

PREVENTION IN ACTION

Internet-Based Interventions Can Help Youth

PERSPECTIVE

The Internet is one of the greater dissemination tools known to mankind. In many ways, it got us our new president, and if we use it as wisely as he did, we can do many things to improve the public's mental health as per the Institute of Medicine recommendations (See related article on page 2).

It is really simple. If you have an evidence-based strategy delivered via the Internet, such as the CATCH-IT depression intervention, it is easy to put it out to the public to determine whether the efficacy in the pristine academic re-



BY CARL C. BELL, M.D.

search environment will be sustained in the real, dirty world.

Internet-based programs are inexpensive and straightforward to facilitate: Develop a Web-based interactive

program, put it on the web, publicize the site in the general media, and educate primary care physicians. With the push of a button, the intervention can be disseminated automatically all over the world.

Internet-based prevention interventions also solve the thorny problem of fidelity to the proven model, as the intervention is the same everywhere it goes; you don't have to worry about different practitioners doing the intervention differently. I think of depression prevention interventions that are shown to be evidence based on the Internet as McDonald's, which has a pretty high level of fidelity: You can go any where in the United States, and a McDonald's cheeseburger is going to taste the same.

The key challenge with such interventions is not the delivery mode per se, but the model itself. Does the intervention address protective factors to prevent mental illness in the target population? Is the application user friendly and engaging? If the answers are yes, and there is public and, importantly, government support, the primary barriers to effective implementation have been removed.

Using the Internet as a delivery vehicle also is an advantage because the technology facilitates user-tracking: how often users go to the site, how long they stay there, and so forth. It also offers a great way to monitor process outcomes of the intervention in addition to adding some measures of actual efficacy of the program online.

DR. BELL is chief executive officer and president of Community Mental Health Council Inc. in Chicago and serves as director of public and community psychiatry at the University of Illinois at Chicago.

The National Research Council's and Institute of Medicine's recent challenge encouraging the federal government to make the prevention of mental, emotional, and behavioral problems among young people a priority seems daunting. But the challenge can be met.

In recent years, many interventions have shown efficacy in preventing depression, anxiety, conduct disorder, substance abuse, and violence in children and adolescents.

For example, a school-centered substance abuse and violence prevention program developed by the National Center on Addiction and Substance Abuse at Columbia University has seen great success in implementations nationwide.

Called CASA-START (Striving Together to Achieve Rewarding Tomorrows), the intervention promotes communication between children and their families, and collaboration among key community stakeholders.

According to the Substance Abuse and Mental Health Services Administration's national registry of evidence-based practices and programs (NREPP) multiple outcome studies have linked the intervention with significant reductions in participants' risk of drug use and violence as well as improvements in school performance (www.nrepp.samhsa.gov).

Another example is an intervention called Coping Cat, developed by Philip C. Kendall, Ph.D., of Temple University in Philadelphia. This intervention uses cognitive-behavioral therapy (CBT) to help children recognize and analyze anxious feelings, and to develop strategies aimed at coping with anxiety-provoking situations. The 16-session program uses behavioral training strategies with demonstrated efficacy.

Studies reported in the NREPP database indicate that the intervention has led to significant decreases in child-reported anxiety symptoms and significant increases in children's coping ability. The effects have been maintained long-term.

Such evidence-based interventions suggest the "the nation is well-positioned to equip young people with the skills and habits needed to live healthy, happy, and productive lives," said Kenneth E. Warner, Ph.D., dean of the University of Michigan School of Public Health and chair of the Institute of Medicine committee that worked with the National Research Council in writing the new report, "Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities." In order to facilitate such outcomes, "we need to develop the sys-

tems to deliver effective prevention programs to a far wider group of children and adolescents," he said.

Toward this end, Internet-based preventive interventions may hold particular promise. Outcome studies of a combined primary care/Web-based program called Project CATCH-IT, developed by Dr. Benjamin W. Van Voorhees of the University of Chicago and his colleagues, have demonstrated the power of the Internet as a medium for preventing depression in at-risk adolescents.

The initial phase of the intervention is a motivational interview conducted

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by a primary care provider, during which the patient is encouraged to identify his or her goals and to understand the potential impact of depression on attaining those goals. As part of this session, the adolescent is introduced to the

Internet-based program, which is made up of multiple modules based on CBT that the user can move through at his or her own pace. The intervention concludes with a follow-up visit with the primary care provider to re-evaluate patient mood and depression risk (<http://catchit-public.bsd.uchicago.edu>).

In a pilot trial of Project CATCH-IT, 14 adolescents who were at high risk for depression experienced favorable changes in depressed mood and symptom scores (Can. Child Adolesc. Psychiatr. Rev. 2005;14:40-3).

More recently, the investigators randomly assigned 84 adolescents at risk for major depression to one of two versions of the intervention. One version consisted of a 1- to 2-minute brief advice component prior to the Project CATCH-IT implementation; the other included the standard 5- to 15-minute motivational interview.

In a comparison of program use and before and after changes and between-group differences for protective and vulnerability factors, both groups substantially engaged the Web site, and both groups experienced declines in Center for Epidemiologic Studies Short Depression Scale (CES-D 10) scores. Also, the percentage of those with clinically significant depression symptoms based on CES-D 10 scores declined significantly in both groups from baseline to week 12, the authors reported (J. Dev. Behav. Pediatr. 2009;30:23-37).

"For clinicians, the results suggest that motivational interviewing and

brief advice may both be useful in engaging adolescents with mental health disorders with interventions, and that motivational interviewing may confer an added protective benefit in reducing the incidence of depressive episodes," the authors wrote.

The development of optimal delivery models offering the best cost/benefit ratio and yielding the most effective results will require "conducting randomized trials comparing varying degrees of face-to-face contact coupled with Internet interventions," according to the authors. But the advantages of the Internet as a delivery medium over traditional practice are unassailable. Internet applications enable patient autonomy and minimize passive participation, Dr. Van Voorhees said in an interview.

Internet dissemination also does not require scheduling; there is no stigma associated with participation; it is easy to tailor; the fidelity is high; and the application is in vivo, in that the "learning and behavior changes are occurring in the patients' world of activity," he said.

To be optimally effective, however, Internet interventions must be delivered in the context of a relationship, Dr. Van Voorhees stressed. "This can be as brief as 1-2 primary care meetings to engage the patient, or it could be with a youth minister, coach, or guidance counselor."

Internet-based interventions will be useful only if the user can read, understand, identify with, and find personal relevance in the program in order to create a goal-directed change plan, Dr. Van

To increase the likelihood of adolescent engagement with an online intervention, present the information at a 7th-grade reading level and make the design media-savvy.

Voorhees said. An interesting, media-savvy design with information presented at a 7th-grade reading level would increase the likelihood of adolescent engagement, he noted.

Patients most likely to benefit from this type of intervention are those at moderate risk for

mental disorder, Dr. Van Voorhees said.

Despite the obvious benefits of these interventions, they are not immune to challenges. Among the obstacles impeding the transition of these interventions from research to clinical implementation are the lack of a viable commercial distribution model and thus the absence of marketing to build up use of the programs, Dr. Van Voorhees said.

One alternative would be delivery via a government-sponsored public health model, or a mixed government/private pay model, such as that used for vaccine distribution, he said. "Social networking would potentially boost effectiveness, but liability concerns are an issue for institutional sponsors," he noted. ■

By Diana Mahoney. Share your thoughts and suggestions at cpnews@elsevier.com.