RESEARCH
www.commprac.com
ISSN 1462 2815

EFFECT OF PHYSICAL RESTRAIN ON BEHAVIOR AMONG MENTALLY ILL PATIENT: A SCOPING REVIEW

Zahra Mousa Hussain Alsomali

Postgraduate Student, Faculty of Nursing, King Abdulaziz University, Saudi Arabia.
Email: zaalsomali@moh.gov.sa

DOI: 10.5281/zenodo.8296712

Abstract

Objective: The primary aim was to examine the literature for benefits and potential negative implications of utilizing physical restraints in psychiatric wards. **Methods:** A systematic review approach was employed, analyzing both primary and secondary research sources. Owing to a scarcity of primary research articles, secondary research was also considered. Included studies varied in design, participants' characteristics, and methodologies, spanning across diverse geographical locations. **Results:** The predominant reasons for employing physical restraints in psychiatric wards are to manage violent behaviors and to ensure the overall safety of both the patients and the staff. However, there is a significant perception among patients of restraints being used as punitive measures. The review also found that many countries have yet to establish national guidelines on the application of physical restraints in psychiatric settings. While physical restraints can offer tangible solutions for managing disruptive behaviors, the potential emotional and psychological implications for the patients cannot be overlooked. The literature suggests feelings of punishment and trauma linked to the use of restraints, raising ethical concerns. **Conclusion:** Despite their widespread application, the use of physical restraints is fraught with challenges both from an ethical and patient welfare perspective. The need for comprehensive, evidence-based guidelines is apparent. Such guidelines would serve as a foundational reference for psychiatric wards worldwide, ensuring patient safety while minimizing potential emotional harm.

INTRODUCTION

Across various healthcare environments, the issue of safety ignites a cluster of concepts, including quality environment, quality assurance, and patient safety (Slemon et al., 2017). According to Sherwood (2015), safety in nursing practice means ensuring patients are safe from any harm or injury from adverse events during care that might come from medical errors, new technologies, insufficient staffing, communication, and many more. On the contrary, any discussion on safety within psychiatric health care or mental health care is limited and is replaced by the concept of patient risks which involves the harms created by a patient within the psychiatric environment (Kanerva et al., 2015). It includes suicide events, self-harm, aggression, and violence (Slemon et al., 2017). Notably, unlike the other care environments, patient risk within inpatient mental health care settings is regarded as affecting the individual patient, other patients, nursing staff, and the whole public, thus widening the scope of risk (Slemon et al., 2017). According to Ye et al. (2019), patients with psychiatric issues pose significant risks to themselves and those around them. As previously demonstrated, mental problems are among the leading cause of disability globally, accounting for a third of disability cases (Araya et al., 2020). Similarly, violence and harm caused by mental health problems in psychiatric care settings are disturbing and significantly high.

Patients with severe mental disorders are likely to engage in agitation and auto-lesion incidents. A review conducted in China showed that the prevalence of aggressive behaviors among schizophrenia patients in psychiatric wards ranged from 15.3

percent to 53.2 percent (Zhou et al., 2015). In another study done in southern Africa showed that about 69.8 percent of staff experienced some form of physical violence perpetrated by mentally ill patients (Olashore et al., 2018). In another study done in Europe, approximately 70 percent of the participants reported having been attacked by patients (Franz et al., 2010). In America, 40 percent of psychiatric ward staff reported as having experienced violence from psychiatric patients (Phillips, 2016). In Saudi Arabia, the statistics are similar. In a cross-sectional study by Basfr et al. (2019), 90.3 percent of the participants confirmed having experienced both physical and verbal abuse from patients in psychiatric hospital settings. According to the study, violence against nursing staff in psychiatric care settings in Saudi Arabia has reached an alarming rate which calls for evidence-based interventions to minimize risks posed by acute mentally ill patients in psychiatric wards. Some of the violence is even experienced when aggressive patients are admitted to the emergency rooms, and psychiatrists are often called upon to assess and treat this kind of patient. Healthcare professionals often employ several alternative methods such as de-escalation techniques and crisis management to manage such violent patients (Ye et al., 2019). However, healthcare providers implement compulsory intervention whenever alternative approaches fail to resolve violence portrayed by mentally ill patients.

Physical restraints are any procedures or actions implemented by care providers to prevent a violent patient from moving. This is often done by any adjacent manual method or mechanical device attached to the patient's body and cannot be removed (de Bruijn et al., 2020). Some of the common devices used for physical restraints range from limb holders, applying the brakes on a wheelchair, safety vests and bandages, abdominal restrain, or raising the bed rails. On a wide scale, physical restraint has been regarded as an inhuman approach and is often associated with human rights violations and an ethical dilemma (Ye et al., 2019; Achir Yani Syuhaimie Hamid & Catharina Daulima, 2018; De Bruijn et al., 2020). According to Ye et al. (2019), physical restraint can cause ethical and practical controversies as it can result in numerous unanticipated effects on patients and nurses. Moghadam et al. (2014) state the use of physical restraint is accompanied by adverse events such as risks of physical injury and death, psychological distress, which stimulates further aggression and harm, as well as a negative emotional impact on family members. As a result, the method is termed traumatizing and is against patient dignity and treatment principles. Notably, it can be used as a last resort option to prevent harm and maintain patients' and nurses' safety.

In this regard, several qualitative studies have been published on the utilization of physical restraint. According to Moghadam et al. (2014), the majority of these studies concluded that restraint intervention is a more complex process that requires further investigation to come up with a definitive conclusion about its continued use on patients in psychiatric units. In Saudi Arabia, there are limited studies on the use of physical restraint by psychiatrists. Currently, there is no comprehensive literature on the importance of physical restrain in the psychiatric setting, which exposes healthcare professionals to numerous problematic and unsafe behavior. As a result, lack of evidence-based guidance causes uncertainty and doubts while implementing physical restraints in practice and might lead to wrongful use (de Bruijn et al., 2020).

Study Purpose

There is a gap in the literature regarding the use benefits of physical restraints in mental health care. This calls for further investigation to review the available literature on the use of physical restraints by psychiatrists. As a result, this study intends to systematically assemble and rigorously review the available evidence on the benefits of physical restraints in mental health wards. The following PICOT question will guide this study: For hospitalized mentaly ill patients in psychiatric wards with violent behaviors (P), does physical restrains (I) compared to standard intervention (C) reduce and control violent behaviors (O) within a day of hospitalization (T)

METHOD

Search Strategy

A systematic search strategy designed to explore the above biomedical databases was created. This systematic review followed a protocol according to preferred reporting items for systematic review and meta-analysis protocols (PRISMA) model. This PRISMA-P 2015 is an evidence-based framework with a specific set of items meant to guide the reporting of systematic reviews and meta-analyses (Shamseer et al., 2015).

Search Strategy

Search for relevant articles was conducted from electronic sources, including Google scholar, biomedical databases, life sciences, and other healthcare specialties databases. The main databases searched include the Cochrane Library, CINAHL Plus, and MEDLINE. The keywords used included mentally ill patients, psychiatric wards, violent behaviors, physical restraints, benefits, and behavioral issues. The Boolean operators' phrases (psychiatric wards AND violent behaviors, physical restraints, benefits NOT adverse effects, and behavioral issues OR aggression) were used to narrow down the search increase sensitivity. Limits were also employed on research studies in order to have a focused and productive search.

Inclusion and Exclusion Criteria

The initial intention of the current study was to include only primary research articles. This is because primary research studies such as observational studies and randomized controlled trials (RCT) are considered superior and contain suitable evidence to assess the impact of nursing interventions (Park et al., 2014). Unfortunately, due to a limited number of primary research articles, secondary source research studies such as systematic reviews and meta-analysis were included. Majorly, the first inclusion criterion was based on research design, and studies were included if they were observational studies such as cross-sectional studies or retrospective cohort studies or were experimental studies such as randomized controlled trials. Another criterion for inclusion was study setting. It was mandatory for the included studies' settings to be a hospital setting and a particular psychiatric ward if necessary. This means that participants in the studies were supposed to be admitted to the hospital, and it was a must for a psychiatrist to be involved. Notably, the present study will exclude studies conducted in general hospitals and studies whereby there was no psychiatrist's involvement. This is because these studies are too general on

the subject, and the present study intended to address a specific patient group and care settings. Subsequently, studies done in long-term care facilities or nursing homes were excluded. In general, studies with data from psychiatric institutions, psychiatric hospitals, or psychiatric wards will be included, while those in general hospitals, nursing homes, or other care facilities and not containing psychiatric patients will be excluded. Another inclusion criterion is the intervention, and only studies interested in the use of physical restraints or pharmacological restraints will be included. Other study features such as language, timing, and human subjects were considered. For instance, the review will include articles fully published from 2010 to the present and should have been published in English. Notably, there will be no restrictions based on the geographical locations of the research.

Data Extraction

After successfully selecting full-text articles, the researcher will examine and sort selected studies into a data extraction review matrix and summarize their findings. Some of the crucial data included in the table include studies' purpose, sample size, research design, strengths and weaknesses, and level of evidence. This information is presented in a matrix table in the appendix. Notably, the matrix table contains only a critical analysis of the primary research sources, which were initially targeted by this research.

Study Selection Process

The final search was undertaken and covered peer-reviewed from January 2010 to 2021. The search was limited to English publications and associated with human subjects. The initial literature search found 638 articles whereby 217 were duplicates and hence excluded. Out of the 421 remaining articles, 404 studies (95.97%) were removed for being irrelevant. 17 articles were further assessed, and four articles were further excluded.

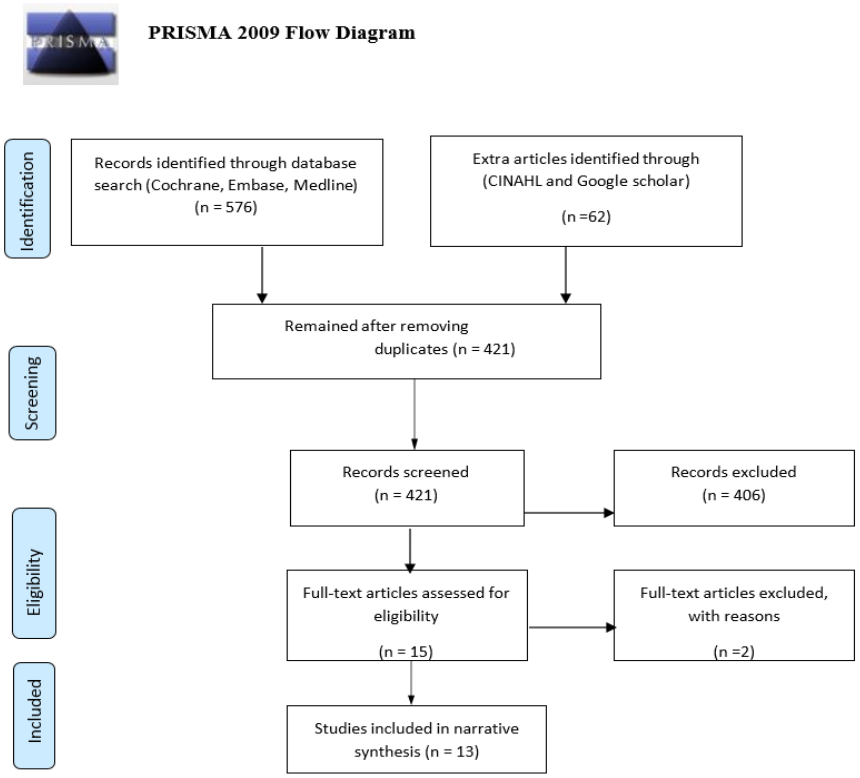

Figure 2: PRISMA Flow diagram (Moher, Liberati, Tetzlaff, & Altman, 2009

FINDING AND RESULTS

The present study encountered very few primary research studies focused on psychiatric settings, including hospitals, wards, or patients. There is a limited number of experimental studies on the subject, limiting the quality of evidence and drawing conclusions.

In a cross-sectional study done in 2015 at Amanuel Mental Specialized Hospital in Ethiopia, Belete (2017) intends to find out the frequency at which physical restraints are used among bipolar patients presented at a local hospital. The researcher uses a total of 400 participants clinically diagnosed with bipolar disorder by mental health professionals or psychiatrists. These adult participants are picked by systematic random sampling technique from a group of 11,500 bipolar patients, and data collected for one month. Among the 400 participants in the study, the prevalence of physical restrain was 65 percent. The results are statistically significant because about 75 percent of the participants experienced more than 1 episode of bipolar disorder or abnormal behavior. This indicates that there was a high prevalence in the use of physical restraints. The possible explanation of might is because healthcare professionals in mental facilities considered this intervention effective.

In another research, Husum et al. (2010) use a cross-sectional prospective study design to examine the extent to which seclusion, involuntary mediation, and physical restraint of patients admitted in mental health ward are connected to staff, patients, and ward features. The study was a multicenter study and used data from 32 acute mental health wards. The researchers collected data from 1016 involuntary admitted patients for two months, and this was restricted to chart data only as the regional review committee approved the study without requiring any consent. The study finds

that at least 10 percent of admitted patients in psychiatric wards experience physical restraints, which shows that this is a common intervention method.

Kontio et al. (2011) explore the experience and perceptive of psychiatric inpatients on the physical restraint method. Eventually, using a descriptive qualitative approach with open-ended focused interview questionnaires, the researchers interviewed individual perceptions regarding the restraints. The research was done on six acute wards in mental health facilities in Finland, and the results were analyzed by inductive qualitative content analysis. The study found that patients that underwent physical restraints experienced negative incidents related to loneliness, helplessness, anger, confusion, and humiliation. Patients reported negative feedbacks associated with staff interaction and treatment. As a result, most patients thought that the physical restraints method required improvement, especially in regard to human treatment, written agreement, and a patient-friendly environment.

In another descriptive study done in South Africa, Kalula & Petros (2016), the researchers examine the prevalence of physical restraint utilization as well as patient features associated with the intervention. Using 572 participants in a cross-sectional study design, the researchers collect data from 132 patients that were physically restrained in an acute ward. According to the study findings, physical restraints were mainly used to protect staff from harm as well as protect medical devices. However, the study noted that this intervention is poorly coordinated despite it being prevalent.

In another qualitative study done in southern Iran, Moghadam et al. (2014) sought to examine the perception about physical restraint from psychiatric nurses. The study is done on 14 participants that worked as nurses in psychiatric hospitals. The researchers use semi-structured interviews, one-on-one interviews, and audio records to collect data. The nurses admitted to using physical restraints to cope with stresses and unruly behaviors in the wards. In this study, physical restraint emerges as one of the effective methods used by nurses to control and manage violent mentally sick patients. This is despite the method not being satisfactory, and both patients and nurses would prefer it.

Di Lorenzo et al. (2011) conducts a research study to examine the use of physical restraint in an acute psychiatric ward in Italy. The researchers collect data retrospectively from nursing charts and medical records for three years from mental health wards where mechanical restraint by belt was discouraged but utilized. Restraints by belt were applied only if the other alternative interventions had failed. The study finds that the physical restraints approach was highly used involuntary or compulsory admissions of clients with an altered consciousness state to control unruly and aggressive behavior. The method was also commonly applied at night and within 72 hours among patients with schizophrenia and other psychotic disorders.

Wong et al. (2020) conduct a qualitative study to assess and characterize patients that experience physical restraints. Using a grounded theory approach, the researchers collect data using one-on-one, in-depth interviews from 25 adults in the emergency department wards. The study finds out that physical restraints were accompanied by harmful experiences, and there is a need for compassion, and therapeutic engagement after the intervention. However, the method is effective although there is a need for a patient-centered approach.

In a one-year retrospective study conducted by Miodownik et al. (2019), the researchers evaluate factors associated with a shortened period of restrictions in an acute male psychiatric ward. Using data from 176 subjects that experienced restraints, the study finds that physical restraints are commonly used in various mental health issues, including schizophrenia, mood disorders, mental retardation, organic mental disorder, and mental disorders due to substance abuse. The prevalence of use is high despite the numerous negative implications associated with the method.

Due to a limited number of primary research studies, secondary research studies were also included, although not included in the matrix table. This is because primary research sources were the initial target of this research. A review by Ye et al., 2019 provide an in-depth analysis of physical restraint. The authors basically attempted to clarify physical restraint and its effectiveness in the mental health department. This is based on studies from biomedical databases, including PubMed, PsycINFO, and CINAHL. From the data, the researchers identified that physical restraint is a coercive practice that needs to be discouraged. The procedure denies patients their right to movement and also causes physical injuries to the patients. However, the method is still effective and should be taken as the last option in any medical setup because it causes adverse effects to the individuals involved.

The prevalence and risks of using restraint in psychiatry are well illustrated by Beghi et al. (2013). Using 74 studies from Embase, PubMed, PsycINFO database, the researcher collects data and identifies that this intervention was commonly used in practice. Regardless of the efforts to reduce the use of restraints, the data confirmed that there are many hospitals still using the procedure in handling violent patients with mental illness and other groups of violent individuals. The variables used often related to the use of forcible measures in the 49 studies included in this research were young adults, age groups, schizophrenia, foreign ethnicity, involuntary admission male gender, and the availability of male staff. The method was still widely used in many countries, even with so much opposition and discouragement. Possibly, the process of patient restraint is still being practiced because there are no other effective techniques for handling aggressive patients.

Achir Yani Syuhaimie Hamid & Catharina Daulima (2018) provides an in-depth analysis of the experience of restraint use in patients with violent behaviors in mental health institutions. In this study, the researchers employed purposive sampling methodology to identify the individual patients that were restrained and how effective the process was. In this case, the number of participants in the study was eight, and data analysis was done using Colaizzi's method. The study's result was that patients with violent behavior have negative effects on other patients during their hospitalization. According to Achir & Catharina (2018), the ultimate decision of employing restraint in handling mentally ill patients with violent behavior is effective but needs to consider the human rights of other patients.

There are various effects of seclusion and restraint. Chieze and colleagues provide very informative data regarding the impacts of restraints and seclusion in adult psychiatric patients. According to the researchers, determining the impacts of coercion is a significant challenge to most health care sectors. The attempt to define the challenges results in ethical, legal, and methodological controversies. Chieze et al. 2019 confirm that regardless of the limited evidence on the effectiveness of seclusion and restraint, the practice is still widely used in adult psychiatric.

In a study done by Annamalai & Huiting (2014), the method of physical restraint has widely been used across the world to manage unwarranted behavior among mentally ill patients. According to the study, restraint is regarded as an emergency approach to prevent impending harm to the patient or other individuals around them when no other method is available. Most healthcare organizations, especially psychiatric hospitals, consider the method acceptable for violent and agitated patients.

DISCUSSION

The main objective of this review was to search and examine previously published literature on the benefits of physical restraints among hospitalized patients in psychiatric wards. Despite the initial intention to only include primary research, there were limited articles, hence the need to include secondary research sources. This would lead to heterogeneity of the studies included due to the participants' different characteristics, study design, and different approaches used to measure outcomes. All in all, the objective remained the same and was intended to assemble and critically analyze gathered evidence on the subject. This review's findings will guide healthcare organizations to engage in evidence-based decisions regarding the application of physical restraints in practice. Furthermore, this review's outcomes and conclusion might assist healthcare professionals, particularly in psychiatric wards, to logically discuss the application of restraints on patients with other healthcare stakeholders, including policymakers, patients, and their families. Most importantly, this review will identify the knowledge gab and will assist in bringing changes in the daily psychiatric practice involving patient restraining.

This review finds that the main apparent excuses for the use of physical restraint among mentally ill patients are prevention and control of stressed and violent behaviors and managing safety (Di Lorenzo et al., 2011; Kalula & Petros, 2016). Appropriate management of disruptive patients by psychiatrists and staff in psychiatric wards using this intervention assists in finding safety and prevention of harm in the ward. The assessed studies are from different geographical locations, and it is clear that most countries do not have national guidelines regarding the use of physical restraints. Moghadam et al. (2014) and Annamalai et al. (2014) noted that physical restraint procedure continues even after the patient is restrained because of nursing of care. Nurses continue to monitor patients to ensure they do not harm themselves and also explain to them the reason for restraining. This is important also as a patient is closely monitored by nurses and evaluated to determine if the individual is safe to be released. All in all, the review finds that there are several challenges associated with this intervention, such as patient’s resistance or opposition to the method. This, according to the patients, is considered a punishment (Kontio et al., 2011; Achir Yani Syuhaimie Hamid & Catharina Daulima, 2018). According to Moghadam et al. (2014), physical restraints are regarded as an intensive approach or physical intervention towards disruptive patients. Many studies have cited the intervention as a method of punishment which justifies the reason for resistance.

One of the limitations characteristics of the reviews is the quality and amount of literary evidence. The conclusion from the present study might inspire future rigorous experimental studies, particularly RCTs. Another limitation of the study is the small sample size which might jeopardize the applicability of the findings. However, this study is the most recent and comprehensive research study globally and in Saudi Arabia conducted to assess the impact of physical restraints on hospitalized

psychiatric patients. Besides highlighting the benefits of the intervention, this review gives great insight into contemporary human rights concerning mentally ill patients' physical restraints.

To sum up, this review finds that physical restraints are still a widely used method across the globe despite the negative effects associated with its implementation. Physical restraints have largely been used in mental health facilities to control and prevent harm and protect other patients, staff, and medical devices from harm, thus safety. Notably, there is a need to develop a comprehensive guideline to assist with the use of the intervention in the management of violent patients in psychiatric wards.

CONCLUSION

The controversy surrounding the use of physical restraints in psychiatric settings is both longstanding and multi-dimensional. The decision to employ such a method should be based on clinical necessity and, ideally, only when other less restrictive interventions have failed. As the global health community continues to evolve in its understanding of mental health and the associated treatments, it is imperative that evidence-based practices become the norm. The primary conclusion derived from this systematic review is the pervasive use of physical restraints in psychiatric settings worldwide. Although there are documented benefits, particularly concerning the immediate safety of patients and staff, the psychological effects on patients cannot be overlooked. The literature strongly indicates that physical restraints can instill feelings of punishment, humiliation, and trauma. Thus, as healthcare professionals, we must ask ourselves if the potential physical benefits outweigh the emotional harm, and if not, we must ardently seek alternatives. This inquiry is especially salient in an era where patient rights and holistic care are at the forefront of medical discussions. For the future, healthcare systems should be pressed to adopt evidence-based guidelines and training for staff that underscore restraint as the absolute last resort. Furthermore, continuous education, improved patient-staff communication, and investment in alternative intervention methods are imperative.

References

1) Achir Yani Syuhaimie Hamid, M., & Catharina Daulima, N. (2018). The experience of restraint-use among patients with violent behaviors in mental health hospital. *Enfermería Clínica*, *28*, 295-299. https://doi.org/10.1016/s1130-8621(18)30173-6

2) Annamalai, J., San, G., & Huiting, X. (2014). Effectiveness of non-pharmacological interventions to reduce the use of physical restraint in mental health settings: a systematic review protocol. *JBI Database of Systematic Reviews and Implementation Reports*, *12*(6), 24-35. https://doi.org/10.11124/jbisrir-2014-1395

3) Araya, T., Ebnemelek, E., & Getachew, R. (2020). Prevalence and associated factors of aggressive behavior among patients with schizophrenia at Ayder comprehensive specialized hospital, Ethiopia. *Biomed Research International*, *2020*, 1-8. https://doi.org/10.1155/2020/7571939

4) Basfr, W., Hamdan, A., & Al-Habib, S. (2019). Workplace violence against nurses in psychiatric hospital settings: Perspectives from Saudi Arabia. *Sultan Qaboos University Medical Journal [SQUMJ]*, *19*(1), 19. https://doi.org/10.18295/squmj.2019.19.01.005

5) Beghi, M., Peroni, F., Gabola, P., Rossetti, A., & Cornaggia, C. (2013). Prevalence and risk factors for the use of restraint in psychiatry: a systematic review. *Riv Psichiatr*, *48*(1), 10-22. https://doi.org/10.1708/1228.13611

6) Belete, H. (2017). Use of physical restraints among patients with bipolar disorder in Ethiopian Mental Specialized Hospital, outpatient department: cross-sectional study. International Journal of Bipolar Disorders, 5(1). https://doi.org/10.1186/s40345-017-0084-6

7) Chieze, M., Hurst, S., Kaiser, S., & Sentissi, O. (2019). Effects of seclusion and restraint in adult psychiatry: A systematic review. *Frontiers in Psychiatry*, *10*. https://doi.org/10.3389/fpsyt.2019.00491

8) De Bruijn, W., Daams, J., van Hunnik, F., Arends, A., Boelens, A., & Bosnak, E. et al. (2020). Physical and pharmacological restraints in hospital care: Protocol for a systematic review. *Frontiers in Psychiatry*, *10*. https://doi.org/10.3389/fpsyt.2019.00921

9) Di Lorenzo, R., Baraldi, S., Ferrara, M., Mimmi, S., & Rigatelli, M. (2011). Physical Restraints in an Italian Psychiatric Ward: Clinical Reasons and Staff Organization Problems. *Perspectives in Psychiatric Care*, *48*(2), 95-107. https://doi.org/10.1111/j.1744-6163.2011.00308.x

10) Franz, S., Zeh, A., Schablon, A., Kuhnert, S., & Nienhaus, A. (2010). Aggression and violence against health care workers in Germany - a cross sectional retrospective survey. *BMC Health Services Research*, *10*(1). https://doi.org/10.1186/1472-6963-10-51

11) Husum, T., Bjørngaard, J., Finset, A., & Ruud, T. (2010). A cross-sectional prospective study of seclusion, restraint and involuntary medication in acute psychiatric wards: patient, staff and ward characteristics. *BMC Health Services Research*, *10*(1). https://doi.org/10.1186/1472-6963-10-89

12) Kalula, S., & Petros, S. (2016). Use of physical restraint in hospital patients: A descriptive study in a tertiary hospital in South Africa. *Curationis*, *39*(1). https://doi.org/10.4102/curationis.v39i1.1605

13) Kanerva, A., Lammintakanen, J., & Kivinen, T. (2015). Nursing staff's perceptions of patient safety in psychiatric inpatient care. *Perspectives in Psychiatric Care*, *52*(1), 25-31. https://doi.org/10.1111/ppc.12098

14) Kontio, R., Joffe, G., Putkonen, H., Kuosmanen, L., Hane, K., Holi, M., & Välimäki, M. (2011). Seclusion and restraint in psychiatry: Patients' experiences and practical suggestions on how to improve practices and use alternatives. *Perspectives in Psychiatric Care*, *48*(1), 16-24. https://doi.org/10.1111/j.1744-6163.2010.00301.x

15) Masters, K. (2017). Physical restraint: A historical review and current practice. *Psychiatric Annals*, *47*(1), 52-55. https://doi.org/10.3928/00485713-20161129-01

16) Miodownik, C., Friger, M., Orev, E., Gansburg, Y., Reis, N., & Lerner, V. (2019). Clinical and demographic characteristics of secluded and mechanically restrained mentally ill patients: a retrospective study. *Israel Journal of Health Policy Research*, *8*(1). https://doi.org/10.1186/s13584-018-0274-4

17) Moghadam, M., Khoshknab, M., & Pazargadi, M. (2014). Psychiatric nurses' perceptions about physical restraint; A qualitative study. *The International Journal Of Community Based Nursing & Midwifery (IJCBNM)*, *2*(1), 20–30. Retrieved 16 March 2021, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4201183/.

18) Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine, 6*(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

19) Olashore, A., Akanni, O., & Ogundipe, R. (2018). Physical violence against health staff by mentally ill patients at a psychiatric hospital in Botswana. *BMC Health Services Research*, *18*(1). https://doi.org/10.1186/s12913-018-3187-6

20) Park, T., Usher, K., & Foster, K. (2014). The challenges of conducting a nurse-led intervention in a randomized controlled trial with vulnerable participants. *Nursing Research and Practice*, *2014*, 1-6. https://doi.org/10.1155/2014/394237

21) Phillips, J. (2016). Workplace violence against health care workers in the United States. *New England Journal of Medicine*, *374*(17), 1661-1669. https://doi.org/10.1056/nejmra1501998

22) Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., & Petticrew, M. et al. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ*, *349*(jan02 1), g7647-g7647. https://doi.org/10.1136/bmj.g7647

23) Sherwood, G. (2015). Perspectives: Nurses' expanding role in developing safety culture: Quality and safety education for nurses – competencies in action. *Journal of Research in Nursing*, *20*(8), 734-740. https://doi.org/10.1177/1744987115621142

24) Slemon, A., Jenkins, E., & Bungay, V. (2017). Safety in psychiatric inpatient care: The impact of risk management culture on mental health nursing practice. *Nursing Inquiry*, *24*(4), e12199. https://doi.org/10.1111/nin.12199

25) Wong, A., Ray, J., Rosenberg, A., Crispino, L., Parker, J., & McVaney, C. et al. (2020). Experiences of Individuals Who Were Physically Restrained in the Emergency Department. *JAMA Network Open*, *3*(1), e1919381. https://doi.org/10.1001/jamanetworkopen.2019.19381

26) Ye, J., Wang, C., Xiao, A., Xia, Z., Yu, L., & Lin, J. et al. (2019). Physical restraint in mental health nursing: A concept analysis. *International Journal of Nursing Sciences*, *6*(3), 343-348. https://doi.org/10.1016/j.ijnss.2019.04.002

27) Zhou, J., Zhong, B., Xiang, Y., Chen, Q., Cao, X., & Correll, C. et al. (2015). Prevalence of aggression in hospitalized patients with schizophrenia in China: A meta-analysis. *Asia-Pacific Psychiatry*, *8*(1), 60-69. https://doi.org/10.1111/appy.12209