

Factor Predicting the Use of Physical Restrain in Clinical Setting

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Abstract

Purpose: The purpose of the study is to identify the factors predicting psychiatric nurses' decision to use physical restraint in a clinical psychiatric setting in the Province of Jeddah, Saudi Arabia.

Methods: A descriptive explanatory design was used. 110 nurses working in a psychiatric hospital in Jeddah city were recruited during the period 27th April to 29th June 2017. The outcome was assessed on the following scales: level of knowledge, occupational stress, working environment, nurses' attitude toward use of physical restraint and nurses' practice toward use of physical restraint.

Results: The study participants had sufficient knowledge about the use of physical restraint, experienced high levels of occupational stress, suffered an unproductive working environment and accepted attitudes and practice toward physical restraint. In addition, these variables significantly predicted the nurses' use of physical restraint.

Conclusion: The findings revealed that the level of knowledge and occupational stress scales, the working environment, and nurses' attitude and practice toward the use of physical restraint significantly predicted the nurses' use of physical restraint.

Recommendations: The study recommends the establishment of educational and awareness programmes for nurses to better understand the concept of restraining a patient and the consideration of alternative measures for controlling agitated and violent patients. It also recommends that providing adequate staffing and other resources, maintaining a therapeutic ward environment, and decreasing work-related stress could influence psychiatric nurses' decisions to use physical restraint on their patients.

Keywords: clinical psychiatric wards, level of knowledge, environmental work stress, nurses' attitudes, nurses' practice, occupational stress, psychiatric hospital, psychiatric nurses, use of physical restraint

1. Introduction

In mental health hospitals there are several procedures that can be implemented to limit a patient's freedom (Azab & Abu Negm, 2013; Bleijlevens et al., 2016). Unfortunately, these procedures, involving seclusion and restraint, interfere with psychiatric patients' legal and ethical rights (Saarnio & Isola, 2010). The restraints are commonly used in mental health settings to control disruptive behaviour, wandering, to maintain treatment plans, and prevent falls (Mahmoud, 2017). They include the use of bodily force (physical restraint) or a device (mechanical restraint) to control a person's freedom of movement. The use of antipsychotic medication (chemical restraint) is also indicated to control a patient's abnormal behaviour (Cusack et al., 2018; Köpke et al., 2012). In this respect, physical restraint is widely used in intensive care, neurology, and psychiatric clinics.

Worldwide healthcare services have expressed alarm at increasing levels of violence and aggression aimed at staff. Evidence regarding the most effective way to manage violence and aggression in inpatient mental health settings is lacking (Georgieva, Mulder, & Wierdsma, 2012) and the use of restrictive interventions continues to be sanctioned under law as a means by which staff can respond. One such intervention is the use of physical restraint.

The prevalence of physical restraint varies according to the clinical setting and culture across the world. Specific

and large-scale population-based, cross-sectional studies show that the prevalence of physical restraint varies from 10% in Finland (Kaltiala-Heino et al., 2003) to 78% in Switzerland (Gordon et al., 2016). Another national study of ten Western countries revealed an incidence ranging from 17% in Sweden to 69% in Greece (Köpke et al., 2012). In Canadian intensive care units, the prevalence of physical restraint was 53% and predictors were the use of sedative, analgesic, and antipsychotic drugs, agitation, and occurrence of an adverse event (Saxena & Kaur, 2017). In a retrospective Italian study, the main reason for mechanical restraint among psychiatric patients was to manage the aggressive behaviour of male patients, the presence of organic comorbidity and neurocognitive disorders (Cusack et al., 2018).

Nurses are closely involved in providing direct care to the restrained patient. Moreover, absence of a clear physician's order to use physical restraint suggests that nurses mainly take decisions independently. Recent anecdotal evidence indicates that there are negative consequences associated with the use of physical restraint, which may cause complications, depending on the application process. These complications can be classified as: compromise of blood circulation, deterioration of tissue integrity, incontinence, aspiration, respiratory distress, pressure injuries, constipation and nerve damage (Khalil et al., 2017; Mahmoud, 2017; Riahi et al., 2016). In this sense, use of restraint has negative psychological results. For instance, previous reports shed light on the emotional effect of using restraints such as powerlessness, sadness, anger and violation of autonomy and privacy. Therefore, psychiatric nurses must be aware of the possible complications of physical restraint and follow up closely patients who are physically restrained. In this context, psychiatric nurses are primarily responsible for establishing a safe and therapeutic environment for patients, maintaining this environment and ensuring optimal surveillance based on the restraint application standards (Bleijlevens et al., 2016; Köpke et al., 2012).

The attitudes of mental healthcare providers towards the procedure of physical restraint were conceptually defined as the nurse's feelings about using physical restraints and how the nurse feels about caring for patients who are restrained. Some studies showed that the attitudes of nurses towards the restraints were inappropriate, such as not feeling guilty and not thinking that these actions could lower the dignity of the patient, especially when seen by the family (Göktaş & Buldukoğlu, 2018; Khalil et al., 2017; Salehi et al., 2019). Attitudes towards physical restraint can affect nurses' performance and behaviour, especially with psychiatric patients who are already confronting discrimination, which may also be expressed by professionals and the general public (Mahmoud, 2017). Getting in touch with psychiatric patients and gaining knowledge can help to replace myths with facts, reducing stigma and affecting attitudes positively. A recent study by Göktaş and Buldukoğlu (2018) investigated the knowledge, attitudes and practices of psychiatric nurses towards physical restraint; the results showed that they had sufficient knowledge about the use of physical restraint, but poor attitudes and practice.

A study conducted in Turkey reported that a low percentage of nurses know the complications of physical restraint. The same study also reported that most nurses used physical restraint in the clinic, did not receive directives from physicians when deciding to apply a restraint, and did not use alternative methods. A similar study conducted in Hong Kong determined that nurses' knowledge about physical restraint was inadequate, and that they exhibited negative attitudes toward restraint application.

In a similar context to the current study, a qualitative study in Iran discovered that physical restraint is extensively applied to control psychiatric patients, despite having negative consequences (Moghadam et al., 2014). An Indian survey study investigated 278 psychiatrists' views on using physical restraint; the majority of the participants (80%) sometimes used physical restraint in the management of their mentally ill patients, but only 70% of them obtained informed consent from the relatives beforehand (Vedana et al., 2018). Despite this high prevalence of physical restraint among psychiatric patients, there are no published data about the factors making nurses use physical restraint in a psychiatric clinical setting. Therefore, this study aims to predict the factors, knowledge level, attitude, practice, occupational stress and work environment, which convince psychiatric nurses to use physical restraint at the Al-Amal Psychiatric Hospital, Jeddah, Saudi Arabia.

In terms of the knowledge level, Saarnio and Isola (2010) reported that educating employees about taking the decision to use physical restraint is valuable; it is unclear which factors affect their decision. Göktaş and Buldukoğlu (2018) believe that continuing education and appropriate support to address moral issues in hospitals that exercise rigid restraint should address this behaviour towards patient violence. Their study questioned 254 nurses working in four different hospitals in Turkey; from the central care unit, nurses reported nine deaths among patients exposed to physical restraint (Göktaş & Buldukoğlu, 2018). The cause of these deaths was physical restraint of the chest, and the researchers suggested that officials should inform the nurses about physical restraint and its complications. According to Fiabane et al. (2013), it is important for nurses to be aware of the international standards for caring for psychiatric patients regarding the use of physical restraint. There is also a need for

education on how to use alternatives to physical restraint. Nursing education should explore these alternative methods, and present the risks and challenges of using physical restraint (Moghadam et al., 2014).

In the healthcare field, occupational stress is considered as a major problem (Fiabane et al., 2013). Nurses believe that occupational stress is the highest level of stress they experience (Xianyu & Lambert, 2006). Male nurses reported that irritability and violence in patients have an effect on their mood and make them feel depressed; they must be more aware of these effects to reduce the sense of the stress. Muir-Cochrane et al. (2015) reported on the lack of accessible alternatives to restraint, indicating that nurses believe there are none. Nurses need to be made aware that there are alternative methods to physical restraint and its adverse consequences. Three topics are related to the use of physical restraint. First is a poor interpersonal environment, that is poor staff-patient relationships. Second is an unfavourable physical environment which contributes to aggression. Third the practice environment influences the adoption of physical restraint.

Based on the results of the studies carried out previously, nurses do not receive physician requests for physical restraint application, they do not keep accurate records, and they have only a low level of knowledge about the physical and psychological complications of physical restraint. These problems make it necessary to conduct comprehensive studies on the use of physical restraint in Saudi Arabia. Therefore, the aim of this study was to identify the predictors of using physical restraint among psychiatric nurses in psychiatric settings.

1.1 Research Variables

Dependent variables: The mean scores of each scale for nurses' knowledge, attitudes, and practices regarding physical restraint, occupational stress and work environment.

Independent variables: Nurses' individual characteristics (age, gender, education qualification, and years of experience).

2. Methods

2.1 Research Design

A cross-sectional study design was used.

2.2 Setting

The present study was carried out in the Al-Amal Mental Health Government Hospital in the city of Jeddah. The hospital consists of eight wards (six male and two female) caring for 131 patients. The hospital's total capacity is 131 beds (six in the ER ward and 125 in the male and female inpatient wards). This is the only mental health hospital in a region serving around two million people.

2.3 Participants and Outcome Measures

The study was carried out on a convenient sample consisting of 110 nurses working in these hospitals. The response rate was 89%. In this context, 110 of the 124 nurses (89%) agreed to participate in the survey and completed the information form and scale. The abstaining nurses refused to participate in the survey because of the frustration of completing questionnaires, and also because they expressed that they were physical restraint supporters. The majority of nurses working in the hospital were females and males, with diploma and bachelor's degree in nursing as well as having at least one year of experience. Data were collected through a self-administered structured questionnaire, which aimed to assess nurses' knowledge, attitude and practice regarding the use of physical restraint. It comprised two parts: the first requested socio-demographic data and the second included outcomes of interest, as detailed below.

2.4 Knowledge Level, Attitude and Practice of Physical Restraint

2.4.1 Level of Knowledge Scale

The Level of Knowledge Scale was developed by Janelli et al. (1992). It has 18 items, each scored on a Likert scale from 1 to 3. Each correct answer scores 1 point, and each incorrect or undecided answer nil, with a possible total ranging from 0 to 18. The higher the score, the greater the respondent's knowledge regarding physical restraint use. The instrument was tested for content-related validity by three experts in the field of nursing and education. A pilot study was conducted on ten patients and seven nurses to test the clarity and applicability of the tool, and modifications were made accordingly. Cronbach's alpha coefficients were 0.87 and the content validity index (CVI) = 0.89 (Janelli et al., 1992).

2.4.3 Nurses' Attitudes toward Use of Physical Restraint

The scales for attitude and practice were adapted from Janelli et al. (1992). The scale for attitude has ten items

measuring nurses' attitude toward the use of physical restraint, rated on a 4-point Likert scale in which 4 = 'strongly agree' and 1 = 'strongly disagree'. Thus, high scores with a cutoff point 24–40 reflect positive attitudes and low scores with a cut-off point 10–23 reflect negative attitudes (potential range: 10–40). This scale is used in Arab countries and has established psychometric properties content validity index (CVI) = 0.88 and Cronbach's alpha coefficients of 0.86 (Mahmoud, 2017).

2.4.2 Nurses' Practice towards Use of Physical Restraint

This scale has eighteen items to assess nurses' practice, covering issues in nursing care provided to patients immediately before or during restraint, such as "explain procedures to patient and significant others". The items reported as done were scored 1 and the items not done 0. For each area, the scores of the items were summed and the total divided by the number of items, giving a mean score for the section. These scores were converted into a percentage score and average and standard deviations were computed. The nurses' practice was considered adequate if the score was 60% or more and inadequate if less than 60%. The Cronbach's alpha coefficients for these sections were 0.73 and 0.78 respectively (Janelli et al., 1992).

2.4.3 Occupational Stress Scale

Several instruments have been developed over the years to assess the relationship between work stress and mental health. The researcher used a specific scale to assess psychiatric stressor. The scale is called the Occupational Stress Scale (OSS) and consists of 42-items developed by Cushway et al. (1996); each item can score from 0 to 3 (0 = "Does not apply to me", 1 = "Rarely applies to me"; 2 = "Sometimes applies to me" and 3 = "Does apply to me"). The Cronbach's alpha was 0.93 (Joseph, 1997).

2.4.5 Working Environment Scale

This scale was developed by Webster et al. (2009). It rated on 5 Likert scale from 0 (never) to 5 (always). The highest score shows the best working environment. The Work Environment Scale consists of four factors: Factor 1 - Getting Things done, 10 items; Factor 2 - Flexibility of Management Support, 8 items; Factor 3 - Feeling Valued/Not Valued, 8 items, and; Factor 4 - Professional Development, 6 items. A Cronbach's alpha of the scale was 0.94 (Flint et al., 2010).

2.4.6 Pilot Study

A pilot study was conducted with 10 of the potential participants, who were then excluded from the main study. The purpose of the pilot study was to test the applicability, feasibility and clarity of the questionnaire; it also served to estimate the time needed to complete the study. Simple modifications were made. The data were collected for the period 27 April to 29 June 2017.

2.5 Ethical Considerations

Verbal and written consent were sought from the participants in the study after clarifying the procedure. Participants were informed about their right to refuse to participate and to withdraw at any time without any consequences. Confidentiality was assured. Ethical approval was obtained from the Fakeeh College for Medical Sciences (ref: 15486/45) and from the Ministry of Health (ref 17845/65).

2.6 Statistical Analysis

Data obtained from participants were numerically coded and analyzed using SPSS for Windows, version 24. Descriptive statistics were used to summarize baseline characteristics, including socio-demographic and clinical information. Frequencies and percentages for qualitative variables and Chi-square and Spearson correlation coefficient tests were administered. Statistical techniques were employed to examine the independent variables of the study and their relationships with, or influence on, the dependent variable. The computed scores of each independent factor were used as predictor variables in regression analysis with the dependent factor. Multiple linear regressions were used to examine the integrated relationship of all independent variables. Lastly, the Pearson correlation examined the relationship between each independent variable, and other dependent variables. The statistically significant difference was considered when P-Value ≤ 0.05

3. Results

A total of 161 nurses were recruited in the period 27 April to 29 June 2017. However, 31 preferred not to cooperate or to follow the study directions, and 19 were excluded as they did not respond to the research team's contact. The sample size was calculated to detect correlation between variables with a medium effect size at 0.80 power, level of significance of 0.05 (Cohen, 1992). Participants received either hard or soft copies of the outcome measures. Phone and e-mail messages were sent to all participants reminding them to complete the questionnaire. Table 1

summarizes the demographic background of the participants. Of the 110 nurses, 55% were male. The majority were between the ages of 20 and 39 (80.9%) and 40.9% had bachelor's degrees.

Table 1. Participants Level of knowledge about physical restraint

Item	Correct	Incorrect
	N (%)	N (%)
1- Physical restraints are safety vest or garments designed to prevent injury.	75 (68.1%)	35 (31.8%)
2- A restraints are legal only if it is necessary to protect the patients or others from harm.	67 (60.9%)	43 (39.0%)
3- Restraints should be used when one cannot watch the patient closely.	48 (43.6%)	62 (56.4%)
4- Patients are allowed to refuse to be placed in a restraint.	55 (50.0%)	55 (50.0%)
5- A physical restraints require a physician's order.	46 (41%)	54(49%)
6- Confusion or disorientation is the main reason for using a restraint.	37 (33.6%)	74 (67.2%)
7- A restraint should be released every 2 hours if the patient is awake.	87 (79.0%)	23 (20.9%)
8- Restraint should be put on snugly.	45 (40.9%)	65 (59.0%)
9- A patient should never be restrained while lying flat in bed because of the danger of choking.	68 (61.8%)	42 (38.1%)
10- When a patient is restrained, skin can break down or restlessness can increase.	97 (88.1%)	13 (11.8%)
11- When a patient is restrained in a bed, the restraint should not be attached to the side rails.	89 (80.9%)	11 (19%)
12- Sheet restraints may be necessary at times.	65 (59.0%)	45 (40.9%)
13- A nurse can be charged with assault if he/she applies restraints when they are not needed.	76 (69.0%)	34 (30.9%)
14- A record should be kept on every shift of a patient in restraints.	83 (75.4%)	27 (24.5%)
15- A physician's order to restrain must be specific.	97 (88.1%)	13 (11.8%)
16- In an emergency, a nurse can legally restrain a patient without a physician's order.	43 (39.0%)	67 (60.9%)
17- Good alternatives to restraints do not exist.	34 (30.9%)	76 (69.0%)
18- Deaths have been linked to the use of vest restraints.	54 (49.0%)	56 (50.9%)

Level of Knowledge

Table 2 shows that the range of items answered correctly fluctuated from 37% to 88%. Most of the nurses answered affirmatively to the following items: the use of physical restraint needs a specific physician's order (88%), the use of physical restraint is associated with complications such as skin breakdown (88.1%) and the restraint should be removed every two hours (79%). In addition, 80.9% of the participants stated that physical restraint should be fitted and secured comfortably; records of usage should be kept for each restrained patient in every shift (75.0%). The smallest proportion of nurses believed that, in emergencies, they could use physical restraint without seeking a physician's orders (60.9%). On the other hand, a majority of nurses demonstrated misunderstandings about physical restraint in answering the following items: no other good methods than physical restraint exists (69%), and confusion and disorientation are good reasons to use physical restraint (67%). Moreover, when there is no one else to monitor or control the patient, the nurse can use physical restraint (56.4%). The nurses' scores were a significant predictor for the use of physical restraints as it explains around 30% of the usage of physical restraints.

Table 2. The Participants' attitude towards use of physical restraints

Items	Strongly Agree	Agree	Disagree	Strongly Disagree
	N %	N %	N (%)	N %
I try alternative nursing measures before restraining the patient.	10 (9%)	30 (27.2%)	30 (27.2%)	40 (36.3%)
I feel that it is more important to let the patient in restraints know that I care about him or her.	22 (20%)	18 (16.3%)	37 (33.6%)	33 (30%)
I feels that the main reason restraints are used in the hospital is shortage of staff.	38 (34.5%)	35 (31.8%)	19 (17.2%)	18 (16.3%)
I feel embarrassed when the family enters the room of patient who is restrained and they have not been notified.	26 (23.6%)	21 (19%)	34 (30.9%)	29 (26.3%)
I believe that the family members have the right to refuse the use of restraints.	18 (16.3%)	19 (17.2%)	38 (34.5%)	35 (31.8%)
I feel guilty when placing a patient in restraints.	37 (33.6%)	10 (9%)	42 (38.1%)	21 (19%)
It makes me feel bad if the patient gets more upset after restraints	16 (14.5%)	18 (16.3%)	34 (30.9%)	42 (38.1)

Nurse attitudes towards physical restraints

Table 3 presents the participants' attitudes towards the use of physical restraint in psychiatric settings. The results indicated that the majority of the sample did not try any other type of nursing measure before using restraints. Two-thirds of the study sample gave staff shortage as the main reason encouraging them to use restraints. Fewer than half felt guilty about placing a patient under restraint, or embarrassed when family members entered the room of a patient under restraint. Most of the respondents showed that using physical restraint reduced nursing care time, and they did not believe that using restraints could result in loss of dignity. 46.9% applied restraints to assure legal protection for nurses and the hospital, and 45.8% felt bad if the patient became more upset after restraints were applied. The nurses scores were a significant predictor for the use of physical restraints as it explains around 23% of the usage of physical restraints.

Table 3. Participants Work Environment Subscale

	responses	Percentage	Mean	Std. Deviation	(x ²)	P-value
Factor (1) Getting Things Done	Never	21.9%	2.7	1.2712	62.8	0.00
	Rarely	28.5%				
	Sometimes	24.5%				
	Frequently	12.5%				
	Always	12.6%				
Total		100%				
Factor (2) Flexibility of Management Support	Never	18.3	2.8	1.2749	117.7	0.00
	Rarely	24.7%				
	Sometimes	35%				
	Frequently	9.75%				
	Always	12.35%				
Total		100%				

	Never	17.1%				
	Rarely	21.1%				
Factor (3) Feeling valued-not valued	Sometimes	35.5%	2.9	1.2577	59.4	0.00
	Frequently	11.1%				
	Always	15.2%				
Total		100%				
	Never	18.2%				
	Rarely	22.9%				
Factor (4) Professional Development	Sometimes	39.7%	2.7	1.1704	104.9	0.00
	Frequently	8.8%				
	Always	10.4%				
Total		100%				

Nurse practices towards physical restraints

Table 4 shows participants' practice in the use of physical restraint. Generally, the results showed poor practice, as the majority of the participants (64.6%) did not assess the patient's condition every 10-15 minutes. In addition, only 38.1% of nurses monitored skin status after using physical restraint, and 57.3% did not document the patient intervention. Interestingly, over three-quarters of the study sample reported that they neither talk to the patient while restraining them (80%) nor engage the patient in the decision to use physical restraint (76.4%). The results of nurses scores were a significant predictor for the use of physical restraints as it explains around 18% of the usage of physical restraints ($p < 0.05$).

Table 4. Regression model parameters estimating

Model	Independent variables	Unstandardized Coefficients	Std. Error	Standardized Coefficients (β)	Sig
C	(Constant)	26.477	2.714		0.000
	Occupational Stress	0.065	0.018	0.338	0.001
	Nurse knowledge	0.30	0.056	-0.414	0.000
	Nurse attitudes	0.23	0.45	0.18	0.000
	Nurse practice	0.18	0.27	0.13	0.000
	Work Environment	0.048	0.023	0.173	0.035
	Age	0.84	0.32	0.41	0.64
	Education Qualification	0.87	0.67	0.46	0.57
	Years of experience	0.67	0.41	0.76	0.64

Occupational Stress

As shown in Table 5, the mean score of level of occupational stress among nurses is (4.5) with a standard deviation (0.9567) which lies within interval (1 to 1.66), the mean within this interval indicates that the overall occupational stress among nurses is extreme. Also, we found out that (x^2) value is (46.23) and the corresponding (P-value) is (0.021), which is less than (0.05) indicating the responses of the study subjects about occupational stress among nurses is statistically significant.

Table 5. Participants the level of occupational stress

	Responses	Percentage	Mean	Std. Deviation	(x ²)	P-value
Level of Occupational Stress among nurse's	Does not apply to me	23.1%	1.02	0.9567	46.23	0.021
	Rarely apply to me	24.4%				
	Sometimes apply to me	2.5%				
	Does apply to me	50%				
Total		100%				

Work Environment Scale

The results of the work environment scale indicate that the mean score of factor (1) of work environment (Getting Things Done) from nurse's perspective is (2.7) with a standard deviation (1.2712) which lies within interval (2.6 to less than 3.40), the mean within this interval indicates that the level of factor (1) of work environment (Getting Things Done) from nurse's perspective is medium. Also we found that (x²) value is (62.8) and the corresponding (P-value) is (0.00), which is less than (0.05), indicating the responses of the study subjects about factor (1) of work environment (Getting Things Done) is statistically significant. As reported in Table 6.

Table 6. The results of the work environment scale

	responses	Percentage	Mean	Std. Deviation	(x ²)	P-value
Factor (1) Getting Things Done	Never	21.9%	2.7	1.2712	62.8	0.00
	Rarely	28.5%				
	Sometimes	24.5%				
	Frequently	12.5%				
	Always	12.6%				
Total		100%				
Factor (2) Flexibility of Management Support	Never	18.3	2.8	1.2749	117.7	0.00
	Rarely	24.7%				
	Sometimes	35%				
	Frequently	9.75%				
	Always	12.35%				
Total		100%				
Factor (3) Feeling valued-not valued	Never	17.1%	2.9	1.2577	59.4	0.00
	Rarely	21.1%				
	Sometimes	35.5%				
	Frequently	11.1%				
	Always	15.2%				
Total		100%				
Factor (4) Professional Development	Never	18.2%	2.7	1.1704	104.9	0.00
	Rarely	22.9%				
	Sometimes	39.7%				
	Frequently	8.8%				
	Always	10.4%				
Total		100%				

4. Discussion

To our knowledge, this is one of the few studies which has identified the factors predicting psychiatric nurses' use of physical restraint through using several variables (knowledge level, occupational stress, working environment, attitudes and practice towards physical restraint).

The findings of the current study confirm that the psychiatric nurses have sufficient knowledge about using physical restraint, as predicted by the first hypothesis and proved by the results. A survey conducted by Wai-Tong and Isabella (2007) using the same questionnaire on a sample of 42 registered psychiatric nurses in Hong Kong found that the level of psychiatric nurses' knowledge of physical restraint is very low. Also, the nurses believed that physical restraint was useful for patient safety and in responding to treatment. This study was conducted on elderly people in a psychiatric department. The current study's finding is consistent with another study which concluded that psychiatric nurses' knowledge level of physical restraint is adequate, although they exhibited poor attitudes and practice (Göktaş & Buldukoğlu, 2018). When our findings were compared with those of Lindsey (2009), the researcher noted that their data are very weak, suggesting that educating employees and changing their culture of physical restraint is still unclear with regard to the factors affecting this decision, despite the number of factors involved. Muir-Cochrane et al. (2015) believe that continuing education and appropriate support to address moral issues in hospitals that exercise rigid physical restraint should change their attitude to patient violence. In Turkey, the researcher stressed that actions to reduce the use of, and complications from, physical restraint should include attention to nurse staffing and education in the use of restraints (Demir, 2007).

Our results indicate that nurses in the psychiatric hospital in Jeddah experiencing higher levels of occupational stress will tend to use physical restraint more often than nurses experiencing lower levels of occupational stress (50%), with little difference between those nurses who reported that occupational stress does not apply to them (23%) or rarely applies to them (24.4%). Fiabane et al. (2013) concluded that nurses were certain that occupational stress is the highest level of stress they experienced. Adib-Hajbaghery et al. (2012) and Xianyu and Lambert (2006) found that a major source of occupational stress among hospital nurses is poor relationships between themselves and other healthcare professionals; work overload and time pressure are also significant contributors to stress among health care professionals. French et al. (2013) found that the prevention of functional stress among hospital nurses is by developing a good relationship in the workplace, where conflicts with doctors or problems with nursing or discrimination are possible causes of job stress. This suggests that this main source of occupational stress might influence their attitude toward using physical restraint. Several other studies support our findings regarding the relationship between occupational stresses and nurses using restraints with patients. Unfortunately, there is no study linking occupational stress among nurses with their decision to use physical restraint.

No previous research has tested the relationship between psychiatric nurses' attitude toward using physical restraint and factors in the work environment. Fiabane et al. (2013) suggested that hospital management and nursing departments should work harder to develop useful strategies to enhance a healthy working environment. Tio (2014) suggested that there was significant correlation between job satisfaction and the working environment, while the study of Larue et al. (2009) concluded that the main factors influencing any decrease in the duration and rate of seclusion is the work environment. Muir-Cochrane et al. (2015) reported on the three topics related to the use of physical restraint: an adverse interpersonal environment, a negative physical environment contributing to aggression, and the practice environment.

The findings of Mahmoud (2017) agree with and support those of the current study: that there is a positive significant correlation between nurses' attitude and practices regarding the use of physical restraint. In a study in Hong Kong, researchers found that psychiatric nurses have negative attitudes toward the use of physical restraint; Wai-Tong and Isabella (2007) also stressed the importance of increasing nurses' awareness and consideration of these important factors, including the personal meaning of physical restraint, the possible use of alternative measures of restraint, the adverse consequences of physical restraint, staffing and resources, and ethical dilemmas, which all influence their decisions, and could eventually lead to a consequent reduction in the use of physical restraint.

The present study results provided important information about factors predicting nurses use of physical restraint in psychiatric settings. These results are also expected to contribute to the content of physical restraint training for both future nurses in nursing faculties and nurses working in psychiatric hospitals.

5. Conclusion

Physical restraint is relatively common in a psychiatric setting. Its use seems to be predicted by the psychiatric nurse's knowledge level, the level of occupational stress, and the working environment. It is therefore

recommended to include training on the physical and chemical restraint of patients in the study plan, as well as implementing the training and simulated practice of restraining measures, giving future nurses the transferable skills needed in clinical practice. Additionally, the practice environment needs to be considered as an influential factor on the nurses' decision to use physical restraints.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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