Brief interventions for depression in primary care

A systematic review

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Depression is a multifactorial mood disorder, which affects both males and females across all age groups. The prevalence of major depression in the primary care setting in North America has been reported at rates of 4.8% to 11.1%.[1] These rates could easily be doubled when considering the population prevalence of minor depressive symptoms.[2] Both major and minor depression have been found to be persistently disabling conditions requiring close monitoring,[3] and patients with depression are at increased risk of unfavourable outcomes, such as decreased productivity, increased physical illness, and suicide.[4] Furthermore, depression places a considerable financial burden on health care systems. A recent Health Canada study suggested that depression and distress cost Canadians at least $14.4 billion annually in treatment, medication, lost productivity, and premature death.[5]

Primary care physicians are the providers most likely to see patients when they first become depressed,[6] thus they often take on the large responsibility of ensuring provision of treatment and adequate follow-up once a diagnosis of depression is made. It has been established that pharmacotherapy and psychotherapy are of comparable efficacy in the treatment of depression in primary care,[7] and that the combination of these modalities might be more efficacious than either individually, particularly in preventing relapse.[8] It has also been shown that many patients prefer psychotherapy to pharmacotherapy.[9]

Most primary care physicians are capable of initiating and monitoring treatment of depression with various pharmacologic agents, but owing to time limitations and lack of knowledge or inexperience with other various modalities, they are often unable to provide effective psychotherapeutic treatment for their patients.[10] Patients are often referred for psychotherapy; however, in many Canadian provinces, these services are difficult to obtain. Therapy provided by licensed physicians specializing in mental health is covered by

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Abstract

OBJECTIVE To assess existing, brief nonpharmacologic interventions that are available for primary care physicians with minimal training in psychotherapy to use in managing depression in adult patients.

DATA SOURCES MEDLINE was searched from 1996 to 2007, EMBASE was searched from 1980 to 2007, and EBM Reviews was searched from 1999 to 2007.

STUDY SELECTION Several randomized controlled trials were selected using specified criteria. Selected articles were subsequently appraised and qualitatively analyzed.

SYNTHESIS Significant improvements on depression scales were found in 6 out of 8 studies ($P<.05$) using various brief interventions and formal control groups. Successful interventions included bibliotherapy, websites based on cognitive-behavioural therapy (CBT), and CBT-based computer programs. Completion rates were highest when interventions were shorter, more structured, and included frequent contact or reminders from study staff. Validity limitations included small sample sizes, non-blinding of studies, and an uncertain degree of generalizability.

CONCLUSION Bibliotherapy, CBT-based websites, and CBT-based computer programs might be effective in assisting primary care physicians who have minimal training in psychotherapy in treating adult patients with depression. Health care personnel contact with patients undergoing these interventions might result in increased effectiveness. Future research is warranted in this area, and despite several limitations, findings from this study could help guide efforts in the development and evaluation of such research.

Résumé

OBJECTIF Évaluer les interventions brèves non pharmacologiques actuellement disponibles au médecin de première ligne qui a peu de formation en psychothérapie pour traiter la dépression chez l'adulte.

SOURCES DES DONNÉES On a consulté MEDLINE entre 1996 et 2007, EMBASE entre 1980 et 2007 et EBM Reviews entre 1999 et 2007.

CHOIX DES ÉTUDES On a retenu plusieurs essais cliniques randomisés à partir de critères précis. Les articles choisis ont ensuite fait l'objet d'une évaluation et d'une analyse qualitative.

SYNTHÈSE Des améliorations significatives aux échelles de dépression ont été observées en réponse à diverses interventions brèves dans 6 études sur 8 possédant des groupes témoins appropriés ($P<.05$). Les interventions efficaces incluaient la bibliothérapie, des sites Web axés sur la thérapie cognitivo-comportementale (TCC) et des programmes informatiques portant sur la TCC. Les interventions courtes, mieux structurées et incluant de fréquents rappels et contacts avec les membres de l'étude étaient les plus susceptibles d'être menées à terme. La validité des études était limitée par la petite taille des échantillons, l'absence d'insu et l'incertitude quant à la possibilité de généralisation.

CONCLUSION La bibliothérapie, les sites Web axés sur la TCC et les programmes informatiques portant sur la TCC pourraient être utiles au médecin de première ligne qui a peu de formation en psychothérapie pour traiter des patients adultes déprimés. Le contact entre le personnel soignant et ces patients pourrait entraîner une meilleure efficacité. Ce domaine mérite d'être davantage étudié, et malgré plusieurs limitations, les observations de cette étude pourraient servir de guide pour le développement et l'évaluation de ce type de recherche.

most provincial health insurance plans, but wait times can be extremely long. Services provided by other health care professionals have shorter waiting lists, but can cost patients anywhere from $40 to $180 per hour.[11]

Owing to a combination of cost, wait times, and reluctance to be referred to specialists, patients often rely solely on their primary caregivers for psychological support as they struggle with depression. Physicians with minimal training in psychotherapy usually provide some form of informal supportive care to patients and often recommend self-help books or other resources. There is some evidence to show that bibliotherapy (book therapy) using a cognitive-behavioural therapy (CBT) approach can be helpful for some depressed patients.[12] Additional research has shown the potential for CBT to be administered via computer or telephone with minimal therapist contact.[13,14] Current Canadian guidelines for depression management include recommendations for CBT but do not describe types of supportive assistance requiring little psychotherapeutic experience.[15]

This review explores what types of effective, brief nonpharmacologic interventions are available for primary care physicians with minimal training in psychotherapy to use in managing depression in adult patients. The review process involved systematic selection of articles, extraction of data with critical appraisal of validity, and qualitative analysis of results.

DATA SOURCES

In January of 2007, 3 computer databases were searched for potentially relevant articles (MEDLINE from 1996 to 2007, EMBASE from 1980 to 2007, and EBM Reviews from 1999 to 2007), using the key words *depression, psychotherapy, short term, brief, intervention, primary care,* and *general practice*. Retrieved articles were limited to *clinical trial* and *English language*. The search strategy yielded a total of 449 potentially relevant studies (62 articles from MEDLINE, 255 articles from EMBASE, 132 Cochrane Review articles); 63 articles were eliminated because they were duplicates.

Study selection

The titles and abstracts of the remaining 386 articles were reviewed and 45 articles were retrieved for more detailed evaluation. Articles were included in the review if the following criteria were met: (1) the study was a randomized controlled trial; (2) an acceptable definition of depression was used (either recognized diagnostic criteria or a depression rating scale); (3) the intervention was performed by or could be used by a primary care physician with little (<3 days of training) or no training in psychotherapy; (4) the intervention could be used in a primary care setting without the support of additional health care professionals; (5) outcome measures were clinically relevant (ie, improvement of symptoms on a validated depression scale).

Studies were excluded if they were published before 1980 or if the study patients were suffering from depression during the postpartum period, as the result of a medical condition, or within a geriatric setting, or if study patients were adolescents.

Applying these criteria yielded 5 relevant articles.[16-20] Reference lists of these articles were examined for additional relevant articles, and 4 more studies[21-24] that also met the criteria were included.

SYNTHESIS

Table 1[16-24] summarizes the studies included in this review. Study populations consisted largely of middle-aged women. Average age ranged from 37 to 50 years, and the proportion of female participants in the groups ranged from 66% to 93%. Subjects were recruited using various methods, including media announcements, mailed brochures, and recruitment in waiting rooms or on-line. A wide assortment of validated depression and mood disorder scales were used to develop inclusion criteria for the studies, with the exception of 3 studies that included any person who accessed particular study websites and consented to participate.[19,20,23] Study interventions also varied. One study used CBT-based bibliotherapy,[21] 5 studies used CBT-based websites,[17-20,23] 2 studies used computerized programs based on CBT psychodynamic therapy,[22,24] and 1 used an educational package on CBT, which was given to general practitioners.[16] One study used a Web-based discussion group in conjunction with a CBT website, but determined that the discussion group had little effect on outcomes.[18] With the exception of 3 studies,[19,20,23] all subjects were monitored or overseen by study personnel, such as a therapist or a general practitioner, on at least a weekly basis. This weekly monitoring was brief and usually limited to questions on use of the intervention or screening for suicidal thoughts; no therapy was provided.

Duration of interventions ranged from 4 to 32 weeks, and included anywhere from 5 to 10 sessions, chapters, or modules. Follow-up periods ranged from 3 to 6 months, although some studies did not assess subjects for follow-up outcomes. Overall completion rates were highest for interventions with more structure, for shorter intervention periods, and for interventions with frequent contact or reminders from study personnel. Completion rates were poorest for the least structured and longer-duration interventions. The highest completion rate (91%) was seen using a CBT and psychodynamic therapy computerized program over 10 weekly sessions,[22] and the lowest completion rate (20%) was seen using a CBT-based website over a 19-week recruitment period with no communication to subjects from study personnel.[20]

Overall, statistically significant ($P<.05$) differences in depression scores were seen in treatment groups within 6[17-19,21,22,24] of the 8 studies using formal control groups. Successful interventions included bibliotherapy, CBT-based websites, and CBT-based computer programs; and most of the positive changes were maintained within

Table 1. Summary of studies used in review

STUDY	POPULATION CHARACTERISTICS (TREATMENT/ CONTROL)	METHOD OF RECRUITMENT	INCLUSION AND EXCLUSION CRITERIA	INTERVENTION AND CONTROL (NO. OF SUBJECTS ENROLLED)	DURATION OF INTERVENTION; LENGTH OF FOLLOW-UP	OVERALL COMPLETION RATE	MEASURES OF OUTCOME AND RESULTS	LIMITS
Jamison and Scogin,[21] 1995	Mean age: 37 y/39 y Female: 75%/93%	Media announcements	HRSD, BDI, and DSM criteria used as inclusion criteria (all subjects were diagnosed with major depression) Excluded: suicidal, psychotic, substance abuse, or other psychopathology	**Intervention:** minimal-contact CBT bibliotherapy with *Feeling Good* (40 subjects) **Control:** waiting list (40 subjects) All subjects received weekly telephone calls	Read book in 4 wk 3-mo follow-up	83% of treatment group and 98% of control group completed the 4-wk study	HRSD, BDI, DSM, SCL-90, ATQ, and DAS before, after, and at 3-mo follow-up Treatment group had decrease in depressive symptoms, thoughts, attitudes (70% no longer met criteria for depression) Improvement maintained after 3 mo	Participants were self-selected; therefore, results might not be generalizable Grade-6 reading skills required Short follow-up period
Jacobs et al,[22] 2001	Entire study group: • Mean age: 44 y • 27% had affective disorder	Newspaper advertisements	Intake interview, using DSM criteria; included any presenting problems except substance abuse, severe mental disorder, or dementia	**Intervention:** computerized psychodynamic and CBT *(Therapeutic Learning Program)*, overseen by therapist **www.masteringstress.com** (45 subjects) **Control:** traditional short-term individual therapy (45 subjects)	10 weekly sessions, or 10 wk of individual therapy; 6-mo follow-up	91% of treatment group and 100% of control completed 90% of all subjects provided follow-up data	BDI, PSS, BSI, and STAI; all statistically significant reductions in both groups; all maintained at follow-up Therapist GAF rating higher and more clinical change for patients in control group	Sample less pathological than general population; only some had depression Possible therapist bias ranking individual therapy patients Note: control group received traditional psychotherapy
Clarke et al,[23] 2002	Mean age: 43 y/44 y Female: 74%/77%	Recruitment brochures mailed to HMO members (equal no. of depressed and nondepressed patients)	Any person who accessed website and consented was enrolled	**Intervention:** interactive website using CBT (unattended), e-mailed reminders **www.feelbetter.org** (144 subjects) **Control:** usual care in HMO (155 subjects)	7 chapters and "Thought Helper" on-line as much as desired; assessed at 0, 4, 8, 16, and 32 wk	74% of entire group completed at least 1 follow-up assessment; 59% at 32 wk Average no. sign-ins: 2.6	No effect across entire sample using CES-D scale No difference in obtaining other mental health services Modest effect among persons reporting low levels of depression at intake	No clinical diagnosis of initial subjects Infrequent patient use Some subjects more severely depressed than average population
King et al,[16] 2002	**Patients:** • 18 y to >60 y • Female: 66%/74% **GPs:** • Mean age: 43 y/45 y • Full-time: 74%/83% • Most in group practice	HADS at participating GPs offices	HADS criteria used as inclusion criteria Excluded: organic brain syndromes, psychosis, learning disorders, unable to read English	**Intervention:** educational package on CBT to GPs, 4 half-days of training (42 GPs, 137 patients) **Control:** usual care by GP (42 GPs, 135 patients)	Scale measures taken at 0, 3, and 6 mo following GP training	60% GPs and 91% patients in treatment group 62% GPs and 90% patients in control group	BDI, STAI, SF-36, DAQ showed no change in patient outcomes Slightly increased physician confidence in treatment group; treatment group physicians more likely to refer	Physicians did not get to choose patients they thought were suitable Very depressed sample
Proudfoot et al,[24] 2003	Mean age: 44 y/46 y Female: 74%/73% Taking medication: 43%/36%	Screening in GP waiting rooms and GP referral	Computerized intake interview and GHQ-12 used to include patients with depression or anxiety Excluded: suicidal, psychotic, substance abuse, receiving counseling, taking medication for >6 mo	**Intervention:** multimedia, interactive CBT computer program *(Beating the Blues)*, overseen by GP weekly **www.beatingtheblues.co.uk** (77 subjects) **Control:** treatment as usual (66 subjects)	9 weekly sessions with assignments; scales before treatment; 1, 3, and 6-mo follow-up	65% of treatment group and 77% of control group 62% of treatment group and 65% of control group provided 6-mo follow-up	BDI and WSAS showed significantly greater improvement in symptoms, work, and social adjustment; BDI reduced by 5 points (95% CI 2-9); WSAS reduced by 3 points (95% CI 0.5-6) 17% of treatment group and 31% of control group received posttrial counseling (unknown statistical significance)	Sample size too small to rule out interactions between treatment and medication Authors have financial interest in website GPs must purchase software

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Table 1. *continued from page 791*

STUDY	POPULATION CHARACTERISTICS (TREATMENT/ CONTROL)	METHOD OF RECRUITMENT	INCLUSION AND EXCLUSION CRITERIA	INTERVENTION AND CONTROL (NO. OF SUBJECTS ENROLLED)	DURATION OF INTERVENTION; LENGTH OF FOLLOW-UP	OVERALL COMPLETION RATE	MEASURES OF OUTCOME AND RESULTS	LIMITS
Christensen et al,[17] 2004	Entire study group: • Mean age: 36 y • Female: 71%	Subjects randomly selected from electoral roll and mailed questionnaires	KPDS criteria used to include Excluded if receiving care from psychologist or psychiatrist	**Intervention 1:** CBT website (MoodGYM) **http://moodgym.anu.edu.au** (182 subjects) **Intervention 2:** educational website (BluePages) **http://bluepages.anu.edu.au** (165 subjects) **Control:** weekly discussion of lifestyle factors (178 subjects) All subjects received weekly telephone calls	6 weekly sessions; post-intervention questionnaires done after sixth session	66% of MoodGYM, 82% of BluePages, and 88% of control group completed treatment and posttreatment questionnaire	CES-D score decreased for both interventions equally Based on ranking scales, MoodGYM reduced dysfunctional thinking and BluePages increased education regarding depression	No follow-up period was used to assess sustainability
Andersson et al,[18] 2005	Mean age: 36 y/36 y Female: 78%/72%	Newspaper advertisement, press release	CIDI-SF and MADRS-S criteria used to include Excluded: bipolar, psychosis, suicidal, new medication in last mo, history of CBT	**Intervention:** Internet-based CBT, Web-based discussion group, overseen by therapist who gave weekly feedback (57 subjects) **Control:** waiting list, Web-based discussion group (60 subjects)	5 modules to be completed (mean time of completion was 10 wk); 6-mo follow-up	65% completed 63% of treatment group and 82% of control group provided posttreatment data 63% of treatment group and 58% of control group provided follow-up data	BDI showed significant (P=.007) improvement for treatment group No difference on QoLI 233 Web-discussion postings for treatment group, 842 for control group Improvements somewhat maintained at follow-up	Medication status might have confounded results Web-based discussions differed among groups Unclear what kind of feedback was provided by therapist
Clarke et al,[19] 2005	Mean age: 50 y/44 y/45 y Female: 72%/83%/76%	Recruitment brochures mailed to HMO members (equal no. of depressed and nondepressed patients)	Any person who accessed website and consented was enrolled	**Intervention 1:** interactive website using CBT, postcard reminders **www.feelbetter.org** (75 subjects) **Intervention 2:** interactive website using CBT, telephone reminders (80 subjects) **Control:** usual care in HMO (100 subjects)	7 chapters and "Thought Helper" on-line as much as desired; reminders at 2, 8, and 13 wk; assessed at 0, 5, 10, and 16 wk	82% of entire group completed at least 1 follow-up Average no. sign-ins: 5.9 with postcards; 5.6 with telephone reminders	CES-D showed greater reductions in treatment group (20% more treatment subjects no longer met criteria for depression) Reductions in CES-D more pronounced in those more severely depressed at baseline No significant effects on SF-12 or use of health care services	No clinical diagnosis of initial subjects Short follow-up period
Christensen et al,[20] 2006	Entire study group: • Age range: 25-44 y • Female: 66%	Spontaneous visitors to website recruited directly into trial	Any person who accessed website and consented was enrolled Excluded if subject stated that physician had referred them to site	**Intervention:** 6 versions of CBT website modules compared (brief CBT; brief CBT and problem solving; brief CBT, stress, and problem solving; extended CBT and problem solving; extended CBT, behavioural strategies, and problem solving; full program) **http://moodgym.anu.edu.au** (2794 users) **Control:** none No communication from study personnel	19-wk recruitment period; 1-5 modules, depending on group; assessed before each module and after completion of last module	20% of participants completed assigned intervention	GDS scores showed that extended CBT with or without behavioural strategies resulted in significant (P=.01) reduction of depression Longer program—higher dropout rates	No clinical diagnosis of initial subjects Lack of formal control group Sample might not be generalizable Poor retention (possibly owing to lack of contact with study personnel)

ATQ—Automatic Thoughts Questionnaire, BDI—Beck Depression Inventory, BSI—Brief Symptom Inventory, CES-D—Center for Epidemiological Studies Depression Scale, CI—confidence interval, CIDI-SF—Composite International Diagnostic Interview Short-Form, DAQ—Depression Attitude Questionnaire, DAS—Dysfunctional Attitude Scale, DSM—*Diagnostic and Statistical Manual of Mental Disorders*, GAF—Global Assessment of Functioning, GDS—Goldberg Depression Scale, GHQ-12—General Health Questionnaire-12, HADS—Hospital Anxiety and Depression Scale, HMO—health maintenance organization, HRSD—Hamilton Rating Scale for Depression, KPDS—Kessler Psychological Distress Scale, MADRS-S—Montgomery-Asberg Depression Rating Scale-Self-rated, PSS—Perceived Stress Scale, QoLI—Quality of Life Inventory, SCL-90—Symptom Checklist-90, SF-12—measure of health-related functioning, SF-36—measure of quality of life, STAI—State-Trait Anxiety Inventory, WSAS—Work and Social Adjustment Scale.

a specified follow-up period, when one existed in the study. Three of the studies[17,19,21] stated that significant differences in baseline characteristics existed among study groups, but analysis in all of these studies deemed these differences inconsequential with regards to outcome. No significant changes in depressive symptoms were seen with the use of a CBT-based website with no contact from study personnel[23]; however, use of the same website with the addition of regular postcard or telephone reminders did produce significant reductions in depressive symptoms.[19] Use of an educational package on CBT given to general physicians[16] showed no change in patient outcomes, and although physicians in the treatment group stated that they had increased confidence in providing CBT, they were more likely to refer patients for additional support. A CBT-based website comparing 6 versions of different modules found that extended CBT resulted in a significant ($P = .01$) reduction of depressive symptoms when compared with brief CBT, problem-solving techniques, and behavioural strategies, but did not elaborate on the specific length of the extended CBT module.[20]

Validity was assessed using criteria from the Evidence-Based Medicine Working Group.[25] These criteria were as follows: (1) randomized study; (2) no clinically significant difference between groups reported at baseline; (3) equal treatment of groups except for the intervention; (4) blind rating of outcomes; (5) all subjects enrolled in the trial are accounted for at follow-up and analyzed in the groups to which they were randomized. A summary of the validity assessment is presented in **Table 2**.[16-24]

Interventions used

- Burns DD. *Feeling Good. The New Mood Therapy.* New York, NY: William Morrow and Company Inc; 1980. (Cognitive-behavioural therapy [CBT] bibliotherapy)
- Gould RL. *Therapeutic Learning Program.* Palm Springs, CA: IHS-Online Inc; 1989. (Computer program using CBT and psychodynamic-based therapy; some of the program is available on-line) **www.masteringstress.com**
- Clarke G. Learning to Overcome Depression. Portland, OR: Center for Health Research; 1999. (Interactive website using CBT-based therapy; available on-line) **www.feelbetter.org**
- Proudfoot J. *Beating the Blues.* London, UK: Ultrasis; 2000. (Computer multimedia program using CBT-based therapy; software must be purchased by physicians) **www.beatingtheblues.co.uk**
- Christensen H, Griffiths K. MoodGYM. Canberra, ACT: Centre for Mental Health Research, Australian National University; 2004. (Interactive website using CBT-based therapy; available on-line) **http://moodgym.anu.edu.au**
- Griffiths K, Christensen H, Bennett K, Bennett A, Tam A. BluePages. Canberra, ACT: Centre for Mental Health Research, Australian National University; 2001. (Educational website with information on symptoms, treatment, and resources for depression; available on-line) **http://bluepages.anu.edu.au**

DISCUSSION

Most studies included in this review found significant positive outcomes in depression resulting from a variety of brief interventions, which required minimal therapist or physician contact. Several factors, however, must be considered before final conclusions can be drawn. Despite an extensive literature search, only 9 trials were found to meet the study inclusion criteria. Only 6 of these trials used validated scales to diagnose subjects with depression before entrance into the study. It is nearly impossible to obtain blind-rated outcomes when studying various therapeutic interventions; none of the 9 studies was entirely blinded. However, rated scales were used consistently throughout all of the studies, thus outcomes might have been less biased than more subjective measures of clinical diagnoses or improvement.

Many of the studies had small samples, thus other unknown factors might have confounded results. Several of the studies stated that the prevalence of depression in their samples was either higher or lower than would be found in the general population. Also, subjects were recruited using media advertisements and mailed brochures, thus the generalizability of study results to primary care clinic populations is uncertain. Furthermore, limitations of the review process exist. It is unknown what effect unpublished and irretrievable literature, or studies published in languages other than English, might have had on the results of this review.

Despite these limitations, this review does demonstrate that a variety of brief interventions might be effective and feasible for use in primary care settings with physicians who have limited experience in psychotherapy. Bibliotherapy, CBT-based websites, and CBT-based computer programs were all shown to be effective in reducing depressive symptoms and improving clinical functioning. Regardless of the type of intervention, those with greater structure, shorter intervention periods, and frequent contact or reminders from study personnel resulted in higher completion rates. This finding demonstrates the importance of some amount of contact with support staff when patients are using bibliotherapy, computerized therapies, or on-line therapies. The brief weekly contact described in the studies could potentially be analogous to a primary care physician who sets up weekly appointments with patients undergoing one of the study interventions. Weekly contact would provide time for the physician and patient to discuss how the intervention was going and for the physician to screen for worsening symptoms or suicidal thoughts.

To date, there is little published literature on the effectiveness and feasibility of computerized and on-line

interventions for depression. One study found some evidence for equal effectiveness of CBT-based computer programs when compared with therapist-led CBT.[26] Researchers concluded that some CBT-based computer programs might be cost-effective, but the quality of this data was uncertain. Another study found that CBT-based websites and computer programs might improve depression while reducing per-patient therapist time and cost of CBT.[27]

Table 2. Validity assessment of study trials

STUDY	RANDOMIZED?	GROUPS SIMILAR AT BASELINE?	GROUPS TREATED EQUALLY?	BLIND RATING OF OUTCOMES?	COMPLETE FOLLOW-UP? ANALYZED AS ITT?
Jamison and Scogin,[21] 1995	Yes	More men in treatment group (but no correlation in result variation analysis)	Yes	No	All participants accounted for; dropouts excluded from final analysis, but when used in analysis yielded same results
Jacobs et al,[22] 2001	Yes	Listed characteristics of all study patients before randomization but did not compare groups	Yes	No	All participants accounted for; included partial information for 1 dropout who partially completed; other dropouts not analyzed
Clarke et al,[23] 2002	Yes	Yes	Yes	No	ITT analysis explicitly stated (but those lost to follow-up likely not analyzed)
King et al,[16] 2002	Parallel group, cluster randomized (GPs from same practices were randomized together)	Yes (both GP and patient groups)	Yes	Research assistant not blind to allocation of GPs (but GP self-reported outcomes used); GPs not blinded to which patients were participating	ITT analysis explicitly stated (but those lost to follow-up likely not analyzed)
Proudfoot et al,[24] 2003	Yes	Yes	Yes	No	ITT analysis explicitly stated
Christensen et al,[17] 2004	Yes	Yes (slight difference in years of education; no difference in outcome)	Yes	No	ITT analysis (in analysis, baseline scores were assigned to participants who did not respond after intervention)
Andersson et al,[18] 2005	Yes	Appear to be so in chart (not stated if any difference)	Yes	No	ITT analysis stated; however, main outcome measure results calculated on a last-observation-carried-forward basis (missing values filled in with pretreatment values)
Clarke et al,[19] 2005	Yes	Participants in control group more likely to be college graduates and were significantly older (no difference in outcome)	Yes	No	ITT analysis stated; restricted maximum likelihood estimation to condition out missing data
Christensen et al,[20] 2006	Yes	Yes	Yes	No	Modified ITT analysis: all participants included in analysis except for those who did not complete pretest assessments; secondary analysis of participants who completed assigned modules

ITT—intention to treat.

One critical review of Internet information about depression found that the quality of information on-line was quite poor[28]; therefore, caution must be used when referring patients to Internet resources for depression.

More information is available on the efficacy of bibliotherapy in the context of self-administered treatments. Although bibliotherapy has proven to be effective in the treatment of depression[12,13,29] and might be cost-effective in primary care,[30] many resources have not yet been properly evaluated. Caution should be used and progress closely monitored when implementing bibliotherapy.[29]

Potential benefits of interventions such as bibliotherapy and CBT-based websites and computer programs include the fact that most of these services are free and accessible to many patients, that there are no waiting lists, that there is less stigma attached to patients receiving these services compared with seeing a therapist, and that patients can develop a sense of empowerment that comes with choosing to actively help themselves. Additional benefits of computer-based therapies are that some programs can tailor responses to patients and provide prompt feedback based on patient input.

Physician involvement in the use of these services might be necessary to ensure that a proper diagnosis is made and that appropriate adjunctive treatments are initiated. Health care providers must also use their discretion in order to exclude patients who would not benefit from these services, such as those in crisis, those with severe depression, or those unwilling or unable to think through their feelings and problems.

No studies regarding person-to-person psychotherapy mediated on-line or counseling via e-mail exchanges with patients were found, although these types of therapy also exist. Areas for future research on this topic include developing studies on more types of interventions, repeating previous studies with larger sample numbers to ensure that findings are reproducible, developing studies to compare various interventions with one another, and evaluating interventions when they are recommended and mediated by physicians.

Conclusion

Several brief interventions might assist primary care physicians with minimal training in psychotherapy in treating depressed adult patients. These interventions include bibliotherapy, CBT-based websites, and CBT-based computer programs, and they might be most effective when health care personnel have regular contact with patients throughout the intervention period.

According to the results of this study, the following options are currently available, valid, and effective interventions that could be considered for treating patients with mild to moderate depression. After a patient is properly diagnosed and deemed an appropriate candidate for psychotherapeutic intervention, the health care provider might consider using 1 or more of the following options in treatment:

- For motivated patients without Internet access, bibliotherapy with *Feeling Good* by Dr David Burns could

EDITOR'S KEY POINTS

- Depression is a disabling disorder that is extremely common in primary care. Patients with depression often rely solely on their primary care physicians to provide treatment and support, but many primary care physicians have minimal training in psychotherapy.
- This study aimed to identify existing effective non-drug therapies that physicians could easily implement in the management of their adult patients with depression.
- For motivated patients without Internet access, bibliotherapy with *Feeling Good* by Dr David Burns could be recommended. Patients who have Internet access might benefit from using CBT-based websites like MoodGYM or Learning to Overcome Depression. For patients who would benefit from longer courses of therapy, CBT-based computer programs are also available for a fee: *Beating the Blues* and the *Therapeutic Learning Program.*
- Assigning chapters, pages, or modules to patients and scheduling regular follow-up sessions to discuss patient progress would likely increase both compliance and effectiveness of the therapy.

POINTS DE REPÈRE DU RÉDACTEUR

- La dépression est une affection invalidante extrêmement fréquente en médecine primaire. Souvent, les patients déprimés dépendent de leur seul médecin de première ligne pour obtenir traitement et support, mais plusieurs de ces médecins ont peu de formation en psychothérapie.
- Cette étude voulait identifier les thérapies efficaces non pharmacologiques actuellement disponibles que le médecin pourrait facilement utiliser pour traiter la dépression chez l'adulte.
- Pour les patients n'ayant pas accès à Internet, on pourrait recommander une bibliothérapie avec *Feeling Good* du Dr David Burns. Ceux qui ont accès à Internet auraient avantage à utiliser des sites Web de TCC comme *MoodGYM* ou *Learning to Overcome Depression*. Pour ceux pouvant nécessiter un traitement de plus longue durée, il existe aussi des programmes informatiques de type TCC non gratuits: *Beating the Blues* et le *Therapeutic Learning Program.*
- Le fait de suggérer aux patients certains chapitres, pages ou modules en plus d'un suivi régulier pour évaluer les progrès pourrait améliorer le respect et l'efficacité du traitement.

be recommended.[21] Assigning chapters or pages to a patient to read with scheduled weekly follow-up sessions to discuss patient progress might increase both compliance and effectiveness of the therapy.

- Patients who have Internet access and who are motivated to complete 5 weekly or bimonthly modules with ongoing follow-up with their care provider might benefit from using MoodGYM, a CBT-based website (**http://moodgym.anu.edu.au**).[17,20] Access to the 5 modules on this site is free. It might be most effective to decide on a timeline for the patient to complete each module and to schedule follow-up appointments after each module is completed. Learning to Overcome Depression (**www.feelbetter.org**)[19,23] is another CBT-based website. It has 7 chapters that can be used by patients and their care providers in a similar fashion; however, at the time of publication this site was undergoing reprogramming and was not available for use.
- For patients who would benefit from a longer course of therapy, 2 CBT-based computer programs are also available for consideration: *Beating the Blues* (**www.beatingtheblues.co.uk**)[24] and the *Therapeutic Learning Program* (**www.masteringstress.com**; this site was under construction at the time of publication).[22] Full access to these programs must be purchased (although parts of these programs have recently become available for access on-line), and both interventions consist of approximately 10 modules that are intended to be completed on a weekly basis. Again, established timelines for completion and regular follow-up with a care provider would likely increase compliance and effectiveness of these interventions.

Although future research is warranted in this area, several brief interventions have shown promise in the psychotherapeutic treatment of patients with depression. Despite the limitations of the studies reviewed and of this systematic review, it is hoped that these findings might help guide efforts in the treatment of depression as well as the development and evaluation of further research.

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Competing interests
None declared

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