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A mental health home visit service partnership intervention on improving patients' satisfaction

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ABSTRACT

Aims: To investigate a partnership intervention of the community-based and hospital-based home visit to improve patients' satisfaction.
Methods: A time series quasi-experimental quantitative design was used. The experimental group had "partnership intervention", while the control group maintained routine home visits. Patient satisfaction was measured pre-intervention, six months and 12 months after the partnership intervention.
Results: Six and 12 months after partnership intervention, in the experimental group, items related to stabilizing disease conditions, improving daily living abilities, enhancing communication ability and providing relevant resources were significantly higher than pre-intervention. However, 12 months after the intervention, the influence of the intervention became weaken.
Conclusions: The partnership intervention can significantly improve patients' satisfaction with home visit service.

Introduction

Mental health problems have been identified as the top burden in the world in terms of years lived with disability (YLDs) (Vigo, Thornicroft, & Atun, 2016). In recent years, it has become a common goal of many countries to provide effective community-based rehabilitation model to stabilize the conditions of mental health problems patients, limit their disabilities, and help them to be employed. Evidence-based research has identified that community-based rehabilitation for schizophrenia is effective in reducing disability (Asher et al., 2016; Nemoto, Niimura, Ryu, Sakuma, & Mizuno, 2014).

Home visits can reduce re-hospitalization rate from 42.1% to 11.6% (Chang & Chou, 2015). Hospital stay duration and medical costs are also significantly decreased (Chang & Chou, 2015; Sharifi et al., 2012). However, it is not easy for patients with severe mental health problems to return to the community successfully; over 75% of such patients found it was difficult to reach this goal (Miyamoto, Hashimoto-Koichi, Akiyama, & Takamura, 2015). In addition to their symptoms, disease recurrence, repeated hospitalization, and multiple disabilities, they also have to experience rejection or discrimination from the public, community and their friends, relatives, and medical staff (Chen & Chang, 2016; Cheng, Huang, Hsu, & Su, 2012; Hsiao, Lu, & Tsai, 2015; Wang, Petrini, & Morisky, 2016b).

Previous studies demonstrated that patients with mental health problems who live in the community had significantly lower quality of life than hospitalized patients (Guan, Xiang, Ma, Weng, & Liang, 2016). It is important to provide patient-centered services to meet individual recovery needs, with the aims of improving their overall quality of life and stabilize mental health conditions (Chan & Mak, 2014; Guan et al., 2016).

Two service systems provide home care for patients with mental health problems in Taiwan: community-based and hospital-based. In the community-based system, Public Health Nurses (PHNs) from 370 Public Health Centers (PHCs) offer home visit service to the majority of patients. In 2016, 700,000 home visits were completed (Ministry of Health and Welfare, 2017). In the hospital-based service, approximately 109 hospitals participated in this service (Ministry of Health and Welfare, 2017). Physicians and Home Health Nurses (HHNs) in psychiatry departments provide services to fewer patients than the community-based service system (Ministry of Health and Welfare, 2017). Previous studies mentioned that PHNs have insufficient competence in offering mental health nursing care (Cheng et al., 2012). It is important

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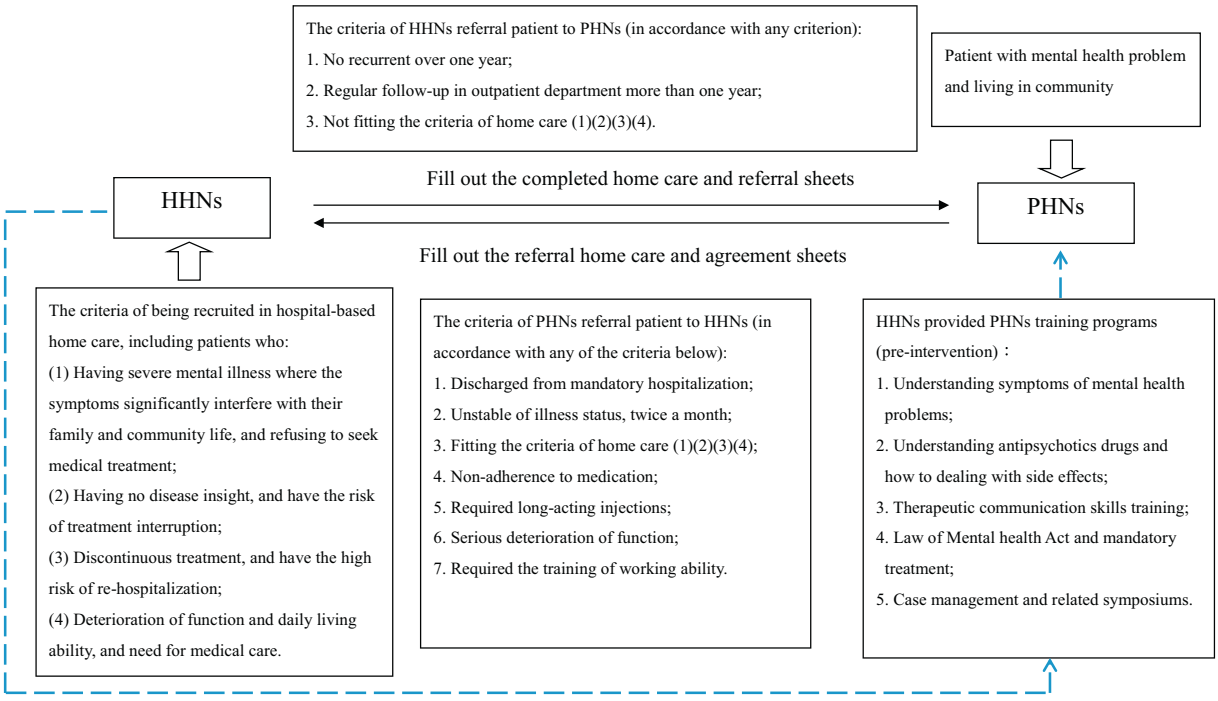

Fig. 1. The model of mental health home visit service partnership intervention.

Table 1
Comparison of demographic and clinical status of the experimental group and control group.

Items	Experimental group (n = 120)			Control group (n = 120)			t/×2	p-Value
	n	%	Mean	n	%	Mean		
Age	120		45.75	120		46.82	−0.637[a]	0.525[a]
Age at onset	120		27.54	120		29.98	−1.544[a]	0.124[a]
Gender							0.269	0.604
Male	68	55.83		64	53.33			
Female	52	44.17		56	46.67			
Marital status							2.031	0.730
Married	44	36.37		51	42.5			
Single	57	47.5		52	43.33			
Divorced	19	15.83		17	14.13			
Employment							0.474	0.789
Never	39	32.5		39	32.5			
Loss job	55	45.83		56	46.67			
Employ	26	21.67		21	17.5			
Retirement	0	0		4	3.33			
Diagnosis							2.694	0.260
Schizophrenia	96	80		91	75.83			
Bipolar	12	10		9	7.5			
Major depression	11	9.17		19	15.83			
Delusion disorder	1	0.83		1	0.83			
Illness status							1.559	0.816
Stable	85	70.84		83	69.16			
Tolerable	21	17.5		20	16.67			
Unstable	14	11.67		17	14.17			
OPD F/U							3.56	0.085
Regular	105	87.5		94	78.33			
Irregular	15	12.5		26	21.67			
Medication							3.709	0.079
Adherence	106	88.33		95	79.17			
Non adherence	14	11.67		25	20.83			

OPD F/U: outpatient department follow-up.
[a] t-Test.

to enhance PHNs' ability to provide appropriate nursing care for patients with mental health problems which may improve the patients' satisfaction with the home visit service, and achieve the WHO's Mental Health Action Plan 2013–2020, emphasizing community based care and full respect of the human rights of people with mental health problems (Saxena, Funk, & Chisholm, 2014). The purpose of this study was to explore the partnership intervention of the community-based and hospital-based home visit in improving patients' satisfaction with home visit service.

Table 2
Comparison of pre-post satisfaction of patients with various mental health home visit services items in the experimental group.

	Pre-test		Six months after the intervention		Twelve months after the intervention		F value	Bonferroni adjusted post-hoc
	Mean	SD	Mean	SD	Mean	SD		
Regular home visit	4.00	0.64	4.40	0.65	4.21	0.67	15.370***	2 > 1,3; 3 > 1
Telephone consultation	3.93	0.63	4.31	0.64	4.19	0.62	13.247***	2,3 > 1
Assisting long-acting injections	4.50	0.76	3.88	1.36	4.50	0.76	1.577	
Supervising to continue outpatient department follow-up	3.99	0.62	4.26	0.65	4.14	0.59	5.627**	2 > 1
Supervising to take medicine	3.95	0.70	4.30	0.65	4.15	0.64	7.366***	2 > 1
Reducing side effects of medication	3.63	0.85	4.17	0.73	3.94	0.80	9.102***	2 > 1
Assisting emergency transport to hospital	3.94	0.62	4.09	0.86	4.28	0.58	2.373	
Assisting of arrange hospitalization	3.70	0.70	4.00	0.67	4.00	0.52	2.359	
Assisting in the self-control of symptoms	3.78	0.62	3.85	0.70	3.87	0.69	0.488	
Assisting in the self-control of behavioral problems	3.75	0.67	3.92	0.74	3.80	0.67	1.753	
Education about mental health problem	3.92	0.61	4.19	0.71	4.02	0.70	5.618**	2 > 1
Education about medication	3.86	0.66	4.15	0.63	4.04	0.71	5.937**	2 > 1
Providing guidance of the interaction with family member	3.82	0.75	4.16	0.67	4.02	0.68	8.407***	2 > 1
Providing guidance of the physical hygiene	3.83	0.55	4.10	0.68	4.00	0.61	5.228**	2 > 1
Providing guidance of coping with insomnia	3.71	0.69	4.04	0.65	3.98	0.60	7.786***	2,3 > 1
Assisting with arrange daily living	3.64	0.71	4.01	0.70	3.98	0.60	10.248***	2,3 > 1
Training of daily living ability	3.60	0.65	3.97	0.70	3.88	0.62	8.929***	2,3 > 1
Training of social skills	3.53	0.72	3.87	0.70	3.67	0.64	4.186*	2 > 1
Assisting to apply severe disease card or disability card	4.02	0.75	4.29	0.69	4.04	0.60	4.189*	2 > 1
Assisting to apply economic support	3.52	1.12	3.88	0.78	3.82	0.64	2.393	
Providing employment resource	3.31	0.84	3.92	0.74	3.54	0.76	9.211***	2 > 1,3
Providing community rehabilitation resources	3.74	0.66	4.14	0.60	3.80	0.76	6.405**	2 > 1,3
Providing rehabilitation association resource	3.68	0.63	4.04	0.68	4.00	0.58	4.977*	2,3 > 1
Providing information regarding long-term care facilities	3.71	0.83	4.00	0.68	4.07	0.62	3.545	
Providing accompany for a walk	3.75	0.80	3.82	0.67	3.82	0.77	0.125	
Providing emotional support	3.94	0.73	4.22	0.71	4.20	0.59	7.825***	2,3 > 1

* $P < 0.05$.
** $P \leqq 0.01$.
*** $P \leqq 0.001$.

Methods

Participants and ethical considerations

This study adopted purposive sampling and selected one psychiatric hospital providing home visits and 12 PHCs. Six PHCs with partnership intervention between community-base and hospital-based services were considered as the experimental group. The experimental group was located closer to the psychiatric hospital, so that HHNs and PHNs were able to transfer the patients under the model of partnership intervention. Another six PHCs with similar characteristics were selected, which provided routine home visits were regarded as the control group. The participants inclusion criteria were: (1) diagnosed in ICD-9-CM with: 295 (schizophrenia), 296 (affective psychoses, including Bipolar and major depression), 297 (delusional disorder) and claiming the Severe Disease Card issued by the Bureau of National Health Insurance; (2) aged over 18; (3) willing and with capacity to give informed consent. All participants with alcohol or drug abuse, dementia, and learning disability were excluded. The ethics committee of the Institutional Review Board at the China Medical University Hospital approved the study.

Design

This study applied a time series quasi-experimental quantitative design. Evaluation consisted of one pre-test (one week before the intervention) and two post-tests (carried out six and 12 months after the intervention).

Tools and intervention methods

Satisfaction with the mental health home visit service of the patients was measured using the “Scale of Satisfaction with the Mental Health Home Visit Service of the patients”, which was developed by our research team. The scale possesses expert validity by reviewed the content of each item within 6 experienced psychiatric nurses; after the examination of the 6 experts, two items were deleted from the question pools. The Item-level Content Validity Index (I-CVI) of each question was > 0.83 and the Scale-Level Content Validity Index (S-CVI) was 0.86. According to the references (Polit & Beck, 2006; Polit, Beck, & Owen, 2007), when I-CVI and S-CVI are > 0.8, it indicates that the questionnaire possesses good content validity. The scale has 26-items, on a 5-point Likert scale, ranging from 1 (very dissatisfied) to 5 (very satisfied). The scale has been confirmed to be a reliable measurement (Cronbach's Alpha = 0.93) (Huang, 2010).

The establishing process of the partnership intervention model including two steps, firstly, researchers as observers, accompany PHNs to do home visit for 63 times in order to understand the difficulties during their home visit; also the researchers evaluated the PHNs' needs in further education support. Secondly, 5 times focus group interviews including HHNs and PHNs (participants number each time: 17–19 persons; interview duration: 1–2 h) were conducted in the purpose of confirm the needs of PHNs' continuing education and what approaches could make HHNs and PHNs apply the partnership collaboration successfully. Afterward, according to the home visit observation results and the focus group consensus; the partnership intervention model of this study was established (Fig. 1).

Fig. 1 pointed out the model of mental health home visit service

Table 3
Comparison of pre-post satisfaction of patients with various mental health home visit services items in the control group.

	Pre-test (n = 120)		Six months after the intervention (*n* = 110)		Twelve months after the intervention (n = 110)		F value	Bonferroni adjusted post-hoc
	Mean	SD	Mean	SD	Mean	SD		
Regular home visit	4.05	0.68	4.05	0.80	3.70	0.99	8.372***	1,2 > 3
Telephone consultation	3.95	0.73	4.16	0.69	4.03	0.76	2.532	
Assisting long-acting injections	4.00	0.82	3.80	0.92	4.30	0.82	1.693	
Supervising to continue outpatient department follow-up	3.85	0.76	3.89	0.64	4.05	0.52	2.610	
Supervising to take medicine	3.91	0.70	4.01	0.61	4.05	0.55	1.549	
Reducing side effects of medication	3.83	0.72	3.81	0.75	3.97	0.56	1.125	
Assisting emergency transport to hospital	4.07	0.66	3.71	0.76	3.89	0.57	2.170	
Assisting of arrange hospitalization	3.81	1.08	3.71	0.78	3.86	0.85	0.250	
Assisting in the self-control of symptoms	3.63	0.87	3.45	0.61	3.80	0.66	3.344*	3 > 2
Assisting in the self-control of behavioral problems	3.68	0.77	3.54	0.74	3.82	0.72	2.876	
Education about mental health problem	3.84	0.55	3.93	0.63	4.04	0.66	2.960	
Education about medication	3.86	0.53	3.84	0.65	4.01	0.61	2.758	
Providing guidance of the interaction with family member	3.81	0.66	3.93	0.66	4.12	0.64	5.795**	3 > 1,2
Providing guidance of the physical hygiene	3.75	0.62	3.81	0.74	4.00	0.54	3.812*	3 > 1
Providing guidance of coping with insomnia	3.78	0.71	3.85	0.70	4.01	0.56	3.309*	3 > 1
Assisting with arrange daily living	3.76	0.70	3.85	0.66	3.97	0.67	1.843	
Training of daily living ability	3.56	0.72	3.69	0.63	3.87	0.76	2.971	
Training of social skills	3.75	0.71	3.65	0.77	3.83	0.78	0.667	
Assisting to apply severe disease card or disability card	4.04	0.75	3.85	0.75	4.15	0.59	3.228*	3 > 2
Assisting to apply economic support	4.09	0.78	3.83	0.71	4.09	0.74	1.843	
Providing employment resource	3.57	0.66	3.57	0.59	3.74	0.69	0.657	
Providing community rehabilitation resources	3.44	0.84	3.57	0.59	3.78	0.60	2.049	
Providing rehabilitation Association resource	3.50	0.76	3.50	0.69	4.05	0.60	5.487**	3 > 1,2
Providing information regarding long-term care facilities	3.50	0.89	3.56	0.63	3.94	0.44	3.274	
Providing accompany for a walk	3.53	0.84	3.47	0.61	3.89	0.66	3.375*	3 > 2
Providing emotional support	3.84	0.79	4.06	0.70	4.00	0.75	2.308	

* $P < 0.05$.
** $P \leqq 0.01$.
*** $P \leqq 0.001$.

partnership intervention between HHNs and PHNs. When patients with mental problem discharged from psychiatric hospital, if the patients met the HHNs home visit recruited criteria; those patients would be cared under hospital-based home visit services. While the mental conditions of patients who received HHNs' care became more stable and met the criteria of HHNs referral patient to PHNs, the HHNs would transfer the patients to PHNs. HHNs would accompany the PHNs to do the first time home visit for new cases. In additional, if the patients who under PHNs care became unstable such as the criteria in Fig. 1, the PHNs would transfer the patients to HHNs when obtained the family's agreement. Moreover, in the partnership model, HHNs offered PHNs a training program in relevant nursing skills and knowledge. This intervention service model aims to improve the relationship between PHNs and HHNs in integrating mutual benefits in home visit.

Data analysis

Statistical analyses were done using SPSS Version 20.0. Statistical significance was identified when $p < 0.05$. Demographic, clinical status and satisfaction scores were described using mean, standard deviation, and percentages. Between-group differences in demographics, clinical status and satisfaction scores at pre-test, 6-month and 12-month post intervention were assessed with independent *t*-tests. A Chi-square test was used to examine qualitative variables. Repeated measures ANOVA incorporating Bonferroni adjusted *post-hoc* analysis was used to assess the impact of the intervention on patient's satisfaction pre-test, 6-month and 12-months post intervention.

Results

This study included 240 participants: 120 in each of the experimental group and control group. Finally, 109 patients in the experimental group and 110 patients in the control group completed the study.

Demographic and clinical status of subjects

The mean age of participants was 46.28 (SD 12.96) years old (range 18 to 86). The mean age at onset was 27.54 (SD 11.00) years in the experimental group and 29.98 (SD15.02) years in the control group. The most prevalent diagnosis was schizophrenia ($N = 187$). The employment rate was 21.67% in the experimental group and 17.5% in the control group. The experimental group and control group had no significant differences in terms of age, gender, marital statuses, employment statuses, diagnosis, ages at disease onset, illness stability, regulation of outpatient department follow-up, and medication adherence (Table 1).

Influences of partnership intervention on the satisfaction of patients with home visit

Comparing the patients' satisfaction with the mental health home visit service pre-test, the mean score of the control group in “assisting to apply economic support” was significantly higher than in the experimental group. The remaining 25 items showed no significant differences between the two groups. Six and 12 months after partnership intervention with the experimental group, 18 (post six months) and 7

Table 4
Comparison of patients' satisfaction in the experimental group (n = 109) and control group (n = 110) with various mental health home visit services items after six months and twelve months of the intervention.

	Six months after the intervention				t Value	Twelve months after the intervention				t Value
	Experimental Group (n = 109)		Control Group (n = 110)			Experimental Group (n = 109)		Control Group (n = 110)		
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Regular home visit	4.40	0.65	4.05	0.79	3.641***	4.19	0.70	3.71	1.03	4.072***
Telephone consultation	4.32	0.64	4.14	0.67	1.944	4.18	0.63	4.00	0.81	1.789
Assisting long-acting injections	3.65	1.09	3.69	0.93	−0.129	4.08	0.76	4.28	0.83	−0.985
Supervising to continue outpatient department follow-up	4.26	0.63	3.94	0.64	3.539***	4.12	0.63	4.07	0.57	0.581
Supervising to take medicine	4.26	0.66	4.00	0.60	2.906**	4.12	0.67	4.04	0.60	0.873
Reducing side effects of medication	4.08	0.76	3.76	0.71	2.864**	3.85	0.79	3.90	0.64	−0.504
Assisting emergency transport to hospital	4.15	0.80	3.78	0.82	2.370*	4.14	0.67	3.95	0.78	1.533
Assisting of arrange hospitalization	4.08	0.70	3.79	0.75	1.835	3.94	0.67	3.86	0.90	0.448
Assisting in the self-control of symptoms	3.87	0.68	3.55	0.70	2.999**	3.82	0.70	3.84	0.67	−0.218
Assisting in the self-control of behavioral problems	3.90	0.74	3.65	0.74	2.191*	3.81	0.69	3.79	0.73	0.130
Education about mental health problem	4.16	0.72	3.89	0.66	2.819**	4.00	0.71	3.99	0.67	0.107
Education about medication	4.13	0.63	3.85	0.67	3.005**	3.98	0.72	3.99	0.63	−0.096
Providing guidance of the interaction with family member	4.13	0.69	3.90	0.67	2.350*	3.95	0.70	4.08	0.65	−1.350
Providing guidance of the physical hygiene	4.08	0.68	3.82	0.73	2.396*	3.96	0.67	4.00	0.58	−0.437
Providing guidance of coping with insomnia	3.99	0.67	3.83	0.71	1.580	3.90	0.66	4.03	0.59	−1.464
Assisting with arrange daily living	4.00	0.70	3.84	0.68	1.562	3.96	0.66	3.95	0.65	0.071
Training of daily living ability	3.94	0.73	3.70	0.67	2.223*	3.92	0.63	3.85	0.73	0.683
Training of social skills	3.87	0.70	3.67	0.76	1.706	3.81	0.68	3.75	0.75	0.494
Assisting to apply severe disease card or disability card	4.12	0.77	3.92	0.77	1.543	3.99	0.66	4.05	0.65	−0.535
Assisting to apply economic support	3.86	0.87	3.83	0.77	0.208	3.82	0.74	4.14	1.00	−1.896
Providing employment resource	3.73	0.88	3.63	0.66	0.706	3.69	0.76	3.59	0.93	0.596
Providing community rehabilitation resources	3.97	0.71	3.62	0.67	2.668**	3.88	0.72	3.88	0.89	0.015
Providing rehabilitation Association resource	3.96	0.72	3.54	0.80	2.803**	3.89	0.65	3.92	0.79	−0.156
Providing information regarding long-term care facilities	3.98	0.69	3.62	0.67	2.427*	3.89	0.57	3.71	0.75	1.268
Providing accompany for a walk	3.84	0.70	3.45	0.65	3.049**	3.73	0.72	3.85	0.69	−0.860
Providing emotional support	4.22	0.71	4.07	0.72	1.501	4.15	0.63	3.99	0.75	1.650

* $P < 0.05$.
** $P \leqq 0.01$.
*** $P \leqq 0.001$.

items (post 12 months), respectively, in the patients' satisfaction instrument were significantly higher than the scores before the intervention (Table 2). Comparing the pre-test and twice post-tests of the control group, only four items in the 12th month were significantly higher than pre-test (Table 3).

Comparing patients' satisfaction with home visit services between the experimental group and the control group, six months after partnership intervention (Table 4), 16 satisfaction items scores in the experimental group were significantly higher than those of control group; indicating the patients' satisfaction in the experimental group had been improved due to partnership intervention. However, after 12 months of the partnership intervention, only one item in the experimental group was significantly higher than in control group.

Discussion

Patients with mental health problems can easily become chronic and need long-term follow-up. They suffer from negative symptoms, cognitive deficits, and social function degradation which often results in lifetime disability. With the growing number of cases of severe mental health problems, other than diagnosing their condition correctly and stabilizing their symptoms, it is also important to provide holistic nursing care to patients with mental health problems. All the steps above aim to assist with better symptom control, maintain quality of life, postpone cognitive and functional deterioration, and recovery to facilitate social function. Medical services should be in line with the needs of individuals to achieve the best treatment results (Galletly et al., 2016; Gerson & Rose, 2012; Harvey, Loewenstein, & Czaja, 2013). Previous studies demonstrated that home visits were a good model for providing consistent care to patients in the long-term (Chang & Chou, 2015).

This study confirms that partnership intervention can effectively improve the satisfaction of patients with mental health problems having home visits. The aspects which improved were mainly related to stabilizing the condition (supervising to continue outpatient department follow-up; supervising to take medicine; reducing side effects of medication; education about mental health problems; education about medication), improving daily living abilities (providing guidance of the physical hygiene; training of daily living ability; assisting with arranging daily living), enhancing communication ability (providing guidance of the interaction with family member; training of social skills), providing relevant resources (assisting to apply severe disease card or disability card; providing employment resource; providing community rehabilitation resources; providing rehabilitation association resource), and providing emotional support. A study over 14 years found that, the patients without medical treatment suffered worse physical and mental

health than those with medical treatment (Ran et al., 2015). The results of this study are similar to those of two previous studies. The first one integrated evidence-based community-care services for six months and patient satisfaction scores were significantly improved (Li, Liu, & Huang, 2016). In the second, well-trained nurses provided home visits once a month after 12 months, and both the satisfaction and quality of life of the patients were improved. And such intervention was cost-effective (Malakouti et al., 2015). It was beneficial for the patients with severe mental health problems to receive the home visit provided by well-trained caregivers.

This study confirms that, six months after the partnership intervention, the satisfaction of experimental group with multiple items on home visit provided by PHNs was significantly improved. However, there were two items "assisting in the self-control of symptoms" and "assisting in the self-control of behavioral problems" that showed no significant difference. The satisfaction of the experimental group with "assisting in the self-control of symptoms" and "assisting in the self-control of behavioral problems" was significantly higher than the control group after six months (Table 4). However, 12 months after partnership intervention, there was no significant difference between the two groups in the above two items. The two items were mainly about if patients could take care of their own symptoms. There were significant differences among individuals. Nurses needed to have more clinical knowledge and experience to provide appropriate assistance. Based on previous studies, patients with mental health problems often overused negative coping strategies, especially multiple-episode psychosis (Holubova et al., 2016; Kommescher, Gross, Putzfeld, Klosterkotter, & Bechdolf, 2017). Negative coping strategies were significant predictor of lower quality of life and increased the self-stigma (Holubova et al., 2015; Holubova et al., 2016). Therefore, PHNs should continue to enhance their ability in guiding patients to use effective coping strategies to manage symptoms and behavioral problems. Furthermore, it is suggested that relevant training can be implemented six-monthly to reinforce the ability of PHNs in assistance in symptoms and behavioral problems of patients in order to improve the positive self-instruction and positive coping abilities of patients.

Twelve months after partnership intervention, the satisfaction of the two groups with home visits demonstrated no significant difference probably because: (1) the adherence to medication of patients with severe mental health problems reduced after discharge (Wang et al., 2016b; Wang, Petrini, & Morisky, 2016a; Zhou, Rosenheck, Mohamed, Ning, & He, 2017); their symptoms deteriorated along with their irregular medication, resulting in worse insight. Also, patients might consider it was not necessary to receive the services of PHNs to stabilize disease and improve daily living and communication abilities and their satisfaction with home visit was reduced; Nurses providing community-based home visit should continue tracking and improving the adherence to medication and help patients with mental health problem living in community (Wade, Tai, Awenat, & Haddock, 2017). (2) it is not easy for patients with severe mental health problems to live in the community. Besides mental health problems, their physical health was often ignored (Ewart et al., 2017). Mental and physical health problems interact and worse physical health lowered satisfaction; (3) PHNs providing home visits require relevant further education on psychiatric nursing at least six-monthly to maintain and update their abilities to meet the demands of individuals.

Research limitations

Participants in this study were confined to the central area of Taiwan, and purposive sampling might lead to restriction of deduction. The items on home visit satisfaction of this study do not include physical health related items.

Conclusion

Patients with severe mental health problems require long-term treatment and rehabilitation. This study shows that six months after partnership intervention, satisfaction of patients with home visit was significantly improved. However, satisfaction decreased 12 months after the intervention. Provided PHNs relevant six-monthly, particularly to enhance the abilities of PHNs in helping patient to control their own symptoms and behavioral problems. The results offered evidence for further education and training in home visitors taking care of patients with mental health problems.

Implications for practice

- Partnership intervention of community-based and hospital-based home visit can promote the satisfaction of patients with mental health problems.
- Establishing partnership intervention of community-based and hospital-based home visits can provided a reference for other counties to build effective home-visit models.
- Aspects of the study which did not improve satisfaction can serve as a reference point for future education and training of home visitors.

Conflict of interest statement

The authors report no actual or potential conflict of interest.

Author contributions

Study design: XYH; data collection and analysis: XYH, JFC, MCL, YHW; manuscript preparation: JFC, TPY.

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