Original Article

Psychological Interventions for Recurrence Prevention in Adolescent Depression: A Systematic Review

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Abstract:

Objective: To determine the effectiveness of psychological interventions in depressive adolescents to prevent recurrent depressive episodes.

Material and Methods: English databases, including Embase, Medline, Global Health, and PsychINFO, were searched for studies that examined the effectiveness of psychological interventions in preventing recurrent depression. Eight articles were found in the electronic databases and 4 studies were found from a manual search. Methodological quality was assessed using the Cochrane Collaboration's tool.

Results: One quasi-randomized control trial and 11 randomized control trials met the inclusion criteria. A systematic review of the 12 studies was conducted. The studies involved 1,641 participants that represented different effects of recurrence prevention interventions at 6, 9, 12, 24, and 33 months following treatment completion. Cognitive behavioral therapy (CBT) group intervention showed effectiveness in recurrence prevention in depressive adolescents in 6-33 months. Supportive psychotherapy and family therapy also prevented recurrent depression at 24-month follow-up, while psychodynamic/psychoanalytic psychotherapy and interpersonal psychotherapy could prevent recurrence in depressive adolescents for 12 months following completion of the intervention.

Conclusion: Among the psychological interventions studied in the included articles, CBT group intervention showed the greatest long-term effect since group CBT could prevent recurrent depression in adolescents up to 33 months.

Keywords: adolescent, depression, psychological intervention, recurrence prevention

Introduction

According to the World Health Organization,[1] approximately 20.0% of adolescents around the world reported having mental health difficulties with depression being one of the most common problems. Clinical depression among adolescents was stated to have high prevalence rates: 6.0% at the age of 15 years old which increased to 17.4% at the age of 18 years old.[2] Depression leads to significantly increased risks of physical diseases, relationship difficulties, and cognitive problems, especially in college students.[3]

Many studies have suggested that depression in adolescence is associated with long-term negative consequences, for instance increased risks of later depression, anxiety, and suicidal behaviors.[4] In addition, depression itself is a highly recurrent disorder in which the subsequent episodes will usually begin within five years following the first episode of depression. Onset during adolescence is one of the predictors of continued risk for recurrences of depressive episodes and several psychosocial co-morbidities.[5]

Because of the high prevalence and serious consequences of adolescent depression, research into evaluating the effectiveness of both depression prevention programs and therapeutic interventions is of great importance.[6] However, the research examining prevention strategies for depressive adolescents or recurrence prevention interventions did not clearly identify which ones were the most effective. Most research aimed to study the efficacy of antidepressants or other pharmacological interventions, not psychosocial intervention.[7]

Psychological intervention for prevention was divided into universal, selective, and indicated.[8] Universal prevention embraces the entire population, whereas selective prevention includes adolescents with particular psychopathological risk factors for depression, while indicated prevention involves those with subclinical or mild-to-moderate depressive symptoms. Relapse prevention should be categorized as an indicated prevention in terms of incomplete remission but it should be a selective prevention in patients with complete remission.[9]

A number of meta-analyses found that at 6-month follow-up, selective and indicated prevention programs were more effective than universal programs.[10] Even though Stice and colleagues found that selective prevention programs yielded larger effects than universal ones, universal programs were still considered useful due to their cost-effectiveness and public health promotion.[11]

Ishikawa and co-authors reported the effect on depressive symptoms of classroom-based social skills training as an example of preventive intervention which was theoretically maintained for 1 year.[12] But in terms of the longer effects of classroom-based interventions, Sato and colleagues indicated that coping strategy training was more efficient in elementary school students and early adolescents who were approximately 9-12 years old, due to their cognitive abilities.[9]

Current studies revealed that most of the evidence-based prevention programs were cognitive-behavioral-based interventions. However, recent prevention interventions focused only on building cognitive-behavioral skills of young people without understanding the socio-cultural context of depression.[13] Spence pointed out that ignorance of environmental factors (i.e., culture and religion) may likely cause the failures of previous universal interventions for depression in adolescents. Hence, all kinds of prevention interventions are now important for a dual approach to build individual skills to reduce risks of depression and also to enhance the environmentally protective factors at the same time.

Recently, a few studies were published on selective and indicated prevention interventions for adolescent depression. Clark et al. found that group cognitive intervention was significantly more efficient than the usual care

for adolescents who had depressive parents, to prevent depression during a 14-month follow-up period. However, this selective prevention program found that the treatment versus control difference would decrease with time.[14] Although short-term treatments were unlikely to change any long-term outcome after the discontinuation of treatment,[15] pharmacological, non-pharmacological, and combined treatments of depression were strongly suggested rather than indicated prevention for youths with prior depressive episodes.[16]

Since there were no reviews that evaluated the long-term effectiveness of psychological intervention to prevent a new onset of depression, supporting evidence is needed to determine specific prevention interventions for recurrent depression in both clinical and community settings.

To date, there are no systematic reviews that focus on psychological intervention in preventing recurrence of depressive episode in adolescents. Therefore, the objective of this study was to systematically review the evidence of psychosocial treatment for recurrence prevention in adolescent depression.

Material and Methods

Search strategy and study selection

In June 2015, Embase (1980-2014), Medline (1946-2014), Global Health (1910-2015), and PsychINFO (2002-2014) were searched from 1994 to the end of December 2014. The author read all abstracts of the retrieved articles from the search in order to exclude articles which were not eligible.

The search terms were comprised of four components. First, a literature search used the diagnostic categories of depressive disorders in ICD or DSM ["Depression" ("Dysthymia" or "Unipolar Depression")]to generate the target population. Second, the search narrowed to studies which were undertaken in "Adolescent" ("youth" or "young people") for those age groups in the population.

Third, the databases were searched for articles including words related to recovery prevention programs in depressive disorder. The search included combinations of key words regarding the outcome of "relapse prevention" or "recurrent" as they are overlapping meanings in some articles regarding the definition by the American Academy of Child and Adolescent Psychiatry. Finally, the author searched "psychological intervention" or "psychotherapy" for non-pharmacological interventions to prevent recurrent depression in adolescents.

Further searching

Various key journals, for instance the Journal of the American Academy of Child and Adolescent Psychiatry, the European Child and Adolescent Psychiatry, and Archives of General Psychiatry, were hand searched by the same search strategy and key words. In addition, key authors (Clarke et al., 1999; Rohde et al., 2006; Stice et al., 2008; Birmaher et al., 2000)[11,14,15,17,18] were also manually searched for reassurance that relevant articles were not overlooked. This was supplemented by a hand search from the lists of references.

Inclusion criteria

This systematic review indicated inclusion and exclusion criteria based on the study titled Psychotherapy for depression in children and adolescents: study protocol for a systematic review and network meta-analysis.[19] Hence, the inclusion criteria were:

–English language

–Original and published journal articles

–Published between 1994 and 2014

–Evidence level 1b–3b[20]

–Outcome measurements in participants who already received treatment for depressive disorder

–Participants aged between 10 and 19 years old as this age range is defined as the age of adolescence by WHO (2014)

–Depressive disorder was clinically screened or recorded regarding International Statistical Classification of Diseases and Related Health Problems 9th/10th or Diagnostic and Statistical Manual of Mental Disorders III/IV Edition/IV Edition Text Revision or depressive status defined as scoring above a certain cut–off on a depression rating scale of standard depressive screening (e.g., the Children's Depression Inventory, Beck Depression Inventory, and Center for Epidemiologic Study Depression Scale)

–Control condition in the articles could be waiting list control (WL), usual care (UC) or (psychotherapy/pharmacological) placebo. These control conditions were viewed as the independent nodes.[19]

Exclusion criteria

1. Investigation of children and young people with a known case of physical or other psychiatric diseases as the primary diagnosis (e.g., schizophrenia), because the effectiveness of psychotherapy might be affected by these comorbidities[19]

2. Studies that included psychological intervention combined or compared with pharmacological treatment, such as combining different psychological interventions or psychotherapy and antidepressants, to directly determine the uncontaminated effectiveness of psychological treatment[19]

Data extraction and quality evaluation

Titles and abstracts of the articles were read by the first author for the purpose of excluding unqualified articles. Then, full–text articles were obtained.

The outcome summarization, within and across the included studies in this review, were categorized as low of risk bias, unclear risk of bias, and high risk of bias. The risk of bias was assessed in each domain of the included studies: sequence generation, allocation concealment, blinding of participants/personnel and outcome assessor, incomplete outcome data, selective outcome reporting, and

other sources of risk of bias. In the case of low risk of bias for all domains within a study, all information from the study had to be at low risk of bias. But if one or more domains were unclear or seriously weakened the confidence of the results, the studies were classified as unclear or high risk of bias.[22]

The authors assessed all included studies of each domain and summarized both within and across the studies as low risk of bias, unclear risk of bias or high risk of bias. Disagreements were resolved by both authors.

Results

The electronic search theoretically found 1,339 relevant titles of studies. The number of excluded articles was 1001: 388 due to duplication and 623 due to their irrelevant grounds (Figure 1). Others were retrieved in full–text for further assessment. Then 6 articles were excluded for particular reasons (Table 1). Therefore, 8 articles were included in the study from the electronic search. The manual search with the same search terms found an additional 4 articles. A total of 12 articles were included in this systematic review.
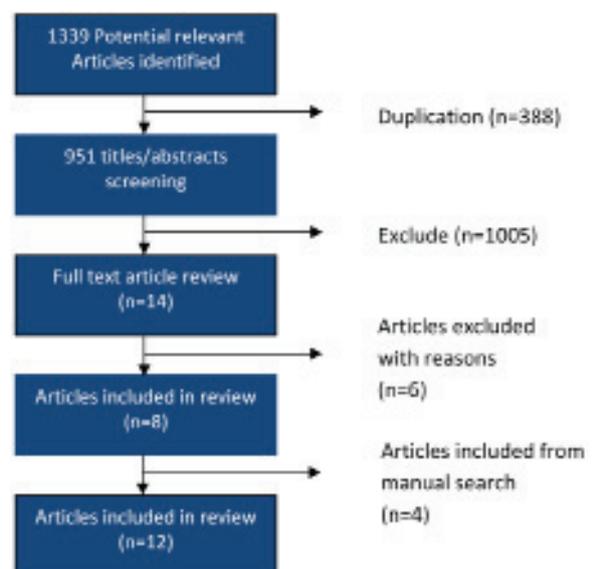

Figure 1 Flow chart of study selection

Table 1 Studies that were excluded from the analysis

Study	Reason for exclusion
Horowitz et al. (2006)[10]	Participants did not fully meet clinical criteria of depression
Weisz et al. (2006)[32]	Meta-analysis study
Gladstone et al. (2009)[33]	Systematic review study
Dietz et al. (2014)[34]	No follow-up of recurrence after post-treatment evaluation
Zhou et al. (2014)[35]	Systematic review and open-label studies included
Van Zoonen et al. (2014)[36]	Participants did not fulfill clinical criteria of depression

Description of included studies

Overall, the included studies were divided into two groups based on their primary goals of psychological interventions for adolescent depression. The first group aimed to prevent depression in high-risk youths in a community setting, including participants with a history of prior depression. The other group targeted the non-pharmacological interventions in adolescents who were diagnosed as depressive disorders and had already received some treatments in a clinical setting (Table 2).

The first group or the indicated prevention group included 5 studies: Rohde et al. (2006),[18] Stice et al. (2008),[11] Stice et al. (2010),[23] Beardslee et al. (2013),[24] and Rohde et al. (2014).[25] The other group included 7 studies of treatments by Mufson & Fairbanks (1996),[26] Renaud et al. (1998),[27] Birmaher et al. (2000),[15] Clark et al. (1999),[17] Sanford et al. (2006),[28] Trowell et al. (2007),[29] and Weitkamp et al. (2014)[30] which were interventions for treatment in clinical settings. Except for the Clark et al. (1999) study, which was a time series (quasi-experimental study/ quasi RCT), all of them were designed to be randomized control trial (RCT) studies.[17]

Five of the 12 studies in this systematic review [Clarke et al. (1999),[17] Rohde et al. (2006),[18] Stice et al. [2008],[11] Stice et al. (2010),[23] and Beardslee et al. (2013)[24]] indicated full high quality randomized control trials and a time series with a low risk of bias. They were appropriate designs with sequence generation, randomization, blinding technique, and outcome reports. All studies specified the drop-out rate and their reasons for missing data. However, the 3 studies of Birmaher et al. (2000),[15] Renaud et al. (1998),[27] and Rohde et al. (2012) were classified as unclear and with higher risks of bias and the other 4 studies could be categorized as high-risk bias studies since their limitations could significantly alter the results[31] (Table 3).

Participant characteristics

A total of 1,641 participants were included in this systematic review (1996-2014). Most participants in this systematic review were adolescent females (13-19 years old). All studies were conducted in Europe, Canada, and the USA.

In terms of the exclusion criteria, every study excluded psychosis, eating disorder, bipolar disorders, obsessive-compulsive disorder, physical and sexual abuse, brain disease, substance use, mental retardation, and anxiety disorder. In terms of ethnicity, the authors accepted that the outline of the participant ethnicities in their studies did not represent all ethnicities in the normal population as the main ethnicities in the sample sizes were minorities, as well as participants in the Interpersonal Psychotherapy for Depressed Adolescents (IPT-A) study of Mufson & Fairbanks (1999) who were all Latinos and African-Americans (Figure 2).

Table 2 Characteristics of included studies (ordered by year)

Author/year	Design study	Intervention	Participant	Comparison group	Intervention period	Duration follow-up	Outcome measure
Mufson & Fairbanks (1996)	Quasi-RCT	Interpersonal Psychotherapy For Adolescent (IPT-A)	14 depressed patients (mean aged 17.5 years old)	No control group	12 weekly sessions (average 10 sessions)	–1 year	–K-SADS-E[1] –BDI[2] –HRSD[3] –SCL-90[4] –SAS-SR[5] –C-GAS[6]
Renaud et al. (1998)	RCT	Individual Cognitive Behavioral Therapy (CBT)	100 patients with MDD (13–18 years old) divided to	–Systemic Behavioral Family Therapy (SBFT) –Non-directive Supportive Therapy (NST)	12–16 sessions	–1 year –2 years	–BDI[2] –C-GAS[6] –K-SADS[7]
Clarke et al. (1999)	RCT	Group Cognitive Behavioral Intervention	123 adolescents with MDD or dysthymic disorder (14–18 years old)	–Wait list control	8 weeks (Biweekly 2-hr sessions) plus 1-2 booster sessions	–2 years	–K-SADS-E[1] –BDI[2] –HAM-D[3] –CBCL-scale[8] –LIFE interview
Birmaher et al. (2000)	RCT	Individual Cognitive Behavioral Psychotherapy (CBT)	107 patients with MDD (13–18 years old)	–Systematic Behavioral Family Therapy (SBFT) –Non-directive Supportive Therapy (NST)	12–16 weeks	–2 years	–K-SADS[7] –BDI[2]
Rohde et al. (2006)	RCT	Group Cognitive Behavioral Intervention (CB)	114 adolescents with MDD from juvenile justice center (13–17 years old)	Life skills-tutoring	8 weeks (Biweekly 2-hr sessions)	–6 months –1 year	–K-SADS [7] –LIFE interview[9] –CBCL-scale[8]

Table 2 (continued)

Author/year	Design study	Intervention	Participant	Comparison group	Intervention period	Duration follow-up	Outcome measure
Sanford et al. (2006)	RCT	Adjunctive Family Psycho-education (AFP) plus Usual Treatment (UT)	41 patients with MDD (13–18 years old)	Usual Treatment (Individual/group counseling and/or drug therapy with supportive case management)	6 months (12 sessions)	9 months	–RADS[10] –SSAI[11] –FAD[12] –ACL[13]
Trowell et al. (2007)	RCT	Systems Integrative Family Therapy (SIFT)	72 patients with depressive disorders (MDD, dysthymia and double depression) (9–15 years old)	Focused Individual Psychodynamic Psychotherapy (FIPP)	9 months (8–14 SIFT 90 minutes sessions and 16–30 FIPP 50 minutes sessions)	6 months	–K–SADS[7] –CDI[14] –MFQ[15] –C–GAS[6]
Stice et al. (2008)	RCT	Group Cognitive Behavioral Intervention (CB)	341 high school students with depressive symptoms (14–19 years old)	–Group Supportive–expressive Therapy –Bibliotherapy –Assessment–only	6 weeks (weekly 1 hour sessions)	6 months	–BDI[2] –K–SADS[6] –SAS–SR[5]
Stice et al. (2010)	RCT	Group Cognitive Behavioral Intervention (CB)	341 high school students with depressive symptoms (14–19 years old)	–Group Supportive–expressive Therapy –Bibliotherapy –Brochure	6 week (weekly 1 hour sessions)	–1 year –2 years	–BDI[2] –SAS–SR[5]
Beardslee et al. (2013)	RCT	Group Cognitive–Behavioral Prevention (CB)	316 adolescents who had prior depressive episodes or had one/ more depressive parents (13–17 years old)	Usual Care (UC)	–8 weekly 90–minute group sessions –6 monthly continuation sessions	–2 years	–CES–D[16] –CDRS–R[17]

Table 2 (continued)

Study	Design	Intervention	Sample	Control	Duration	Follow-up	Measures
Rohde et al. (2014)	RCT	Group Cognitive Behavioral Intervention	378 high school students with two or more depressive symptoms (13–19 years old)	–Bibliotherapy –Brochure Control	6 week (weekly 1 hour sessions)	6 months	–K–SADS[5] –SAS–SR[5] –10–Substance use measurement[18]
Weitkamp et al. (2014)	RCT	Individual Psychoanalytic psychotherapy	35 depressive patients (4–21 years old)	Wait list control	Average 3.38 months/97 sessions (25–205 sessions)	–6 months –1 year	KIDSCREEN–27[19] –CDI[14]

[1]Schedule for affective disorder and schizophrenia for school age children–Epidemiologic version (Orvaschel & Puig Antich, 1987)

[2]Beck Depression Inventory (Beck et al., 1961)

[3]Hamilton Rating Scale of Depression (Hamilton, 1960)

[4]Symptom Checklist (Derogatis, 1974)

[5]Social Adjustment Scale–Self Report for Youth (Weissman et al., 1980; Weissman, & Bothwell, 1976)

[6]Children's Global Assessment Scale (Shaffer et al., 1983)

[7]Schedule for Affective Disorder and Schizophrenia for School Age Children–Epidemiologic Version 5 (Orvaschel, 1994)

[8]Child behavior checklists (Achenbach & Edelbrock, 1983)

[9]Longitudinal Interval Follow–up Evaluation (Shapiro & Keller, 1979)

[10]Reynolds Adolescent Depression Scale (Reynold, 1987)

[11]Structured Social Adjustment Interview (Mccleary & Sanford, 2002)

[12]Family Assessment Device (Epstein et al., 1983)

[13]Adjective Checklist (Friedman & Goldstein, 1993)

[14]Children's Depression Inventory (German Version; Stiensmeier–Pelster et al., 2000)

[15]Mood & Feelings Questionnaire (Angold et al., 1987)

[16]The Center for Epidemiologic Studies Depression Scale (Radloff, 1991)

[17]Children's Depression Rating Scale (Poznanski et al., 1984)

[18]A 10–item Substance use measurement (Stice et al., 1998)

[19]The–27 item KIDSCREEN – Health Related Quality of Life Questionnaire for Children and Young People and their Parents (The KIDSCREEN Group Europe, 2006)

Table 3 Quality assessment: The Cochrane Collaboration's tool to assess the risk of bias (ordered by year)

Study	Sequence generation	Allocation concealment	Blinding of participant and outcome (Assessment)	Complete outcome data	High-selective outcome reporting	Free of other bias
Mufson & Fairbanks (1996)	Low	Low	High	Low	Low	Unclear
Renaud et al. (1998)	Low	Low	Low	Unclear	Low	Low
Birmaher et al. (2000)	Low	Unclear	Low	Low	Low	Low
Clarke et al. (1999)	Low	Low	Low	Low	Low	Low
Rohde et al. (2006)	Low	Low	Low	Low	Low	Low
Sanford et al. (2006)	Low	Low	High	Low	Low	Unclear
Trowell et al. (2007)	Low	Unclear	High	Low	Low	High
Stice et al. (2008)	Low	Low	Low	Low	Low	Low
Stice et al. (2010)	Low	Low	Low	Low	Low	Low
Rohde et al. (2012)	Unclear	Unclear	Low	Unclear	Low	Low
Beardslee et al. (2013)	Low	Low	Low	Low	Low	Low
Weitkamp et al. (2014)	Unclear	Unclear	High	Low	Low	Low
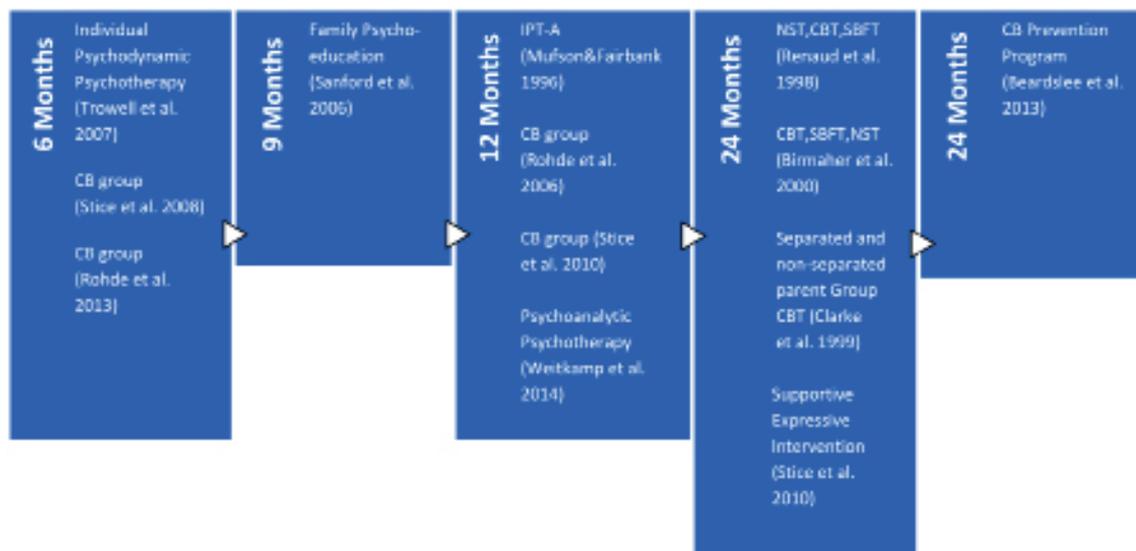
Figure 2 Summary of effective interventions for recurrent prevention (ordered by year and timeline)

6-month recurrence prevention

The first study by Stice et al. (2008) showed that brief cognitive behavioral therapy (CBT) intervention produced a significantly greater depressive symptom reduction than the control group and the treatment effect was clinically significant in preventing a new episode of depression for at least 6 months. The effect size of the CBT depression intervention program at 6-month follow-up was medium (d=0.42).[11]

Other interventions that showed persistent effectiveness at 6 months following treatment were individual psychodynamic psychotherapy and family therapy. Trowell et al. (2007) found that both of them could prevent recurrent depression at 6 months of follow-up. Individual psychodynamic psychotherapy appeared to have a more rapid improvement. However, family therapy was more effective than individual psychodynamic psychotherapy in cases of double depression or major depressive disorder on top of dysthymia.[29]

Intervention by Rohde et al. (2014) in another CBT group also appeared to have persistent treatment outcomes preventing depressive onset for more than 6 months. Major depressive disorder (MDD) onset was about two to eight times higher in usual care without psychological intervention compared to group CBT intervention.[25]

9-month recurrence prevention

At 9 months following intervention, family psycho-education (FPE) was shown to decrease depressive symptoms in the study by Sanford et al. (2006). The effects were medium (Standardized ES=0.64). However, the small sample size (n=41) of this study brought about low accuracy in the estimated treatment effect.[28]

12-month recurrence prevention

The results of the study by Mufson & Fairbanks (1999) suggested that the 12-week interpersonal psycho-therapy (IPT-A) for depressed adolescents could maintain clinical improvement for 12 months following completion of the intervention. Although the outcome should be interpreted with caution according to the small sample size (n=14) and attrition rate, this study reported that IPT-A resulted in fewer depressive symptoms, improved social function, and less co-morbidity than pre-intervention.[26]

A 12-month recovery of MDD was also reported in a study of group CBT by using an intent-to-treat analytic approach.[18] The participants reported the onset of recovery by 12-week post-intake (43.0%) and 77.0% had recovered at the end of the 12-month follow-up period.

Supportive-expressive intervention in the Stice et al. (2010) study was reported to marginally reduce depressive symptoms at 12-month follow-up. However, this therapeutic effect did not significantly persist at 24 months of follow-up.[23]

Finally, Weitkamp et al. (2014) showed a sustained therapeutic effect of individual psychoanalytic psychotherapy up to 1 year after treatment completion. Psychoanalytic therapy showed significantly reduced depressive symptoms and increased quality of life, compared with the wait-list control in the range of a moderate effect size by the end of the 12-month follow-up period (ES=4.36).[30]

24-month recurrence prevention

Renaud et al. (1998) discovered no differences in the rates of recovery and MDD onset at 24-month follow-up among CBT, systematic behavioral family therapy (SBFT), and non-directive supportive therapy (NST). However, different population groups showed various therapeutic effects. In patients who had rapid response to treatment, NST showed a greater proportion of improved functioning (87.5%) than the non-rapid response group (54.5%).[27]

Similarly, Birmaher et al. (2000) found that CBT did not confer longer-term therapeutic effects over family and supportive therapy regarding recurrence prevention

in depressive adolescents. Across 3 psychotherapy groups, 92.0% of the patients recovered after 24 months following psychotherapy trials.[15]

Nevertheless, Clarke et al. (1999) reported that both the immediate and 24–month follow–up therapeutic effects of group CBT was superior to a wait–list control (ES=0.61). Parental involvement in group modality was not associated with clinical improvement.[17] Another study by Stice et al. (2010) also found that group CBT was an effective intervention that reduced depressive symptoms up to 24 months following treatment and the effect size was medium (ES=0.30).[23]

33–month recurrence prevention

Beardslee et al. (2013) conducted the longest duration of assessment in the included studies. They stated that the cognitive behavioral prevention (CBP) program showed a significant therapeutic effect compared with usual care (UC) over the 33 months of follow–up (number needed to treat of 10 at 95% confidence interval=5–2624). Although the later onset rate of depression was slower following completion of the CBP program, the average onset of depression between CBP and UC showed no difference in cases of ongoing parental depression (number needed to treat of 54).[24]

Discussion

The main objective of this systematic review was to evaluate the evidence of psychological interventions in depressive adolescents to prevent recurrent depression. Twelve studies involving a total of 1,641 participants were included in this review. There were different effects of psychosocial interventions for depression following treatment completion that relied on follow–up durations.

The results from twelve studies suggested that cognitive behavioral group interventions (Clarke et al., 1999;[17] Stice et al., 2008;[11] Stice et al., 2010;[23] Rohde

et al., 2006;[18] Rohde et al., 2014;[25] Beardslee et al., 2013[24]) showed the greatest effects on recurrence prevention since these studies claimed that CBT groups could prevent recurrence of depression from 6 to 33 months. Even though individual CBT interventions were also effective in preventing recurrent depression up to 24 months following treatment completion,[15,27] there were no differences among the individual CBT, non–directive supportive psychotherapy (NST) or systematic behavioral family therapy (SBFT).

Family interventions represented their effectiveness on recurrence prevention up to 9 months in cases of adjunctive family psycho–education (FPE)[28] and up to 24 months for SBFT.[15,27] Although IPT–A could prevent recurrent depression for 12 months following treatment, the study bias and small sample size may raise some doubts on the results and their recommendations.[26] Likewise, psycho–analytic psychotherapy and individual psychodynamic psychotherapy were also doubtful in their outcomes of 6 and 12 month–recurrence prevention due to their small sample size and higher risks of bias.[29]

Even though this systematic review showed out–comes that suggest support for group CBT, it is too early to conclude that group CBT is the best intervention for recurrence prevention of depression in adolescents. This is because there were few studies that showed the effectiveness of other psychosocial interventions, and there was a lack of data regarding recurrence prophylaxis which is hard to differentiate from treatment continuation. In addition, the effectiveness of group CBT has never been compared with other psychological interventions (e.g., IPT–A, psychodynamic psychotherapy) for recurrence prevention. To fill the gap of knowledge, it is necessary to determine which intervention could prevent a new onset of depressive episode in adolescents.

However, grey literature and unpublished resources were not searched and counted in this systematic review. Also, non–English articles were not included as English l

anguage only was one of the inclusion criteria. This limitation may lead to overlooking articles conducted in non-western countries.

Conclusion

The finding of one quasi-randomized control trial and eleven randomized control trials indicated that group cognitive behavioral interventions had the benefit of preventing recurrent depression in depressive adolescents. Other psychological interventions for recurrent depression which were suggested less frequently were family intervention (systematic behavioral family therapy and adjunctive family psycho-education) and psychodynamic/psycho-analytic psychotherapy. However, there are particular risks of bias and limitations in some populations that may result in outcomes that are more tentative.

Acknowledgement

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