

## **METHODOLOGY**

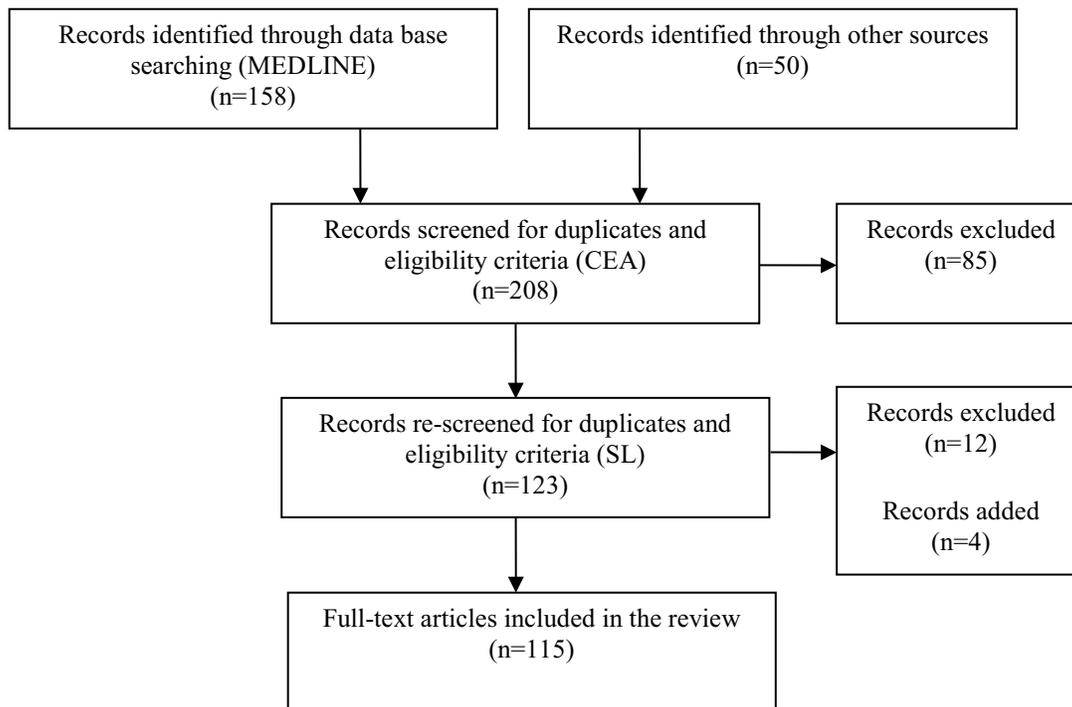
### **The rapid review method**

The methods we used are similar to Khangura and colleagues' (10) seven-step process for conducting a rapid review: (1) identification of the research question in collaboration with the knowledge user, (2) development of the search strategy, (3) identification of relevant studies, (4) selecting studies, (5) conceptual mapping/identifying topical areas (6) charting information, and (7) collating, summarising, and reporting results. Results are reported using a combination of tables and narrative summaries.

### **Search strategy and identification of relevant studies**

The search focused on English, peer-reviewed full abstracts in Medline from 2005 to 2010 using the MESH terms 'mental disorders' and 'internet' and the following non-MESH key words: 'e-mental health', 'e-therapy', 'computer', 'computer-based therapy', 'computer-based treatment', 'web-based therapy', 'web-based treatment. We excluded search terms related to telehealth, given that this is a distinct, and well-established subset of the e-health field that mainly considers the use of telecommunications to connect service providers and patients across geographical distances (3) (as opposed to delivering automated, self-management interventions for example). The search was run in MEDLINE because of time constraints and because it is the most widely searched data base for health-related, has comprehensive coverage (more than 5500 journals), and has substantial overlap with other sources.

The initial search (December 2010) yielded 158 titles/abstracts. Similar keywords were also used in a brief on-line 'grey literature' search which retrieved additional relevant documents, such as a list of in-progress trials, a policy report, and recent conference proceedings. Two experts on e-mental health were also contacted by e-mail for comment on the appropriateness of the identified literature and additional articles. Final searches focused on the work of prominent authors (e.g., H. Christensen; I.B. Hickie; N. Titov). These latter search strategies yielded an additional 50 titles and abstracts. The search strategy and screening process are summarized in the flow diagram presented in Figure 1.

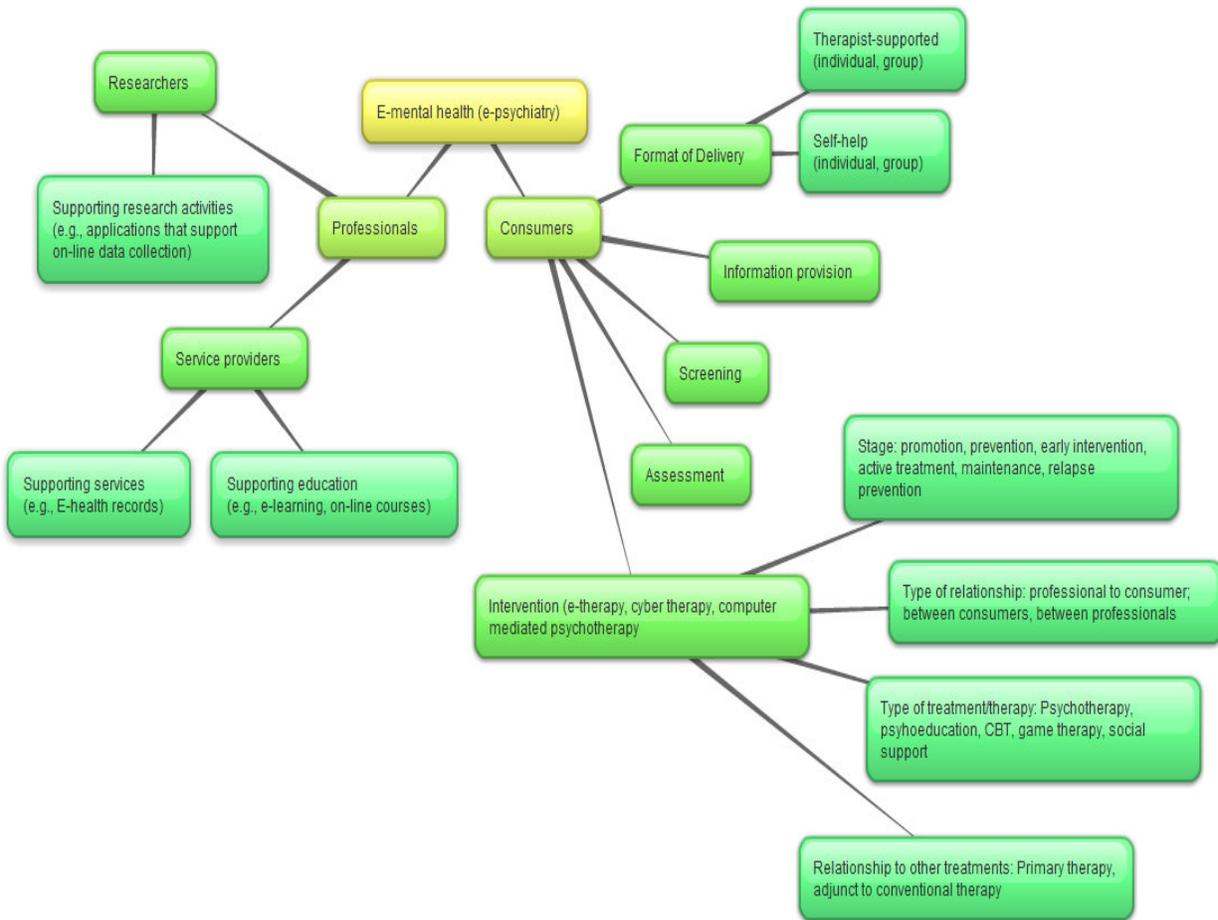
*Flow diagram of search and screening strategy*

The 208 items were initially screened by CEA, using the following criteria: 1) the central focus of the article was e-mental health, rather than the subject just being mentioned in passing and 2) the article reported on interventions targeting individuals with mental health concerns or disorders including screening, access/referral, and treatment as an adjunct to, or independent of face-to-face service delivery. All types of papers (e.g., reviews, commentaries, descriptions of initiatives, and study designs) were included. Documents were excluded if they focussed on administrative or support of services (e.g., e-health records), professional training (e.g., on-line continuing education courses), and research support (e.g., study management or research evidence search tools). The screening left 123 documents for review and write-up. Later, this set of documents was reviewed by SL. At this point the relevancy of 12 items were questioned and removed based on discussion and consensus, and an additional 4 primary studies were identified. This left 115 documents for the validation review.

### **Conceptual mapping, charting information, and reporting results**

A conceptual map of topic areas was developed for the review, based on the research questions and abstract content by CEA, and subsequently revised by SL during the validation stage, displayed in the figure below.

*Conceptual map of topic areas developed for the review*



Documents were reviewed for each topic area and key points were extracted for each research question and then written up. A list of all e-mental health initiatives described in the materials was also prepared (see table below). In the validation step, SL read the full set of materials, critically compared the information with the major points and conclusions of the original review, and reviewed the tabulated examples. In addition, key characteristics from the selected documents (e.g. date, country of origin, type of document) were extracted to describe the body of literature reviewed.

DIGITAL SUPPLEMENT

**Examples of e-mental health programs and initiatives\***

\* inclusion in this list is not meant to imply endorsement or confirmation of effectiveness

Type of Initiative	Target Condition(s)	Target Population (s)	Function	Components and Technologies Used	Reference and Country
Computer-based program	Mild cognitive impairment/ memory disorders	Older adults and elderly	Cognitive training	Home based computers	(73) (US)
Computerized adaptive test	Anxiety	Adults	Patient reported outcomes	Personal digital assistants	(14) (Germany)
Web-based service: 'e-hub' -bluepages -MoodGYM -e-couch	Common mental health concerns	General public	Self-help prevention, early intervention, and treatment (CBT-based)	CBT program, bulletin board, email consultation, information	(27) (Australia)
Web-based program	Panic disorder with or w/o agoraphobia	Adults	Self-help treatment (CBT-based) and peer support	Self-help modules via web pages; access to psychologist feedback; online discussion forum with patients	(22) (Sweden)
Website with various resources 'Reach Out' 'Reach Out Central'	Mental health promotion and stigma reduction (development of coping skills to deal with life stressors)	Adolescents and young adults	Information, social support, CBT treatment	Evidence-based factsheets; moderated community forum; gaming; links to social networking sites; podcasts	(28,29,74) (Australia)
Computer-based program	Addiction	Adults	Self-help treatment (CBT-based)	Computer-based program accessed in clinic consisting of elementary-level computer learning games; presentation of material using multi-media	(75) (US)
Computer-based program	Serious mental illness	Adults (outpatient setting)	Self-assessment before clinic appointment	Computer-based program, touch screen monitor, printed summary of results	(15) (US)
Web-based programs and sites -MoodGym	Depression	Youth Adults	Self-help treatment (CBT-based); and psychoeducatio	Web-pages (BluePages) Interactive modules (MoodGYM)	(31–33) (Australia)

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Type of Initiative	Target Condition(s)	Target Population (s)	Function	Components and Technologies Used	Reference and Country
(CBT) -Bluepages (website)			n website		
Web-based service 'Veterans Chat'	Suicide	Adults (veterans)	Prevention	Chat communication technology accessible by dial-up	(76) (US)
Web-based program	Anxiety and depression	Young adults	Early intervention/ educational program based on cognitive behavioural analysis principles	Web-based program supplemented with printed materials, worksheets, email summaries	(77) (US)
Web-based application 'CommonGround'	Serious mental illness	Adults (outpatient setting)	Decision making in relation to medication management	Web-based software application including survey, database, library, reports, and personal data; combined with peer-run Decision Support Center in the waiting area	(78,79) (US)
Web-based Program	Mental health issues in youth	Parents	Prevention and early intervention, knowledge and skills development related to mental health issues in youth	Web-based program, multimedia based interactive modules	(80) (US)
Web-based symptom questionnaire	Depression, suicide risk, anxiety, PTSD	Adolescents and young adults  (primary care)	Screening/ assessment	Web-based interactive application	(16) (US)
Web-based symptom questionnaire	Depression, substance abuse, anxiety, PTSD, various phobias, panic disorder, and OCD	Adults (mental health care)	Screening/ assessment	Web-based instrument	(17) (Netherlands)

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Type of Initiative	Target Condition(s)	Target Population (s)	Function	Components and Technologies Used	Reference and Country
Electronic symptom questionnaire	Depression and alcohol abuse	Adults (rural primary care)	Screening/assessment	Portable computerized touch screen device	(30) (US)
Web-based support	Mental health problems	College students	Information; peer support	Website; electronic bulletin board	(81) (UK)
Web-based program	Mental disorders	Adults	Group therapy	Group therapy delivered through web-based chat room	(82) (Germany)
Web-based program	Neurodevelopmental and neuropsychiatric disorders	Children	Monitoring pharmaceutical interventions in child psychiatry	Web-based symptom monitoring system	(18) (UK)
Web-based symptom questionnaire 'Neuropsych Questionnaire'	Neuropsychiatric disorders	Adults and Children	Screening/assessment	Web-based instrument	(19) (US)
Web-based, mobile interventions	Substance use, anxiety, eating disorders, and lifestyle management	Adults	Monitoring	Web-based mobile technology	(20) (US)
Website 'DoctorsHealth'	Mental health problems	Physicians and their families	Information and resources	Website with information on mental health resources	(83) (Australia)
Overcoming Depression on the InterNet	Depression	Adults	Self-help treatment	Self-help website plus telephone and/or postcard reminders to use the website	(84) (US)
CopingMatters	Substance Abuse	Low-moderate risk drinkers	Prevention/early intervention/harm reduction	Self-assessment; individualized feedback; information; workshops; journal; interactive forum; links to resources	(85) (US)
Web-based CBT	Depression	Adults (primary care)	CBT treatment delivered by therapist	On-line free texting	(86) (UK)
Web-based	Anxiety	Children and	Self-help treatment (CBT-	CD-ROM (Cool Teens); computer based program	(23,24)

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Type of Initiative	Target Condition(s)	Target Population (s)	Function	Components and Technologies Used	Reference and Country
program 'Camp Cope-A-Lot: The Coping Cat' 'Cool Teens'	Disorders	adolescents	based) with parent/therapist support	(Coping Cat); flash animation, multimedia, cartoon characters; video game rewards; parent/therapist assisted	(US)
Web-based program	Panic disorder	Adults	Self-assessment and self-help	Self-assessment; feedback; information; coping strategies	(87) (Australia)
Web-based program -PTSD Online	PTSD	Adults	Self-help treatment w/ therapist assistance (CBT-based)	Module based self-treatment with email support from psychologist	(88) (Australia)
Web-based program	Social Phobia	Adults	Automated CBT program	Virtual reality therapy interventions directed by a cognitive behaviour therapist	(89) (France)
<b>Website</b> -Glaukopis-net	<b>Range of psychiatric conditions (e.g., dementia, depression and anxiety)</b>	<b>Adults</b>	<b>Information and email consultation</b>	<b>Website with information, and services delivered thru email</b>	<b>(6)</b> <b>(Greece)</b>
Web-based program -interapy.nl	PTSD	Adults	Treatment	Writing sessions with therapist feedback; psychoeducation	(90) (Netherlands)
Web-based symptom questionnaire	Depressive symptoms and Major Depressive Disorder	Adults	Self-screening/assessment	Web-based self-assessment tool	(91) (Taiwan)
Web-based program -Down your Drink	Alcohol abuse	Adults	Screening, prevention, harm reduction	Web-based interactive program with self-assessment, feedback, and brief interventions	(92) (UK)
Web-based program -Beating the Blues	Mild to moderate Anxiety and Depression	Adults in primary care	Self-help treatment (CBT-based)	Introductory video; CBT sessions; progress reports for general practitioners and nurses retrieved from the	(93) (UK)

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Type of Initiative	Target Condition(s)	Target Population (s)	Function	Components and Technologies Used	Reference and Country
				system	
Computer-based program -SPARX	Depression	Adolescents	Self-help treatment	Self-help interactive fantasy game delivered on CD-ROM	(Merry, 2010- personal comm.)  (New Zealand)
Web-based program -Sadness	Depression	Adults	Self-help treatment with therapist support (CBT-based)	Online lessons, homework assignments, online discussion forum with therapist moderating, and email contact/feedback from therapist	(94) (Australia)
Web-based assessment	Care recipients	Adults	Assessment	Electronic diaries operated thru mobile technologies, PDA's, interactive voice response systems	(95) (US)
Computer-based program -Captain's Log -Destination Reading and Math	Attention problems	Children	Cognitive training	Computer-based exercises	(96) (US)
Web-based program -SHUTi	Insomnia	Adults	Self-help treatment (CBT-based)	Interactive web-based program including vignettes, quizzes, brief games, automated e-mail reminders and prompts	(97) (US)
Web-based program -SOAR	Schizophrenia	Adults with schizophrenia and their caregivers	Multi-family psychoeducation (problem solving approach)	Web-based tutorials, self-help articles, and group forums.	(26) (US)
Web-based program	PTSD/panic, depression, GAD, alcohol and substance use	Adults (affected by disasters)	Self-help intervention	Modular based self-help	(98) (US)
School-based website	Various health and	Youth (middle and	Health promotion and	Website containing information sheets, posting	(12)

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Type of Initiative	Target Condition(s)	Target Population (s)	Function	Components and Technologies Used	Reference and Country
-YooMagazine	psychosocial needs	high school aged)	Early detection	and responding to questions	(Canada)
Web-based bulletin board	Parenting stress	Parents of children with mental illness	Social support	Bulletin board	(25) (US)
Web-based program	Sub-threshold depression	Adults 50+	Self-help intervention (CBT-based)	Modular web-based program with text, exercises, videos, and figures with possibility to call center for assistance	(21) (Netherlands)
Program partially delivered via clinic and web	Anxiety Disorders	Children and youth aged 7-14 and their parents	Self-help and treatment (CBT-based)	Clinic based treatment combined with internet based delivery; color, animations, sounds, roll-over images, pop-up messages, and self-assessment quizzes with immediate feedback	(99) (Australia)
Web-based Program	Social Phobia and public speaking fears	Adults (university students)	Self-help treatment	Web-based modules consisting of information, exercises, essay questions, online discussion; homework assignments with therapist feedback	(34) (Sweden)
Web-based program -Shyness	Social phobia	Adults	Self-help treatment (CBT-based), clinician-assisted	Web-based, online lessons, homework assignments, online discussion forum, and email contact with therapist	(100) (Australia)
Web-based self-help program	Mild to moderate suicidal thoughts, depression	Adults	Self-help treatment (CBT-based)	Web-based modular program with information, exercises, assignments, and section on 'frequently asked questions,' with opportunities to pose questions to this section	(101) (Netherlands)
Web-based program -Project Catch-it	Depression	Adolescents in primary care	Prevention	Web-based modular program (including a workbook for parents), combined with physician delivered motivational interviewing or brief advice	(102) (US)
Web-based	Panic disorder	Adults	Self-help	Web-based program	(103)

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<b>Type of Initiative</b>	<b>Target Condition(s)</b>	<b>Target Population (s)</b>	<b>Function</b>	<b>Components and Technologies Used</b>	<b>Reference and Country</b>
program	with or without agoraphobia		treatment (CBT-based) supported by clinician	consisting of lessons, assignments, email contact with clinician, moderated online discussion forum	(Australia)
Web-based program and website -Kopstoring	Behavioural and psychological problems	Adolescents (16-25) of parents with MI or SUDS	Group-based prevention program (coping skills development)	Web-based chat room for delivery of structured group intervention; program is integrated in a website that includes other e-mail services and chat options	(70) (Netherlands)