The Effects of Restraint and Seclusion on Patients with Mental Disorder: A Systematic Review

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Abstract

The restraint and seclusion could worsen condition of patients with mental disorder on several aspects as physical, psychological, and social. Objective: To identify the effects or impacts of restraint and seclusion behavior on patients with mental disorder. This systematic review was initiated to identify literatures on scientific articles which have been published between 2009-2019 in three databases as ProQuest, pubmed, and Sciencedirect. The selection was conducted in PRISMA flow-diagram and criticized through JBI tool. After 10 relevant articles were collected, they would be analyzed to be a systematic review. Most of ten researches illustrated to negative effects on physical and psychosocial aspects as a consequence of restraint and seclusion on patients with mental disorder. A few of positive effects have been also felt, but was not comparable to the negative effect. The implementation of restraint and seclusion behavior could worsen the condition of patients which became a consideration for the health officer to do intervention of restrain and seclusion on patients with mental disorder.

Keywords: Effect, Restraint, Seclusion, Patient with Mental Disorder.

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A. INTRODUCTION

The restraint and seclusion on patients with mental disorder is still a global phenomenon. In Nepal, the restraint and seclusion on people with mental disorder is expressed by tying with a rope or big belt, confinement in free danger space, and special bed (Shrestha, 2018). The similar situation also occurs in India by tying and placing individual in a confined place (Gowda, et al., 2018). In indonesia, the form of restraint and seclusion is varied, as to tie or bind foot and hand with chain, wood beam, confinement in a locked room, small cage, chain body under the tree, place in backyard or garden and under the house basement (Buanasari, Catharina Daulima&YuliaWardani, 2018; Catharina Daulima, 2018; Puteh, Marthoenis& Minas, 2011). In short, the form of restraint and seclusion in this world is many and various.

The incident rate of confinement in many countries varies. A systematic review by Beghi, et al. (2013) has reported a confinement incident between 1990 – 2010 in the world is approximately 3,8-20%. The confinement in New Zealand in 2010 has reached to 60 people (8,4%) from the total 716 cases of mental disorder (Swadi&Bobier, 2012). In Swiss, the confinement in form of restraint and exile at mental health service is 6,6%. This number is still relatively low if it is compared to the rate of confinement in German 7,2% (Chieze, Hurst, Kaiser & Sentissi, 2019). In

Indonesia, based on the basic health research (2018), the estimation of population amount of 264 million, the total of patients with mental disorder who have ever been confined 14% or about 71.484 people. The confinement which still occurs in many countries has the lowest prevalence 3,8%.

The restraint and seclusion on patients with mental disorder is caused by either internal or external factors. The internal factor which affects the incident of restraint and seclusion is aggressive behavior from patients with mental disorder which may harm their selves, family, and environment (Daulima, 2018; Puteh, et al., 2011; Shrestha, 2018). The external factors are community stigma, family burden, failed treatment, and limited access of mental health service (Buanasari, et al., 2018; Daulima, 2018' Puteh, et al., 2011). The causal factor of restraint and seclusion on patients with mental disorder can arise from their selves, family, community, and health service.

The restraint and seclusion will deliver effects positively and negatively on patients with mental disorder. The positive effect which is experienced by people with mental disorder from this confinement is that they will feel more cared by the family, community, or health officer, since all activities and their needs (meal, drink, and shower) can be fulfilled, they also say that during confinement, their aggressive behavior can be more controlled (Yani et al., 2018; Buanasari et al., 2018; Steinert, Birk, Flamer & Bergk, 2013). Next, the negative effects on patients with mental disorder includes to physical, psychological, and social aspect. The impacts of physical aspect from confinement are postural asphyxia, skin injury, fracture, dead because of lack of oxygen, and atrophy on body organ because of the long duration of confinement (Hamid & Daulima, 2018; Darwan, Buanasari & Kundre, 2019; Shrestha, 2018). The brain damage also appear if the patients with mental disorder who experience restrain and seclusion cannot get medical treatment which will worsen the condition. The brain damage is occurred if during three years, the patients with mental disorder cannot get treatment or therapy which will impact to the increase of dopamine hormone that impair neuron. The damage on neuron impacts impairment of emotional and verbal cognitive function. The psychological impacts from this restraint and seclusion can cause them in trauma, revenge on family, feel dumped, inferiority, desperate, feel alienated, and shame (Buanasari, et al., 2018; Daulima, Rasmawati & Wardani, 2019). The social impacts from this restraint and seclusion are that the patients with mental disorder cannot socialize, have friend, and feel shunned since people will regard them as dangerous (Hamid & Daulima, 2018). The restraint and seclusion can worsen the condition of patients with mental disorder on several aspects as physical, psychological, and social. Based on many studies and searches from previous literature, the researchers intend to write a systematic review which aims to identify the effects of restraint and seclusion on patients with mental disorder.

B. METHODS

The arrangement of this systematic review was through several steps as to determine the research question in PICO method. The sample selection was on patients with mental disorder case. The intervention was due to the restraint and seclusion behavior. The impact from this intervention was various possible effects of restraint and seclusion which might appear as security, side effect, life quality, incident of stress disorder post-trauma (PTSD), and patient subjective perception on that kind of therapy. Next, the researchers collected the data to write this literature review through diagram which consisted of: identification, screening, eligibility selection, and determination of inclusion criteria which the articles must be appropriate to PICO method and in English. On the last step, this review was done by synthesizing those literatures in order to obtain a systematic review.

1. Research Questions
   The research question on this review section, "How are the effects of restraint and seclusion on patients with mental disorder?
2. Journal Identification
   The process of literature search and selection was depicted on (figure 1). The search was on three databases: proquest, pubmed, and science direct by exerting advance search in keyword "impact or effects", "restraint or seclusion or confinement", "mental ill or mental illness or mental disorder" from 2009-2019, next the proquest and pubmed was taken through an integration which using Boolean "And".

C. RESULT AND DISCUSSION

The search step which exerted strategies that have been explained above resulted 1.285 articles from three databases (proquest, pubmed, and science direct). The search was continued by employing screening and duplicates checking, it resulted 26 relevant articles with title and abstract, the screening was based on inclusion and exclusion criteria, it resulted 19 relevant articles. Last, the researchers did eligibility test through full text checking by using JBI tools and resulted the last 10 articles which would be analyzed in this systematic review. All collected articles were original research and in English language.

Based on the research setting, 4 researches of 10 articles was done in service unit of mental hospital, 5 researches was done in psychiatric unit of general hospital, and the last research was done in community. 1 research worked by comparing between groups which have experienced the seclusion directly, restraint with group which have watched seclusion and restraint behavior. 1 research was on the patient who have experienced seclusion, 1 research was on the client who have experienced restraint and 7 researches were on the clients who have experienced restraint and seclusion behavior.

Based on the intervention, 8 researches have discussed about restraint, 1 research has discussed about seclusion or confinement, and 1 research has discussed about restraint. Regarding to the type of research design: 3 researches were

qualitative research design which employed phenomenological approach, 7 researches were prospective quantitative study (4 cohort studies, 1 control case, and 2 cross-sectional).

Based on the impacts or effects which were emerged as consequences of restraint and seclusion on patients with mental disorder varied on 12 researches. The effects were then classified into two categories: negative effect and positive effect which experienced by patients with mental disorder which could be seen on table 1.

Table 1. The Effects of Restraint and Seclusion on Patients with Mental Disorder

Theme	Sub-theme	Article
Positive effect		
	The patients feel as being guarded and cared by the health officer	Mariyati, et al, 2018
		Steinert et al, 2013
		Soininen et al, 2013
		Larue et al, 2013
	Calming	Steinert et al, 2013
	Behavioral change to control emotion	Larue et al, 2013
Negative effect		
	Inconvenience and physical injury	Mariyati, et al, 2018
		Visaggio et al, 2018
	Risky to get more than one compulsion actions	Gowda et al, 2018
	The patients feel as being treated like "sick and inhuman behavior"	Mariyati, et al, 2018
		Verbeke et al, 2019
		Brophyet al, 2016
	Their opinionis not appreciated	Verbeke et al, 2019
		Soininen et al, 2013
	Get in through trauma	Mariyati, et al, 2018
		Whitecrosset al, 2013
		Steinert et al, 2013
	Get into negative feeling, inconvenience, blame their selves, loneliness, fear, anger, and helplessness	Mariyati, et al, 2018
		Steinert et al, 2013
	Dissatisfaction towards hospital service	Strauss et al, 2013

Those negative effects from restraint and seclusion were found almost in all researches. The research done by Brophy, et al. (2016) which has aimed to identify the effects of restraint and seclusion on supporting group (who watched the restraint and seclusion behavior) and the main group (who have experienced restraint and

seclusion) showed that both groups were agreed that the action of restraint and seclusion was an action or behavior which harmed human rights which might restrict freedom in either physical or psychosocial. The prospective research done by Gowda, et al. (2013) has explained that the restraint and seclusion behavior was a kind of action which was still in dilemma and could trigger other compulsive actions (ECT) on patients with mental disorder. Soininen, et al (2013) and Verbeke, et al (2019) in their researches have shown that the patients who experienced restraint and seclusion would feel as treated inhumanly and find that their idea or opinion was unappreciated or not taken into consideration by health officer.

Next, the other negative effect was trauma. Whitecross, et al (2013) in his quantitative research which aimed to measure the effectiveness of counseling intervention post-seclusion in order to reduce trauma experience has reported 47% of trauma symptoms were felt by the patients after the seclusion. The qualitative research done by AchirYani, et al (2018) and Brophy, et al (2016) have also found trauma feeling on patients with mental disorder who experienced restraint and seclusion. Steinert, et al (2013) in his cross sectional research has proven that the patients who got mechanical restraint and seclusion or confinement, they were identified as having possibility of PTSD.

Besides to trauma effect, the other subjective negative effects were also felt by the patients who experienced restraint, seclusion, and confinement action. AchirYani, et al (2018) in their research which specified on restrain action have found that the patients who got negative feeling as inconvenience, fear, anger, helplessness, and self-blaming. The research done by Streinert, et al (2013) also revealed that 60 people who experienced restraint and 42 people who experienced seclusion have stated that the patients reported various kinds of negative feeling which the most frequent feeling were helplessness, stress, fear and anger. Strauss, et al (2013) in their research have also asserted that the patients felt inconvenient while experiencing restraint and confinement action.

The physical effects could not also be denied. Visaggio, et al (2018) in their research have found that from 332 episodes which involved restraint chair, 5 (1,5%) caused injury on the patients and among 101 episodes of mechanical restraint on four points, 3 (3,0%) caused injury on the patients, while for the seclusion or confinement, from 310 episodes of confinement, 11 (3,5%) the patients had injury. The research done by Shrestha (2018) has found that the type of physical injury was more specific as a result of restraint and seclusion, for instance postural asphyxia, skin injury, venous thrombosis, and fracture.

The patients with mental disorder also felt benefits from restraint, seclusion, and confinement behavior. The first benefit was found in a research done by AchirYani, et al (2018) which has reported that the patients who got restraint felt as being more cared by the health officer, they felt that the restrain action was required in order to control their aggressive behavior which then prevented them from self-injuring and others. This research was in line with previous research done by Starus, et al (2013) which has reported that 40,34% were agreed to the restraint behavior

because it was beneficial to control behavior. The research done by Larue, et al (2013) which aimed to understand the patient perception on application of restraint and seclusion protocols has shown that 52% patients agreed that the behavioral change was existed after restraint and seclusion. The research done by Steinert, et al (2013) has also found that 58% patients reported positive effect as the patients have regarded that restraint and seclusion were able to help calming them and being more cared by health officer.

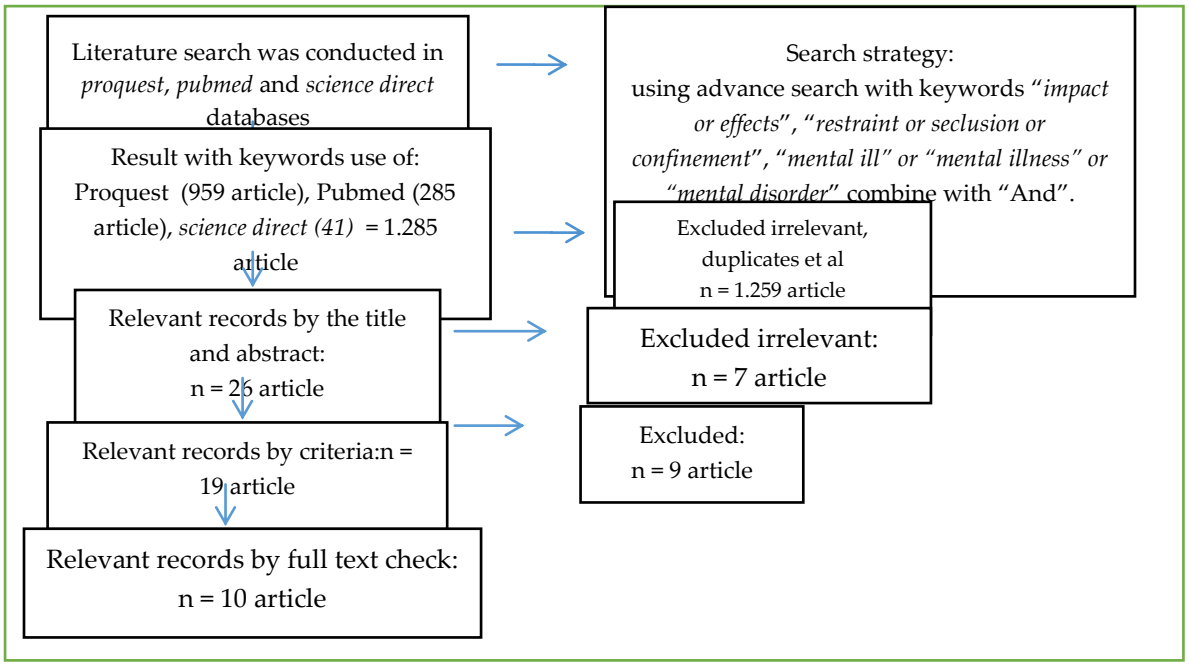

Figure 1. Literature Search and Process of Article Selection in PRISMA Modification

Authors & Year	Purpose	Methods and Design	Sample	Intervention	Data analysis	Results	Conclusion
Mariyati, et al, 2018 Indonesia	To explore the experience of restraint among patients who had violence in a mental hospital	Qualitative research and phenomenological approach	8 participants	Restraint	Colaizzis method	• The participants have negative feeling as inconvenience, fear, trauma, anger, helplessness, and self-blaming • The support from professional health officer during the restraint (the participants will feel as being guarded and cared) • The patients state loneliness and feel as being treated inhumanely • All participants assert that they feel ill on their body	• It affects negatively on physical and psychological aspect of patients • The patients feel positive effect (such as getting more attention from health officer)
Gowda et al, 2018 India	To identify the prevalence of restraint in psychiatric inpatient unit, India and to examine the level of compulsion which correlated toa variety of restraint form	Quantitative research, prospective cohort study	200 patients (40 are mechanical and controlled manually, 36 are secluded, 64 are treated unconsciously, while 29 are in ECT)	Seclusion, restraint, and other compulsive behaviors	- T test on independent sample and t test on paired sample are used to assess continue variable. - Chi square and Mc-Nemar test are used to assess discrete variable. - The compulsive predictor is	Physical restraint which relates to greater compulsive perception, which is followed by unintentional treatment, chemical restraint, seclusion and ECT	It affects negatively on physical and psychological aspect

					aimed to determine by using logistic regression analysis. - The statistical analysis is done by using significance level of p statistic < 0,05		
Visaggio et al, 2018 United States of America	1) To identify whether the restrained patient will spend lesser time in restraint than the restrained patients who are in four points mechanism; 2) The patient proportion who tends to have medicine through mouth than intramuscular route (IM)	Quantitative research	- Butler 46 Hospital - Life Institute of Hartford Hospital (IOL) 24 - McLean 28 Hospital	Restraint and seclusion/confinement	- Hypothesis 1 is tested in regression model - Hypothesis 2, 3, and 4 use logistic regression analysis -	• Physical injury on patients who experienced restraint action • It is found a lot of injury cases on staffs during episode of mechanical restraint on four points than the seclusion or restraint chair	It affects negatively on physical aspect of patients

	will be higher in restraint chair; 3) The patient will have fewer injury through use of restraint chair than the restraint in four points mechanism and seclusion; and 4) The risk of injury on staffs by using restraint chair is higher than the restraint in four points mechanism or seclusion.						
Verbeke et al, 2019 Belgian	To recommend interactional model from aspect of relation	Qualitative research, phenomenological approach	12 respondents	Restraint and seclusion	Interpretative Phenomenological Analysis (IPA)	• The participants feel as being treated as "sick" which impacts the relation between patients and health officer in	• It affects negatively on psychosocial aspect

	between compulsive action and knowledge according to participant assumption					inharmonious • The participants feel that their subjective wish is not minded, so they surrender often times towards some compulsive treatments	
Whitecrosset al, 2013 Australia	- To identify the effect of seclusion on individuals by using Impact of Events-Revised (IES-R) - To measure the effectiveness of counseling intervention post-confinement/seclusion in order to decrease trauma experience which relates to seclusion behavior and lessen time which spent within seclusion	Quantitative research (Case Control)	31 respondents	Seclusion	Bivariate correlation which aims to assess the relation between total score of trauma and demographical and clinical variables by using IBM SPSS 20.0 version	• 47% patients report trauma symptom in consistence of PTSD probability	• It affects negatively on psychosocial aspect

	behavior						
Steinert et al, 2013 German	- To re-assess the patient perspective in an original study through further interview approximately a year after compulsive behavior is taken - To explore symptoms of PTSD which relate to the experience of compulsive behavior and compare PTSD symptoms among patients who	Quantitative research, Cross-sectional	102 patients, 60 patients have ever experienced seclusion and 42 patients have experienced in mechanical restraint	Seclusion and restraint	The difference of categorical variable is calculated through Chi-Square and Fisher test, while the difference of continue variable is tested through Mann-Whitney test	• The patients who have experienced mechanical restraint and seclusion will indicate probability of PTSD • The patients report as having a few of negative feelings during the measurement, the most frequent are helplessness, stress, fear, and anger • 58% have reported positive effect (ability to calm the patients) • 57% have reported that they feel as being more cared by health officer	• The patients feel positive effect (they get more attention from health officer and help them calming their selves) • The patients also get negative effects on psychosocial aspect

	have experienced seclusion or restraint						
Soininen et al, 2013 Finland	To explore patient perception about hospital treatment after seclusion and restraint	Quantitative research, prospective study	90 respondents	Seclusion and restraint	Each sub-scale is compared by exerting ANOVA repetitive measurement	The patients feel that they get enough attention from staff, and they can state their opinion, however their opinion is not minded. The patients refuse the need and benefit of seclusion and restraint	• It affects negatively on psychosocial aspect • It also affects positively (enough care and attention from health officer)
Strauss et al, 2013 United States of America	To identify the relation between objective and subjective index of coercive treatment and patient satisfaction in psychiatric unit	Quantitative research, cohort study	240 respondents	Restraint and seclusion	- Alfa Cronbach is measured to evaluate internal reliability inconsistency subscale global treatment evaluation (satisfaction) - Spearman correlation is calculated to examine association between patient satisfaction level and inpatient length	The patients have experienced compulsive behavior in form of seclusion or isolation (31,51%) and physical restraint (28,87%), the patients state dissatisfaction on hospital service after getting those compulsive behaviors or treatments	It affects negatively on psychosocial aspect

					of time, time between reception and evaluation, and time between evaluation and release. - Linear regression is aimed to see bivariate difference in satisfaction score to be selected its explanatory variables: current unconscious commitment, compulsion feeling, and report of compulsion history - Multiple linear regression model and satisfaction which include significant explanatory variables within		

					bivariate analysis		
Larue et al, 2013 Canada	To understand patient perception on application of restraint and seclusion protocols	Quantitative research, prospective study	5 respondents	Seclusion and restraint	Descriptive analysis (mean and standart deviation))	• 52% agree to behavioral change after seclusion and restraint are conducted on the patients (the patients are taught how to control emotion, as watching movies, listening music, writing, or reading favorite books) • They feel as being cared by health officer	• The patients get positive effects (behavioral change and feeling as being more cared by health officer)
Brophyet al, 2016 Australia	To see the effects of seclusion and restraint on customers and supporting aspects which cause to this case	Qualitative research	30 customers and 36 supporting aspects	Restraint and seclusion	NVivo 10 software of qualitative data analysis	• The violation of human right, trauma, control, isolation, dehumanization, and anti-recovery	• It affects negatively on psychosocial aspect

"All people with mental disorder must be cured in humanity and respect towards values which attach on human". PBB Resolution 46/119 (Minas &Diatri, 2008), this sentence was indirect statement which aimed to stop all undignified actions on patients with mental disorder as restraint, seclusion, and confinement (Daulima, 2018). This systematic review gave an illustration about information of confinement action on patients with mental disorder. Twelve articles have discussed about question search which concerned on positive and negative effects from confinement (seclusion, restraint, and containment) on people with mental disorder.

1. Negative Effects

Most of effects were negative, but it still affect some benefits and advantages on patients with mental disorder during experiencing seclusion, confinement, and restraint (Shrestha, 2018). The researchers chose to insert various findings as the effects of restraint and seclusion on patients with mental disorder, particularly on significant findings which could prove clinical efficiency and identify benefits or dangers of seclusion, restraint, and confinement. This research did not mean that compulsive method was not needed in certain cases, but in the context which restricted human right and potential consequence which harmed their selves, the evidence-based limitation must invite the medical and nursing staff to question their practice and its use carefully by evaluation the first time of decision making (as the last attempt) to use the strategy.

Most of articles have discussed about negative effect from confinement. The negative effect which could be felt in every aspect of patient life either physical or psychosocial. The physical effect could be inconvenience until physical injury which covered to postural asphyxia, skin injury, venous thrombosis, and fracture (Shrestha, 2018; Visaggio, et al., 2018). This result was in line with the research which concerned about confinement treatment which has been done by Puteh, et al (20111) which has explained that 21 (35,6%) of patients with mental disorder who have experienced confinement, they have significant muscle atrophy in their leg or arm when they are freed from confinement and inpatient time, almost all patients with low extremity atrophy would feel difficult to walk, approximately half of them could not walk completely. Darwan, et al (2019) in their research which concerned on confinement (seclusion, restraint, and isolation) also found forms of physical injury like venous thrombosis, atrophy on some parts of body because of confinement treatment in a long duration of time. A systematic review done by Chieze, et al (2019) has also defined several harming effects on patient physical due to the restraint and seclusion, which the most frequent one was venous thrombosis.

On the psychosocial aspect of isolation or seclusion, restraint, and confinement mostly caused the patients to have trauma and indicate PTSD symptoms (Hamid & Catharina Daulima, 2018; Brophy, Roper, Hamilton, Tellez & McSherry, 2016; Shreshta, 2018; Soininen, et al, 2013; Whitecross, et al., 2013). This finding was in line with the research done by Daulima, Rasmawati & Wardani (2019) which has demonstrated that the majority of patients who experienced confinement would have physical trauma. Chieze, et al (2019) in his systematic review which

aimed to identify the effects on restraint and seclusion case has reported that the incident of PTSD after the seclusion or isolation was about 25% - 47%.

Besides to trauma, the other effects were inconvenience, fear, anger, hopelessness, self-blaming, and desperation (Hamid & Catharina Daulima, 2018; Steinert, et al., 2019). This result was in line with the research (Buanasari, et al., 2018; Daulima, et al., 2019) which have explained the psychological effects of confinement which caused patients with mental disorder to have trauma, revenge on family, feel as being dumped, inferiority, desperation, and alienation. The similar psychological experience was also found by Steinert, et al 92003) who has proven that patients who got seclusion and restraint would feel emotional inconvenience, confidence, self-esteem, and security, it has even been reported that the clients who experienced seclusion would often have negative feeling, stress, fear, and anger. The research done by Hamid & Daulima (2018) has asserted that besides the subjective feeling of restraint and seclusion, it also affected social limitation on people who got that behavior. This finding was supported by the research done by Buanasari, et al (2016) which has explained social effect from restraint and seclusion which impacted the patients could not socialize with other people, thus, they did not have friends. The patients with mental disorder also experienced social discrimination, feel as being excommunicated and avoided, since people regarded them as dangerous (Lestari, 2014).

2. Positive Effects

The positive effects of restraint and seclusion were able to control aggressive behavior on patients with mental disorder effectively (Steinert, et al., 2013). The patients with mental disorder also felt changes on their behavior which specifically control their emotion (Larue, et al., 2013). The other positive effects were that the patients felt as being cared by the family and health officer, so they would be more enthusiastic and happy, because they were guarded and all needs were fulfilled and helped (Achir Yani, et al., 2018; Buanasari, et al., 2018; Steinert, Birk, Flammer & Bergk, 2013). This result was in line with the research finding written by Steinert, et al (2003) which has reported that the patients would feel more enthusiastic or excited because they have gotten extra attention. Chieze, et al (2019) have explained that the subjective feeling of patients with mental disorder who felt as being cared enough by health officer would enable to build therapeutic relation which mediate the result of treatment and especially the effectiveness of treatment.

D. CONCLUSIONS

A lot of researches have restricted a clear conclusion, however it could be specify that all researches on negative effects of seclusion, restraint, and confinement treatment in either physical aspect as inconvenience until physical injury or psychosocial aspect in forms of psychological experiences as trauma, inconvenience, anger, desperation, and helplessness, also shame to meet other people. From those 12 researches, 5 researches have explained the advantages, but in different situation contexts. The advantages from those actions that the patients would feel as being

regarded or cared. This situation could be a consideration for health officers to give intervention, they should implement carefully, although it was the last attempt. The patient rights must be regarded and minded during decision making to implement this kind of treatment or action.

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