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Evaluation of assertiveness training for psychiatric patients

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Aim and objectives. To investigate the effectiveness of assertiveness training programmes on psychiatric patients' assertiveness, self-esteem and social anxiety.

Background. Assertiveness training programmes are designed to improve an individual's assertive beliefs and behaviours, which can help the individual change how they view themselves and establish self-confidence and social anxiety. It is useful for patients with depression, depressive phase of bipolar disorder, anxiety disorder or adjustment disorder.

Design. Experimental.

Method. There were 68 subjects (28, experimental group; 40, diagnosis-matched comparison group). Subjects in experimental groups participated in experimenter-designed assertiveness training twice a week (two hours each) for four weeks. The comparison groups participated the usual activities. Data were collected in the two groups at the same time: before, after and one month after training programme. Efficacy was measured by assertiveness, self-esteem and social anxiety inventories. A generalised estimating equation was used for analysis.

Results. After training, subjects had a significant increase in assertiveness immediately after the assertiveness training programme and one-month follow-up. There was a significant decrease in social anxiety after training, but the improvement was not significant after one month. Self-esteem did not increase significantly after training.

Conclusion. With our sample of patients with mixed diagnoses, assertiveness seemed to be improved after assertiveness training.

Relevance to clinical practice. Patients would benefit more from the assertiveness training programme for the change in how they view themselves, improve their assertiveness, properly express their individual moods and thoughts and further establish self-confidence. The assertiveness training protocol could be provided as a reference guide to clinical nurses.

Key words: assertiveness, assertiveness training group, mental health, nurses, nursing, self-esteem, social anxiety

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Introduction

Assertiveness training can aid individuals including patients with psychiatric disorders by improving self-understanding, building confidence and improving social interaction abilities (Alberti & Emmons 2001, Hou *et al.* 2004). Training typically focuses on the relatively complex interpersonal interactions of daily life. Most researchers have approached

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development of such training programmes from the basic response situations of refusal, request and expression (Aschen 1997, Alberti & Emmons 2001).

In prior work with psychiatric patients in outpatient or day-care settings, empirical studies related to effects of assertiveness training on assertiveness included patients with alcohol abuse, early-onset psychiatric disease, schizophrenia and personality or affective disorders (Clark *et al.* 1984, Brown & Carmichael 1992, Pfost *et al.* 1992, Perczel & Tringer 1998, Weinhardt *et al.* 1998). These studies showed a significant increase in assertiveness post-training for psychiatric patients in outpatient. Assertiveness training has also been shown to improve self-esteem among psychiatric patients. The influence of assertiveness training on social anxiety has also been examined; training was found to decrease anxiety and improve social functioning. Most post-training testing was done immediately after completion of training (Temple & Robson 1991, Brown & Carmichael 1992, Shiina *et al.* 2005). However, outcome studies have not shown consistently that assertiveness training increases patients' self-esteem and assertiveness in acute psychiatric setting (Rosenheck & Dennis 2001, Fiander *et al.* 2003, Killaspy *et al.* 2006). The gap in the literature this study aims to overcome was: (1) there were some limits in the design of past clinical studies, i.e. limited studies designed follow-up measurement after assertiveness training (Aschen 1997, Shiina *et al.* 2005); (2) factors that can influence assertiveness training, such as gender, personality and diagnosis were not controlled and modulated during statistically analysed processes and (3) designed to understand the effectiveness of assertiveness training for psychiatric patients in an Eastern culture. In this study, these limits were considered when designing assertiveness training for psychiatric patients. The effect of assertiveness training on psychiatric patients was compared between an experimental and comparison group. Measurements were taken at pretreatment, intratreatment, posttreatment and follow-up and the generalised estimating equation (GEE) mode of potentially influencing factors was applied to control the factors simultaneously in assertiveness training for data analysis.

Our research group has previously demonstrated significant efficacy in application of assertiveness training for nursing and medical students (Lin *et al.* 2004). The objective of the current study was to extend assertiveness training as we have previously applied it to patients in an acute care setting for a psychiatric disorder to evaluate whether such an intervention could improve assertiveness and self-esteem and decrease social anxiety. Three outcomes of assertiveness variables were chosen due to previous established findings in Chinese population (Lin *et al.* 2004).

Literature review

Assertiveness training

The conceptual definition of assertiveness training is aimed to help the individual change their self-perception, to increase the individual's assertiveness, to express the individual's emotions and thoughts adequately and to build self-confidence further (Aschen 1997, Alberti & Emmons 2001). Commonly used strategies include teaching, demonstration, feedback, role-play, coaching, reinforcement, homework, group discussions, relaxation exercises and self-directed learning. Researchers have suggested that a group approach to assertiveness training is more effective than an individual approach (Lange & Jakubowski 1976). During group training, participants can practice assertive behaviours with other group members and, when other group members contribute their reasons for accepting assertive rights or contribute how they express assertive rights, members of the group are more likely to accept assertive rights.

The content of assertiveness training groups includes two major components: behavioural rehearsal and cognitive rehearsal. Behavioural rehearsal can be further divided into setting effective situational goals, definitive refusals, definitive requests, expressing emotions, definitive expression, defensive techniques and empathy for others and revising assertiveness techniques. Cognitive rehearsal includes self-depreciation and self-defence descriptions, confirming and modifying self-speech, contingency reasoning, thought modification, thought transformation, thought pause, review of cognitive techniques, awareness of commonly used models and transferal and continuation of change (Alberti & Emmons 2001).

Evidence of assertiveness training in psychiatric patients

Assertiveness training is widely applicable because it covers many subjects from different age groups and its efficacy has been repeatedly verified. Previous studies used self-report standardised questionnaire to assess the perceived assertiveness. In terms of training effects, those which have been validated include increased assertiveness (Perczel & Tringer 1998), increased self-esteem (Brown & Carmichael 1992), increased self-concept (Franzke 1987) and decreased social anxiety (Olivares & Garcia 2001). Descriptive summaries focusing on the efficacies of applied assertiveness training in psychiatric patients are given below.

The empirical studies demonstrated an increase in assertiveness with assertiveness training. These studies' subjects included alcohol abuse patients, early-onset psychiatric patients, schizophrenia patients and patients with personality

or affective disorders. The number of assertiveness training sessions applied were ~6–11 times, the lengths of which were approximately 1–2 hours. Previous study results showed that there was a significant increase in assertiveness at posttest (Cianni & Horan 1990, Gordon & Waldo 1984, Korsgaard *et al.* 1998). Also, in 1998 Weinhardt *et al.* conducted follow-up testing at two and six months, the efficacies of which were both significant (Clark *et al.* 1984, Brown & Carmichael 1992, Pfost *et al.* 1992, Perczel & Tringer 1998, Weinhardt *et al.* 1998).

Previous study results also showed an increase in self-esteem with assertive training programme intervention. A lack of assertiveness correlated very significantly with low self-esteem. Many patients lack a true estimate of what they should claim for themselves in society and in personal relationships. Low self-esteem is linked with maladaptive behaviour. Assertiveness training involves the practice of new skills and focuses on the development of new attitudes toward the self (Temple & Robson 1991, Brown & Carmichael 1992, Shiina *et al.* 2005).

Literature review also showed a decrease in anxiety and improved social functioning. Assertiveness training has been shown to increase social skill and social problem solving. Although the majority of findings have suggest that assertiveness training improved patients' social anxiety, the absence of follow-up data limited the conclusions from these studies (Aschen 1997, Shiina *et al.* 2005).

In summary, assertiveness training is skills of interaction that use verbal and non-verbal learning behaviours under different circumstances so that the psychiatric patients can be accepted by society. Patients are repeatedly instructed in advancing assertiveness, self-esteem and social anxiety through explanation, exemplification, role-play, feedback and social enhancement and homework exercises.

Methods

Study design

This was a quasi-experimental study and was conducted between January–December 2005. The study was conducted in an acute psychiatric ward of a military hospital in Taiwan. Study proposal was approved by the institutional ethics committee and informed consent was obtained from each individual prior to participation in the data collection.

Study subjects

Prior to the intervention programme, information for all potential subjects included basic individual information, personality characteristic scale results, assertiveness scale results and willingness to participate in assertiveness training were collected from inpatients diagnosed with depression, depressive phase of bipolar depression, anxiety disorder or adjustment disorder within one week of admission. The diagnostic criteria were established according to the American Psychiatric Association *Diagnostic and Statistic Manual of Mental Disorders*, 4th revised (DSM-IV, American Psychiatric Association 1994) by two psychiatrists. A total of 229 valid questionnaires was collected. A total of 119 patients with assertiveness scores lower than the 50th percentile (≤116; i.e. regarded as having low assertiveness) was qualified for the study. Ninety-two subjects were willing to participate in the study. Scoring of individual personality characteristics formed a normal distribution with use of the Kolmogorov–Smirnov test for normality ($F = 0{\cdot}072$, $p = 0{\cdot}06$). The influences of personality characteristics on assertiveness were analysed by parametric statistical methods. Using ANOVA testing, both the influences of neuroticism-stability and extraversion–introversion on assertiveness were significant ($F = 182{\cdot}019$, $p = 0{\cdot}001$). Therefore, personality characteristics were controlled for in further GEE inferential statistics.

There were two inclusion criteria for eligible adults (i.e. inpatients at our institution receiving acute care for a psychiatric condition). Firstly, the patient understood the study aims as verbally explained and consented to participation and, secondly, the patient was diagnosed with depression, depressive phase of bipolar disorder, anxiety disorder or adjustment disorder. Patients with schizophrenia, organic psychiatric disorders or personality disorders were excluded to eliminate diagnoses that may produce acute psychiatric exacerbations, behavioural disturbances or interferences with group function. Patients were allocated to the experimental or comparison group and the comparison group was matched with the experimental group based on diagnosis. The sample size was calculated with medium effect size and power at 0·80 (Cohen 1988). Forty patients began assertiveness training (experimental group), 28 participated in four or more sessions. The remaining 12 patients were lost due to early discharge and inability to participate in the group at least four or more times. There were 40 diagnosis-matched patients in the comparison group. Within the experimental group, there were 5–8 patients in each sub-group and each sub-group participated in eight assertiveness training sessions, with sessions conducted twice per week for two hours each. All patients were monitored for their psychiatric sign and symptoms by on-site clinical psychiatrists from pretreatment to the eighth week of therapy and one month follow to follow the psychiatric status between experimental and comparison groups.

The contents of the eight sessions were standardised by the use of a manual as follows: (1) introduction to the concepts of assertiveness theory, understanding and classification of assertive behaviours; (2) clarification and recognition of basic individual rights; (3) developing and enhancing listening skills and questioning behaviour; (4) define self-esteem and how it related to assertiveness; (5) facing criticism and expressing dissatisfaction; (6) the art of refusal, definitive requests; (7) practicing assertiveness techniques including assertive non-verbal communication and (8) the giving and receiving of praise and empathy training) (Lin *et al.* 2004). Specific intervention used in this study included teaching, demonstration, feedback, role-play, coaching, reinforcement, homework, group discussions and self-directed learning. The group therapist was an experienced psychiatric nurse at a medical centre with a Masters degree and years of experience in leading assertiveness training group. She had nine years of experience working as a group leader in both inpatient and outpatient settings. The professional group leader had strong knowledge of the approaches to handle the topics. The *Assertiveness Training Programme Manuals* is developed by Lin *et al.* (2004). The purpose of this manual is to maintain the consistency between treatment groups.

Testing with the assertiveness scale, self-esteem scale (SES) and social anxiety scale (SAS) was conducted immediately after each session finished for both patient groups, experimental and comparison (see Study tools section). Follow-up tests were conducted one month after the last session for both groups to collect the short-term effect of the intervention. Before assertiveness training began, SES results and SAS results were collected in the two groups at the same time. The researcher also explained the purpose of assertiveness training programme. All patients signed informed consent forms before joining the study. The members in the comparison groups were offered the intervention after the study.

Study tools

Personality characteristics scale

In this study, personality characteristics were represented by the Maudsley Personality Inventory, a bi-dimensional testing scale established by Eysenck in 1959 (Eysenck 1959). It has a total of 57 questions divided into three parts: neuroticism-stability (N scale, 24 questions), extraversion–introversion (E scale, 24 questions) and lie detection (L scale, nine questions). This is a self-completed true/false questionnaire, with two points awarded for each 'yes' answer and zero points for each 'no' answer. The maximum score was 48 points and the minimum score was zero points. A higher score on the N scale indicated a higher neurotic tendency, that is, a greater likelihood to develop anxiety or depression. A higher score on the E scale indicated a higher extroversion tendency, that is, a greater likelihood to be impetuous, constructive, optimistic and fond of socialising. This personality scale has a high reliability (split-half reliability) and has been shown to have construct validity (Lawrence 1980/1995). Lee *et al.* (1980) showed that test–retest reliability is 0·80–0·90 for the N scale and 0·57–0·81 for the E scale; internal scale consistency (Cronbach's α) is 0·86 for the N-scale and 0·78 for the E scale.

Assertiveness scale

Assertiveness is based on the individual's living attitude scale. The scale referred to Rathus' Assertive Scale (Rathus 1973), applying six-point Likert scale to answer, requiring subjects to select among coincidence degrees of situations – depicted according to question content – with their present situation. The higher the score, the higher the assertive ability was. The internal consistency reliability expressed as Cronbach α was 0·68 and Cronbach α coefficient of the three factors (emotion expression, refuse and requirement) was 0·81, 0·83 and 0·77, respectively. The reassessment reliability 10 months later was 0·63 and Cronbach α coefficient of three factors (emotion expression, refuse and requirement) was 0·55, 0·79 and 0·70, respectively.

Self-esteem scale

Self-esteem was represented by the SES, originally devised in 1965 during Rosenberg's studies on self-worth and self-acceptance in adolescents (Rosenberg 1965). The SES contains 10 items and uses a Likert four-point scale for scoring. Total score ranges between 10–40 points, with a higher score indicating higher self-esteem and a lower score indicating lower self-esteem. The two-week test–retest reliability of the SES is 0·85 and internal consistency with Cronbach's α coefficient is 0·88. The concurrent validity of Rosenberg's scale and Lerner's SES is 0·72 (Savinwilliams & Jaquish 1981). The Rosenberg SES has also been shown to have higher discriminant validity (Fleming & Courtney 1984, Reynolds 1988).

Social anxiety scale

Social anxiety in this study was measured by the SAS devised by Leary. The SAS is a five-point Likert scale and contained 15 items. Total score ranges between 15–75 points, with a higher score indicating higher social anxiety and a lower score indicating less anxiety. The eight-week test–retest reliability is 0·80, with an internal consistency Cronbach's α coefficient of 0·87. In terms of convergent validity, the SAS shows a high correlation with other social anxiety and

shyness scales ($r > 0{\cdot}60$) (Jones *et al.* 1986, Leary & Kowalski 1987).

Data processing and analysis

After questionnaire collection, SPSS12·0 and SAS8·2 statistical software were used for data filing and analysis. GEE analysed by SAS PROC GENMOD were used to examine separately the prognostic factors affecting post-training assertiveness, self-esteem and social anxiety.

Results

Basic analysis of baseline data

For descriptive statistics analysing group assertiveness training, basic information for the experimental and comparison groups were as follows: Because the hospital was a military institution, the majority of inpatients were male. Both the experimental and comparison groups were exclusively male, with 28 patients each; in terms of diagnosis, 12 of the 28 patients in the experimental group had an adjustment disorder. The diagnoses of comparison group members were paired with the diagnoses of the experimental group; 24 of 28 patients in the experimental group had high neuroticism as a personality characteristic. Twenty-three patients had an introverted personality. In the comparison group, 39 of 40 patients had high neuroticism and 34 of 40 patients had an introverted personality (Table 1). Analysis of baseline statistics showed that there were no significant differences between groups in assertiveness [Exp. Group: Mean (SD) = 105·86 (23·80); Comparison Group: Mean (SD) = 109·55 (22·20); $t = -1{\cdot}33$, $p = 0{\cdot}194$], self-esteem [Exp. Group: Mean (SD) = 21·43 (5·59); Comparison Group: Mean (SD) = 21·20 (5·30); $t = -0{\cdot}359$, $p = 0{\cdot}722$] and social anxiety [Exp. Group: Mean (SD) = 54·04 (8·08); Comparison Group: Mean (SD) = 53·75 (8·09); $t = -1{\cdot}09$, $p = 0{\cdot}285$] (Table 1).

Table 1 Descriptive statistics data of experimental and comparison groups

	Experimental group ($n = 28$)	Comparison group ($n = 40$)
Diagnosis		
Depression	7	10
Depressive phase of bipolar disorder	4	4
Anxiety disorder	5	7
Adjustment disorder	12	19
Sex		
Male	28	40
Female	0	0
Age (mean/SD)	22·03	22·35
Education		
Elementary school	0	1
Junior high school	2	6
Senior high school	14	20
University school	12	13
Assertiveness (mean/SD)		
Pretest	105·86/23·80	109·55/22·20
Posttest	129·61/26·88	111·93/24·13
Follow-up test	124·54/23·42	113·23/22·08
Self-esteem (mean/SD)		
Pretest (mean/SD)	21·43/5·59	21·20/5·30
Posttest (mean/SD)	23·18/5·37	21·78/4·67
Follow-up test (mean/SD)	22·75/4·87	22·48/5·31
Social anxiety (mean/SD)		
Pretest	54·04/8·08	53·75/8·09
Posttest	44·29/7·92	50·60/9·91
Follow-up test	45·11/8·53	49·60/9·49

Inferential statistics

The related GEE was used to analyse the assertiveness, self-esteem and social anxiety of the experimental and comparison groups controlling for group designation, personality characteristics, time and group by time interactions. The GEE model was $Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \cdots + \beta_j X_j$ [when $i = 1$, Y was 'assertiveness scale total score'; when $i = 2$, Y was 'SES total score'; when $i = 3$, Y was 'SAS total score'; X_1 = group designation; X_2 = personality characteristic (neuroticism-stability); X_3 = personality characteristic (extraversion–introversion); X_4 = time, X_5 = group by time interactions; X_j = hidden influencing factors of assertiveness training].

Assertiveness

After controlling for possible confounding variables, group designation, personality characteristics and time and group by time interactions, assertiveness posttest scores of experimental group members were higher than those of comparison group members by 21·37 points ($Z = 5{\cdot}09$, $p < 0{\cdot}001$; Table 2). The positive effects on assertiveness were maintained through posttest to one-month follow-up testing, with analysis revealing a gradually increasing trend toward more assertiveness. Assertiveness follow-up scores of experimental group members were higher than those of comparison group members for 15·00 points [Exp. Group: Mean (SD) = 124·54 (23·42); Comparison Group: Mean (SD) = 113·23 (22·08); $Z = 3{\cdot}83$–$5{\cdot}09$, $p < 0{\cdot}001$; Table 2; Fig. 1].

Self-esteem

After controlling for potential confounding variables, group designation, personality characteristics and time and group

Table 2 Generalised estimating equation (GEE) analysis of longitudinal outcome variables: assertiveness, self-esteem and social anxiety ($n = 56$)

Variable	Estimate	SE	Z-value	p-value
Assertiveness				
Intercept	109·55	3·46	31·60	0·0001§
Group(Exp.)*	−3·69	5·61	−0·66	0·5107
Time (2nd)†	2·37	2·07	1·14	0·25
Time (3rd)†	3·67	1·29	2·84	0·0046
Group(Exp.) × time (2nd)‡	21·37	4·20	5·09	0·0001§
Group(Exp.) × time (3rd)‡	15·00	3·91	3·83	0·0001§
Self-esteem				
Intercept	21·20	0·82	25·61	0·0001§
Group(Exp.)*	−0·37	1·23	−0·25	0·83
Time (2nd)†	0·57	0·66	0·86	0·39
Time (3rd)†	1·27	0·52	2·43	0·015
Group(Exp.) × time (2nd)‡	1·71	1·28	1·33	0·18
Group(Exp.) × time (3rd)‡	0·58	1·16	0·50	0·61
Social anxiety				
Intercept	53·75	1·26	42·55	0·0001§
Group(Exp.)*	0·28	1·96	0·15	0·88
Time (2nd)†	−3·15	0·96	−3·27	0·0011
Time (3rd)†	−4·15	1·11	−3·71	0·0002
Group(Exp.) × time (2nd)‡	−6·60	1·58	−4·16	0·0001§
Group(Exp.) × time (3rd)‡	−4·77	1·66	−2·87	0·0041

*Reference group: comparison group.
†Reference group:Time (1st).
‡Reference group: Group (Comparison) × Time (1st).
§$p < 0·0001$.

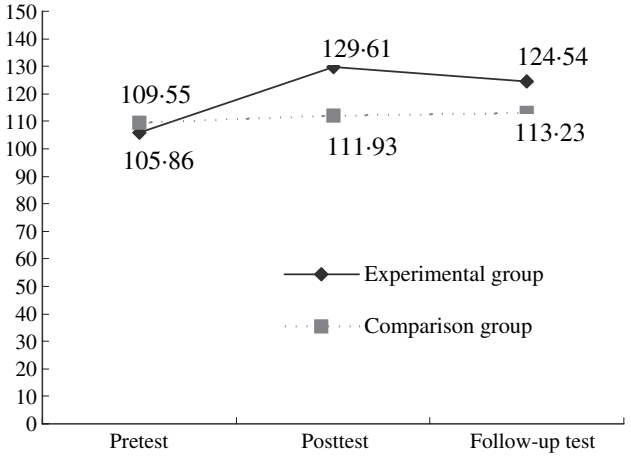

Figure 1 Changes in assertiveness in the experimental group and comparison group at pretest, posttest and follow-up test.

by time interactions, self-esteem posttest scores of experimental group members were higher than those of comparison group members by 1·71 points ($Z = 1·33$, $p = 0·18$; Table 2). Effects of assertiveness training on self-esteem were not maintained through follow-up testing. Self-esteem at follow-up scores of experimental group members were higher than those of comparison group members by only 0·58 points [Exp. Group: Mean (SD) = 22·75 (4·87); Comparison Group: Mean (SD) = 22·48 (5·31); $Z = 0·50$, $p = 0·61$, Table 2].

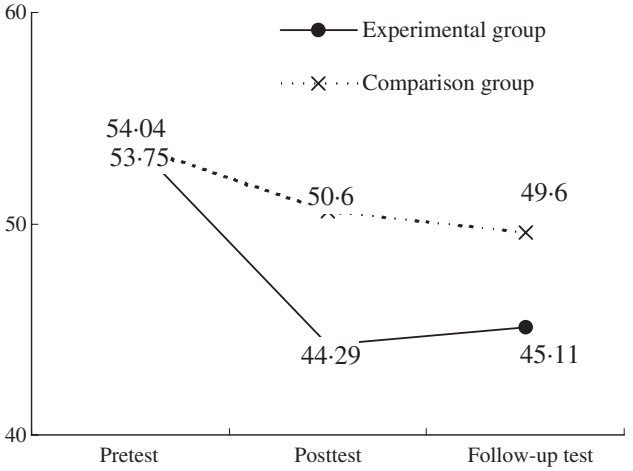

Figure 2 Changes in social anxiety in the experimental group and comparison group at pretest, posttest and follow-up test.

Social anxiety

Finally, after controlling for group designation, personality characteristics, time and group by time interactions, posttest social anxiety scores of experimental group members were lower than those of comparison group members by 6·60 points ($Z = −4·16$, $p < 0·001$; Table 2). There was a non-significant trend toward decreased social anxiety through one-month follow-up testing. Social anxiety follow-up scores of experimental group members were lower than those of comparison group members by 4·77 points [Exp. Group: Mean (SD) = 45·11 (8·53); Comparison Group: Mean (SD) = 49·60 (9·49); $Z = −2·87$, $p < 0·01$; Table 2; Fig. 2].

Discussion

Efficacy of assertiveness training on assertiveness

After use of the GEE with appropriate controls to examine the influence of assertiveness training on assertiveness, we found that scores for members of the experimental group showed a significant increasing trend at posttest and one-month follow-up test, trends that were not observed in the comparison group. This is consistent with results obtained by other researchers (Clark *et al.* 1984, Brown & Carmichael 1992, Pfost *et al.* 1992, Perczel & Tringer 1998, Weinhardt *et al.* 1998). A 2004 study (Lin *et al.* 2004) in which

assertiveness training was given to university students with low or moderate assertiveness found an assertiveness pretest score of 109·55 points compared with posttest score of 111·93 points and follow-up score of 113·23 points. In the current study, the pretest score of the experimental group was 105·86 points, with a posttest score of 129·61 points and follow-up score of 124·54 points. Hence, we conclude that assertiveness can be effectively increased equally for psychiatric patients as well as for university students with similar baseline personality characteristics.

There are several possible reasons for the increased assertiveness observed after group training in this study. Briefly, the assertiveness training programme as a whole aided participants in understanding the concepts of assertiveness (such as understanding and classification of assertive behaviours and clarification and recognition of individual rights) and the benefits of practical application Through regular role-play practice and constant guidance and encouragement from the researchers, participants could suitably express internal thoughts and emotions that they indicated they had been afraid to express in the past. The group provided an opportunity for sharing and discussion among participants, facilitated interaction between participants and provided opportunities to evaluate relationships between the individual and the rest of the group, which enhanced participants' learning in affirming the assertiveness of oneself and others. Both researchers and group participants provided positive feedback during the sessions and for 10 minutes before the end of each session. This aided the participants in reinforcing their assertive behaviour performances. At the conclusion of each session, researchers wrote feedback letters for participants, aiding their self-understanding and improving the cohesiveness of participants with researchers and the group. The researchers had prior experience in patient care and this may have enhanced the sense of the trust and security felt by participants as they learned assertive behaviours. After the final session, researchers contacted participants by phone to encourage them to review notes and homework provided by the programme to reinforce assertive behaviour concepts and aid future application.

Efficacy of assertiveness training on self-esteem

In contrast to the results for assertiveness, the differences in self-esteem between the experimental and comparison group at posttest and follow-up test did not reach significance. This result differs from those obtained by some previous researchers (Temple & Robson 1991, Brown & Carmichael 1992, Shiina *et al.* 2005).

Shiina *et al.* (2005) applied cognitive–behaviour therapy in conjunction with assertiveness training to bulimic patients obtained a self-esteem pretest score of 21·20 points compared with a posttest score of 21·78 points ($p = 0·02$). For our study, the self-esteem pretest score was 21·43 points and the posttest score was 23·18 points. Some possible reasons for the inability of assertiveness training to improve self-esteem were identified. Rogers stated that an individual's self includes two concepts, the realistic self and the ideal self (Rogers 1981). The closer the realistic self is to the ideal self, the higher the self-esteem. Many factors influence self-esteem including social self-esteem, academic performance self-esteem, family self-esteem and body image self-esteem (Pope *et al.* 1998). This finding suggests that newly acquired assertive skills did not modify established self-esteem. To improve the internal and external validity of the study further, several aspects need to be addressed in future. Firstly, further research is needed to examine the effectiveness on different aspects of self-esteem such as social self-esteem, academic performance self-esteem, family self-esteem and body image self-esteem. Self-esteem also represents perceptions over time. Participants in the assertiveness training group certainly acquired several techniques for raising self-esteem, but it is unknown how long it might take to assimilate techniques in developing affirmation of self-worth. Therefore, effects might not yet have developed in the short-term time frame of our testing. Moreover, there are probably particular blocks to improved self-esteem for the majority of psychiatric patients, who have experienced setbacks, failures and rejection before hospital admission, resulting in a chronic distortion of self-worth. Secondly, the eight-session programme may well have been insufficient to promote a significant increase in self-esteem; future designs should consider increases in number and length. In terms of content for future programmes, social self-esteem, academic performance self-esteem, family self-esteem and body image self-esteem may need to be individually included. Thirdly, the random allocation of subjects into experimental or comparison groups could also decrease the threats such as novelty effects to external validity of the study.

Efficacy of assertiveness training on social anxiety

After concurrent control for group designation, personality characteristics, measurement time and group by time interactions, differences in social anxiety between the experimental and comparison groups at posttest reached significance. This result is consistent with study results obtained by other researchers (Aschen 1997, Shiina *et al.* 2005). However, the positive effect did not extend through to the one-month follow-up testing.

Some possible reasons for the posttest improvement in social anxiety include the influence of improved assertiveness.

With an increase in self-affirmation, there may have been a concurrent relative reduction in social anxiety resulting from originally unfamiliar interpersonal relationships. Furthermore, by sharing experiences with each other, participants could express their view on many issues including facing criticism and expressing dissatisfaction, definitive refusal, definitive requests and giving and receiving praise. Additionally, they could realise that others had also undergone similar ordeals in the past, leading to reorganisation of their internal experiences and reduction in social anxiety. Through regular role-play work, participants could practice organisational skills in self-expression. The regular practice may have made participants feel more at ease in expressing themselves and in interacting with others, reducing social anxiety. Additionally, each session had a specific theme and researchers organised warm-up activities to relieve tension and facilitate involvement of participants in the main theme. Therefore, participants were more capable of avoiding awkward situations and interacting with each other effectively to conquer internal anxiety. By giving each other feedback, members received encouragement from others with psychiatric conditions similar to their own, which also may have reduced social anxiety. Participant interaction was also fostered at the conclusion of each session, when researchers encouraged members to discuss homework and express thoughts about programme participation in small groups.

We were also able to identify some possible reasons for the inability of improvement to be sustained through follow-up testing. Because assertiveness training as a basis for positive interpersonal interactions was created by researchers and medical teams, a regularly professionally trained programme is needed to patients after discharge when they returned to the normal social environment. The majority of patients after discharge chose to stay home to rest, which resulted in a lack of social interactions. Finally, some patients were concerned about the opinions of others at work regarding their medical condition. Therefore, they would have appeared to be more withdrawn in interactions with others in the postdischarge environment and they may have been more likely to choose avoidance as a defence strategy.

Future research should consider increasing the number of assertiveness training sessions and increasing the time per session and between sessions to discuss homework with other participants. Another possibility is to organise participants into small groups, which could increase homework discussion with each other in their own time, improve cohesiveness and encourage patients to form support groups after discharge to enhance social interactions. The limitations of our study include that it was almost completely restricted to patients from a medical centre clinic. This can limit the generalisability of the findings to other populations of psychiatric patients. The external validity is considerably less generalisable to the general outpatient psychiatric medical clinics. Therefore, it is suggested that future research can apply this protocol to different levels of psychiatric hospitals and expand the protocol in order that different clinics of psychiatric patients can use this protocol in general.

Conclusion

A further limitation of our study was that it was almost completely restricted to limited non-randomisation (matched) group design. This can limit the generalisability of the findings to other populations of psychiatric patients. However, aassertiveness training resulted in significant differences in assertiveness at both posttest and one-month follow-up. This shows that assertiveness of experimental group members increased significantly after receiving assertiveness training. In contrast, differences in self-esteem at posttest and one-month follow-up were not significant. Social anxiety at posttest was significantly lower than pretest; however, significance was lost by the one-month follow-up test. Both the positive and negative correlations between assertiveness training in our group setting and changes in assertiveness, self-esteem and social anxiety for patients with psychiatric disorders are helpful in designing future interventions. Establishing assertiveness skills for patients with mental illness is of particular interest to the psychiatric nursing. Findings of this study may prove to be useful guide for psychiatric nurses in the clinical practice.

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Contributions

Study design: YRL, KRC; data collection: YRL, MHW, CIY, THC, CCH, WCT, YHC, KRC; data analysis: YCC and manuscript preparation: YRL, KRC.

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