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The study of the effectiveness of mental health nurse follow-up programs for female outpatients with depressive disorders

Abstract

Background. Depression is a common chronic illness and one of the most degeneration health problems in the world. Depression is about twice as common in women as in men. Patients often discontinue with the treatment after the first visiting psychiatrists. In Taiwan, more and more patients seek help for depression. As a result, busy psychiatrist practices become the problem in the management of depression at outpatient clinics. There is a lack of collaborative follow-up program provided by mental health nurses for outpatients with depression in Taiwan.

Purposes. The purposes of this study were to examine the effectiveness of mental health nurse 3-month follow-up programs in female outpatients with depressive disorders and to compare two treatment formats of follow-up programs: telephone counseling program (TCP) and group therapy program (GTP).

Method. This is a quasi-experimental, pretest-posttest comparison group design. Mental health nurse 3-month follow-up programs included interventions of care management and structured psychotherapy. Twenty-six female outpatients with depression were assigned into two forms of follow-up programs: telephone counseling program (TCP) and group therapy program (GTP). The participants in TCP received 10 regular telephone calls of 30-60 minutes. The participants in GTP received 12-session weekly group interventions. The outcome variables including the symptoms of depression, quality of life and use of medical resource were evaluated at baseline (pre-treatment) and post-intervention.

Results. Results of Student's paired t test revealed that the follow-up programs significantly reduced the depressed symptoms ($t=-7.04$, $p<0.05$, effect size 66.47%) and improved quality of life ($t=3.45$, $p<0.05$, effect size 32.25%). Results of Quade's analysis of covariance indicated that two different modalities of telephone counseling program (TCP) and group therapy program (GTP) appeared to have similar effects for releasing depressed symptoms ($F(1, 24)= 0.06$, $p>0.05$) and increasing quality of life ($F(1,24)= 0.07$, $p>0.05$). No significant difference in using emergency services ($\chi^2(1)=0.89$, $p>0.05$) and psychiatrist treatment ($z= -0.11$, $p>0.05$) between two programs was found. However, patients in GTP showed for significant higher adherence to scheduled outpatient appointment than patients in TCP ($\chi^2(1)=8.65$,

p>0.05).

Conclusion. Mental health nurse follow-up program contributes to improve clinical outcomes and quality of life. The establishment of telephone-counseling and group therapy programs could benefit more patients with different needs.

Keywords: mental health nurse follow-up program, telephone counseling program (TCP), group therapy program (GTP), women with depression, quality of life, pretest-posttest comparison group design

INTRODUCTION

The Global Burden of Disease study (Murray & Lopez, 1996) stated that depression is a leading cause of disability and accounts for 15% of the disease burden worldwide by the year of 2020. The cross-national epidemiological survey (Weissman et al., 1996) found that the lifetime prevalence of major depression was 1.5% and depression was about twice as common in women as in men. The high prevalence rate and disability problems lead the depression management in primary care to be the main focus of the World Health Organization strategy for mental health (World Health Organization, 2001). In Taiwan, patients with depression mostly were treated by psychiatrists in outpatient department of the psychiatric hospitals and the general hospitals. There is an insufficient collaborative follow-up program by mental health nurse to address the problem with busy psychiatrist practices in management of depression. To address this problem and to improve quality of care, in this paper we report the findings of a research study that examined effects of nurse collaborative follow-up programs including telephone counseling program (TCP) and group therapy program (GTP), and compared these two programs.

BACKGROUND

The studies (Katon et al., 1992; Simon et al., 1993) reported that almost half outpatients with depression discontinued treatment one month after receiving an initial antidepressant medication, and most of them did not receive follow-up care. The treatment guideline indicated that it is crucial to provide follow-up contact especially the first 12 weeks until patients' condition is improved (Depression Guideline Panel, 1993; HEDIS 2000, 1999). Nursing telephone follow-up program is developed to improve care for outpatients with depression in primary care setting. The elements of nursing telephone follow-up program included patient education, monitoring of adherence to medication, emotional support, and behavioral interventions (Hunkeler et al., 2000; Rubenstein et al., 1999). Hunkeler and colleagues (2000) compared telehealth care which consisted of ten 6-minute calls during 4 months by primary care nurses with usual care. They found that compared with usual care patients who received nurse telehealth care experienced 50% improvement from baseline on depression scale at 6 weeks and 6 months. Mental and physical functioning was also improved at 6 weeks. The results suggested that nurse follow-up program contributed to a better quality of care in busy primary care setting.

Due to the lack of psychotherapy provided for outpatients with depression, Simon and his colleagues (2004) conducted a randomized controlled trial to examine the effects of telephone psychotherapy. They compared usual primary care with two intervention

programs: telephone care management and telephone psychotherapy combined with telephone care management. Telephone care management consisted of at least 3 calls, communication of patients' conditions to physician and care coordination. Another intervention integrated telephone care management with a structured 8-session cognitive-behavioral psychotherapy program was provided via telephone. The results revealed that the telephone psychotherapy combined with telephone care management significantly reduced symptoms of depression greater than usual care. In contrast, there was no significant mean difference on depression score between telephone care management and usual primary care. The similar findings were also found in the randomized clinical trials (Katon et al., 1995; Katon et al., 1999; Mynors-Wallis et al., 1995; Schoenbaum et al., 2001; Unutzer et al., 2002; Wells et al., 2000), which compared in-person psychotherapy added to care management with care management alone. The result suggested that integrating psychotherapy to care management program contributed to a better quality of care in primary care setting. Psychotherapy provided via telephone demonstrated its feasibility although in-person psychotherapy illustrated its dynamic interaction during therapy. Those who are not able to use traditional in-person psychotherapy due to time restriction can be reached by telephone psychotherapy.

Very few studies existed of examining the group modality of treatment delivery for depressive patients in primary care setting. This is despite that the experience of being accepted and affirmed by the group peers is extremely powerful (Clarke, Adamoski, Joyce, 1998). The female single-sex groups create a safer environment where women feel free to express their emotions, thus encouraging a deeper exploration of personal distress and facilitating growth (Corob, 1987). The study (Corob, 1987) also demonstrated that group therapy for women with depression contributed to the effects of a sense of energy, a purpose and direction of life, hope, catharsis, positive view of self and their illness and alternative ways of dealing with depression. Group modality of treatment delivery may be a cost effective model, especially when the limited resources are available in primary care setting. A randomized controlled trial by Araya and his colleagues (2003) compared the effectiveness of a stepped-care program with usual treatment for low-income depressed women in Santiago. A 3-month stepped-care program consisted of 7-week psychoeducational group, follow-up management and medication treatment. Usual treatment included antidepressant medication or referral to a specific clinic. The results revealed that at a 6-month follow-up, 70% of patients in the stepped-care program appeared to have a better recovery on depression states indicated by depression scores greater than 8, compared with only 30% of patients in the usual treatment program receiving that score. Another randomized trial (Miranda et al.,

2003) reported the findings of comparising the effects of cognitive-behavioral group therapy alone with the same therapy supplemented by clinical case management for outpatients with depression. The results showed that patients receiving supplemental case management appeared to have fewer depressive symptoms than those who received group therapy only. The research findings illustrated that combined group therapy with care management might be a cost effective model of management of depression in primary care setting.

In summary, comprehensive model for management of depression in primary care setting needs to include symptom and medication monitoring, patient education and structured psychotherapy. The strength of telephone modality of treatment delivery is a good outreach form for its flexible schedule. The advantages of in-person psychotherapy are its richness of therapy and cost effective. Follow-up care management by nurses in primary care setting emphasizes medication and symptom monitor and management. Psychotherapy is provided by psychologists. The role of mental health nurses is received little attention. White (2004) described the consultation liaison model was developed by two nurses from community mental health services. The model was developed to cope with busy primary setting where doctors could spend spare time to treat people with depression. In this model, mental health nurses cared the patients who were referred by primary physicians. Nurses worked closely with crisis assessment services at the local hospital and patient support services, and continued with regular feedback to the psychiatrist, primary physician and other primary care team members. Nurse interventions included 6-week short-term structured psychological therapies such as cognitive behavioral therapy (CBT), postnatal depression support group, patient education, medication management, dissemination of information about local support services. Mental health nursing successfully improved drop out rate of depressive patients in primary care setting and reduced physician workload. This model demonstrated the comprehensive care extended the role of nurses in caring for depression in primary care setting. Nevertheless, the lack of research studies is implemented to illustrate its effectiveness.

THE STUDY

Aims

The purposes of this study were to examine the effectiveness of mental health nurse follow-up programs in female outpatients with depressive disorders and to compare two treatment modalities: telephone counseling program (TCP) and group therapy program (GTP). The measurements of the effectiveness included symptoms of depression, quality of life, the use of hospitalization and emergency department, and

the adherence to scheduled outpatient appointments.

Design

This is a quasi-experimental, pretest-posttest comparison group design with one group of telephone counseling program (TCP) and another group of group therapy program (GTP).

Sample

Female participants who were diagnosed as having depressive disorders by psychiatrists according to ICD-10 were recruited to participate in a three-month clinical trial. Female participants were excluded if they reported current problems with substance abuse. To receive group therapy program (GTP), potential participants need to be able to come to group weekly. To receive telephone counseling program (TCP), potential participants need to be able to attend to phone counseling regularly. During the initial 9 months of recruitment patients were randomized to GTP. Those who could not participate in GTP due to personal factors such as time management problem were assigned to TCP. During the remaining 3 months of recruitment patients were assigned to TCP.

A total of 35 patients were recruited to participate in this study. The Participants were allocated to two groups: 18 were in GTP and 17 were in TCP. But only 14 participants completed group therapy program (GTP) and 12 completed telephone counseling program (TCP). Mean age of 26 participants was 36 year old. Four in GTP and five in TCP were not able to complete the study and were not included in the data analysis. According to the test of Kruskal-Wallis one-way analysis of variance by rank, there is no difference of characteristics of 35 patients in levels of symptoms of depression ($\chi^2(3)=6.06$, $p>0.05$), levels of quality of life ($\chi^2(3)=4.41$, $p>0.05$), ages ($\chi^2(3)=1.23$, $p>0.05$), level of education ($\chi^2(3)=6.82$, $p>0.05$).

Data collection

Ethics approval for the study was granted by the institution review board. The information of the research was disseminated through psychiatrists of the psychiatric outpatient clinic. Through the list of potential participants given by psychiatrists, the researcher contacted them an arranged an in-person interview in their house, the restaurant near their house or the researcher's office. During the interview, the subjects gave their written consent to participate in the study after the purposes, the risks and benefits of the study had been explained to them verbally and writing. Meanwhile, the baseline data were also collected.

Interventions

The mental health nurse follow-up programs designed for this study included two formats of telephone counseling program (TCP) and group therapy program (GTP). The interventions were both conducted by the researcher (the first author) who is a psychiatric nurse, an assistant professor, and has working experiences with inpatients and outpatients with depressive disorders.

Mental health nurse 3-month follow-up programs included care management and structured psychotherapy. Care management included monitoring symptoms and medication, crisis assessment and management, links with crisis and support services, feedback patients' conditions to psychiatrists, and patient education. Structured psychotherapy emphasized stress management and body-mind-spirit empowerment strategies. The content was developed based on "the Depression Workbook" (Copeland, 1992) and "body-mind-spirit group therapy" (Chan, 2002). The main topics of psychotherapy include 'experiences of depression', 'a medical overview of depressive disorders', 'the way out of depression', 'taking a look at your lifestyle', 'preventing suicide' 'growth through pain', 'letting go and forgiveness', 'love yourself', and 'transformation of self'. Patient Education Booklet containing information about depressive disorders, antidepressant medication, coping with stress and suicide preventions was provided to patients.

Telephone counseling program (TCP) included care management and psychotherapy. Telephone counseling consisted of 10 telephone calls including one call per week during the first 8 weeks of the program and one call every two weeks during the remaining 4 weeks. Calls were provided with the length of 30 to 60 minutes. Extra calls were provided as required by patients for crisis intervention or by the researcher's assessments of patients' severe conditions.

Group therapy program (GTP) included care management and psychotherapy: The interventions were provided with the length of 90-120 minutes weekly for 12 weeks. The primary researcher (the first author) was the leader of group therapy and another researcher assisted to record the processes during group therapy. The group therapy was conducted in the consultation room of medical school where the primary researcher (the first author) worked. Extra calls were provided as required by patients for crisis intervention or by the researcher's assessments of patients' severe conditions.

Instruments

The main outcomes were measured by the symptoms of depression, quality of life, and use of medical resources. The outcomes were evaluated at baseline (pre-treatment) and at post-treatment. The instruments are described as follow:

1. Beck Depression Inventory (BDI) is a self-report questionnaire. This scale

consists of 21 item sets, each with a series of four statements. Statements denote symptom severity along with an ordinal continuum from absent (scored as 0) or mild (scored as 1) to severe (scored as 3). It is designed to assess severity of depressive symptoms in patients with diagnosed depressive illness, to monitor the beneficial or adverse effects of treatment, and to assess symptom change over time. It can also be used to screen patients who may suffer from depressive illness and may require mental health services. Depression severity scores are defined as follow: 0-9, minimal; 10-16, mild; 17-19, moderate; and 30-63, severe. The BDI indicates high internal consistency. Cronbach's alphas based on the study of psychiatric patients ranged from 0.76 to 0.95.

2. The World Health Organization Quality Of Life-abbreviated version (WHOQOL-BREF): The WHOQOL- BREF will be used to evaluate the quality of life in this study. There are six domains, including physical domain, psychological domain, social relationship, environment, and spirituality/region/personal beliefs. The WHOQOL-100 is a self-administered questionnaire, subjects will be asked to judge their life of quality subjectively based on recent two weeks as time reference. The internal consistency of this instrument is using Cronbach's α and the value shows 0.90. Pearson correlation has been used for testing validity and $p<.01$. (Data also available on request) (The Taiwanese WHOQOL group, 2000).
3. Frequencies for the use of medical resources including the use of hospitalization and emergency department, and increasing the adherence to scheduled outpatient appointments were obtained through reviewing the medical chart.

Data analysis:

Data was managed by the SAS system. Pre-treatment versus post-treatment and between group differences in the level of depression and quality of life were analyzed using Quade's analysis of covariance. All other comparison such as compliance to the outpatient appointment, emergency visits were analyzed using Wicoxon-Mann-Whitney rank sum test, Pearson chi-square test, Wilcoxon signed rank test and so on.

Results

The efficacy of nurse follow-up programs

Table 1 summarized the means and standard deviations of the rated depression and quality of life sores for before-after 3-month follow-up programs. The result of Wilcoxon signed rank test revealed that there were significant effects of follow-up programs on reduction of depressed symptoms ($S=-170$, $p<0.05$) and improvement of

quality of life (S=109.5, $p<0.05$). By using Student's paired t test, the significant effect on reduction of depressed symptoms was also found (t=-7.04, $p<0.05$) and effect size was indicated by 66.47%. Similarly, the effect on improving quality of life was statistically significant (t=3.45, $p<0.05$) and effect size was shown by 32.25%. The results suggested that the follow-up programs were effective and its effect on releasing symptoms of depression was greater than on improving quality of life.

Table 1 Descriptive statistics showing effects of follow-up programs

		Effects of follow-up care			
		Pretest		Posttest	
Variables	No	Means	SD	Means	SD
Symptoms of depression	26	28.88	10.24	14.77	12.59
Quality of life	26	2.88	0.41	3.10	0.48

To explore the impacts of other factors on reduction of depressed symptoms and quality of life, a number of tests were conducted. The Pearson product-moment correlation test showed that ages had no impact on depressed symptoms (r=-0.14, $p>0.05$) and quality of life (r=0.33, $p>0.05$). Similarly there is no significant relationship found between total numbers of receiving follow-up cares and depression symptoms (r=-0.11, $p>0.05$) and quality of life (r=-0.04, $p>0.05$) in the variable of. Spearman rank correlation test revealed educational levels did not influence the effects of depressed symptoms (r_s=-0.01, $p>0.05$) and quality of life (r_s=0.10, $p>0.05$). Follow-up programs to participants with different types of depressive disorders had similar effects of depressed symptoms ($\chi^2(3)= 4.06$, $p>0.05$) and quality of life ($\chi^2(3)= 2.25$, $p>0.05$) according to the test of Kruskal-Wallis one-way analysis of variance by rank. Whether or not participants suffered from depressive disorders at the first time appeared to have no influence on depressed symptoms (S=125.5, $p>0.05$) and quality of life (S=111.5, $p>0.05$) according to Wilcoxon-Mann-Whitney rank sum test. The results suggested that follow-up programs designed for the study appeared to have equally effects to patients with different conditions and backgrounds.

The following results compared two modalities of follow-up programs: group therapy program (GTP) and telephone counseling program (TCP) in terms of clinical outcomes and use of medical resources.

The comparison of depression variables between GTP and TCP

Table 2 summarized the means and standard deviations of the rated pre- and post-test

depression sores for GTP and TCP. The Quade's analysis of covariance was conducted to compare the degree of reducing symptoms of depression between GTP and TCP. No significant difference was found between GTP and TCP ($F(1,24) = 0.06$, $p>0.05$). The result suggested that two follow-up programs had similar effect on releasing symptoms of depression.

Table 2. Descriptive statistics showing pre and post test depression scores of GTP and TCP

		Symptoms of Depression on BDI score			
		Pretest		posttest	
groups	No.	Means	SD	Means	SD
GTP	14	29.86	11.39	15.50	12.98
TCP	12	27.75	9.07	13.92	12.62

The comparison of quality of life between GTP and TCP

Table 3 summarized the means and standard deviations of the rated pre- and post-test quality of life sores for GTP and TCP. The result of Quade's analysis of covariance indicated that there was no significant different degree of improving quality of life between GTP and TCP ($F(1,24) = 0.07$, $p>0.05$). The result suggested that two follow-up programs had similar contribution to improve quality of life.

Table 3 Descriptive statistics showing pre and post-test quality of life scores of GTP and TCP

		Quality of life			
		Pretest		Posttest	
groups	No	Means	SD	Means	SD
GTP	14	2.92	0.41	3.12	0.51
TCP	12	2.82	0.42	3.08	0.45

The comparison of frequencies of seeing psychiatrist at outpatient department between GTP and TCP

Table 4 summarized the means and standard deviations of the rated frequencies of seeing OPD psychiatrist for GTP and TCP. The Wilcoxon-Mann-Whitney rank sum test demonstrated that no significant difference in frequencies was found between two programs ($z=-0.11$, $p>0.05$). The result suggested that patients in two follow-up

programs required seeing psychiatrists at similar level.

Table 4 Descriptive statistics showing frequencies of OPD treatments of GTP and TCP

Groups	No.	Frequencies of seeing OPD psychiatrist			
		Means	SD	Sums of levels	Means of level
GTP	14	4.29	1.98	191.50	13.68
TCP	12	4.17	2.04	159.50	13.29

The comparison of adherence to scheduled outpatient appointments between GTP and TCP

Table 5 summarized the results of participants' adherence to scheduled outpatient appointments between GTP and TCP. The Pearson chi-square test showed that the significant difference in frequencies was found ($\chi^2(3)=8.67$, $p<0.05$). The result also indicated that participants in GTP were more likely to completing all outpatient appointments as required by psychiatrists and were less likely to drop from outpatient appointments after one to two months treatments than participants in TCP ($\chi^2(1)=8.65$, $p<0.05$). The results suggested that participants in GTP appeared to have a better adherence to schedule outpatient appointments than participants in TCP.

Table 5 Frequencies (and percent) of adherence to scheduled outpatient appointment between GTP and TCP

	Adherence to scheduled outpatient appointments				
	1 Complete all appointment	2 Miss one to two times appointment	3 Stop appointment after one to two months	4 Stop appointment after first appointment	
Groups	n(%)	n(%)	n(%)	n(%)	N
GTP	10(71.43)	2(14.29)	0(0.00)	2(14.29)	14
TCP	3(25.00)	2(16.67)	5(41.67)	2(16.67)	12

The comparison of uses of admission and emergency services between GTP and TCP

No participants in GTP and TCP admitted to the hospital. Table 6 summarized the results of participants' use of emergency service between GTP and TCP. Pearson chi-square test and Fisher exact test indicated that no significant difference between two programs was found ($\chi^2(1)=0.89$, $p>0.05$).

Table 6 Frequencies (and percent) of use of emergency service between GTP and TCP

	Frequency of use of emergency services		
	0	1	
Groups	n(%)	n(%)	N
GTP	13(92.86)	1(7.14)	14
TCP	12(100.00)	0(0.00)	12

Discussion

The present data showed that mental health nurse follow-up program combining care management and structured psychotherapy effectively improved the care outcomes for female outpatients with depression. This result is consistent with the results of previous studies (Katon et al., 1995; Katon et al., 1999; Mynors-Wallis et al., 1995; Schoenbaum et al., 2001; Simon et al., 2004; Unutzer et al., 2002; Wells et al., 2000). The persistent finding demonstrates that care management supplemented by structured psychotherapy is the comprehensive care model for management of depression in primary care setting and outpatient department of psychiatry in hospitals. In addition, the results also suggested that structured psychotherapy provided by psychologist or mental health nurse contributed to similar effect. The role of nurses in caring for outpatients can include the provider of psychotherapy in addition to disseminating medical and care information about depression and monitoring depressed symptoms and medication. Gournay, (2000) and White (2004) also emphasized the need to have nurses' role more comprehensive. The extended roles in nursing care can help to deal with busy practices at outpatient department and primary care setting since depression becomes the common disease in health care setting.

No patient admitting to hospitals for depression was reported in this study. In addition, only one patient used emergency services for once only. The findings suggested that crisis assessments and interventions, and links with crisis and support services might effectively prevent patients from admission to hospitals and might

influence them to use less emergency service. The effectiveness of the follow-up programs designed for this study may illustrate that it may be a good outreach service that nurses can provide out of office service and allow patients to call in when they need help.

The previous studies (Araya et al., 2003; Hunkeler et al., 2000; Simon et al., 2004; Unutzer et al., 2002) focused on examining the effectiveness of treatment modalities of follow-up programs: telephone follow-up, telephone psychotherapy, in-person psychotherapy or group psychotherapy. The results suggested establishing one of these treatment modalities in primary care setting was effective to improve quality of care. Comparing the modalities of telephone and group follow-up programs which was not examined before was the focus of this study. The results revealed that follow-up program provided via telephone or group interventions appeared to have similar effects. The findings suggested the primary care model including both modalities of treatment delivery could be established to provide care for patients with different needs.

The results of this study indicated that over 70% patients in GTP program completed all scheduled outpatient appointments with psychiatrists compared with only 3% patients regularly seeing their doctors at all appointments. The findings suggested that group sharing the experiences of receiving treatments from doctors among patients with therapists might increase patients' motivation to see doctors regularly. The reason mentioned often by patients in TCP not seeing doctors regularly was because they thought stress was main cause of their illness and medication prescribed by psychiatrists could not help with it much. Patients in GTP reported that having conditions to be monitored by doctors was as important as by nurses.

Conclusion

The small sample size of the present study may influence to demonstrate the results of comparison of two groups. In addition, because the research design does not include control group the results cannot illustrate effects of mental health nurse follow-up program comparing usual care without nurses' follow-up. The outcomes were evaluated at baseline (pre-treatment) and post treatment after 3-month interventions. Therefore, it is not known about if the effects would be maintained at the follow-up. Nevertheless, this preliminary study contributes to providing information about the impacts of mental health nurse follow-up program on improving clinical outcomes and quality of life. The similar effects of telephone-counseling and group therapy follow-up programs demonstrates that to establish both formats of follow-up programs in primary care setting could benefit more patients with different needs. The study's implication for nursing practice relates to the need of implementing mental

health nurse follow-up program combined care management and psychotherapy to address on busy primary care physician practices. Further studies need to emphasize the limitation highlighted in this study and to include a bigger sample, control group, measurement of maintaining effects and cost-effectiveness analysis.

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