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A Controlled Trial of a Needs-based, Nurse-led Psycho-education Program for Chinese Patients with First-onset Mental Disorders: Six-month Follow-up

Abstract

Objectives: The study reported herein tested the effectiveness of a nurse-led, needs-based psycho-education program for Chinese patients with first-onset mental illness over a 6-month follow-up.

Methods: A randomized controlled trial was conducted with 96 families of Chinese patients with schizophrenia newly referred to one outpatient clinic in Hong Kong. They were randomly assigned to either the nurse-led psycho-education program or usual outpatient care (both n=48). The patients' mental health, illness insight, self-efficacy, services utilization, and hospitalization rates were measured at recruitment and at one week and six months post-intervention.

Results: The patients in the psycho-education program reported significantly greater improvements in mental health, insights into treatment and illness, and hospitalization rates over the 6-month follow-up, when compared with those who received usual care.

Conclusions: The findings provide evidence that the needs-based psycho-education program can improve the health conditions and treatment insights of Chinese out-patients with first-onset mental illness.

Keywords: controlled trial, needs-based intervention, psycho-education, first-episode mental illness

INTRODUCTION

People with first-onset, moderate to severe mental health problems may encounter highly disturbed mood and behaviors. They often present to mental healthcare many months after the onset of symptoms, due to various unexpected reasons such as feelings of guilt and fears of social stigma[1]. It appears that the longer duration of the untreated symptoms, the more negative the eventual health outcome[2], thus indicating a need for early intervention prior to the symptoms becoming severe and sustained. In Hong Kong and Western countries, due to a long waiting list in outpatient clinics(OPD)[2,3], new clients can only receive their first psychiatric consultation and subsequent care at least 4-6 weeks after referral, according to the priority of care categorized in a mental health triage.

To fill in the service gaps in first-episode mental illness, nurse-led services may form an integral part of their first-line, earliest intervention. Preliminary evidence has indicated support on these nurse-led interventions for some patient groups such as depression and learning disabilities[4-6] and longer-term conclusive effects are needed. Therefore, this controlled trial aimed to test the effectiveness of an individual, nurse-led psycho-education program for Chinese people with first-episode mental illness who were newly referred to an OPD, over a 6-month follow-up.

LITERATURE REVIEW

Similar to Western developed countries, a growing number of psychiatric advanced practice nurses (APN) are making an increasingly vital contribution to this expanded role of primary and secondary preventive mental healthcare. There have recently been successful implementation and sustainability of nurse-led services such as cardiovascular, diabetic, learning disability, and elderly care[4-6]. Recent research has demonstrated a positive impact on reducing waiting times[1,7], allowing clients with more prominent symptoms and need for care to receive efficient and high-quality mental health interventions. Richardson and Cunliffe[7] suggested that the need to provide nurse-led service and expand the APN role can be seen as

an innovative way to address the accelerated development of nurse-led service, in response to demands for specialized mental healthcare.

However, there is a lack of evidence on nurse-led services in mental healthcare due to a reflection of limited rigorous evaluative research on mental health nursing interventions, together with an issue of some psychosocial interventions, which are nurse-led, failing to be defined as such. A few studies on the effectiveness of nurse-led mental healthcare in the depressed elderly and clients with learning disabilities or deliberately self-harm can demonstrate a reduction of hospital admissions[5,8] and an improvement in clients' quality of life[8,9]. Griffin and Bisson's[10] study on nurse-led self-harm assessment service in the U.K. suggested no difference between the community-based mental health education provided by psychiatric APNs and psychiatrists, concluding that an expansion of the nursing role in this area would lead to cost-effective service. In Hong Kong and Western countries, community psychiatric nurses and experienced mental health nurses in community care services indicated sufficient knowledge and skills in case management and psycho-education programs independently for patients with different mental illnesses[3,6,10]. Needs-based psychosocial interventions led by psychiatric nurses in recent clinical trials are also found effective in reducing patient relapse and enhancing medication adherence in severe mental illnesses over one-year follow-up[11,12]. Therefore, more systematic evaluation of the clinical effectiveness of nurse-led, needs-based psychiatric care is needed on not only relapses from illness but also patients' longer-term health outcomes such as satisfaction with services received.

Psychiatric APNs in Hong Kong function independently and interdependently with other disciplines to excel health education and care co-ordination for patients with mental health problems[13]. An initial psychiatrist consultation is arranged for patients in OPDs within 4-6 weeks following a triage of their mental condition. Prior to the first consultation, those patients (60%) who were classified as Category 2 (presenting noticeable mental symptoms but low risks of self-harm/violence) are referred to the APN for a focused mental health

assessment and nurse-led psycho-education program, while another 20% are classified as Category 1 in which the patients are severely mentally ill, requiring immediate treatment[13].

With limited research available on this topic, this clinical trial was therefore designed to test the effects of an APN-led, needs-based psycho-education program (NPEP) for Chinese patients with first-onset, moderately severe mental health problems. We hypothesized that the NPEP for patients with first-onset mental health problems would produce significantly greater improvement in their mental status, insight into illness, and self-efficacy in managing life situations; and reduce hospitalization rates immediately and 6 months after intervention, when compared with routine outpatient care.

METHODS

The study was a single-blinded randomized controlled trial with a repeated-measures, control group design undertaken between February 2010 and September 2011. The study examined and compared the immediate and 6-month effects between a treatment group receiving the individual psycho-education program (plus the routine psychiatric care) for newly triaged patients with moderately severe mental health problems (Category 2) at one psychiatric OPD in Hong Kong, and a control group with routine outpatient care services only. The OPD was located in the Kowloon East region, serving one-fifth of the psychiatric outpatients (i.e., about 1,200 of new cases in 2009) in Hong Kong[13]. The CONSORT flow diagram of the clinical trial is presented in Figure 1.

[Insert Figure 1 here]

Participants

Between March and October 2010, a randomized sample (n=96) were recruited from patients who were newly referred to the OPD and met the study criteria listed below. Since there were very few similar studies, the estimated sample size of this trial was calculated using a moderate effect size (0.4) between two study groups with a 5% level of significance

and a power of 0.80 [13]. In addition, taking account of the potential attrition at a rate of about 20% [11,15], a total of 96 patients (48 participants per group) were recruited. A total of 234 Chinese patients who attended the OPD at recruitment were eligible for the study. One hundred and fifty (64%) agreed to participate and 96 (64%) were randomly selected.

The inclusion criteria for these patients in the OPD were: being aged ≥18, ability to understand Cantonese/Mandarin, having the first onset of mental illness, and being a new contact for mental healthcare services. They were assessed and triaged by a psychiatric nurse using the Brief Psychiatric Rating Scale (BPRS)[16], the Chinese version of Beck's Depression Inventory II (BDI)[17], and based on their history of violence and self-harm. Those who presented noticeable psychiatric symptoms (BPRS and BDI scores between 25-48/127 and 10-29/63, respectively)[16,17] but low risk of self-harm were potential participants. Those patients who were receiving other psychosocial interventions or upgraded to the highest priority of psychiatric consultation before intervention were excluded.

After giving their written consent following a full explanation of the study, the participants were assigned randomly to either the usual psychiatric care (n=48), or the NPEP (plus usual care; n=48) by drawing a labeled card. The OPD staff were blind to the study group and the participants were asked to maintain the confidentiality of their study participation.

Interventions

The NPEP was comprised of six bi-weekly, 1-hour sessions (over three months). The program was based on psycho-education and supportive programs[3,11,18,19], the principles of nurse-led assessment, education and crisis intervention by Griffin et al.[5], Yung, Organ and Harris [19], and Tummey[20] in the U.K. The program consisted of six themes, including orientation and engaging and understanding mental health and illnesses; sleep hygiene and allaying anxiety; psychiatric treatments and medications; coping with health problems; interpersonal skills; and community support resources and future plan. A psychiatric APN

and the researchers selected the individualized learning objectives from the needs assessment results of each participant using the Educational Needs Questionnaire[11,21]. The results indicated the relative importance of the six themes and topics under each theme perceived by individual participants. The content, order and depth of presentation for individual topics of the education sessions varied according to the perceived priority of the participants, but all participants received six sessions with the same duration. The APN coordinated all levels of individualized care and, together with the participants, prioritized individual educational needs and formulated a tailor-made education program within one week after assessment. However, all participants had received six, 1-hour education sessions

The program (and its content in Appendix A) also adopted a few strategies to address traditional Chinese cultural tenets regarding communication and interpersonal relationships. For instance, the first and second sessions focused on understanding strong interdependence and collective actions, acceptance of social roles, and communication with family members[3,22]. Subsequently, they were also asked for skill rehearsals in resolving conflicts and behavioral disturbances in daily living. Intervention consistency and fidelity control were assured with systematic review and discussion of the contents of the audio-tapes of the sessions by the researchers over the study period, with the participants' consent. In addition, the APN continuously monitored the attendance and dropouts of patients in the NPEP group.

The usual care group (and the NPEP participants) were invited to use and could receive routine psychiatric outpatient services only. These services consisted of medical consultation and treatment planning by a psychiatrist (at 3-4 week intervals) and advice on community services and brief family education on mental illness by psychiatric nurses or social workers.

Outcome Measures

One trained research assistant who was blind to the group assignment administered the pre-test before randomization and two post-tests at one week and six months after the

intervention, in order to reduce subject bias from the researchers on outcome measurement. Patients' mental state, insights into illness and treatment, self-efficacy in managing difficult life situations, and their utilization of community services were rated using the following four measuring tools.

The 18-item Brief Psychiatric Rating Scale(BPRS)[16] was used to assess patients' mental state. This scale has been used globally in mental health services research, indicating good content validity and internal consistency (Cronbach's alpha= 0.85) [16,22]. The patients' mental status was assessed and rated on a 7-point Likert scale for each item (0=not assessed, 1=not present to 7=extremely severe). The maximum score of the BPRS was 126 (presence of extremely severe mental symptoms) with a minimum of 0-7.

The Insight and Treatment Attitudes Questionnaire(ITAQ)[23] was designed to measure patients' awareness of illness and insight into their needs for treatment for schizophrenia. This scale consists of 11 questions, rating on a 3-point scale (0=no insight; 1=partial insight; 2=good insight). The higher the score, the better is the patient's insight on recognition of mental problems, possibility of future illness, and need for admission and willingness to receive treatments. It was translated into Chinese and indicated satisfactory internal consistency (Cronbach's alpha= 0.82) and good inter-rater reliability (r= 0.82, p= 0.001) and correlations (r= 0.56, p= 0.01) with psychopathology[21,23].

The 10-item Perceived Self-efficacy Scale(PSS) developed by Jerusalem and Schwarzer in 1992 was translated into Chinese by Zhang and Schwarzer[24]. It is a uni-dimensional, generic measure of one's competence in the management of challenging and stressful encounters in life situations, with good internal consistency (Cronbach's alpha= 0.88) and content validity[24]. The items were rated on a 4-point Likert scale (1=absolutely correct to 4=absolutely incorrect), with a total score ranging from 10-40. The higher the total scores, the more competent is an individual to cope with his/her life situations.

The modified Family Support Services Index(M-FSSI)[25] was validated by Fung and Chien[26], consisting of 16 items of community mental healthcare services and indicating satisfactory inter-rater reliability (kappa value= 0.82, p= 0.01) and content validity[22,26]. Its items are rated based on which services the patients with mental illness (or families) needed and which they were receiving and their unmet service need scores are then calculated.

The admission and OPD default follow-up rates of patients during intervention and six months following intervention were calculated by asking the patients and checking against clinical records. All participants completed a demographic data sheet, consisting of selected characteristics such as age, duration of illness and medication use.

Data Collection Procedure

A trained research assistant administered the baseline measurement and the two post-tests. Once written consent to participate had been obtained, the participants were asked to complete the pre-test questionnaire and socio-demographic data sheet in a quiet interview room before randomization. After being randomly assigned to one of the study groups, attendance of the NPEP and any participant dropouts were recorded by the APN. Two weeks and six months after interventions, all the participants were asked by the research assistant to complete the same questionnaires again. The patients' average number and length of psychiatric hospitalizations were calculated.

Ethical Considerations

Ethical approvals were obtained from the Human Subjects Research Ethics Committees of the University and the clinic under study. The research assistant identified potential participants from the outpatient records and approached eligible patients when attending the triage assessment. The research assistant explained the purpose of the study and assessed their full understanding of the information before seeking written consent.

Data Analysis

Pre- and post-test data obtained from the study groups were numerically coded and analyzed using SPSS for Windows, version 17.0. The homogeneity of the two groups was examined by comparing the demographic data and pre-test mean scores between groups, using Chi-square or independent samples t-test. The significance level of multiple t-tests was set at 1% using Bonferroni's corrections[28]. As all the pre-test scores indicated no statistical differences between groups, an analysis of covariance was not considered.

Data were analyzed on an intention-to-treat basis that maintained the advantages of random allocation[14]. Preliminary assumptions of normality, linearity and homogeneity of variance were tested and found appropriate to use multivariate analysis of the five dependent variables (BPRS, ITAQ, PSS, M-FSSI, and hospitalization rates) at the pre-test and post-tests. A multivariate analysis of variance (MANOVA) was performed for the outcome variables to determine the treatment effects (group x time), followed by Tukey's HSD analyses (with Type I error protected). Level of statistical significance was set at 0.05.

RESULTS

Characteristics of Study Participants

Forty-three of the NPEP participants (89.5%) completed the NPEP; five participants in the NPEP (10.4%) and four in the control group (8.3%) could not be contacted at 6-month follow-up. The demographic and clinical characteristics of the participants and those of the 138 non-participants are summarized in Table 1, indicating no significant differences in these characteristics between groups. Their average and modal session attendance were 4.9 (SD=1.2) and 4 (range 1-6), respectively.

[Insert Table 1 here]

There were more male (n=54, 56.3%) than female patients. Participants' mean age was 25.7 years (SD=6.9) and 73% (n=70) of them had completed secondary school education or

above. Average duration of their illness was 1.4 months (SD=0.6). Their average monthly household income (Hong Kong dollars 12,500 or US $1,603) was within the median range of monthly household income of Hong Kong population in 2009[29]. While 35 (36.5%) had not yet taken any psychiatric medication, one-third (36.5%) of them were taking conventional or atypical anti-psychotics.

Intervention Effects

The means and standard deviations of the outcome measures at pre-test and two post-tests and the results of MANOVA (group x time) for the study groups are presented in Table 2. There was a statistically significant difference between the two groups on the combined dependent variables (F=9.85, df=6,94, p=0.001; Wilks' Lambda=0.86, partial eta-squared=0.24). The results of MANOVA for the outcomes (see Table 2) indicated that there were statistically significant differences between groups on BPRS, ITAQ, perceived self-efficacy (GSES), and length and duration of hospitalizations over 6-month follow-up. The post-hoc Tukey's HSD comparisons indicated that the NPEP participants' mental state (BPRS; t= 5.81, p=0.001 and t= 4.62, 0.003, respectively), perceived self-efficacy (t= 7.02 and 6.98, respectively; both at p= 0.005) and illness insights (ITAQ; t= 4.31, p=0.005 and t= 3.68, p= 0.01, respectively) improved significantly at two post-tests, but that their average length of hospitalizations improved significantly only at 6-month follow-up (t=5.01, p= 0.001). The two groups had slight changes in the demand for services over follow-up.

[Insert Table 2 here]

DISCUSSION

The findings provide satisfactory support for the effectiveness of the nurse-led, needs-based psycho-education program, the NPEP, in a Chinese population as an early intervention for patients with first-episode, moderate to severe mental health problems. As suggested in a few recent Western studies[3,6,31], the NPEP provided by psychiatric APN not only can improve

patients' mental condition and insights into their illness and treatment immediately after intervention, but also substantially reduce the length of psychiatric hospitalizations over a short period (e.g., 1-3 months) of follow-up. In addition, this program can address the individualized mental health needs and specific cultural tenets of the patients who are distressed by first-episode noticeable symptoms (e.g., improving interpersonal skills and self-care), thus reducing their risk of re-hospitalizations. These improvements could be the result of training and practices of problem solving, coping with stress, and interpersonal skills in the program, which have been considered therapeutic factors in psycho-education studies[15,16].

The nurse-led psycho-education, NPEP, used in this study is one of the current approaches to early intervention for adults with severe mental illness. Through the NPEP, patients are empowered to understand and accept the illness and cope with it successfully. Achievement of this basic competency is considered to constitute an essential part of the treatment plan in the early contact with mental healthcare service, upon which additional psychosocial interventions such as individual cognitive-behavioral therapy, self-assertiveness training and family-focused programs can be built[32,33,34]. As suggested by McGorry[35], multi-component early interventions for severely mentally ill people can include an introductory stage with evidence-based pharmacotherapy and supportive psychotherapy; an intermediate stage with family-oriented intervention and therapeutic alliance; and a final stage with focused problem-solving, social skills training and strategies for re-integration into the community[36,37].

There has been increasing supporting evidence of the use of the needs-based approach to interventions to provide therapeutic care and support for various physical and mental illnesses[38,39]. Sellwood et al.'s [40] provides evidence that relapse outcomes for psychotic patients in a needs-based intervention are far superior (50% less likely) at the 6-month follow-up, compared with routine care. This finding echoed the results of this trial, indicating

that there is a necessity for an individual needs assessment of and structured needs-based interventions for first-episode psychiatric patients upon referral to achieve a high quality patient-oriented care.

Only a few studies have previously demonstrated significant longer-term effects (e.g., >6 months) of a nurse-led intervention for patients with first-episode mental illness in both Western and Asian countries, except for illness relapse[16,19,41]. The findings of this study clearly affirm the positive effects of such intervention designed to enhance consumer-oriented healthcare, consisting of multiple components such as education and practices of problem-solving and interpersonal skills; in turn, more appropriate services utilization by patients would likely result[13,41,42].

A few limitations are worth to be noted. First, the participants' socio-demographic data, psychiatric diagnoses and medication use after psychiatrist consultation, which could have made great differences to patients' mental condition and illness insights, were not investigated in this study. In future clinical trial, the correlations between these confounding variables and the study outcomes should be examined. Those with significant association with the outcomes should be set as co-variants for the outcome analyses. Second, the results might not be able to be generalized to other adolescent or adult samples because 30% of the patients had an illness onset at aged 30+. This late onset might indicate that Chinese families hesitated and thus delayed bringing their relatives for treatment due to their perceptions of social stigma towards mental illness[22,42]. Last, all patients volunteered to participate in the NPEP and thus could have high motivation and enthusiasm for recovery from illness. Their desire to participate and cooperate in the NPEP might account, in part, for its large effect.

CONCLUSIONS

The NPEP developed for first-episode mental illness and delivered in one psychiatric OPD in Hong Kong was more effective than usual outpatient care. It is important to further

implement this patient-oriented intervention, and to validate its long-term effects compared with other psychosocial interventions with larger samples from diverse socio-cultural and clinical backgrounds.

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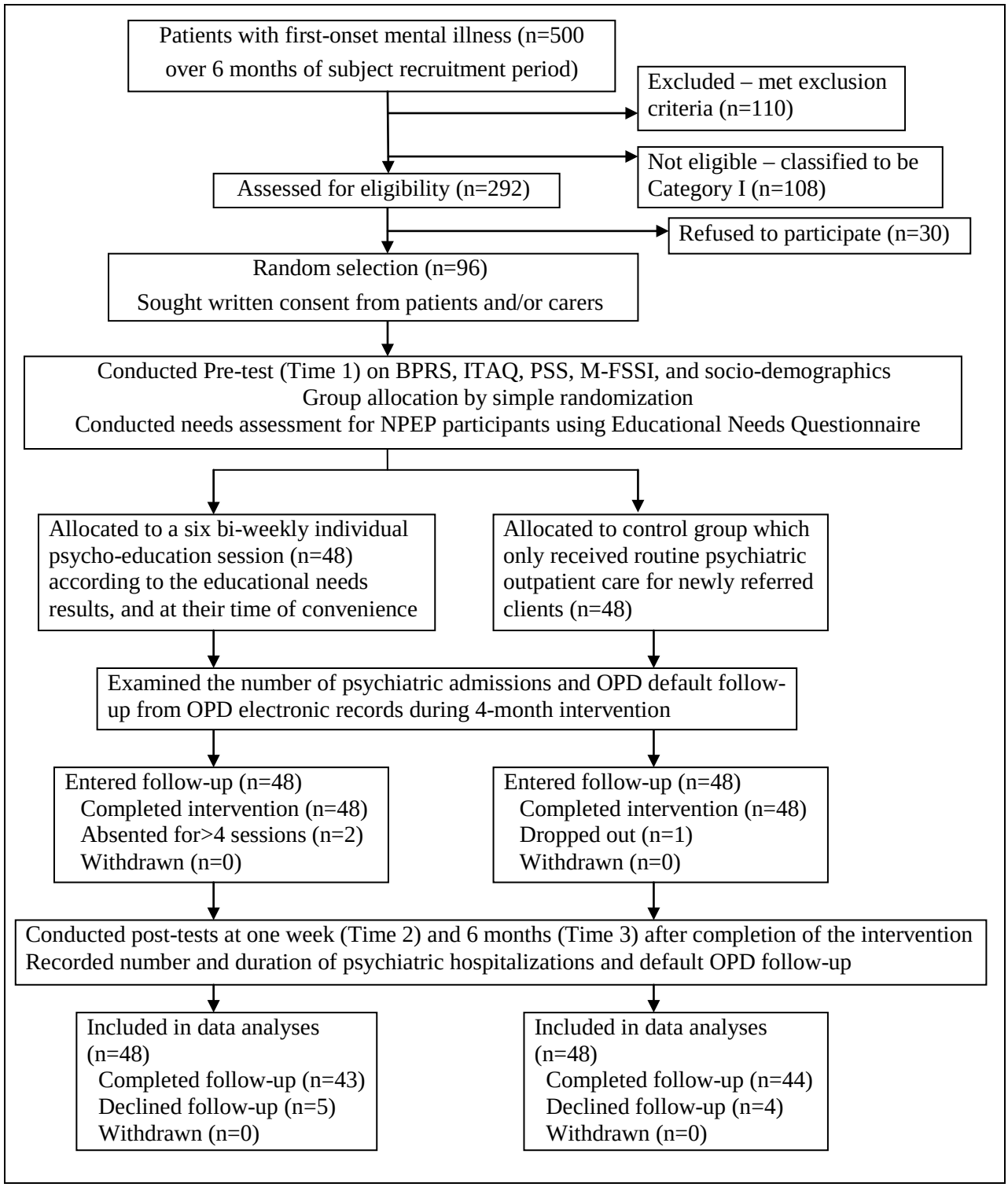
Figure 1

Flow Diagram of The Clinical Trial



Note. NPEP, Nurse-led, Needs-based Psycho-educational Program; BPRS, Brief Psychiatric Rating Scale; ITAQ, Insight and Treatment Attitudes Questionnaire; PSS, Perceived Self-Efficacy Scale; MFSSI, Modified Family Support Services Index.

Table 1

Socio-demographic and clinical characteristics of patients receiving NPEP, usual care only and non-participants at baseline measurement

Characteristics	NPEP (n = 48) [a]	Usual Care (n = 48) [a]	Non-participants (n = 138) [a]	Test value [b]	P value
Gender				1.75	.19
Male	26 (54.2)	28 (58.3)	75 (54.3)		
Female	22 (45.8)	20 (41.7)	63 (45.7)		
Age	25.3 ± 6.0,	26.1 ± 7.2,	27.8 ± 6.8,	1.42	.25
	19 - 45	20 - 43	18 - 49		
18-29	29 (60.4)	31 (64.6)	90 (65.2)		
30-39	14 (29.2)	13 (27.1)	39 (28.3)		
40-49	5 (10.4)	4 (8.3)	9 (6.5)		
Duration of illness (months)	1.3 ± 0.7,	1.5 ± 0.4,	1.7 ± 1.0,	1.98	.13
	2 weeks – 4 months	2 weeks – 3 months	1 week – 4 months		
< 1 month	12 (25.0)	13 (27.1)	43 (31.2)		
1 – 2 months	22 (45.8)	23 (47.9)	66 (47.8)		
2 – 3 months	10 (20.8)	9 (18.8)	18 (13.0)		
3 – 4 months	4 (8.3)	3 (6.3)	11 (8.0)		
BDS	15.1± 2.5,	16.3± 2.7,	17.1± 3.2,	1.83	.15
	11 - 23	12 - 24	10 - 25		
10 – 15	31 (64.6)	29 (60.4)	90 (65.2)		
16 – 22	13 (27.1)	14 (29.2)	39 (28.3)		
23 – 29	4 (8.3)	5 (10.4)	9 (6.5)		

BAS	16.1± 3.0,	15.3± 2.9,	16.8± 4.8,	1.75	.13
	11 - 22	12 - 23	10 - 24		
10 – 15	29 (60.4)	31 (64.6)	85 (61.6)		
16 – 22	15 (31.3)	13 (27.1)	44 (31.9)		
23 – 29	4 (8.3)	4 (8.3)	9 (6.5)		
Number of family members living with patient				2.48	.09
One	23 (47.9)	24 (50.0)	79 (57.2)		
2 - 3	21 (43.8)	21 (43.8)	52 (37.7)		
4 - 5	4 (8.3)	3 (6.2)	7 (5.1)		
Monthly household income (HK$) [c]	12,800± 1,058	12,040± 1,269	13,720± 1,769	2.32	.10
5,000 – 10,000	11 (22.9)	12 (25.0)	30(21.7)		
10,001 – 15,000	12 (25.0)	14 (29.2)	40(29.0)		
15,001 – 25,000	19 (39.6)	15 (31.3)	45(32.6)		
25,001 – 35,000	6 (12.5)	7 (14.6)	23(16.7)		
Type of psychiatric medication				1.57	.20
Conventional antipsychotics (e.g., haloperidol)	8 (16.7)	7 (14.6)	25 (18.1)		
Atypical antipsychotics (e.g., olanzepine)	9 (18.8)	11 (22.9)	22 (16.0)		
Anti-depressants (e.g., Prozac)	5 (10.4)	4 (8.3)	10 (7.3)		
Blended mode [d]	8 (16.7)	9 (18.8)	25 (18.1)		

Nil medication	18 (37.5)	17 (35.4)	56 (40.6)		
Dosage of medication [e]				1.94	.12
High	3 (6.33)	5 (10.4)	14 (10.1)		
Medium	15 (31.3)	16 (33.3)	40 (29.0)		
Low	12 (25.0)	10 (21.5)	28 (20.3)		

Note. NPEP, Nurse-led, Needs-based Psycho-education Program in the outpatient clinic under study; BDS, Beck's Depression Scale; BAS, Beck's Anxiety Scale.

[a] denotes frequency (f %) or mean ± standard deviation, and range.

[b] an analysis of variance (F-test, df=231) or the Kruskal-Wallis test by ranks (H statistic, df=2) was used to compare the socio-demographic and clinical variables of patients among the three groups at baseline.

[c] US$1 = HK$7.8

[d] Patients were taking more than one type of psychotropic medication, e.g., the use of both conventional and atypical antipsychotics or one type of atypical antipsychotic together with one anti-depressant[29].

[e] Dosage levels of neuroleptic medications were compared with the average dosage of medication taken by psychotic patients in Haloperidol-equivalent mean values[15].

Table 2

Outcome measure scores at pre- and post-tests and results of MANOVA (group x time) for two groups of patients with moderate or severe mental health problems

	NPEP (N=48)						Usual care (N=48)						
	Baseline		One week post-intervention		6 months post-intervention		Baseline		One week post-intervention		6 months post-intervention		
Instrument	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F[†]
BPRS	4.7	0.9	3.5	1.0	3.0	0.8	4.5	0.9	4.7	1.0	4.8	1.9	7.52**
ITAQ	9.1	1.9	12.6	1.7	15.2	1.8	10.1	1.9	12.1	2.1	12.4	2.3	6.70*
PSS	16.9	3.1	21.4	4.0	27.5	4.2	15.6	4.4	14.7	4.9	15.0	4.2	8.15**
MFSSI	5.0	1.8	5.8	1.8	5.3	1.1	5.2	1.1	6.1	0.9	5.8	1.8	2.02
Re-hospitalization													
Number [a]	1.2	0.8	1.5	1.2	1.1	0.6	1.3	0.7	2.4	1.1	2.7	1.0	3.07
Duration [b]	8.3	2.1	9.6	1.1	5.1	3.8	9.2	3.2	10.0	6.3	14.1	5.6	5.72*

Note. NPEP, APN-led, Needs-based Psycho-education Program in the outpatient clinic under study.

BPRS, Brief Psychiatric Rating Scale; possible scores range from 0 to 7, with higher scores indicating greater severity of symptoms.

ITAQ, Insight and Treatment Attitudes Questionnaire; possible scores range from 0 to 22, with higher scores indicating better insight.

PSS, Perceived Self-Efficacy Scale; possible scores range from 10 to 40, with higher scores indicating high competence to manage difficult life situations.

MFSSI, Modified Family Support Services Index; possible scores range from 0 to 16, with higher scores indicating more community mental health services needed.

[a] average number of readmissions to a psychiatric inpatient unit over three months at three time points.

[b] duration of readmissions to a psychiatric inpatient unit at each time point in terms of average number of days of hospital stay over three months at three time points.

[†] df = 1, 94

* $p < 0.01$

** $p < 0.001$

Appendix A

Outline of the Needs-Based Psycho-education Program

Nurse-Led, Needs-Based Psycho-education for First-Onset Mental Illness (NPEP)

Introduction

The NPEP is provided for patients with first-onset moderately severe mental illness newly referred to and triaged by psychiatric nurse as Category II in one psychiatric outpatient clinic. The patients being classified as Category II are those who present noticeable mental symptoms but low risk of self-harm or violence. These patients have their first psychiatrist consultation in the clinic within 3 to 8 weeks following triage. Six sessions (30 to 60 minutes) conducted by a psychiatric Advanced Practice Nurse (APN) are designed for these newly engaged patients who are participating voluntarily in the NPEP. The NPEP can provide focused mental health assessment, education, crisis intervention, and referrals to appropriate services. The topics of the NPEP provided for individual patients who agree to participate in the program will be tailor-made according to their individual needs. The session content and its sequence of presentation will follow a structure based on the results of the Educational Needs Assessment [14.20] provided by the APN. The objectives of this program include:

1. To provide early psychiatric and psychosocial intervention to patients waiting for an initial psychiatric consultation and treatment plan;
2. To allay anxiety and promote better self-management of patients' mental health problems in daily functioning, such as sleep hygiene and self-care;
3. To educate and orientate patients and/or their family members on mental health services and medication management; and
4. To liaise with other mental health professionals for appropriate services and psychological support for patients in coping with the illness

Each of the patients under Category II would be invited for participation in this psycho-education program by the APN in person immediately after triage, and the patient and/or his/her family would receive full explanation of the purpose, content and procedure of the program. Nevertheless, their participation is on a voluntary basis and free of charge.

Content of Sessions

(i.e., the sequence of learning for individual patients would be based on their results of Educational Needs Assessment)

1. Orientation & Engagement Session

It is usually and preferable to meet the patient and conduct the first orientation session six to eight weeks before attending the first psychiatric consultation. Family members are invited to attend. Main content of the session is:

- Briefing on psychiatric outpatient clinic, its services, the purpose of the NPEP, and the assessments used;
- Taking comprehensive medical and psychiatric history, family background and mental health assessment;
- Assessment of suicide and violence risks and evaluation of need for emergency psychiatric care (e.g., urgent psychiatric consultation and crisis intervention measures);
- Advice giving on community mental health and physical care services; referrals may be given as needed;
- Warning signs of deterioration or severity of psychiatric symptoms and strategies in help seeking; and
- Seeking consensus with patient on time schedule of the coming sessions.

2. Mental Status & Sleep Hygiene

This session is held two weeks after the first session or a couple of weeks before the first psychiatric consultation. Only the patient is included. It consists of:

- Establishing trust with patient by showing professional knowledge, empathy, understanding, and concern about personal health needs.
- Assessing the mental status using valid measurement tools such as depression and anxiety scales, Brief Psychiatric Rating Scales, and insight into to the illness and treatment;
- Knowledge of the mental illness and its treatment and prognosis;
- Promotion of sleep hygiene and healthy lifestyle;
- On-going evaluation on needs for emergency psychiatric care (e.g., urgent psychiatric consultation and crisis intervention); and
- Encouragement to attend the coming sessions.

3. Medication Compliance

This session is held about one week before the first psychiatric consultation; patient and family are included. It consists of:

- Ongoing assessment of patient's mental status and follow-up of sleep hygiene;

- Knowledge of psychiatric medications, their desired and side-effects and patient's treatment plan;
- Discussion about patient's attitude and insight to the illness and medication;
- Advice on medication management supported by family members; and
- Ongoing encouragement to attend the coming sessions.

4. Relaxation Training

This session is held two to three weeks after the third session. Both patient and family are included. It consists of:

- Reflection on medication management, mental state and feelings about the progress;
- Discussion about patient's stressors, life events, and coping methods and resources;
- Suggestions on ways of coping and social support, and community support services;
- Stress management and relaxation exercise training and practice; and
- Family relationship and support.

5. Counseling on Individual Health Needs

This session is held two to three weeks after the fourth session; only the patient is included. It consists of:

- Ventilation of feelings and strengthening of coping strategies used;
- Instillation of hope and sense of well-being;
- Reinforcement of drug compliance and relaxation;
- Discussion about specific psychosocial health needs and giving advice; and
- Encouraging follow-up contact via phone before next session.

6. Review and Evaluation Session

This session is held about three weeks after the fifth session. Both patient and family are included. It consists of:

- Reviewing the knowledge and skills learned;
- Evaluation of personal, community and family resources and coping skills; and
- Advice on regular follow-up in OPD and importance of medication compliance.