

Pattern of use and impact of patient sitters on the quality of healthcare in Saudi Arabia

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ABSTRACT

الأهداف: تقييم نمط الاستفادة ومدى تأثير مرافقي المرضى على نوعية الرعاية الصحية المقدمة في مستشفيات القوات المسلحة بالطائف - المملكة العربية السعودية (KSA).

الطريقة: أجريت دراسة مقطعية بمستشفيات القوات المسلحة بالطائف خلال الفترة من 1 يناير إلى 30 مارس 2008م. اشتملت الدراسة على عدد 203 مريض أدخلوا المستشفى، و 125 من مرافقي المرضى، و 213 من الفريق الطبي، وقد تم إعداد 3 استبيانات مختلفة حيث صمم لكل مجموعة من المشاركين استبيان مناسب واشتمل على معلومات الحالة، ومدة الإقامة، والفائدة المرجوة والضارة للمرافقين.

النتائج: بلغت النسبة المئوية للمرافقين من النساء 58.4% وكانت نسبة 88% من المرافقين سعوديين تراوحت أعمار المرافقين بين 17-60 عام بمعدل 33.0 (±9.64) عام. أظهرت الدراسة أن أكثر من 73% من المرافقين كانوا منتظمين في أعمالهم في قطاعات أخرى، كما أوضحت الدراسة أن نوعية غرفة المريض، وعمر المريض كانت هي العوامل الأكثر تحديداً لوجود المرافق، ولم يكن لوجود المرافق أي تأثير ذي دلالة إحصائية لتحديد مدى رضا المرضى عن نوعية الرعاية الصحية المقدمة.

خاتمة: أن نمط الاستفادة من مرافقي المرضى خلال فترة التنويم في المملكة العربية السعودية يختلف تماماً عن الدول الغربية، حيث أن الثقافة الاجتماعية تلعب دوراً مهماً لتحديد مدى الاستفادة من المرافق في المنشآت الصحية. هذه الدراسة تدق جرس الإنذار للنظام الصحي في المملكة العربية السعودية وأيضاً في البلدان العربية الأخرى لاستحداث أنظمة وقوانين تعزز الاستخدام الأمثل للمرافق خلال فترة تنويم المريض في المنشآت الصحية كما تفتح المجال لعدد من الدراسات البحثية الأخرى لتقييم مدى فاعلية تطبيق أنظمة أو إجراءات مستحدثة.

Objectives: To assess the pattern of use and impact of patient sitters on the quality of healthcare in Taif Armed Forces Hospital, Taif, Kingdom of Saudi Arabia (KSA).

Methods: A cross-sectional survey was conducted at the Armed Forces Hospital, Taif Region, KSA from 1st January to 30th March 2008. The study included 203 admitted patients, 125 patient sitters, and 213 physicians and nurses. Three different questionnaires were specifically designed for each group of participants including information on the pattern and duration of patient sitting, and potential benefits and harm among sitters.

Results: Approximately 58.4% of the participating sitters were women, 88% were Saudis, with age range from 17-60 years old, and mean (±standard deviation) of 33.0 (±9.64) years. More than 73% of the sitters have regular jobs. Types of the room and patient's age were the significant predictors for the presence of sitters. Patient satisfaction was not significantly associated with the presence, or absence of patient sitters.

Conclusion: Pattern and use of patient sitters in Saudi Arabia is unique where socio-cultural factors play the most important role. This study is another reminder to the healthcare system in KSA, as well as other Arab countries to develop policies that clearly specify patient criteria that support the decision of patient sitter use.

Saudi Med J 2010; Vol. 31 (6): 688-694

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Received 14th March 2010. Accepted 26th April 2010.

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The use of patient sitters or companions in Western countries was introduced to ensure the safety of patients with different illnesses. Sometimes, patients are at risk of harming themselves or others,¹ especially those with confusion, impulsivity, problematic behaviors, and substance intoxication/withdrawal.² Perhaps the most common frightening concern is the potential for suicide.¹ Hospital review organizations such as, the Joint Commission on Accreditation of Health Care Organizations (JCAHO) have developed extensive guidelines on the use of frequently employed restrictive measures (such as seclusion, physical restraint, and chemical restraint), and proposed recommendations for face-to-face observation,³ or constant observation⁴ by a licensed person.³ Constant observation is defined as "an increased level of observation and supervision, in which continuous one-to-one monitoring techniques are utilized to assure the safety and well-being of an individual patient or others in the patient care environment."⁵ Patient's sitter usage has expanded from monitoring patients at risk for self-harm to include those patients at risk for disrupting therapy, and those at risk for falls.⁶ Several studies were conducted in Europe and the United States^{1,2,4,6,7} to analyze the risk/cost/benefit of patient sitters/companions in different healthcare settings. Boswell et al⁷ examined the impact of sitters on the incidence of patient falls and satisfaction in an acute care hospital. They reported that for each shift without a sitter, there was only a marginal increase in the rate of falls, and a marginal decrease in patient satisfaction. Further review of the literature provided multiple descriptions of the use of sitters/companions in general hospital settings,^{1,2,8,9} however, research has not provided outcome data supporting the use of patient sitters in relation to their benefit/expense ratio. Meanwhile, the literature does not offer a system-approach to changing practice, or any alternatives to the use of sitters. In non-Western countries like the Kingdom of Saudi Arabia (KSA), available data are lacking and circumstances are completely different. Patient sitters are almost always relatives, or friends with different educational backgrounds or non-educated, rather than licensed personnel. This study aims to investigate the pattern of patient sitters' use, and to assess the impact of patient sitters on the quality of healthcare system in the Armed Forces Hospitals, Taif, KSA.

Methods. This cross-sectional study was conducted at Taif Armed Forces Hospitals, (Al-Hada, Prince Mansour, and Prince Sultan Hospitals)) Taif, KSA. These hospitals provide healthcare services for military personnel and their families in Taif area, western KSA. The study was conducted from 1st January to

30th March 2008. Participants in this study included 3 groups: 1. Adult patients (with or without sitters) currently admitted to Taif Armed Forces Hospitals during the study period, 2. Patient sitters, and 3. Medical staff (physicians and nurses). Patients were excluded if they were less than 18-years old, had loss of consciousness or confusion, or admitted to critical care, obstetrics, or psychiatric units. Three pre-designed questionnaires were developed and administered to: 1) patients (including socio-demographic information, medical history, presenting medical problem, reason for having a sitter [if any], and need for sitters), 2) patient sitters (including pattern and duration of sitting, and potential benefits and harm of being a sitter, and 3) physicians and nurses (including their attitudes towards patient sitters, benefits, and constraints). Patients and patient sitters' questionnaires were administered in Arabic through an in-depth interview with each patient, and patient sitter. The interviews were conducted by 10 trained nurses on light-duty assignment from the nursing department. However, the physicians and nurses' questionnaire was self-administered in the English language. A pilot study was conducted to assess the validity of the questionnaires, and modifications were made based on the pilot testing. Patient satisfaction was assessed using the standardized Client Satisfaction Questionnaire (CSQ-8).¹⁰ The CSQ-8 is an 8-item, easily scored, and administered measurement that is designed to measure client satisfaction with services. The CSQ-8 is scored by summing the individual item scores to produce a range of 8-32, with high scores indicating greater satisfaction. Based on the CSQ-8,¹⁰ the average satisfaction percentage of the current studied patients was 80%, which was used as cut-off point to determine factors associated with higher patient satisfaction level. Approval of the research and ethics team at Taif Armed Forces Hospitals was obtained to conduct the study, and consent was taken from each participant to voluntarily participate in the study.

Data were analyzed using the Statistical Package for Social Sciences version 16 (SPSS Inc, Chicago, IL, USA). Presence of sitters was treated as a dependent variable, in both univariate and multivariate logistic regression analyses. Department of admission, room, duration of hospital admission, patient ability to move, patient age, education, and previous admission were treated as independent categorical variables. Patient satisfaction was separately treated as a dependent variable in both univariate and multivariate logistic regression analyses. Predictor variables of patient satisfaction were all categorical, and included presence of sitters, patient gender, and patient marital status, in addition to the same independent variables used to determine

the presence of sitters. Univariate data analysis was performed and expressed as crude odds ratios (ORs), and their confidence intervals (CI [95%]). To assess strength of association, and to adjust for confounding variables, significant predictors in univariate analysis were treated using a multiple logistic regression model based on the backward stepwise selection. Level of significance was determined at $p < 0.05$.

Results. This study included 203 patients, 125 sitters, and 213 medical staff (physicians and nurses). Response rate among patients was 96% compared to 98% among sitters, and a total of 89% among the

medical staff. **Figure 1** describes the socio-demographic characteristics of patients and sitters. All patients were Saudis with 129 (63.5%) women. Patients' age ranged from 16-88 years old with a mean \pm standard deviation (SD) of 46.1 ± 19.8 years, and most of patients were married. However, among sitters, there were 58.4% women, and 88% Saudis, with age range from 17-60 years old, and mean \pm SD of 33.00 ± 9.64 years (**Figure 1**). Types of work of the sitters in the current study revealed that the percentage of sitters who do not have current specific job is 26.4% (**Figure 2**). **Table 1** shows univariate and multivariate analyses of factors determining the presence of sitters. In the univariate

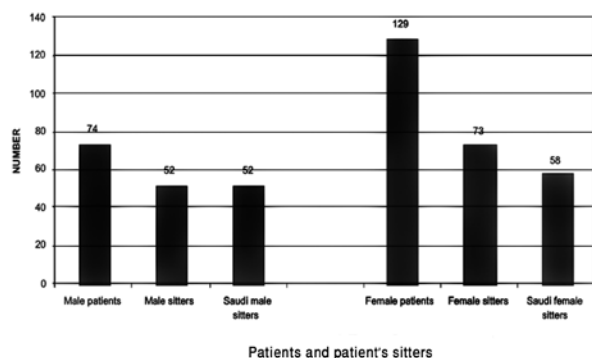


Figure 1 - Socio-demographic characteristics of the participating patients and patient sitters.

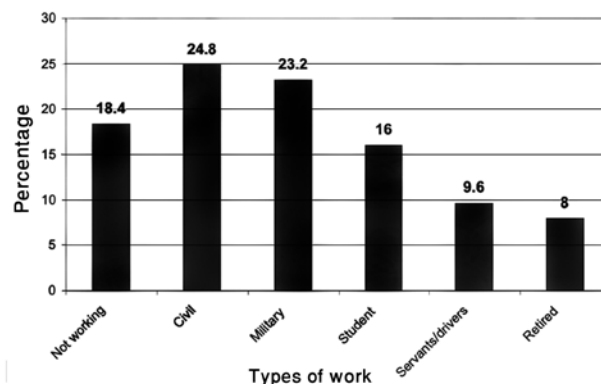


Figure 2 - Types of work of the studied patient sitters.

Table 1 - Factors determining the presence of sitters among the studied patients.

Variables	Presence of patient sitter		Crude OR	(95% CI)	Adjusted OR	(95% CI)
	Yes (n=125)	No (n=78)				
	n (%)					
Department						
Medical, n=109	62 (56.9)	47 (43.1)	1		-	
Surgical, n=94	63 (67.0)	31 (33.0)	1.54	(0.83 - 2.85)		
Room						
Single, n=98	77 (78.6)	21 (21.4)	4.35	(2.25 - 8.47)	4.61	(2.42 - 8.77)
Double or multiple, n=105	48 (45.7)	57 (54.3)	1		1	
Duration of hospital admission						
Less than 21 days, n=138	84 (60.9)	54 (39.1)	1		-	
More than 21 days, n=65	41 (63.1)	24 (36.9)	1.1	(0.57 - 2.11)		
Patient ability to move						
Able to move, n=106	59 (55.7)	47 (44.3)	0.59	(0.32 - 1.09)		
Need assistance, n=97	66 (44.3)	31 (55.7)	1		-	
Patient's age						
Less than 50 years, n=129	67 (51.9)	62 (48.1)	1		1	
More than 50 years, n=74	58 (78.4)	16 (21.6)	3.35	(1.67 - 6.80)	3.61	(1.81 - 7.22)
Patient educational level						
Illiterate, n=71	52 (73.2)	19 (26.8)	2.54	(1.13 - 5.77)	1.07	(0.43 - 2.64)
Primary/intermediate, n=54	28 (51.9)	26 (48.1)	1		1	
Secondary/university, n=78	45 (57.7)	33 (42.3)	1.27	(0.59 - 2.70)	0.66	(0.25 - 1.73)
Patient previous admission						
Yes, n=132	79 (59.8)	53 (40.2)	1		-	
No, n=71	46 (64.8)	25 (35.2)	1.23	(0.65 - 2.35)		

Variables entered in the multivariate regression model include single versus double or multiple room, age more than 50 years versus less than 50 years, and illiterate and secondary/university education versus primary/secondary education. OR - odds ratio, CI - confidence interval

Table 2 - Factors determining satisfaction of the studied patients.

Variables	Patient satisfaction		Crude OR	(95% CI)	Adjusted OR	(95% CI)
	Less than average (n=100)	More than average (n=103)				
<i>Presence of sitters</i>						
Yes, n=125	53 (42.4)	72 (57.6)	1		1	
No, n=78	47 (60.3)	31 (39.7)	2.06	(1.11 - 3.82)	0.54	(0.28 - 1.04)
<i>Patient gender</i>						
Male, n=74	27 (36.5)	47 (63.5)	1		1	
Female, n=129	73 (56.6)	56 (43.4)	2.27	(1.21 - 4.27)	0.50	(0.30 - 1.20)
<i>Patient age</i>						
Less than 50 years, n=129	74 (57.4)	55 (42.6)	2.48	(1.32 - 4.69)	2.50	(1.21 - 5.16)
More than 50 years, n=74	26 (35.1)	48 (64.9)	1		1	
<i>Patient marital status</i>						
Married, n=173	88 (50.9)	85 (49.1)	1.55	(0.66 - 3.68)	-	
Not married, n=30	12 (40.0)	18 (60.0)	1			
<i>Patient educational level</i>						
Illiterate, n=71	37 (52.1)	34 (47.9)	1.47	(0.68 - 3.19)	-	
Primary/intermediate, n=54	23 (42.6)	31 (57.4)	1			
Secondary/university, n=78	40 (51.3)	38 (48.7)	1.42	(0.67 - 3.03)		
<i>Department of admission</i>						
Medical, n=109	53 (48.6)	56 (51.4)	1		-	
Surgical, n=94	47 (50.0)	47 (50.0)	0.95	(0.52 - 1.71)		
<i>Room</i>						
Single, n=98	44 (44.9)	54 (55.1)	1		-	
Double, n=100	46 (51.1)	44 (48.9)	0.41	(0.11 - 1.43)		
Multiple, n=15	10 (66.7)	5 (33.3)	0.52	(0.14 - 1.85)		
<i>Duration of admission</i>						
Less than 21 days, n=138	53 (38.4)	85 (61.6)	1		1	
More than 21 days, n=65	47 (72.3)	18 (27.7)	4.19	(2.11 - 8.40)	3.78	(1.89 - 7.56)
<i>Patient previous admission</i>						
Yes, n=132	58 (43.9)	74 (56.1)	1		1	
No, n=71	42 (59.2)	29 (40.8)	1.85	(0.99 - 3.46)	0.84	(0.41 - 1.71)
<i>Patient ability to move</i>						
Able to move, n=106	51 (48.1)	55 (51.9)	1			
Need assistance, n=76	36 (47.4)	40 (52.6)	0.97	(0.52 - 1.83)	-	
Unable to move, n=21	13 (61.9)	8 (38.1)	1.75	(0.61 - 5.09)		

OR - odds ratio, CI - confidence interval

Table 3 - Perception of physicians, sitters, and patients regarding the presence and need for sitters.

Variables	Medical staff (n=213)	Sitters (n= 125) n (%)	Patients (n= 125)*	X ²	P-value
<i>Presence of sitters is important</i>					
Always/usual	131 (61.5)	109 (87.2)	103 (82.4)	25.8	0.001
Seldom/never	82 (38.5)	16 (12.8)	22 (17.6)		
<i>Presence of sitters is based on</i>					
Patient demand	79 (37.1)	64 (51.2)	69 (55.2)	12.43	0.002
Sitter or patient family demand	80 (37.5)	42 (33.6)	40 (32.0)	1.22	0.54
Medical team advice	54 (25.4)	19 (15.2)	16 (12.8)	9.78	0.01
<i>Sitters are helpful to patients in</i>					
Giving medication	64 (30.04)	85 (68.0)	78 (62.4)	51.6	0.001
Eating/drinking	167 (78.4)	92 (73.6)	93 (74.4)	4.4	0.11
Personal hygiene	122 (56.8)	97 (77.6)	87 (69.6)	11.04	0.004
Psychological support	137 (64.3)	114 (91.2)	104 (83.2)	28.04	0.001
Movement assistance	151 (70.9)	88 (70.4)	91 (72.8)	0.62	0.73

*include patients with sitters only. X² - chi-square test

analysis, no statistical significant association was found between presence of sitters and type of departments (surgical versus medical), duration of stay in the hospital (more than 21 days versus less than 21 days), patient ability to move (needs assistance versus able to move), and patient's previous admission (no previous admission versus previously admitted). However, sitters were significantly more liable to present with patients who were admitted in a single room compared to those who were admitted in a double or multiple rooms, patients aged more than 50 years old, compared to those less than 50 years old and among non-educated patients (compared to more educated patients). Significant variables have been treated in a multivariate regression analysis model, which revealed that only the type of the room and age of the patient was the significant predictors of patient sitters presence (Table 1). In the current research, we studied whether the presence, or absence of sitters can affect patient satisfaction (Table 2). Univariate regression analysis revealed that the absence of sitter, female patients, patient age less than 50 years old, and hospital admission for more than 21 days were significantly associated with lower satisfaction (Table 2). However, in the multivariate regression analysis model, the presence of patient sitters is not a significant determinant of patient satisfaction, and the only significant predictors among the current population were patient age (younger patients were less satisfied compared to older patients, and duration of hospital stay (patients admitted for more than 21 days were less satisfied compared to those admitted for less than 21 days) (Table 2). Healthcare services provided by the sitters were assessed by evaluating both the actual time spent by the sitter in providing direct patient care and the sitters' knowledge regarding patient diagnosis, timing of medications, patient's critical manifestations, and patient management plan, as well as, sitter's knowledge regarding infection control standard precautions, and hospital emergency phone

numbers (Figure 3). Approximately 33% of sitters in the current study reported they were alternating with other sitters for the same patient, and 67.4% reported they spent less than 4 hours per day in providing direct patient care, most of them (63.2%) spend less than one hour per day (Figure 3). Regarding sitters' knowledge on patients status, approximately 85% reported they know the diagnosis of the patient, 71% know the timing of medications, and 62% know patient related critical care manifestations, and only 16% know patient management plans (Figure 3). Additionally, only 18% of the sitters know the infection control standard precautions and 31% know the hospital emergency phone numbers (Figure 3). Presence of sitters was reported as always or usually important by 61.5% of the medical staff compared to 87.2% among sitters and 82.4% among patients (Table 3). Approximately 51.2% of the sitters, and 55.2% of the patients reported that presence of sitters was based on patient demand compared to 37.1% among physicians. No significant difference between the medical staff, sitters, and patients regarding the presence of the sitters based on sitter's or patient family demand. On the other hand, 25.4% of the studied medical staff, 15.2% of the sitters, and 12.8% of the patients reported that the presence of sitters is based on medical advice (Table 3). No statistical significant difference was found between the medical staff, sitters, and patients regarding the usefulness of the sitters in assisting the patient to eat and drink, or to move. However, the 3 studied groups were significantly different regarding usefulness of the sitters in giving medications, for personal hygiene, and for psychological support (Table 3).

Discussion. Despite the use of sitters as a common practice in many settings, little research has been conducted to determine their impact on the quality of healthcare in Saudi Arabia compared to Western countries. This explanatory research expands on the current literature with a focus on a country with different socio-cultural and educational backgrounds.

Pattern and use of patient sitters in Saudi Arabia is unique and different from other western countries. This uniqueness is mainly related to the characteristics of the sitters themselves who are volunteering untrained relatives or friends, and their role is unclear, except providing psychological support, or to some extent help patients in eating or walking. However, the patient-sitter program in western countries was introduced as a strategy for decreasing hospital liability by protecting patients from harming themselves or others⁶ (thus, patients with mental disorders comprise the largest category of patients with sitters in these countries).⁸ Patient sitters in western countries are trained personnel

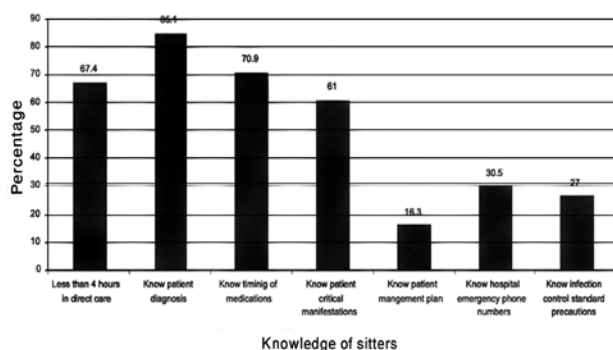


Figure 3 - Time spent and knowledge percentage of the participating sitters (n=125) regarding their patients' care.

with a specific and defined role; the core of which is to improve the quality of nursing care, especially with pressures of decreased number of nurses.^{11,12} Although the presence of sitters should be based on their contribution to quality of health care as determined by the health care personnel, factors determining the presence of sitters in the current study included enough space (single versus double or multiple room), and patient's age (more than 50 years). According to the current findings, patient sitters in KSA are not part of a specific care program. Their presence depends largely on the request of the patient or his family, rather than the medical team recommendation. The main purpose of having sitters in the current study was significantly different between healthcare workers (physicians and nurses) and patients and their sitters, where patients and sitters think that the main purpose of having sitters is to provide psychological support to the patient. This merely reflects the sociocultural differences compared to western countries. This finding was supported by the agreement of the studied physicians, sitters, and patients (no statistical significant difference) who reported that sitters are important to help patients in eating, and in movement. Surprisingly, the presence of sitters in the current study did not show any significant association with patient satisfaction, which was rather associated with other factors (such as, age of the patient, and length of stay in the hospital).

Although patient satisfaction as a perceptive health care outcome was studied extensively, and showed no statistical significant differences according to the presence of sitters, other health care outcomes like length of stay were also not significantly different. Among the studied patients, the number of reported adverse events was 3 (2 among those with sitters, and one among those without sitters). These events were minor, and did not affect medical prognosis, or length of stay. A comprehensive review of the literature on the use of patient sitters in general hospitals all over the world reveals primarily regional, or program specific publications, however, most of them were assessing the use, cost, and policies governing patient sitters for potentially suicidal patients.^{1,2,9,11} Others focused on the effectiveness of a patient-sitter program in relation to patient fall and patient satisfaction.²

In the current study, during a randomly selected 2-month period, there were 125 sitters for 203 admitted patients. This percentage is much higher compared to those reported by Goldberg,² Lamdan et al,¹¹ and O'Dowd et al.¹³ However, the mean length of sitters stay was almost similar to other studies, which ranged from 3.7-9.2 days.^{9,13} In the current study, patients with or without sitters did not differ regarding their length of stay in the hospital. In KSA, most sitters are

patient's relatives or friends. Their main jobs are variant. However, a significant percentage of sitters were civil workers, military workers, or students, and they do not have any medical care background. Furthermore, taking into consideration the current findings that 32% of patients were admitted for more than 21 days, then the reflection on the workforce capacity should be questioned. On the other hand, servants and private drivers represented 9.6% of sitters in the current study. Most of them are non-Saudis, speak neither Arabic nor English, have a low level of education, and do not have a previous background in patient care, or safety. Similar results were reported by Elwarith et al.¹⁴

The time spent by the participating sitters in providing direct patient care was assessed. More than 67% of the sitters reported they spent less than 4 hours in direct patient care each day. Apparently, this time is not enough for constant observation. Meanwhile, extra time was reported by the sitters spent in various ways including talking with other sitters, watching TV, or walking around the hospital. This increases the potentiality for problems (for example, annoying other patients especially in multi-patients wards, interference with regular daily medical activities, or other problems with the hospital security personnel).¹⁴ Basic knowledge related to patient care and safety among the participating sitters based on the study findings is lacking. Lack of knowledge was mainly related to patient management plan, infections control standard precautions, and hospital emergency phone numbers (only 16-30% of the sitters are knowledgeable), however, although 60% and 70% of sitters know the timing of medication and patient critical manifestations, this knowledge percent is considered low. The cornerstone role of sitters is to contribute to the quality of health care. To perform such important role, sitters should have the basic knowledge regarding patient management plan, infection control standard precautions, knowing numbers to call during emergency, knowing timing of medication (trained nurses are responsible for giving medication, so the role of sitters in such cases is to know the timing of medication in case the nurse missed it), and knowing patient critical manifestations. Accordingly, sitters should be instructed upon patient admission regarding basic knowledge required to improve quality and safety of health care.

Although the current reported sitters' pattern can be considered a source of burden on the quality of healthcare in many healthcare settings in Saudi Arabia, hospital regulations/policies are still lacking, not clear enough, or not implemented effectively (mainly because of pressures from patients and their families). Furthermore, research should be encouraged in different healthcare settings to carefully analyze the risk, cost, and benefit of

patient-sitter program.^{7,12} In Western countries, despite the use of patient-sitters initially offered as an easy alternative to the use of restraints, researchers reported that this practice has quickly become an inefficient use of personnel, and an enormous financial burden.^{12,16,17} In KSA, community intervention awareness programs can effectively improve the utilization of patient sitters as supporters of healthcare quality with minimal or no cost at all, as compared to Western countries.¹³ Patient sitters in KSA are volunteers (they are not paid for being a sitter), they have close family relationships with patients, or looking for religious benefits by helping sick people. Awareness programs should focus on the benefits that would be gained from patient constant observation including skills of patient care, and effective psychological support. Sitters must learn the methods to protect themselves from the harm of potential exposure in healthcare settings.

The findings of this study may be limited because of the characteristics of the patients who are either military or their dependents, and may not consequently reflect the general population, as well as, by the short time and cross-sectional design, which did not allow for in-depth assessment of various quality measures and indicators.

In conclusion, this study raises many questions of the impact of patient sitters in quality of the healthcare system. This study is a reminder to the healthcare system in KSA, as well as other Arab countries to develop clear policies that ensure effectiveness of the use of patient sitters in healthcare settings, and these policies should be reinforced towards implementation. The policies should clearly specify patient criteria that support decisions of patient sitter. Future research should focus on extensive assessment of various quality outcomes, as well as the effectiveness of alternative interventions with emphasis on decreasing sitters usage without negatively affecting patient care outcomes.

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