From Folk Therapy to Evidence-based Psychiatry Practice: The Benefit of Evidence-based Psychiatry in Treatment-naïve Psychotic Patients

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Abstract

Background: Though Taiwan's Mental Health Act clearly states that the human rights and legal rights of psychotic patients should be respected and guaranteed, a temple mental asylum violated those regulations in the 21st century. Hundreds of patients were constrained in the asylum and evacuated following a forcible, public right intervention.

Method: The study conducted drug-naïve psychotic patients constrained in an asylum for decades. Before and after formal treatment, a total of 169 patients diagnosed with schizophrenia and other psychotic disorders were assessed with rating scales including the Mini Positive and Negative Syndrome Scale, Comprehensive Occupational Therapy Evaluation scale. In addition, family function, self-care and nutritional status were evaluated.

Results: The initial data show improvement in psychotic symptoms and occupational function. Furthermore, the ratio of patients classified as being at risk for malnutrition was decreased by 21.7% after treatment.

Conclusion: The psychotic symptoms and occupational function of these patients improved after undergoing formal treatment compared with folk therapy. The care model for psychotic patients in the temple asylum should be discussed while considering medical ethics principles. Trial registration: retrospectively registered.

Background

Many patients with mental illness were locked up with iron chains over the past hundred years. In 1793, Philippe Pinel made his first brave reform by unchaining patients, many of whom had been restrained for decades (Hergenhahn & Henley, 2013). Dementia praecox was popularized by the German psychiatrist Emil Kraepelin that eventually relabeled as schizophrenia (Adityanjee, Aderibigbe, Theodoridis & Vieweg, 1999). In 1952, chlorpromazine was confirmed to be more effective for controlling agitation and excitement than any of the previously used drugs, including insulin coma and morphine and scopolamine (hyoscine) combinations (Fink, Shaw, Gross & Coleman, 1958). Thereafter, the first-generation antipsychotics (FGA) and second-generation antipsychotics (SGA) have proven to be effective for controlling the psychotic symptoms associated with schizophrenia. Either FGA or SGA can reduce psychotic symptoms, caregiver load and neurocognitive deficits, and improve brain function in schizophrenia patients (Leucht et al., 2013).

There were approximately 1.17 million people with physical and mental disabilities in Taiwan in 2018. Among them, 10.9% were patients with mental illness (Ministry of Health and Welfare, 2018). The length of a hospital stay for psychotic patients is known to be longer than that for physical illnesses (Moreno et al., 2013). In the early 20th century, most psychotic patients in Taiwan were assigned to asylum care. National Health Insurance (NHI) has been in effect since March 1995 in Taiwan. Over time, the resources for psychiatric inpatient care have exhibited an upward tendency. There were 89 intensive care unit beds,

7,399 acute beds and 13,661 chronic beds in hospitals in Taiwan in 2017 (Ministry of Health and Welfare, Taiwan). There were more than 1600 psychiatric specialist in Taiwan in 2016. As a brief overview, there are adequate psychiatrists and beds. In Asia, the doctor-to-patient ratio in Taiwan is second to that in Japan (Taiwanese Society of Psychiatry, 2016). The HSBC Expat Explorer Survey has helped to inform commercial persons how countries and territories compare regarding different aspects of expat life from personal finance to education and childcare. In 2014, the survey showed that almost seven in ten expats in Taiwan said they spent less on health care than they did before moving. According to the data, Taiwan is superior to Japan, France, Belgium and Germany in affordability and quality (HSBC Report, 2014).

However, there was an asylum accepting up to 600 psychotic patients in Taiwan. Most of them were not offered antipsychotic medications or offered irregular medication treatment. In 1971, a monk recruited a patient with a diagnosis of pyromania and the monk used a straw rope to bind them together and the patient gradually improved (Chang & Lai, 2002). At the time, psychiatric care was lacking in Taiwan. In the largest city in Taiwan, a new mental hospital with 60 acute beds had just been established. There were only 4 psychiatric specialists in the second largest city in Taiwan. Moreover, the highly praised NHI had not been in effect. Therefore, only patients with high socioeconomic status (SES) could receive standard treatment. Most patients could not obtain regular antipsychotic medications and received folk treatments, such as siu-kiann. Siu-kiann is a traditional folk therapy that is commonly used in Taiwan. If someone cannot stop crying, screaming, or self-talking for an unknown reason, the caregivers will take the patient and his/her clothes to seek help from a Taoist priest who can do siu-kiann.

The asylum mentioned above grew over time and had accepted more than 600 patients. The asylum flaunted that patients did not need to take antipsychotic medications. The temple used an iron chain to connect patients with good function and patients with vivid psychotic symptoms at the waist. The temple had declared that the patients could take care of each other this way. However, physical violence has frequently occurred over the past years. The risk of patients being attacked by another patient was neglected by the temple.

The temple is a building with 7 floors and one basement. Approximately 500 patients lived on 5 floors in 2017. There were only 7 workers and one nurse to provide medical care. Notably, there is no psychiatrist in the asylum. The flush toilets were insufficient in the building. For example, there were 189 patients living on the 6th floor and only 5 bathrooms in use. In 2017, there was an outbreak of amoebic dysentery and pulmonary tuberculosis in this organization. The official staff found that stool had spilled over the bedpans. There were vestiges of stool in the corridor of the temple. The outbreak of infectious disease was out of control. Under the formal intervention by the official department, the 503 treatment-naïve patients were evacuated from the temple (Department of Health, Kaohsiung City Government). The patients were referred to hospitals and started regularly receiving antipsychotic medications. This study was designed to evaluate the treatment outcomes after one month and when they were admitted.

Methods

2.1 Participants

As mentioned above, almost everyone in the asylum did not regularly take antipsychotic medications. This trial was conducted to evaluate the treatment outcome of these drug-naïve and chronic patients. Most of the patients admitted to one specific mental hospital were diagnosed with schizophrenia with an illness duration of more than 20 years. According to the accessible statistical data sent to the official health agency, there were 253 patients, 169 of whom were diagnosed with schizophrenia and other psychotic disorders. The 169 patients with schizophrenia and other psychotic disorders underwent a series of laboratory tests and received antipsychotic medications and occupational training after hospitalization. These patients' function, psychotic symptoms and self-care were compared between when they were admitted and after one month of treatment. This trial was approved by the Institutional Review Board (IRB) of Kaohsiung Municipal Kai-Syuan Psychiatric Hospital (KSPH-2018-05). All participants provided informed consent.

2.2 Outcomes

Several outcome measures were assessed: The Mini-PANSS, COTE scale, self-care ability, cognitive function, activities of daily living (ADL), and Mini Nutritional Assessment (MNA).

The Positive and Negative Syndrome Scale (PANSS) is a widely used scale for measuring symptom severity in schizophrenia (Kay, Fiszbein, & Opler, 1987). These patients were assessed by Mini-PANSS when admitted and evaluated again at week 4. The Mini-PANSS score is a statistically significant predictor of response and highly correlated with PANSS-30 scores (Lin et al., 2018).

Occupational function was assessed with the COTE scale. The scale grades general behavior, interpersonal behavior and task behavior. Higher scores on the COTE scale indicated higher patient function (Brayman, Kirby, Misenheimer, & Short, 1976).

The skill of self-care was assessed by the Self-care Ability Scale. This scale evaluated the 5 areas of personal hygiene, eating habits, life in ward, medication adherence and money processing (Yang, Chou, Chang, & Yu, 1996).

The Mini Nutritional Assessment (MNA) was provided for evaluating the nutritional status of a patient. The MNA consisted of 6 items and has been validated and widely used to provide a single, rapid assessment of nutritional status in elderly patients in outpatient clinics, hospitals, and nursing homes. A higher score indicated that the patient had a better nutritional status (Vellas et al., 1999).

The Mini-Mental State Exam (MMSE) is a widely used test of cognitive function. It was applied to screen for cognitive deficits in these patients (Folstein, Folstein, & McHugh, 1975).

The APGAR score was used to evaluate the support system of these patients. The scale assesses the support of family along the dimensions of adaptation, partnership, growth, affection, and resolve

(Smilkstein, 1978).

2.3 Data analyses

All statistical tests were two-sided, and the significance level was set at 0.05. All analyses were performed in SPSS software, version 17.0.

Results

The diagnoses of these patients are shown in Table 1. Because these patients were assigned to several hospitals, there were some missing data. After treatment for one month, the 169 patients with a diagnosis of schizophrenia and other psychotic disorders had statistically significant improvements in psychotic symptoms, occupational function and nutritional status. Self-care abilities did not differ after one month compared with those when admitted. The results mentioned above are shown in Table 2.

The psychotic symptoms of these patients were assessed by the Mini-PANSS. The mean score was 26.40 ± 7.48 when admitted. The score was 24.84 ± 6.62 after one month of treatment ($p < 0.001$). The results indicate a response to antipsychotic medication in chronic patients even though they had been drug naïve.

The score of the COTE scale was 42.04 ± 20.08 when admitted and 44.91 ± 18.55 after training for one month ($p < 0.029$). Although these patients had lived in a limited environment for decades, they showed improvements in occupational function after regular training.

The score of self-care was 21.64 ± 7.87 when admitted and 21.97 ± 7.69 after one month of treatment ($p < 0.576$). The results indicated that there was no obvious improvement in self-care after treatment.

Using the MNA, the score was 8.92 ± 1.77 when admitted. This finding indicates that these patients were malnourished when admitted. The score was 9.66 ± 1.87 after hospitalization for one month ($p < 0.001$). Initially, 129 patients were at risk for malnutrition. After one month, only 101 patients were at risk, and a decrease of 21.7% was observed. Initially, 24 patients were severely malnourished, and after treatment, there were 16, which is a decrease of 33.3%.

When admitted, the score for the cognitive assessment of these patients was 15.17 ± 9.77 and 15.41 ± 10.06 after one month of treatment; the difference was not significant ($p = 0.615$). The score for family function by APGAR was 1.58 ± 2.77 when admitted and 1.67 ± 2.52 after one month of treatment; the results were not statistically significant.

Discussion

Our study demonstrated that these patients had statistically significant improvements in psychotic symptoms, occupational function and nutritional status after hospitalization for one month. To some

extent, the illness course of these drug naive patients was similar to dementia praecox and they are rare today. Although these patients lived in a controlled environment and had not taken medication for decades, they still responded to antipsychotic medications. The duration of untreated psychosis (DUP) is defined as the time from onset of the first psychotic symptom to the initiation of an adequate dose of antipsychotic treatment. It has been postulated that untreated psychosis has a toxic effect through some unknown mechanism, so that patients with a longer DUP have a poorer prognosis (Farooq et al., 2009; Marshall et al., 2005). Our results showed progress, as assessed with the Mini-PANSS, after being treated for one month. We need longer-term follow-up assessments to confirm these outcomes. The prognosis of schizophrenic patients is highly disparate. These inconsistencies may result from the heterogeneity of these patients and the duration of follow-up is also a challenge (Carpenter & Kirkpatrick, 1988).

Only a few of these patients received training, such as orchestra and Song Jiang Battle Array training in the temple. Other patients participated in activities such as pig farming, chicken raising or clothing manufacturing. However, most patients did not have the opportunity to receive regular occupational training. The COTE scale showed that these patients improved in occupational function from before to after treatment. The long-term outcome of improvements in occupational function needs to be followed.

Cognitive impairment is an important clinical feature in many schizophrenic patients. Cognitive function may be influenced by many factors, such as sex, premorbid adjustment, and education (Amminger et al., 2002; Wang et al., 2016). Due to the outbreak of infectious disease, these patients were evacuated from the temple. The relevant personnel were uncooperative with the intervention from the authorities; therefore, we had difficulties collecting premorbid information regarding these patients. Interpretations of the cognition data in this study should be made with caution.

There was no expected statistically significant difference in self-care ability before and after treatment. This finding may have resulted from the chronic course of the illness with functional deterioration over time. Furthermore, an alternative cause may be that nearly all of these patients had not received antipsychotic medications when they lived in the temple asylum. The duration of untreated psychotic patients is believed to be a factor for poor prognosis. Early treatment in psychotic patients may not only reduce the acute psychotic symptoms but also improve long-term outcomes (McGlashan, 1999).

Medical ethics is a system of moral principles that provide values to the practice of clinical medicine and in scientific research. "Four principles" is a common framework postulated by Tom Beauchamp and James Childress and widely used in the analysis of medical ethics. The four principles are (1) autonomy (2) beneficence (3) nonmaleficence: 'first do no harm' (4) equality (justice). The four principles indicate that doctors should have adequate clinical knowledge and practice skills (Beauchamp & Childress, 2012). The healthcare professional must avoid overtreatment or undertreatment of the patients. 'Do no harm' is a key principle in clinical practice. It is important to balance the therapeutic effects and potential injuries. It is worth discussing the care model in the temple asylum based on the above four principles. These patients had an exact diagnosis of psychotic disorder and were therefore sent to the temple by their family members. Barely any of the patients had visited outpatient clinics or

mentioned regularly taking antipsychotic medications, as other patients in the country do. The temple was notorious for using a metal chain (a so-called emotional chain) to connect patients with good function and patients with vivid psychotic symptoms at the waist. The temple staffs claim that the metal chains help patients overcome psychotic problems (Chang & Lai, 2002). Even if this metal chain has a pleasant name, it is dangerous and deprives the patient of basic human rights. When two patients are chained together, if one has a psychotic episode, it might lead to violence and murder.

Our findings showed that most of these patients were malnourished. The causes of the lack of proper nutrition were unknown. Factors taken into consideration included the following: (1) these patients had poor life management skills and missed meal times, and (2) the food supply was insufficient. When the forcible, public right intervention occurred, there were 503 patients, and the staff comprised 7 workers and only one nurse. The shortage of manpower may have exacerbated the poor meal intake described above. The outbreak of amoebic dysentery and pulmonary tuberculosis illustrates the inadequate sanitary equipment in the temple mental health center. Thirty-two patients had a definite diagnosis of amoebic dysentery, and 6 patients were confirmed to have tuberculosis (Department of Health, Kaohsiung City Government). The temple mental health center was initiated when there was no NHI, and there were few options for the mentally ill. Initially, the monk looked forward to taking care of the mentally ill patients. The staff reported that the maintenance cost of the center relied on donations from family members, a policy that has eased the burden on lower income families. However, many family members had confirmation statements that they paid millions of New Taiwan dollars (NTDs). The dispute regarding the temple mental center includes the following: shortage of manpower, inadequate sanitary equipment, patient malnourishment and the outbreak of infectious disease. The violation of medical ethics such as 'do no harm' and 'equality (justice)' is noteworthy.

The laws and procedures of involuntary hospitalization are different in many countries. Generally, involuntary commitment laws are based on the risk of the patient to self or others (Asai, 1999; Mental Health Act, UK, 1983; Office of Mental Health, New York State). Patients with involuntary hospitalization often have an 'active psychotic state', are 'incompetent to make decisions' and are at 'risk of suicide or violence'. Even if the patient was hospitalized, the duration of inpatient treatment should be limited to the shortest possible period of time. It is thought provoking that in the temple mental health institution, most of the patients had lived in this controlled and limited building for decades. In addition, almost none of these patients provided signed hospitalization consent. This situation is controversial on the legal level. Taiwan's MHA clearly states that the human rights and legal rights of psychotic patients should be respected and guaranteed. If there were violations of the patients' rights by mental health centers or related personnel, the patient himself or family members could file a complaint to the official health unit (Mental Health Act, Taiwan). However, the patients in the temple asylum did not have the opportunity to protest. There were news reports about instances of patients escaping from the temple and being chained when they were forced to return to the temple. In 1984, a high-profile event occurred. A patient handcuffed with a metal chain escaped from the temple and was misidentified as a fugitive. People next to the temple called the police. The police special team was dispatched to round up the patient. Is this illegal? The arguable care model of the temple had aroused social attention. Meanwhile, several

lawmakers claimed that the temple asylum must exist because of inadequate medical resources. The human rights of these patients from the temple asylum can be discussed in depth at the legal level. The above news and related events of psychotic patients accelerated Taiwan's MHA through legislation. At the same time, the number of acute beds and medical manpower has increased after the debate concerning the asylum.

The temple asylum was started by a monk in 1971, and its continued existence has been attributed to multiple factors. In 1982, a psychiatrist conducted a survey of the asylum under official funding. The institution was unique because of its treatment model, which was outside of regular guidelines, and its focus on religious ritual behaviors. The survey revealed that 60% of the patients had skin lesions, 40% had abnormal physical examinations, and 30% had abnormal neurological examinations. In addition, a high ratio of patients had died of infectious disease (Wen, 1990). Unfortunately, this lack of conventional medical care was demonstrated again 30 years later.

In the 1980s, there were only 202 psychiatric specialists and 1,265 acute beds in Taiwan at that time. The resources for mental health care were unable to meet the needs of patients and family members right away. In summary, the unique and indigenous temple mental health asylum survived for more than 40 years because of multiple factors.

A systemic review found that the incidence of malignancy was low in patients with schizophrenia, but the mortality rate exceeded expected rates (Chou, Tsai, Wu, & Shen, 2016). The contributing factors included unhealthy lifestyle, noncompliance and comorbidity with other medical diseases. A meta-analysis showed that patients with schizophrenia died earlier than the general populations and men died earlier than women (15.9 years vs 13.6 years). The factors associated with the shorter life of these patients included life pattern disturbances when active psychosis resulted in not caring about physical conditions and not eating meals at regular times (Galletly, 2017). Malnutrition in most patients was a significant finding in our study. The potential damage from malnutrition needs to be followed up for a longer period of time.

There were some limitations in the present study. The psychotic symptoms of these patients were assessed by different psychiatrists. There may be interrater differences. These patients were evacuated from the temple by the authority force and therefore, we had difficulties collecting detailed premorbid information and clinical symptoms in these patients. However, the fact that only people with psychosis would be sent to the temple is well known to almost all citizens in Taiwan.

Conclusion

These psychotic patients were drug naïve for decades and had significant improvements in psychotic symptoms, occupational function and nutritional status after evidence-based treatment for one month. There was no anticipated significant difference in self-care ability after treatment and this outcome may have resulted from the chronic course of the disease with functional deterioration over time. The temple asylum was created to care psychotic patients initially and it grew up over time. Medical ethics principles

have to be taken into consideration when the temple asylum did not offer adequate manpower and sanitary equipment. It is controversial that almost all of the patients had lived in this controlled and limited building for decades without admission consent.

Abbreviations

Mental Health Act (MHA), Mini Positive and Negative Syndrome Scale (Mini-PANSS), Comprehensive Occupational Therapy Evaluation scale (COTE), First-generation antipsychotics (FGA), Second-generation antipsychotics (SGA)

Declarations

Ethics Statement:

This data involves collection of sensitive information, thus any requests for access to this data must first be approved by the Institutional Review Board (IRB) of Kaohsiung Municipal Kai-Syuan Psychiatric Hospital (KSPH-2018-05).

Consent to publish

We agree to publish this manuscript to BMC psychiatry

Competing interest:

The authors declare no competing interest.

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Availability of data and materials:

These patients included in the trial were based on the evacuation program from the Department of Health, Kaohsiung City Government. This trial is not involved in blood samples storage.

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

All data generated or analysed during this study are included in this published article [and its supplementary information files]

Author Contribution:

Wang HY: The main writer of this manuscript and participate in research project design and data management.

Huang JJ: The policy maker and response for this project.

Su SF: The policy performer and participate in partial data collection.

Hsu SH: The data collection and evaluate patients.

Chou LS: The data collection and evaluate patients

Chou FH: The design and response for this research project, data management, and revise manuscript.

All authors read and approved the final manuscript.

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Tables

Table 1

The demographic data of the evacuated patients

	N (%)	SD
Sex		
Male	44 (62.0%)	
Female	27 (38.0%)	
Age	58.75	7.60
Education	10.36	
Diagnosis		
Schizophrenia and	169 (66.8%)	
other psychotic disorder		
Bipolar disorder/Depressive disorder	8 (8.0%)	
Substance use disorder	0 (0.0%)	
Neurodevelopment disorder	14 (5.5%)	
Other	5 (2.0%)	

Table 2

Treatment outcome: when admitted vs. one month later

Indicator	Before treatment	One-month follow-up	<i>p</i>
	Mean ± SD (%)	Mean ± SD (%)	
Mini Positive and Negative Symptoms	25.85±7.75	24.44±6.97	0.001**
Comprehensive Occupational Therapy Evaluation scale	42.97±20.70	45.89±18.97	0.017*
Normal (75-100)	10 (4.0%)	9 (3.6%)	
Mild disability (50-75)	64 (25.3%)	59 (23.3%)	
Moderate disabilities (25-50)	71 (28.1%)	83 (32.8%)	
Severe disabilities (0-25)	86 (34.0%)	35 (13.8%)	
Self-care	22.02±7.88	22.23±7.85	0.697
Mini Nutrition Assessment	8.94±1.84	9.66±1.88	<0.001***
Normal nutritional status (12-14)	39 (15.4%)	58 (22.9%)	
Risk of malnutrition (8-11)	164 (64.8%)	131 (51.8%)	
Malnutrition (0-7)	37 (14.6%)	20 (7.9%)	
APGAR ^a	1.58±2.77	1.67±2.52	0.705
Normal (7-10)	17 (6.7%)	9 (3.6%)	
Moderate dysfunction (4-6)	17 (6.7%)	25 (9.9%)	

a: Family APGAR components: adaptation, partnership, growth, affection, and resolve

p* < .05. *p* < .01. ****p* < .001.