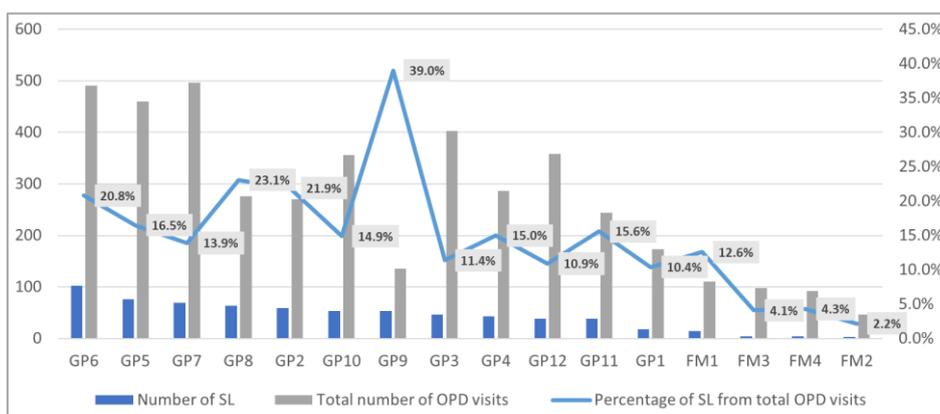


Figure 2. Proportion of sick leaves (SL) issued by doctors at North Al-Khuwair Health Centre (NKHC) per total OPD visit, (n = 683), GP: General Practitioner, FM: Family Physician.

Figure 2 illustrates the proportion of sick leaves from total outpatient visits issued by doctors. Overall, the highest records were reported for GPs, while the lowest records were reported for family physicians. The percentage of sick leave from total OPD visits varies by GPs, ranging from 10.4% for GP 1 to 39% for GP 9. This demonstrates the inconsistent practice of issuing sick leave among general practitioners in the same healthcare facility. This variation was also found among family physicians, with sick leave as a percentage of total OPD visits ranging from 2% for FM 2 to 12.6% for FM 1.

Table 2 shows the univariate analysis of the justifications of sick leaves based on the patient's sociodemographic, health-related, and healthcare setting characteristics. There was a significant association between age, sex, and justification of sick leave. Patients under 40 ($n = 44$, 7.5%, $p < 0.001$) had more unjustified sick leave compared to those 40 and

older ($n = 5$, 5.2%, $p < 0.001$). Females ($n = 41$, 10.5%, $p < 0.001$) were more likely to receive unjustifiable sick leaves than males ($n = 8$, 2.7%, $p < 0.001$).

When examining the nature of medical illnesses, most patients presented with chronic medical illnesses had unjustified sick leave ($n = 10$, 76.9%, $p < 0.001$). There was a significant association between the type of clinic attended and the justification of sick leaves. Most patients who attended GP clinics had justified sick leaves ($n = 633$, 96.2%, $p < 0.001$).

Training level was significantly associated with justification of sick leaves. Family physicians ($n = 1$, 4.3%, $p < 0.001$) issued fewer unjustifiable sick leaves than general practitioners ($n = 48$, 7.3%, $p < 0.001$). There was no significant association observed between nationality, previous medical illness, and characteristics of sick leaves and sick leave justification in this cohort of study population.

Table 2. Univariate analysis of the association between sociodemographic, health-related, sick leave-related, and health-setting-related variables of sick leave holders and sick leave justification at North Al Khuwair Health Centre in December 2023, $n = 683$.

Variable	Total n (%)	Justification		p value
		Yes	No	
Age (year)				
Younger than 40	587 (85.9%)	543 (92.5%)	44 (7.5%)	<0.001 ^a
40 or older	96 (14.1%)	91 (94.8%)	5 (5.2%)	
Sex				
Male	291 (42.6%)	283 (97.3%)	8 (2.7%)	<0.001 ^a
Female	392 (57.4%)	351 (89.5%)	41 (10.5%)	
Nationality				
Omani	621 (90.9%)	578 (93.1%)	43 (6.9%)	0.435 ^a
Non-Omani	62 (9.1%)	56 (90.3%)	6 (9.7%)	
Acute vs. chronic illness ¹				
Acute	670 (98.1%)	631 (94.2%)	39 (5.8%)	<0.001 ^b
Chronic	13 (1.9%)	3 (23.1%)	10 (76.9%)	
Any PMH ²				
Yes	68 (10.0%)	574 (93.3%)	41 (6.7%)	0.293 ^a
No	615 (90.0%)	60 (88.2%)	8 (11.8%)	
Duration of last sick leave				
One day	566 (81.4%)	511 (91.9%)	45 (8.1%)	0.136 ^b
Two or more days	127 (18.6%)	123 (96.9%)	4 (3.1%)	
Frequency of sick leave ³				
One episode a month	562 (82.3%)	517 (92.0%)	45 (8.0%)	0.107 ^b
Two or more episodes a month	121 (17.7%)	117 (96.7%)	4 (3.3%)	
Clinic type ⁴				

Variable	Total n (%)	Justification		p vale
		Yes	No	
GP ⁵	658 (96.3%)	633 (96.2%)	25 (3.8%)	
ANC/PNC/BS ⁶	23 (3.4%)	0 (0.0%)	23 (100.0%)	<0.001 ^b
Chronic disease	2 (0.3%)	1 (50.0%)	1 (50.0%)	
Training level				
Family physician	23 (3.4%)	22 (97.7%)	1 (4.3%)	<0. 001 ^b
General practitioner	660 (96.6%)	612 (92.7%)	48 (7.3%)	

^a Chi square (χ^2) test; ^b Fisher’s exact test; ¹type of illness when issuing sick leave; ² Past medical illness; ³ frequencies of the sick leave within the study period; ⁴ clinics where we sick was issued; ⁵general practitioner clinic; ⁶ including antenatal clinic, postnatal clinic, births pacing clinic; level of significance at $p < 0.05$

Figure 3 shows the justification of sick leave per doctor. There was significant variation in sick leave justifications across and within categories. For example, while most family physicians do not issue unjustified sick leave, one out of every

four sick days granted by family physicians (FM4) was deemed unjustified. On the other hand, unjustified sick leave among GPs ranged from 0% (for GP 1, 4, and 5) to n=22, 41% for GP 9.

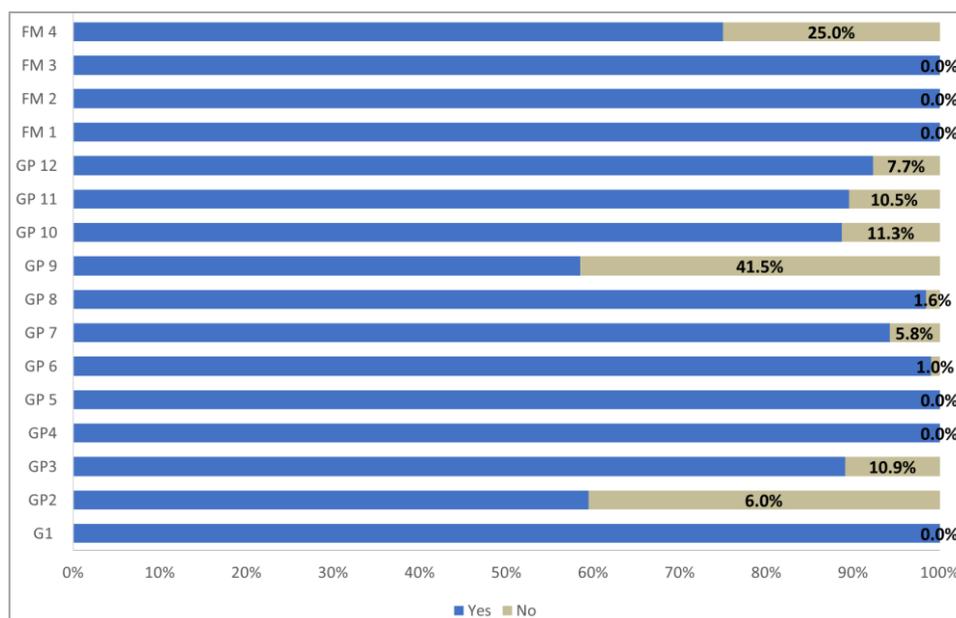


Figure 3. Justification of sick leaves per treating doctor factors at North Al-Khuwair Health Centre (NKHC) in December 2023 (n = 683). FM: family physician, GP: general practitioner.

Table 3 shows the multivariable binary logistic regression analysis after controlling for possible confounders. Young patients were less likely to receive justified sick leaves; however, this was not statistically significant (AOR = 0.40, 95% CI: 0.12 to 1.24, $p = 0.13$). Male patients were 3.29 times more likely to receive justified sick leaves than female patients (AOR = 3.29, 95% CI: 1.46 to 7.41, $p = 0.004$). Patients presented with acute medical illnesses were more likely to receive sick

leave compared to patients who were presented with chronic medical illnesses (AOR= 4.5, 95% CI: 10.79 to 13.43, $p < 0.001$). Patients with chronic medical illnesses were less likely to receive justified sick leaves; however, this was statistically not significant. Family physicians were 2.39 times more likely to issue justified sick leaves compared to general practitioners; however, this was not statistically significant.

Table 3. Binary logistic regression analysis of the justification of sick leave of patients who received sick leaves in North Al-Khuwair Health Centre (NKHC) in December 2023, n=683.

Variable	Justification		
	AOR	95%CI	p vale
Age (year)			
Younger than 40	0.40	0.127to 1.242	0.113
40 or older	1.00		
Sex			
Male	3.29	1.46 to 7.41	0.004
Female	1.00		
Acute vs. chronic illness ¹			
Acute	4.50	10.79 to 13.43	<0.001
Chronic	1.00		
Any PMH ²			
Yes	0.44	0.17 to 1.10	0.078
No	1.00		
Training level			
Family physician	2.39	0.244 to 23.36	0.454
General practitioner	1.00		

¹type of illness when issuing sick leave; ² Past medical illness; Nagelkerke R square 0.212, Hosmer and Lemshow test 0.644, AOR =1 is the reference range; level of significance at p<0.05

4. Discussion

This analytical, observational, cross-sectional study examined the patients' sociodemographic, patients' health-related, and healthcare setting-related characteristics associated with issuing sick leave at North Al Khuwair Health Centre. The sick leave was more prevalent among young, female patients and was mostly issued for acute medical illnesses. Trained family physicians were less likely to issue sick leave certificates than general practitioners. The univariate analysis revealed a significant association between age, sex, nature of medical illness, type of clinic the patient visits, and the justification of sick leave. The multivariate binary logistic regression analysis revealed that age and nature of medical illnesses were significantly associated with sick leave justification. However, there was no significant association between the level of training and justification for sick leave in this sample of study population.

4.1. Patients' Sociodemographic Factors in Issuing Sick Leave Certificates

This study shows that sick leave was more common among

young age group, and female patients, which is similar to the existing literature [5, 10, 11]. However, the study did not look at the type of work the sick leave holders have or the financial status, which may influence the issuing of sick leave. The place of residence can also influence the sociodemographic factors of sick leave holders [12].

According to the current study, nine out of 10 sick leaves were issued to Omani patients, with females receiving more sick leaves than males. This could be attributable to the fact that public health services in Oman cover Omani citizens and government employees. In contrast, nongovernmental employees need to go different pathways to obtain sick leave.

The study showed great sex variation in issuing sick leave. According to a Norwegian study, health considerations account for only 22-24% of observed disparities in sickness absence, with work and home pressures also playing a role [13]. Sleep issues outweigh all other factors in explaining sex disparities. The author concluded that the most significant explanations for the sex disparity must be factors beyond health, to employment, and family stresses [13]. More research is required to investigate the work-related variables that drive more women to seek sick leave certificates.

4.2. Patients' Health-related Factors in Issuing Sick Leave Certificates

This study showed that most of the sick leaves were issued for acute medical illnesses, which is similar to the existing literature [1, 5, 14-16]. Specifically, respiratory illnesses and musculoskeletal disorders accounted for approximately two-thirds of all sick leaves that were issued. However, many times the sickness certificate doesn't fall into a specific diagnosis owing to the uncertainty of the illness the patient presents with. Doctors frequently find it difficult to categorise the illness, as the illness and disease are continuum and difficult to distinguish between [17]. In the absence of a clear definition of the disease and illness concept, sick leave will continue to be a dynamic issue that needs clear standardised strategies to approach.

4.3. Doctor-related Factors Affecting Issuing Sick Leave Certificates

This study shows that trained family physicians were less likely to issue sick leave for their patients compared to general practitioners and this is similar to the existing literature [5]. However, it did not address other doctors' sociodemographic factors like age, sex and years of experience after postgraduate training, all of which can influence the sick leave certification [3-5, 11]. One study showed that long-experienced family physicians and part-time family physicians were more likely to issue sick leaves [3]. Another study showed that female doctors were more likely to issue sick leaves than male doctors and this is irrespective of the clinical setting [5]. When comparing female GPs at primary health care practices with other specialties, general practitioners were more likely to prescribe sick leave than orthopaedic doctors, but less so than psychiatrists [4]. Other studies examine doctor-patient relationships and sick leave certificate. One study showed that the way the patient presents his sickness can influence doctor's decision to issue a sick leave certificate [3]. Having doctors knowing the patient increase the chance of issuing sick leaves [18]. A study found that general practitioners were less likely to issue sick leave when they perceived a patient's condition as somatic, even if the patient's work capacity was impaired. In contrast, when complaints lacked clear somatic explanations, GPs were more likely to issue sick leave, even in the absence of strong clinical evidence [1].

4.4. Work-related Factors Affect the Issuing of Sick Leave Certificates

Although this study did not examine the effect of work type on sick leave issuance, earlier research has found a significant association between absence from work and patients' job designations [1, 11, 19]. Frequently, the patient will present with a complaint that is difficult to establish or deny [1]. In the absence of a clear job description from the employer,

healthcare practitioners face difficulties in accurately assessing a patient's ability to work. As a result, they often rely on the patient's and the GP's subjective assessments of impaired work capacity as the main basis for issuing sick leave [1]. One tool to assess impaired work capacity in the medical context is the International Classification of Functioning, Disability and Health [ICF] [8]. Physicians typically evaluate a patient's functional impairment in relation to their work tasks, but functional impairment doesn't always mean reduced capacity. The patient's and GP's assessments of diminished work capacity were the strongest predictors of sickness certification, with a high level of consensus between the two [1].

In Oman, there is inconsistency in issuing sick leaves within and between primary healthcare facilities. Patients frequently seek sick leave for work-related difficulties, regardless of their ability to work or medical diagnosis. Some patients who visit a healthcare facility may request sick leave because work regulations require them to provide such evidence regardless of their clinical diagnosis or fitness to work. The attendance certificate, which is regarded as official documentation indicating a patient attended a medical facility for a few hours, is frequently rejected by public and private sectors, leaving the patient liable to financial penalties. This is mostly due to insufficient communication between the health sectors and other sectors. Improving communication between health sectors and other sectors can help reduce patient requests for unjustified sick leave.

4.5. The Factors Affecting Justification of Sick Leaves

This study attempted to shed light on the characteristics of justified sick leaves, specifically looking at the association between the level of training and justification of sick leave after controlling for other variables. The univariate analysis revealed a significant association between patients' age, sex, nature of medical conditions the sick leave holders had, doctor training level, clinic where the patient received sick leave, and justification of sick leaves. However, after controlling for possible confounders, there was no significant association between the level of training and justification for sick leave. A possible explanation is that the sample size was small enough to produce any association. The potential disadvantage of the differentiation of justification for sick leave is that it does not give a firm foundation on which both medical and work assessments should be performed to justify sick leave. The current study uses the MOH sick leave policy as a guideline to justify sick leave, although it is entirely dependent on the doctor's assessment [7].

4.6. Strength and Limitation

This is the first study that examines patient, doctor, and healthcare setting aspects of sick leave holders and the effect of the level of training on sick leave justification in a primary

healthcare context. Nonetheless, it has several limitations. First, the study was limited to a single primary healthcare setting; hence, the findings cannot be generalized to all primary healthcare settings. Second, the sociodemographic characteristics of the health centre's catchment area vary from one health center to other, as well as from urban to rural areas. The study did not look at the doctors' and patients' attitudes toward sick leave certificates, nor did it provide an objective assessment of sick leave certificates.

4.7. Study Implications

The study demonstrates variations in issuing sick leaves within the same healthcare facility. It also demonstrates that sick leave is exclusively based on physician assessment, which is frequently based on medical and work capacity evaluations. This study offers valuable insights into the decision-making process concerning sick leave certification in primary care settings. The findings have several important implications for the healthcare sector.

First, the current study revealed an inconsistent approach to issuing sick leave in primary healthcare settings, regardless of training level. Thus, there should be an evidence-based national guideline for sick leave certification to ensure consistent and fair issuance of sick leave, regardless of the physician's level of training. The sick leave policy should incorporate both clinical diagnosis and an assessment of work capacity. The assessment of work capacity should follow specific criteria to make the process more standardized. The policy will help standardize the sick leave practice within and across different healthcare facilities.

Second, clear communication between healthcare and other sectors is crucial for assessing patients seeking sick leave. Many patients request sick leave instead of an attendance certificate, leading to unjustified sick leave requests and productivity loss. Attendance certificates, which are granted to patients who are not qualified for sick leave certificates, must be proven as official documentation of attendance at a healthcare facility.

Third, the high number of sick leave requests from younger and female patients may reflect patient expectations. Thus, training clinicians' appropriate communication skills can improve patient satisfaction while maintaining appropriate use of sick leave.

Fourth, the concept of a patient issuing his own sick leave has been implemented in many countries, particularly since many patients visit healthcare settings with complaints that cannot be proven or defeated. However, this can be piloted with selected healthcare facilities before being implemented on larger scales. Finally, further multicentric research is necessary to better understand the various determinants of sick leave holders.

5. Conclusion

This was the first analytical cross-sectional study to shed

light on the patient and doctor factors of sick leave holders, as well as the justification for issuing sick leave in one of Muscat Governorate's primary healthcare settings. Sick leave was more common with Omani, young-aged female patients. Trained family physicians were less likely to issue sick leave than general practitioners. The study also revealed variations in sick leave issuance between and among different healthcare specialties in the same healthcare setting. A more consistent approach is desired, which includes both medical and ability-to-work assessments when issuing sick leave. Further research from various health sectors is necessary to examine the characteristics of sick leave holders and the best strategy to reduce the burden of sick leave certification in primary healthcare settings.

Abbreviations

ANC	Antenatal Clinic
BS	Birth Spacing
FM	Family Physician
GP	General Practitioner
MOH	Ministry of Health
NKHC	North Al-Khuwair Health Centre
PNC	Post Natal Clinic
SL	Sick Leave
URTI	Acute Upper Respiratory Tract Illnesses

Ethics Statements

The routine data was obtained from AlShifa system after receiving ethical approval.

Ethics Approval

Ethical approval was obtained from the Regional Research Committee at the Ministry of Health in Oman in June 2024 (proposal ID: MoH/CSR/24/28321). Routine healthcare data were retrieved from the AlShifa system at North Al Khuwair Health Centre (NKHC) between 1/12/2023 to 31/12/2023. The data were managed according to the quality control ethics.

Author Contributions

Dr. Salma Rashid Al-Kalbani: Writing original manuscripts, conceptualization, methodology, software, visualizations, data collection and validations, formal analysis, Review and editing.

Dr. Anwaar Al-Lawati: Review and editing.

Declaration of Generative AI in Scientific

While preparing this work, the author(s) used Generative AI to check the grammar. After using this tool, the author reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data Availability Statement

Data is available upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Norrmán G, Svärdsudd K, Andersson DK. How primary health care physicians make sick listing decisions: the impact of medical factors and functioning. *BMC Fam Pract.* 2008; 9: 3. <https://doi.org/10.1186/1471-2296-9-3>
- [2] Nilsing E, Söderberg E, Berterö C, Öberg B. Primary healthcare professionals' experiences of the sick leave process: a focus group study in Sweden. *J Occup Rehabil.* 2013; 23(3): 450-61. <https://doi.org/10.1007/s10926-013-9418-0>
- [3] Norrmán G, Svärdsudd K, Andersson D. Impact of physician-related factors on sickness certification in primary health care. *Scand J Prim Health Care.* 2006; 24(2): 104-9. <https://doi.org/10.1080/02813430500525433>
- [4] Lars Englund GTKS. Variations in sick-listing practice among male and female physicians of different specialities based on case vignettes. *Scandinavian Journal of Primary Health Care.* 2000; 18(1): 48-52. <https://doi.org/10.1080/02813430050202569>
- [5] Tellnes G, Sandvik L, Moum T. Inter-doctor variation in sickness certification. *Scand J Prim Health Care.* 1990; 8(1): 45-52. <https://doi.org/10.3109/02813439008994928>
- [6] Carlsson L. Healthcare and patient factors affecting sick leave. 2017. Available from: <https://api.semanticscholar.org/CorpusID:80001196>
- [7] MOH. 2. MOH. Sick leave certificate policy. 2012. Available from: <https://www.scribd.com/document/433787127/Sick-Leave-Certificates-Policy>
- [8] WHO. International Classification of Functioning, Disability and Health 2024 Available from: <https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health>
- [9] Nantha YS, Hs AS. Sickness Certification Behavior amongst Primary Care Physicians: A Descriptive Analysis of Indirect Measures Using the Theory of Planned Behavior. *Korean J Fam Med.* 2020; 41(4): 267-270. <https://doi.org/10.4082/kjfm.18.0056>
- [10] Brady HD, McGrath D, Dunne CP. Sick Leave Determinants in the Healthcare Sector (Part I): A Review of Contextual Factors. *Brown J Hosp Med.* 2023; 2(1): 57688. Published 2023 Jan 1. <https://doi.org/10.56305/001c.57688>
- [11] Wahlström, R., & Alexanderson, K. (2004). Chapter 11. Physicians' sick-listing practices. *Scandinavian Journal of Public Health, 32(63_suppl)*, 222–255. <https://doi.org/10.1080/14034950410021916>
- [12] Tellnes G, Bjerkedal T. Epidemiology of Sickness Certification—A methodological approach based on a study from Buskerud county in Norway. *Scandinavian Journal of Social Medicine.* 1989; 17(3): 245-51. <https://doi.org/10.1177/140349488901700305>
- [13] Østby KA, Mykletun A, Nilsen W. Explaining the gender gap in sickness absence. *Occup Med (Lond).* 2018; 68(5): 320-326. <https://doi.org/10.1093/occmed/kqy062>
- [14] Krakau I. Severity of illness and diagnoses in a Swedish general practice population. *Fam Pract.* 1991; 8(1): 28-31. <https://doi.org/10.1093/fampra/8.1.28>
- [15] Tellnes G, Svendsen K-OB, Bruusgaard D, Bjerkedal T. Incidence of Sickness Certification: Proposal for use as a health status indicator. *Scandinavian Journal of Primary Health Care.* 1989; 7(2): 111-7. <https://doi.org/10.3109/02813438909088657>
- [16] Okkes IM, Polderman GO, Fryer GE, Yamada T, Bujak M, Oskam SK, et al. The role of family practice in different health care systems: a comparison of reasons for encounter, diagnoses, and interventions in primary care populations in the Netherlands, Japan, Poland, and the United States. *J Fam Pract.* 2002; 51(1): 72-3.
- [17] Amzat J ROH, Disease, and Illness as Conceptual Tools.. Health, Disease, and Illness as Conceptual Tools. *Medical Sociology in Africa.* 2014. https://doi.org/10.1007/978-3-319-03986-2_2
- [18] Soler JK, Okkes IM. Sick leave certification: an unwelcome administrative burden for the family doctor? The role of sickness certification in Maltese family practice. *European Journal of General Practice.* 2004; 10(2): 50-5. <https://doi.org/10.3109/13814780409094232>
- [19] Reiso H, Nygård JF, Brage S, Gulbrandsen P, Tellnes G. Work ability assessed by patients and their GPs in new episodes of sickness certification. *Fam Pract.* 2000; 17(2): 139-44. <https://doi.org/10.5455/msm.2014.249-252>