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Title Page: Good medical adherence according to having meaning in life among Thai schizophrenic patients

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Abstract

Background

The narrative model was used to search for meaning in life, and to change the meaning of the illness for the taking of medication. This study aimed to explore medication adherence, meaning in life, and the association of medication adherence and meaning in life.

Methods

This cross-sectional study explored all Thai schizophrenic outpatients that followed up at the Psychiatric outpatient clinic, Songklanagarind Hospital. Three questionnaires were used: 1) Demographic information 2) Medication adherence questionnaire 3) The meaning in life questionnaire. Descriptive statistics were calculated using proportions, median and inter-quartile range (IQR) or mean and standard deviation (S.D.).

Results

According to the study period, there were 110 respondents. Most of them (94.5%) came to regular follow-ups by doctors' appointments. The majority of them were male (56.4%), single (76.4%), and Buddhist (82.7%). According to the medication adherence questionnaire, all participants (100%) had good medication adherence scores. Concerning meaning in life, most of the participants had high scores in all subparts of meaning in life. As a result, an attempt to indicate the association between good or poor medication adherence and meaning in life could not be established in this study.

Conclusions

Most schizophrenic patients had good medication adherence as well as meaning in life. Thus, the narrative model helps patients to search for meaning in life; meaning in taking medications that decrease negative medication attitudes and change the meaning of the illness. Moreover, schizophrenia does not cause them suffering and it enables them to accept it as part of life.

Keywords: adherence, meaning in life, patient, schizophrenia

Background

Schizophrenia is a long-term chronic mental illness affecting about 7 per 1000 adults globally [1]. It is a disease that has residual symptoms and functional impairment. Therefore, both biological treatment and psychiatric rehabilitation for schizophrenia are essential to recover or improve the patient's quality of life and lessen the burden for family members [2].

In the past, the core concept of schizophrenic management was the combination of medication, ensuring patients gain insight, and the coaching of necessary community-living skills; such as integrating patients back into society, as employment or occupations can deduct or relieve stigma [3]. Although, some patients with schizophrenia gain insight well, the reality of this illness causes them to suffer from stigmatization, and because of this patients usually deny or refuse medication; which in turn makes them relapse.

Nowadays, antipsychotic medications play an effective role in schizophrenic symptom control; however, medication adherence for schizophrenia requires continuous long-term treatment to control symptoms, prevent relapse and consequences [1]. The major problem in the treatment of schizophrenia is non-adherence, potentially severe consequences, and associated costs. Therefore, the study of this phenomenon is a priority issue [4].

In regard to medication non-adherence, patients are divided into two groups: intentional non-adherence; including those who deny medication, and unintentional non-adherence; including those with neurocognitive deficiency. Intentional non-adherence is related to impaired insight, while unintentional non-adherence is derived from cognitive impairment [5,6] that affects the defective executive performance or forgetting about the medication [7].

Identified risk factors drive for non-adherence among schizophrenic patients included: previous non-adherence, impaired insight, cognitive deficiency, psychotic symptoms, drug or alcohol abuse, medication attitudes or beliefs, negative subjective response to treatment, and regarding the disorder as a mild or perceived minor utility from treatment [1,3].

According to a previous study, the non-adherence prevalence of schizophrenia was 28.8% [8]. Alcohol dependence, substance use, negative medication attitude, and stigmatization are important impact factors of poor drug compliance [8,9]. This is because of having a chronic

mental illness, some patients lose meaning in life. The presence of meaning in life is expected as self-appraisal and personal growth, and altruistic with spiritual behaviors. It is positively related to intrinsic religiosity, agreeableness, extraversion, and well-being, and negatively related to depression and anxiety. Whilst searching for meaning in life is hedonic behavior, which positively relates to rumination, religious quests, past-negative and present fatalistic time perspectives negatively affect both neuroticism and depression. In addition, it is negatively related to future time perspective, close-mindedness (dogmatism), and well-being [10-11]. Hence, during chronic mental illness, the presence of meaning in life is a significant issue for promoting a patient's good compliance, and well-being or graceful mental health.

In Thailand, the Department of Psychiatry, Faculty of Medicine, Prince of Songkla University, applies the "narrative" and "homestay" models for psychiatric rehabilitation intervention. The narrative model is used to search for meaning in life, and to change the meaning of the illness for the taking of medication. In addition, the homestay model has been used for de-stigmatization [12]. Schizophrenia patients then have treatment behavior changes, not only drug compliance, but also self-esteem or core concepts of self [13]. These are due to schizophrenic patients having a new perspective of the illness, and accepting medication as necessary for life with this disease. In addition, the return to society or stigmatization is not a problem anymore. They may feel less shy and remake themselves as valuable people; such as a volunteer that helps people in the community. In summary, the burden of family and oneself seems to decrease, while social function would be increased [14]. Thus, this study aimed to study the medication adherence and meaning in life among schizophrenic outpatients. The association of good or poor medication adherence and meaning in life among schizophrenic outpatients were also identified.

Definition

Good adherence means from the prescribed medication, the patient follows a prescribed schedule, neither takes lower nor higher dose, do not completely abandon medication,⁶ nor reject attending ordinary visits or being admitted to the hospital [15,16].

Meaning in life is divided into 2 types; the presence meaning in life and the search for meaning in life [10-11,17].

Methods

The Ethics Committee of the Faculty of Medicine, Prince of Songkla University approved this cross-sectional study (REC: 63-202-3-1). Participants with schizophrenia, who visited a psychiatric outpatient clinic were invited into this study by a psychiatric nurse. We had informed consent with participants. They could agree or disagree to participate in the study and could leave the study at any time.

A cross-sectional study surveyed all schizophrenic outpatients that followed up at a Psychiatric outpatient clinic, Songklanagarind Hospital; from December 2020 to March 2021. Inclusion criteria were schizophrenic outpatients who were diagnosed by psychiatrists for more than one year: based on the ICD-10 code F20.0-F20.9, and were retrieved from the medical register, had been screening for mental capacity, and were willing to complete all parts of the questionnaires. Exclusion criteria were schizophrenic outpatients who were unable or lacked the mental capacity to complete all the questionnaires or felt it was inconvenient for them to collaborate and wanted to stop participating.

The participants were approached by a researcher and were invited to collaborate, by introducing the overview of the information and given a rationale contained in the research. In cases of those who cooperated, the researcher distributed self-reporting questionnaires; these were explained to the participants in detail. The participants were permitted to take a few minutes to deliberate whether or not to join the survey. To assure the participants' identities would be protected signatures of participants were not desired. Furthermore, we informed them that their data would remain anonymous, and highlighted that they could withdraw at any stage of the questionnaire without giving any reasons; additionally, this act would not affect their regular treatment. All participants were permitted to finish and return the questionnaires promptly or at a later time. They could either submit the questionnaires at the front of the clinic or return and leave them at the Psychiatry Department at a later time; therefore, protecting respondent confidentiality was retained.

We calculated the sample size by the G*Power program. We estimated Cohen's effect size at medium (0.3), because there has been no research on the association of the presence of meaning in life and medication adherence in the past, and used Alpha =0.05, Power=0.8, and degree of freedom (df) =1. After we adjusted the sample size calculated, according to G*Power and an incomplete response rate of 20%, the sample size required for this study was at least 110 participants.

Measures

1) Personal and general demographic information comprised of gender, age, religion, income, working information, marriage status, hometown, caffeine or alcohol consumption, substance usage, and underlying diseases.

2) The Medication adherence scale in Thai (MAST) uses 8 items, rated on a 0-5 scale, with the total scores ranging from 0-40. The cut-off point of MAST is 34, with a specificity of 89.7%, sensitivity of 85.8%. The positive and negative predictive values were 90.6% and 84.7%, respectively. The Cronbach's alpha coefficient of MAST was 0.828 [15,16].

3) The meaning in life questionnaire (MLQ) uses 10 items, rated on a 5-point scale from: "absolutely true" to "absolutely untrue", with total scores ranging from 10 to 50. MLQ has 2 subscales: the presence of meaning in life and the search for meaning in life. The presence of meaning subscale measured how fully respondents feel their lives were of meaning.; whereas the search for meaning subscale measured how motivated and engaged respondents are in efforts to find meaning or deepen their understanding of meaning in their lives [17,18]. The higher the score indicates that the participant had more meaning in life. The Cronbach's alpha coefficient of the presence of meaning subscale and search of meaning subscale were 0.73 and 0.78, respectively [18].

Statistical methods

Descriptive statistics were calculated using proportions, median and inter-quartile range (IQR), or mean and standard deviation (S.D.). The significant difference between meaning in

life score and demographic characteristics was tested by using the Kruskal-Wallis test, Rank-sum test, and Student's t-test.

Results

Demographic characteristics

According to the study period, 110 schizophrenic patients came to follow up at a Psychiatric outpatient clinic, only 2 schizophrenic patients were lost to follow-up. Then, there were 110 respondents participated in this study. Most of them (94.5%) came to regular follow-ups by doctors' appointments. The majority of them were male (56.4%), single (76.4%), and Buddhist (82.7%). (Table 1) The mean age was 42.3 ± 11.8 years, and the median income (IQR) was 11,000 (5,000-20,000) baht per month. Of all participants, only 14 (12.7%) and 22 (20%) participants had a history of alcohol drinking and substance usage within one month. The most common substance that the participants used was cigarettes (17.3%). Additionally, some participants (24.5%) had a physical illness; such as hypercholesterolemia (30%), diabetes (22.2%), and hypertension (18.5%).

Medical adherence

Using the medication adherence questionnaire, all participants (100%) had a MAST score of more than 35; meaning they had good medication adherence. (Table 1)

Meaning in life

According to the meaning in life questionnaire, there were two subscales: the presence of meaning in life, and the search for meaning in life. Most of the participants had a high score in all subparts of meaning in life. Moreover, all participants had the presence of meaning in life and looking for something that made their lives feel purposeful and meaningful. (Table 2) There were no statistical differences between meaning in life scores and demographic characteristics. (Table 3)

Association between medical adherence and meaning in life

As a result, an attempt to indicate the relationship between good or poor medication adherence and meaning in life could not be established in this study.

Discussion

This study found that most participants (94.5%) attended regular appointments to visit their doctor, and all of them (100%) had good medication adherence. According to the meaning in life, all participants had the presence of meaning in life and were searching for a meaning in life that gave their lives meaning and purpose. Comparing medication adherence from our study with that reported by a previous study, this was higher than the other study, which found 71.2% were adherent and 28.8% were non-adherent over 3 years. Additionally, a prior systematic review study found that 74% of patients had discontinued treatment within 18 months [19]. These differences might be due to the use of differences in study instruments, study design, ethnicity, and background of the population. Regarding the previous data, factors positively associated with adherence were the perception of benefits of medication, and a good therapeutic relationship with the practitioners [1]. Based on this study's results, most of the participants came to visit or follow up at set appointments and took their medication regularly. Hence, other explanations of this study's results might point to the feature of the population as having a good therapeutic relationship with their practitioners and psychosocial intervention team or having good insight.

As the prior study found, the key drivers of worse adherence included: having poor or no insight, substance abuse, and medication beliefs [1]; in addition, alcohol dependence, substance use, a negative medication attitude, and stigmatization are important impact factors of poor drug compliance [8,9]. From this study, there were only 12.7% and 20% of participants who had a history of alcohol consumption and substance usage (cigarettes) within one month. Therefore, most of the population from this study had lower comorbidity disorders, than the prior study; making for more positive outcomes. However, there were many individuals with schizophrenia factors that were found as having a directional relation with worse adherence; such as, lack of insight into their illness, meaning that they were not aware of the symptoms and consequences of their disease or illness [5,20,21]. Therefore, future studies should search for an association between medication adherence and insight.

In addition, except for the relationship with the physician having evidence suggesting a therapeutic relationship with monitoring and introduction in medication intake or being

contributors to appropriate adherence [22], other external or environment-associated factors included: the stigma of the illness, living situations, and caretaker support were also important. Other environmental factors that affect adherence positively include family or social support [24] and greater social activities [8]. In contrast, the stigma of taking medication and having poor or no social support were found to negatively influence adherence [23]. The prior study, from the Department of Psychiatry, Faculty of Medicine, Prince of Songkla University, identified that our schizophrenic patients had a moderate quality of life [24], and most patients and caregivers perceived a low level of stigma [13]. Moreover, most of the caregivers had no severe caregiver burden, with most burdens being at a mild level (22%). The related, significant factors associated with family or caregiver burden were relapse of patient symptoms, unpleasant events in patient caring, and caregiver's physical illness [14]. As mentioned previously, low burden and low stigma might have influenced this study outcome of medication adherence positivity.

Regarding the meaning in life, this study identified all participants had the presence of meaning in life, and the search for the meaning in life that made their lives feel meaningful and purposeful. That might be due to the influence of using the narrative model to help patients to search for meaning in life; meaning in taking medications that decrease negative medication attitudes and change the meaning of the illness. Thus, all schizophrenic patients in our psychiatric department may have individual meaning for their lives. If someone feels their lives are of meaning, it will motivate or encourage that person to find deepen meaning, understanding, and acceptance for the entirety of their lives [17,18]. Therefore, schizophrenia does not cause them suffering. On the other hand, it enables them to accept it as part of life.

This survey was a cross-sectional study and used self-reporting for individual perception assessment. Beyond its high response rate, the information might not have led to bias. Additionally, the population was limited to only schizophrenic patients who came to the hospital for regular appointments, and it did not cover schizophrenic patients who were lost to follow-up. Furthermore, the population was limited to only schizophrenic patients from the

Psychiatric outpatient clinic, of Songklanagarind Hospital; therefore, it is too soon to generalize this information to a nationwide setting.

The further survey should investigate more schizophrenic patients within Thailand. Therefore, a multicenter survey is recommended. In addition, schizophrenic patients who are lost to follow-up, or have poor medication adherence should also be of concern. Moreover, further studies should employ a more quantitative method or contain a control group.

Conclusions

Most schizophrenic patients had good medication adherence as well as meaning in life. Thus, the narrative model helps patients to search for meaning in life; meaning in taking medications that decrease negative medication attitudes and change the meaning of the illness. Moreover, schizophrenia does not cause them suffering and it enables them to accept it as part of life.

Abbreviations

MAST: The Medication adherence scale in Thai

MLQ: The meaning in life questionnaire

Declarations

We confirm that all methods were carried out in accordance with relevant guidelines and regulations.

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Authors' contributions

JP was involved in the conceptualization and design of the study, data collection and analysis, as well as the drafting of the manuscript and tables. TT was involved in the conceptualization and design of the study, data collection. All authors contributed to and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the current study available from the corresponding author upon reasonable request.

Ethics approval and consent to participate

All stages of research were conducted following the Declaration of Helsinki and the Ethical Statements of the Ethics Committee of the Faculty of Medicine, Prince of Songkla University.

This study was approved by the Ethics Committee of the Faculty of Medicine, Prince of Songkla University (REC: 63-202-3-1). Throughout the process, patients could not be identified, therefore the informed consent was waived by the Medical Ethics Committee.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no conflicts of interest.

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Table 1 Demographic characteristics and medication adherence

Demographic characteristics	Number (%)
Total	110
Gender	
Male	62 (56.4)
Female	48 (43.6)
Religion	
Buddhism	91 (82.7)
Islam/Christianity	19 (17.3)
Marital status	

Single	84 (76.4)
Married	20 (18.2)
Divorced	6 (5.5)
Education	
Primary school and below	10 (9.1)
Secondary school	40 (36.4)
Diploma	15 (13.6)
Bachelor's degree and above	45 (40.9)
Home town	
Songkhla province	65 (59.1)
Other	45 (40.9)
Occupation	
Government employee officer/State enterprise officer/	19 (17.2)
Private company employee	
Merchant/Personal business/Employee /Agriculture	38 (34.5)
Student	3 (2.7)
Unemployed	50 (45.5)
History of alcohol drinking (within 1 month)	
Yes	14 (12.7)
No	96 (87.3)
History of substance use (within 1 month)	
Yes	22 (20.0)
No	88 (80.0)
Physical illness	
No	83 (75.5)
Yes	27 (24.5)

Follow-up

Come on appointment	104 (94.5)
Before appointment	5 (4.5)
Come after appointment	1 (0.9)

Medication Adherence

Good (score <34)	110 (100.0)
Poor (score \geq 34)	0

Table 2 Meaning in life

Subscale	Median	IQR
Presence of meaning in life		
I understand my life's meaning.	5.0	4.0 - 5.0
My life has a clear sense of purpose.	5.0	3.0 - 5.0
I have a good sense of what makes my life meaningful.	5.0	4.0 - 5.0
I have discovered a satisfying life purpose.	5.0	4.0 - 5.0
My life has no clear purpose.	1.0	1.0 - 4.0
Search for meaning in life		
I am looking for something that makes my life feel meaningful.	5.0	3.0 - 5.0
I am always looking to find my life's purpose.	5.0	4.0 - 5.0
I am always searching for something that makes my life feel significant.	4.5	3.0 - 5.0
I am seeking a purpose or mission for my life.	4.0	3.0 - 5.0
I am searching for meaning in my life.	5.0	3.0 - 5.0

Table 3 Meaning in life scores categorized by demographic characteristics

Demographic characteristics	Median (IQR)	Rank sum test P-value
Gender		0.023
Male	40.5 (36.0-46.0)	
Female	38 (31.5-42.2)	
Religion		0.333
Buddhism	39.0 (34.0-44.0)	
Islam/Christianity	42.0 (34.0-46.0)	
Marital status		0.578
Single/divorce	38.5 (34.0-44.0)	
Married	42.0 (32.8-46.0)	
Education		0.07 ^a
≤Secondary school	40.0 (34.5-46.0)	
Diploma	39.0 (36.5-42.5)	
Bachelor's degree and above	38.0 (30.0-42.0)	
History of alcohol drinking		0.854
Yes	40.5 (34.0-45.5)	
No	39.0 (34.0-44.0)	
History of substance use	mean ± S.D.	0.106 ^b
Yes	40.7 ± 5.5	
No	38.1 ± 7.2	
Physical illness		0.712
No	38.0 (34.0-44.5)	
Yes	40.0 (35.0-44.0)	

Note: a = p-value from Kruskal-Wallis test; b = p-value from t-test.

Supplementary Files

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