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Regular Article

Randomized study of school-based intensive interpersonal psychotherapy for depressed adolescents with suicidal risk and parasuicide behaviors

Tze-Chun Tang, MD, PhD,[1] Shaw-Hwa Jou, MD, MS,[2] Chih-Hung Ko, MD,[1] Shih-Yin Huang, MS[3] and Cheng-Fang Yen, MD, PhD[1,4]*

[1]*Department of Psychiatry, Kaohsiung Medical University Hospital, Kaohsiung Medical University,* [2]*Department of Psychiatry, Changhua Christian Hospital,* [3]*Division of Student Counseling, Office of Student Affairs, Kaohsiung Medical University and* [4]*Department of Psychiatry, Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Taiwan*

Aim: The aim of the present study was to examine the intervention effects of intensive interpersonal psychotherapy for depressed adolescents with suicidal risk (IPT-A-IN) by comparison with treatment as usual (TAU) at schools.

Methods: A total of 347 students from one-fifth of the classes of a high school in southern Taiwan completed the Beck Depression Inventory-II, the Beck Scale for Suicide Ideation, the Beck Anxiety Inventory and the Beck Hopelessness Scale for screening for suicidal risk. Of them, 73 depressed students who had suicidal risk on screening were randomly assigned to the IPT-A-IN or TAU group. Analysis of covariance (ANCOVA) was performed to examine the effect of IPT-A-IN on reducing the severity of depression, suicidal ideation, anxiety and hopelessness.

Results: Using the pre-intervention scores as covariates, the IPT-A-IN group had lower post-intervention severity of depression, suicidal ideation, anxiety and hopelessness than the TAU group.

Conclusion: Intensive school-based IPT-A-IN is effective in reducing the severity of depression, suicidal ideation, anxiety and hopelessness in depressed adolescents with suicidal risk.

Key words: adolescents, depression, interpersonal psychotherapy, school-based intervention, suicidality.

DEPRESSION AND SELF-HARM behaviors in adolescents have increased in the past decade in Taiwan. Suicide even ranked as the second leading cause of death in Taiwan for people aged 15–24, second to accidents.[1] It is worth noting that many depressed adolescents are untreated[2] and many refused to be treated in hospitals.[3] Therefore, school-based interventions are needed to meet the community's needs.[4,5]

Interpersonal psychotherapy (IPT) is a newly developed treatment model. IPT was defined by Klerman *et al.*[5] and further developed by Weissman *et al.*[6,7] IPT mainly helps patients with major depressive disorder to ameliorate depressive symptoms by adjusting interpersonal relationships. The basic procedures of IPT start with identifying target symptoms, understanding interpersonal problems and linking psychological symptoms to interpersonal problems. This concept can also be used to target psychological symptoms involving suicide and depression. The effectiveness of IPT, a type of time-limited therapy that focuses mainly on current interpersonal issues, on depression has been verified.[6,8] The study by Mufson *et al.* modified the IPT and applied it in adolescents with depression.[9] By using several instruments to evaluate the severity of depression, they reported that depressed adolescents who received school-based interpersonal psychotherapy for

**Correspondence: Cheng-Fang Yen, MD, PhD, Department of Psychiatry, Kaohsiung Medical University Hospital, No. 100, Tzyou 1st Road, Kaohsiung 807, Taiwan. Email: chfaye@cc.kmu.edu.tw*
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adolescents (IPT-A) had significantly lower depressive symptoms and better subsequent social adjustment functions than those receiving treatment as usual (TAU).[9] Hence, school-based IPT-A is proposed to be an effective therapy model in community settings.

Although Mufson *et al.* found that IPT-A was superior to TAU,[9] there are still some issues regarding IPT-A treatment for adolescents in the community setting that need further examination. First, few studies have examined the effects of IPT-A on suicidal risk in depressed adolescents.[10] Second, in the original IPT-A program, the intervention period lasted 12 weeks. But adolescents with suicidal risk need instant effective treatment to resolve their suicidal ideations and behaviors; therefore a long treatment program might increase adolescents' reluctance to stay in treatment.[8,11] Intensiveness with shorter duration of treatment would be one of the alternatives to classic therapy design (e.g. from once a week in 12 weeks to twice a week in 6 weeks). Third, except for the modified IPT developed,[9] the original IPT-A was designed primarily for depressed adolescents who were referred to hospital units. But the treatment design should take into consideration those adolescents who do not meet referral criteria, are not ready to visit hospitals for regular treatments,[12] and who are still on waiting list for treatment. Thus, a modified, short-term IPT-A has been developed to provide immediate intervention for depressed adolescents with suicidal risk in community settings, and the purpose of the present study was therefore to examine its effects on reducing the severity of depression and suicidal risks.

The Program of Intensive Interpersonal Psychotherapy for depressed adolescents with suicidal risk (IPT-A-IN) was introduced in a high school in Kaohsiung City, Taiwan in 2005. The primary goal of this school-based intervention program is to reduce the severity of depression and suicidal risk of adolescents who were detected on screening in school samples. IPT-A-IN is delivered by well-trained school counselors. In the present case–control study the effect of IPT-A-IN on reducing the severity of depression, suicidal ideation, anxiety and hopelessness in depressed adolescents with suicidal risk was compared with that of TAU in schools. We hypothesized that by setting target symptoms as suicidal ideation/attempt and linking this to interpersonal problems, IPT-A-IN would be more effective than TAU for depressed adolescents with suicidal risk screened in a school-based population.

METHODS

Subjects

The samples consisted of adolescents aged 12–18 years who were recruited from a high school, which consisted of a junior and a senior school, located in Kaohsiung City in southern Taiwan. This school cooperated with the department of psychiatry of a medical center to manage students' psychological disturbance. At the beginning of every semester, the students of this school completed self-report questionnaires for depression and suicidal risk.

There were 1826 students in this high school in September 2005. One-fifth of the classes from every level in the whole school were randomly selected and the students in these classes ($n = 347$) were recruited into the study. In the present study we used the Chinese versions of Beck Depression Inventory-II (BDI-II),[13–15] the Beck Scale for Suicide Ideation (BSS),[16,17] the Beck Anxiety Inventory (BAI),[18,19] and the Beck Hopelessness Scale (BHS)[20,21] to measure adolescents' severity of depression, suicidal risk, anxiety and hopelessness during the period September 2005–January 2006. Compared with the study by Mufson *et al.*,[22] we extended the screening by measuring the severity of anxiety and hopelessness, which have been proved to be significant indicators of adolescent suicide and have often been ignored.[23–25] Before undergoing screenings in each class, students and parents were informed by the teachers that the program would be conducted in the school. Students with omission questionnaires were invited later to complete the questionnaires. Parents whose children participated in the study, teachers, representatives from the community, and Bureau of Education and Health in Kaohsiung would be invited to attend initial, midterm, and outcome report meetings. Those participants would obtain information related to the progress of study and provide some suggestions. In the course of the intervention we also held a meeting to discuss the condition of participants, and the teachers, parents, representatives of the hospital and school were invited to attend the meeting to provide suggestions for follow-up treatment.

Those who had moderate–severe depression (BDI score > 19), suicide ideation or previous suicidal

attempt (BSS score > 0), moderate–severe anxiety (BAI score > 16), or significant hopelessness (BHS ≥ 9) in the preceding 2 weeks were selected for further evaluation. A senior psychiatrist used the Chinese version of the Structured Clinical Interview (SCID-I)[26,27] to determine the axis I psychiatric diagnoses on the DSM-IV-TR[28] for the selected students. Meanwhile, if the diagnosis of personality disorder or pathological personality trait was assumed, the evaluation for the axis II personality disorders would go further. The participants with acute psychotic symptoms, drug abuse, or serious medication condition would be excluded from this program and referred to medical setting for further treatment. The psychiatrist also evaluated the students' severity of depression and suicidal risk. According to the school's crisis management, students who develop acute psychotic symptoms and put themselves at suicidal risk, act out lethal suicidal behaviors (i.e. suicide jumping, hanging), or lack proper care for suicidal risk by their family are considered to have highly demand for emergency management in hospitals, and were excluded from this intervention program and were referred to the counseling center. The school counselors would inform their parents, provide relevant information, and suggest that the parents bring their children to hospital for treatment. Students who were evaluated to have no urgent need to receive hospital treatment or those who had been advised to attend hospital but either they or their parents had refused, were recruited into this intervention program.

After exclusion of five students due to acute stage of psychosis (two schizophrenia and one bipolar mania) and suspected axis II personality disorder (two cluster B personality disorder), a total of 73 depressed students with suicidal risk were recruited into the intervention program, and they were randomly assigned to the IPT-A-IN and the TAU programs. This intervention program was approved by the institutional research board of Kaohsiung Medical University Hospital and the school's parent association. Written informed consent was obtained from legal guardians and students. All students were informed that they could withdraw from the study at any time.

A total of 35 students (12 boys, 23 girls; mean age, 15.26 ± 1.70 years) were assigned to the IPT-A-IN arm, and 38 students (13 boys, 25 girls; mean age, 15.24 ± 1.65 years) were assigned to the TAU arm. No difference in gender or age was found between the IPT-A-IN and TAU groups. No students refused to participate in the treatment programs or withdrew from the study during the 6-week sessions. One IPT-A-IN participant's parent received three sessions of family therapy. Three participants in the TAU group dropped out. The reason why one participant dropped out was because he considered that his teacher handled the class relationship unfairly and he was unwilling to continue discussing this with his teacher. The other two felt stressed due to the additional attention from teachers and worried that the teachers would pass on their conversations to their parents. In light of these two special cases, other school teachers replaced the previous teachers and these two participants could then continue once-weekly sessions. Each group had one participant who needed to be referred to hospital for treatment, and both agreed to receive antidepressant medication. No student was removed from the study due to hospitalization during the period of study.

Procedures

Program of intensive interpersonal psychotherapy for depressed adolescents with suicidal risk

The IPT-A-IN shared the same principles with the IPT-A, which collected target symptoms related to the current interpersonal problem domains, including interpersonal conflict, interpersonal sensitivity, role transition, and grief. In IPT-A-IN, which, following IPT-A, adopts biopsychosocial viewpoints, suicide is considered to be one of the comorbid symptoms of depression. When the depressed person with suicidal risk also suffers interpersonal stress, depression would be worsened and thoughts of self-injury would be deepened. Hence, proper treatment for interpersonal stress could both ameliorate depressive symptoms and reduce thoughts of self-injury. In IPT-A-IN, suicidal ideation and depression are connected as interpersonal problems, and the adolescents and their family are educated on the reduction of suicidal risk, which is achieved by resolution of interpersonal problems. The IPT-A-IN was conducted by one school counselor and five intern counseling psychotherapists. The intern counseling psychologists had received clinical training in hospitals plus regular weekly supervision for at least 6 months. All therapists in IPT-A-IN had received training for IPT-A. In the training courses, they completed a case study and reports that met with the IPT-A framework. All thera-

pists in IPT-A-IN were also trained about how to identify adolescent depressive symptoms and suicidal risk, how to use screening tools for suicidal risk in adolescents, how to interpret the results of screening tools, and how to maintain student compliance in the course of intervention. The therapists helped students to deal with interpersonal problems by following the manual and received supervision regularly. Based on the suggestion of Gilat and Shahar, the therapists provide two 50-min face-to-face sessions weekly and a 30-min phone follow up weekly.[29] Compared with the Mufson *et al.* study,[30] we shortened the therapy period from a weekly session 12–16 times to two sessions per week for 6 consecutive weeks in order to respond to the urgency of suicidal risk. The most concerning interpersonal issues among participants were interpersonal conflicts (90%), grief and loss response (8%), and interpersonal sensitivity and role transition (2%). Herein, the foci of intervention were on the interpersonal conflicts and grief response.

Treatment-as-usual intervention

TAU intervention is primarily school based, offering supportive and psychoeducation without IPT intervention. The eight school teachers responsible for TAU have learned basic skills of supportive counseling and psychoeducation for depressed adolescents with suicidal risk, but they had never received training for IPT-A. The students assigned to TAU received psychoeducation and irregular individual supportive counseling one or two times per week in the 6-week period. The counselors would take 30–60 min for each supportive session. The parents were invited to join the session if needed. The focus of session is mainly on support and education, not in dealing with interpersonal relationships. During the courses of both intervention models, combining medication or family education was allowed if the psychiatrist suggested it.

The students in the IPT-A-IN and TAU intervention groups were assessed on the BDI, BSS, BAI and BHS before and after intervention during the same 6-week period. The post-intervention assessments were conducted by the evaluators who were blind to the results of pre-intervention assessments. Assessment tools were self-report scales, therefore, evaluators would remind students who had omissions in the questionnaire and help to calculate the total scores. The study process is described in Fig. 1.

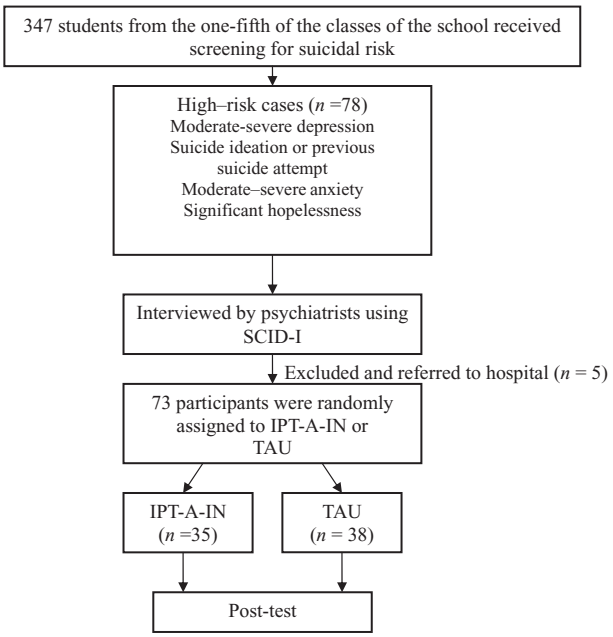

Figure 1. Flowchart of study design. IPT-A-IN, intensive interpersonal psychotherapy for depressed adolescents with suicidal risk; SCID-I, Chinese version of the Structured Clinical Interview; TAU, treatment as usual.

Statistical analysis

Age, sex, and pre-intervention scores on the BSS, BDI, BHS and BAI were compared between students in the IPT-A-IN and TAU groups on *t*-test and χ^2 test. To examine whether the IPT-A-IN intervention had better effects on the improvement of depression, suicidal ideation, anxiety, and hopelessness than the TAU, the post-intervention scores on BDI, BSS, BAI and BHS between the IPT-A-IN and TAU groups were compared on ANCOVA, with the pre-intervention scores used as covariates. $P < 0.05$ was considered statistically significant.

RESULTS

The pre-intervention and post-intervention scores on the BSS, BDI, BHS and BAI in the IPT-A-IN and TAU groups and the comparison of post-intervention scores on ANCOVA are shown in Table 1. Before intervention, the students in the TAU group had a higher anxiety score on the BAI than those in the IPT-A-IN group ($t = 0.76$, $P < 0.05$). ANCOVA indicated that, using the pre-intervention scores as

Table 1. Comparison of BSS, BDI, BHS and BAI vs treatment arm (ANCOVA)

	Before intervention		After intervention		
	Mean	SD	Mean	SD	*F*
BSS					
IPT-A-IN	17.83	6.86	8.97	10.77	12.48*
TAU	16.79	4.65	16.29	7.99	
BDI					
IPT-A-IN	32.66	10.06	19.97	14.68	15.64**
TAU	32.32	8.70	31.58	12.01	
BHS					
IPT-A-IN	11.51	4.10	7.74	5.29	11.91*
TAU	11.95	4.64	12.42	4.08	
BAI					
IPT-A-IN	21.03	11.18	11.94	10.34	21.79**
TAU	22.24	11.35	25.45	14.35	

*$P < 0.01$; **$P < 0.001$.

BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; BHS, Beck Hopelessness Scale; BSS, Beck Scale for Suicide Ideation; IPT-A-IN, intensive interpersonal psychotherapy for depressed adolescents with suicidal risk; TAU, treatment as usual.

covariates, the IPT-A-IN group had lower post-intervention scores on the BSS, BDI, BHS and BAI than the TAU group, indicating that the IPT-A-IN had significantly higher effects on reducing severity of depression, suicidal ideation, anxiety, and hopelessness than the TAU.

DISCUSSION

The present results show that school-based IPT-A-IN has superior effects, compared to TAU, on reducing severity of depression, suicidal ideation, anxiety, and hopelessness in depressed adolescents with suicide risk in schools. Mufson *et al.* first proposed an evidence-based study to train school-based clinical staff, to transform the original IPT model from a hospital to a community setting, and to offer basic framework for conducting standard therapeutic evaluation in a community setting for follow up.[9] They suggested that the more severely depressed the subjects are, the more structured the treatment procedures should be. It is necessary, however, to make modifications to improve the treatment effects and reduce patient resistance,[31] including abbreviating the courses of treatment, shortening the duration of each treatment session, increasing the flexibility in the treatment schedule due to school calendar constraints, and accepting heterogeneous diagnostic profiles. This study was conducted in accordance with the principles laid down by Mufson *et al.*[30] Our IPT-A-IN had several advantages. First, the present IPT-A-IN therapists received training for IPT-A. Second, the length of intervention in the present study was reduced from the original 12–16 weeks to 6 weeks, and the results proved that the modified model was effective. Third, although the intervention was used for depression and suicidal risk, the symptoms of anxiety and hopelessness were also measured because they are also an index of suicidal risk.[23–25] The present study found that the IPT-A-IN with its short-term intervention, could ameliorate the symptoms of anxiety and depression, hopelessness, and also neutralize suicidal risk. Fourth, no student refused to receive basic screening in the present study. In the Mufson *et al.* study a high proportion (60%) of the adolescents refused to receive basic assessment.[30] In the high school studied here, the students regularly complete self-reported questionnaires for assessing depression and suicidal risk, which might have reduced the students' resistance.

There were several differences between the original IPT-A[30] and the IPT-A-IN used in the present study. First, the family session is a necessary part of IPT-A, and adolescents' parents were involved in the treatment at the initial stage of IPT-A.[32] Many adolescents, however, were unwilling to invite their family to join the session, and many parents of the adolescents also had no time to join the session. As a result, alternatives should be taken into consideration. IPT-A-IN is mainly designed to resolve interpersonal issues at

schools with the hope that adolescents can transfer their interpersonal focus to peers, as normally seen in development. The IPT-A-IN sessions were held at school and focused on the interpersonal relationships with school teachers and peers. Previous research found that the support of peers and teachers could modulate parent–child conflict and improve emotional problems and suicidal ideation.[31,33] In IPT-A-IN, parents are still involved with informing the therapist and managing the emergent suicide risks by sending the adolescents to hospital. But if the adolescents did not agree to parents' participation in the IPT-A-IN sessions, the therapeutic focus was shifted to inviting peers and other support systems in school. Family members would be informed only if adolescents' behaviors related to suicide risk, rather than being given the general information on the IPT-A-IN session. Second, although IPT-A involved techniques such as teaching and demonstration of interpersonal communication, IPT-A-IN used other externalizing techniques, such as solution-focused, narrative therapy. Meanwhile, cognitive behavioral skills could also be added in accordance with the therapist's profession and preference in IPT-A-IN.[32,34,35] Third, IPT-A concentrated on reducing depressive symptoms in adolescents,[36] while IPT-A-IN focused on emotional symptoms (including anxiety and depression) as well as suicidal ideation. Fourth, IPT-A-IN inherited the foundation of IPT-A; the four major interpersonal issues are interpersonal sensitivity, interpersonal conflicts, role transition and grief response. With a shorter period of intervention, mainly focused on the grief response in interpersonal conflicts, the therapist would request the participants to select one interpersonal issue that they had the highest motivation to deal with. This is different from IPT-A, which selects more than two interpersonal issues to tackle.

The reason why we excluded subjects with personality disorder is because IPT-A-IN requires the therapeutic relationship to be established as soon as possible, focusing on problems and recent interpersonal conflicts. In the present study three students were excluded from IPT-A-IN and referred to hospital for individual and family therapy. Research has found that patients with personality disorders would better be referred to hospital or community counseling centers for long-term personal psychotherapy or family therapy.[37] We also found that most of the present participants were not depressed enough to be diagnosed with major depressive disorder. Interpersonal conflicts with family members and peers, however, were very prevalent among the present participants, which was also found by Fordwood *et al.*[38] Facing these interpersonal conflicts, the adolescents developed significant symptoms, and most of them had comorbid anxiety or insomnia. Two subjects (one from each group) were advised to go to hospital for medication combined with psychological intervention. As for the other subjects with depressive symptoms and suicidal ideation, whom the psychiatrist judged did not need to receive treatment in clinic or be admitted to hospital, the school counselors suggested that they receive IPT, either in hospitals or in schools. Most students had no intention to receive therapy in hospital, but they were willing to accept IPT-A-IN in campus and were cooperative with the sessions focusing on interpersonal topics. No student dropped out from the intervention programs, and IPT-A-IN had a superior effect on reducing adolescents' negative emotions, which all indicated that IPT-A-IN is adequate for depressed adolescents with suicidal risk in the community.

Although the efficacy at termination was proved, some limitations to effectiveness and application should be noted. First, further follow up is needed to assess whether the effects of IPT-A-IN last for a longer period.[39] In the Mufson *et al.* study the therapeutic effectiveness of community-based IPT-A was found to last longer than 16 weeks.[9] Second, in the present study we were unable to determine whether IPT-A-IN's effectiveness could be achieved within a shorter period of time. That is, we did not determine the minimum number of sessions required to achieve basic therapeutic efficacy of IPT-A-IN. In the present study the subjects with suicidal risk in the IPT-A-IN group received twice-weekly sessions for 6 consecutive weeks. In future we will examine the effect of IPT-A-IN given in once-weekly sessions to determine the minimum required. Third, further research is needed to determine whether therapeutic effect remains once there is no more official supervision to school counselors. Further studies are also needed to examine whether the effects of IPT-A-IN are different in various types of interpersonal problems. And in order to generalize this model to suburban area with different sociocultural backgrounds and interpersonal problems, exploration and modification are needed.[40]

CONCLUSION

The present study demonstrated that school-based IPT-A-IN is effective in reducing severity of depres-

sion, suicidal ideation, anxiety and hopelessness in depressed adolescents with suicide risk in a two-session intensive intervention each week for 6 weeks. This short-term treatment model is effective for depressed adolescents with suicide risk in the community setting.

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