

# **Working toward Wellness**

## **Telephone Care Management for Medicaid Recipients with Depression, Thirty-Six Months After Random Assignment**

**OPRE Report 2011-21**

**December 2011**

Office of Planning, Research and Evaluation (OPRE)  
Administration for Children and Families  
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The findings and conclusions in this report do not necessarily represent the official positions or policies of HHS.

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## Overview

Although many public assistance recipients suffer from depression, few receive consistent treatment. This report presents 36-month results from a random assignment evaluation of a one-year program that provided telephonic care management to encourage depressed parents, who were Medicaid recipients in Rhode Island, to seek treatment from mental health professionals. Called “Working toward Wellness” (WtW), the program represents one of four strategies being studied in the Enhanced Services for the Hard-to-Employ Demonstration and Evaluation Project to improve employment for low-income parents who face serious barriers to employment. The project is sponsored by the Administration for Children and Families and the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services, with additional funding from the Department of Labor.

This report focuses on assessing the success of the program’s efforts to improve depression symptoms and work-related outcomes, two years after the end of the intervention. In WtW, master’s-level clinicians (“care managers”) telephoned the study participants in the program group to encourage them to seek treatment, to make sure that they were complying with treatment, and to provide telephonic counseling. The effects of the program are being studied by examining 499 depressed Medicaid recipients with children; these parents were randomly assigned to either the program group or the control group from November 2004 to October 2006.

## Key Findings

- WtW care managers used the telephone effectively to initiate engagement with people with depression to consider treatment. They contacted 91 percent of those assigned to the program group, and they averaged about nine contacts per client over the yearlong intervention.
- WtW increased the use of mental health services while the intervention was running, but it did not help individuals sustain treatment after the intervention ended. Although the program group members were more likely to receive mental health treatment and to fill prescription medications for depression in the early phase of WtW, this effect disappeared after the one-year intervention ended.
- Authorization procedures limited the capacity of WtW care managers to function as liaisons between clients and clinicians; care managers could not provide direct feedback to clinicians regarding WtW clients as they progressed in treatment. Such a collaborative approach was difficult to orchestrate in the case of WtW because the care managers worked for UBH while the community clinicians worked in a variety of settings outside UBH.
- WtW did not have an effect on depression or employment outcomes at 36 months after the end of the intervention. At that point, despite some modest impacts on depression for subgroups in earlier follow-up periods, the overall distributions of depression levels between the program and the control groups are not significantly different. Since the 36-month impact on depression was minimal, it is not surprising that there were no differences in employment outcomes for the two groups.



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The Authors



## Executive Summary

Although low-income individuals are disproportionately likely to suffer from depression, few receive treatment, and even fewer persist with their treatment. Randomized controlled trials have demonstrated that telephone care management interventions can successfully encourage primary care patients and employed workers to talk with mental health specialists, increase their use of antidepressants, reduce their depression, and even improve their work performance and job retention.<sup>1</sup>

This report presents the 36-month results from a program called “Working toward Wellness” (WtW) that provided telephone care management to a low-income population — depressed parents receiving Medicaid in Rhode Island — to encourage them to seek treatment from a mental health professional. The project was conducted as one of four studies in the Enhanced Services for the Hard-to-Employ Demonstration and Evaluation Project, which was sponsored by the Administration for Children and Families and the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services (HHS), with additional funding from the Department of Labor. WtW is being evaluated by MDRC in partnership with United Behavioral Health (UBH) and Group Health Cooperative (GHC). UBH delivered the care management services, and GHC designed the intervention and provided technical assistance and training to UBH staff.

This report presents the following key findings:

- WtW care managers used the telephone effectively to initiate engagement with people with depression to consider treatment.
- WtW increased the use of mental health services while the intervention was running, but it did not help individuals sustain treatment after the intervention ended.
- Authorization procedures limited the capacity of WtW care managers to function as liaisons between clients and clinicians; care managers could not provide direct feedback to the clinicians regarding WtW clients as they progressed in treatment.
- WtW did not have an effect on depression or employment outcomes at 36 months after the end of the intervention.

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<sup>1</sup>Katzelnick et al. (2000); Wang et al. (2004); Simon et al. (2004).

## **Background on the WtW Program**

Although there is considerable evidence that individuals with depression benefit from psychotherapy and medications, only about one-fifth of depressed individuals currently are in treatment.<sup>2</sup> In low-income communities, there may be less knowledge about depression treatment and lower quality of care than in higher-income communities, and individuals are more likely to be depressed but less likely to receive treatment.

One promising way to help people receive effective depression treatment is through care management. In WtW, master’s-level clinicians — “care managers” — call individuals who were suffering from depression to encourage them to seek treatment, help them find and make appointments with mental health professionals, make sure that they were keeping appointments and taking prescribed medications, educate them about how depression would affect them and how treatment can help them, and provide support and counseling by telephone to individuals who were reluctant to seek treatment in the community. It was hypothesized that encouraging people to seek treatment and alleviate their depression would help more of them return to work or become more productive at jobs they already held.

Although telephone care management has helped reduce depression among populations of relatively high socioeconomic status, its effects for low-income populations were unknown. It was unclear whether telephone care management would be effective in providing Medicaid patients with depression the education, support, and motivation that they need to enter and engage with treatment over time. The evaluation of WtW begins to fill this gap by reporting the results of a randomized controlled trial of a telephone care management intervention for Medicaid recipients who have children.

## **The WtW Evaluation**

To study WtW, individuals who had children and who were receiving Medicaid in Rhode Island and were eligible for mental health services through United Behavioral Health were screened by telephone for depression. Those who were found to have depressive symptoms as defined by a clinical assessment using the Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR) questionnaire and who agreed to participate were assigned to the study. Individuals scoring 6 or higher on the QIDS-SR questionnaire — which is defined as a mild or higher level of depression — were included in the study. The evaluation used a random assignment design, meaning that each study participant was randomly assigned to either a program group, which received the intervention’s mental health services, or a control group, which did not. Participants in the program group were eligible to receive telephone care management from master’s-level clinicians employed by UBH. The control group received usual care that includ-

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<sup>2</sup>Kessler et al. (2003).

ed referrals to mental health treatment providers in the community. Random assignment ensures that, on average, all characteristics are similar for the two groups at baseline so that any substantial differences that later emerge can be attributed to the program with confidence.

Of the 499 individuals in the study, 245 were randomly assigned to the program group, and 254 were assigned to the control group. The study includes participants who were more severely depressed than those in studies that have focused on employed populations.<sup>3</sup> The average age of the participants at baseline was 35, and 90 percent are women. About half of them had a General Educational Development (GED) certificate or a high school diploma when they entered the study, and a quarter had some education beyond high school. A little less than half the participants are white; approximately 33 percent are Hispanic; and 12 percent are African-American. Less than half the participants (44 percent) were employed at the time of random assignment.

The random assignment of study participants occurred from November 17, 2004, to October 20, 2006. This report presents results through 36 months following random assignment, or from November 2007 (for the first clients assigned) to October 2009 (for the last clients assigned). The two main purposes of the study are to determine (1) whether a telephone care management model that is focused on low-income parents can successfully help participants get treatment and, if so, (2) whether the model is effective at alleviating depression and increasing employment and earnings.

## **Key Findings on Program Implementation**

As stated in the 18-month report, the first question addressed by the study is whether care managers were able to engage members of the program group and what challenges they faced in helping individuals seek treatment. Key findings on the implementation of the program are presented below.

- **Care managers effectively contacted people with depression via telephone, but it was difficult to maintain engagement with them.**

Care managers successfully contacted 91 percent of those assigned to the program group, and they averaged about nine contacts (8.8 contacts) per client over the yearlong intervention. This took considerable effort. The contact-to-attempt ratio is about 30 percent — meaning that the care managers made about 3.5 attempts for each contact. Making contacts also required time. After the initial contact, which typically occurred within just a few days after random assignment, the median period that elapsed between contacts was about three weeks through the fifth contact and from three to four weeks through the ninth contact.

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<sup>3</sup>Wang et al. (2007).

- **The “phone program” was a useful alternative for clients but typically did not lead to in-person treatment.**

The “phone program” became a useful tool for engaging those who were not yet willing or able to begin in-person treatment. The phone program was a structured psychoeducational program based on a workbook that clients worked through under a care manager’s telephone guidance. The workbook was designed to help people who are experiencing stress and depression to better recognize and manage their symptoms. With clients in the phone program, the care managers continued to encourage in-person care for those who remained depressed, although, for many who used it, the phone program became an end in itself. According to the case note data, it does not appear that the phone program typically led to in-person treatment.

- **The care managers were rarely able to function as liaisons between clients and clinicians in the community.**

It was originally expected that the care managers would provide feedback to clinicians in the community regarding WtW clients as they progressed in treatment. Such a collaborative approach — whereby care managers and clinicians work together — was difficult to orchestrate in the case of WtW because the care managers worked for UBH while the community clinicians worked in a variety of settings outside UBH. The community clinicians were contracting to offer care not only with UBH but also with a number of other health care organizations. To be sensitive to participants’ concerns about contact between the care managers and the clinicians, the care managers were required to obtain written permission from both the participants and the providers before performing the liaison function. Unfortunately, it was very difficult for the care managers to obtain this written permission from either party, and consequently the care managers could not perform this role. As a result, care managers could only advise or guide the participants on ways to better navigate health care and how to advocate for themselves.

## **Key Findings on Program Impacts**

This report presents results through the 36 months following random assignment, using information from Medicaid claims data and a survey conducted with about 86 percent of study participants. Depression and employment outcomes were assessed at the time of the 36-month follow-up survey. UBH provided claims data on the use of behavioral and physical health care services and prescription drugs. These data cover only through 24 months following random assignment because medical claims data were incomplete beyond that point. The focus of the study has been to assess whether WtW improved depression symptoms and work-related outcomes after the end of the intervention.

The key impact findings are presented below.



- **More program group members than control group members received treatment for depression, but that effect did not last past the one-year intervention period.**

In the early phase of the intervention, program group members were more likely than control group members to receive mental health treatment and to fill prescription medication for depression. As shown in Figure ES.1, higher percentages of the program group received mental health services on a monthly basis in the first six months of the intervention. Program group members were more likely than control group members to see a psychiatrist, primary care physician, or psychologist about a mental health issue. This impact on the use of mental health services is slightly higher than was found in a study of a similar intervention serving a non-Medicaid population.<sup>4</sup> The line graph also shows that the difference between the program and the control groups started to decline after about Month 7 of the intervention and that there were no differences by the end of the intervention and beyond Month 12. This graph supports the finding that WtW had a positive impact on the use of mental health services during the one-year intervention but not after the end of the intervention.

Similarly, Figure ES.2 shows the percentages of program and control group members who filled prescriptions for psychotherapeutic drugs, by month. Except for at Month 3, there was no significant difference in filling prescriptions for psychotherapeutic drugs overall, although program group members were more likely than control group members to fill prescriptions for psychotherapeutic drugs other than antidepressants during the 24-month follow-up period. Often, other psychotherapeutic drugs, such as antianxiety medications, are prescribed along with antidepressants for people suffering from depression.

- **Although earlier results suggested that there may have been some modest impacts on depression, the program did not significantly reduce depression at 36 months.**

At the 6-month follow-up point, no overall difference in depression levels was observed between the program group and the control group. For a subgroup of Hispanic sample members, there was an effect on treatment, and the program group had reduced depression severity at 6 months, but this subgroup effect was no longer detectable at 18 months or 36 months following random assignment. Although no significant effect on average depression severity was found for the full sample, there was a significant change in the distribution of depression severity at the 18-month follow-up. Specifically, there was a reduction in the number of people who suffered from very severe depression at 6 months and at 18 months, although that effect did not persist through 36 months.

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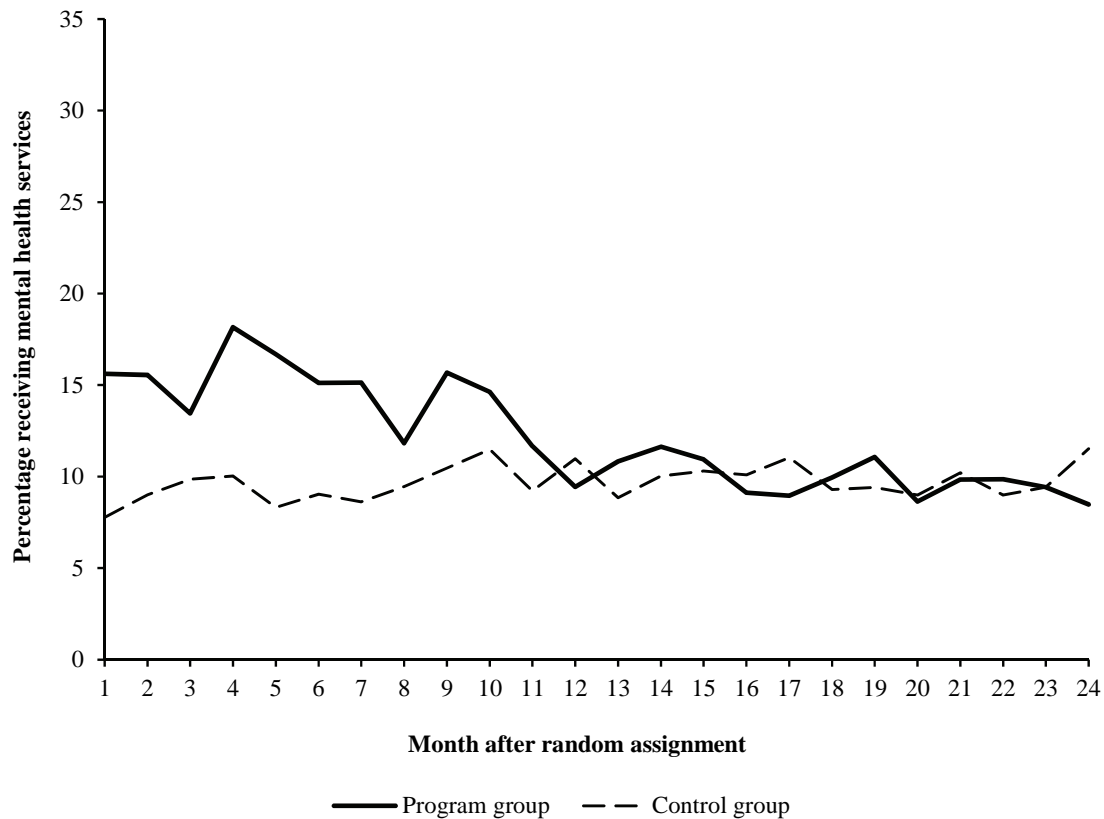
<sup>4</sup>Wang et al. (2007).

The Enhanced Services for the Hard-to-Employ Demonstration

Figure ES.1

Percentage Receiving Mental Health Services, by Month

Rhode Island: Working toward Wellness



SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health medical claims data.

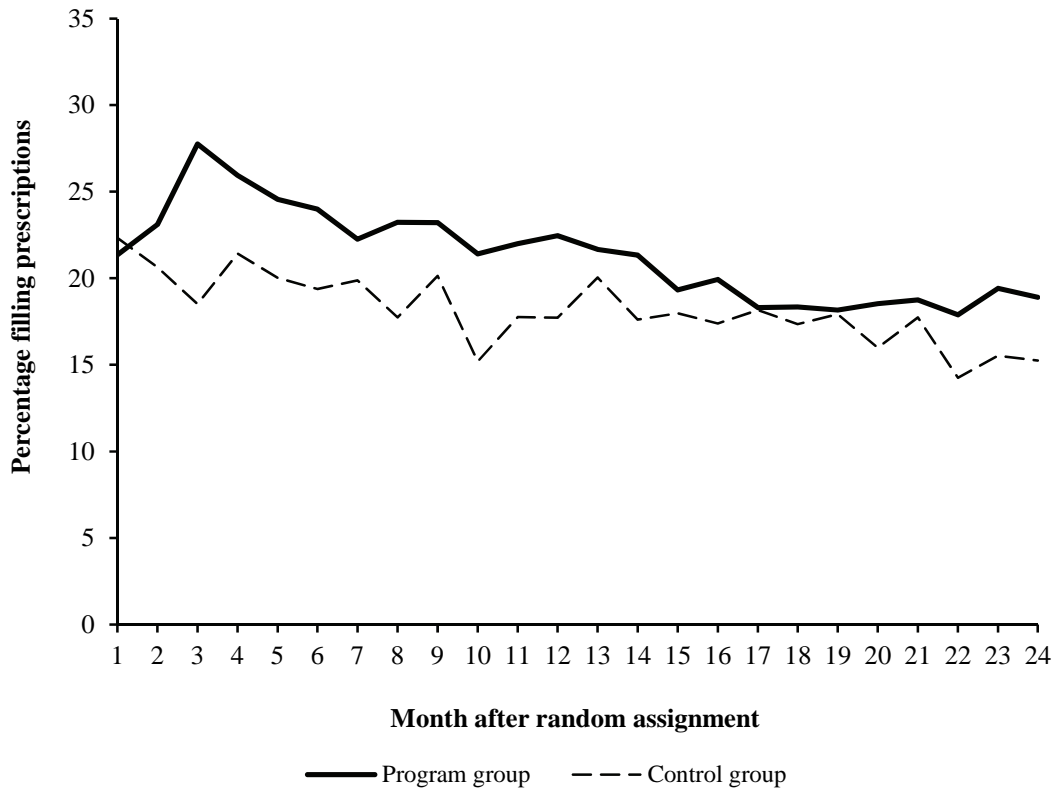
- **There was no difference in employment between the program and the control groups.**

There were no differences in the number of days of missed work or in hourly wages between the two research groups. Since the 36-month impact on depression was minimal, it is not surprising that there were no differences in employment outcomes for the two groups.

The Enhanced Services for the Hard-to-Employ Demonstration

Figure ES.2

Percentage Filling Prescriptions for Psychotherapeutic Drugs, by Month  
Rhode Island: Working toward Wellness



SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health prescription claims data.

NOTES: Percentages shown are adjusted for pre-random assignment characteristics.

- **WtW had few effects on parenting and outcomes for children.**

Besides examining the effects of WtW on adults' depression, this study also examines how the program affected participants' children. The "child add-on study" allowed the research team to collect in-depth information on older children of study participants — children at the transition to early and late adolescence — for whom the effects of parents' depression might be particularly salient. Research has found that maternal depression contributes to difficult adjust-

ment during adolescence in low-income families,<sup>5</sup> as well as to depression among the adolescents themselves, particularly among girls after puberty.<sup>6</sup> Based on parental reports of their children and on youth reports of their own mental health, social skills, and self-esteem, effects of the WtW program are extremely rare. While a few significant differences were found between the program and control groups on the youths' use of medical services, there is no consistent pattern of benefits for children as a result of their parents' assignment to the WtW program.

## Implications of the Findings

The WtW study found that care managers were able to engage the participants by telephone and encourage them to seek in-person treatment for depression. Nearly everyone in the program group was successfully contacted at least once, but it was difficult to maintain engagement with them. The WtW intervention had a modest impact on the use of mental health treatment services overall. The high rate of successful telephone contacts in the early phase of the intervention suggests that care managers were able to engage the participants and had at least begun building telephone relationships with them. However, the challenge appears to be in encouraging individuals beyond initial engagement and sustaining them in treatment.

The results from this study provide some important lessons to consider before implementing telephone care management of depression for the Medicaid population. One factor contributing to the lack of impact on depression may be that the study sample was already a highly served population. It turned out that many participants had received depression treatment prior to enrolling in the WtW intervention. This may be a function of the way in which the original sample was selected. Medicaid recipients received letters asking them to complete a depression screener and mail it back. Very depressed, untreated people may have been less likely to return the letter to begin with. In fact, only about 10 percent of people who were mailed this letter ever returned the depression screener. It is possible that individuals who had been treated for depression in the past were more likely to respond to the recruitment letter and to agree to participate in the study. About 73 percent of the participants reported ever having received treatment for depression, and 40 percent of them had the treatment in the prior year. The program may not have succeeded in reaching people who were less inclined to get treatment (but who might have benefited more from it) because the outreach to recruit participants was conducted only by mail. Recruitment methods such as in-person screenings at social service agencies might have discovered more individuals with untreated depression and might have resulted in a more representative sample. This is a speculation, however, and there are no data to directly assess these assumptions.

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<sup>5</sup>McLoyd, Jayaratne, Ceballo, and Borquez (1994).

<sup>6</sup>For a review, see Beardslee et al. (1998); also see Angold, Costello, and Worthman (1998).

On the other hand, given that WtW participants experienced life stressors that often prevented them from receiving continuous treatment, recruiting individuals without prior depression treatment might have resulted in a group who had even greater barriers to treatment. The relatively modest effect on the use of mental health services may be highlighting the multiple challenges to treatment and the competing demands faced by low-income parents. According to extensive case notes compiled by the care managers,<sup>7</sup> study participants faced many stressors that may have limited or overwhelmed their efforts to seek or maintain in-person care. Moreover, a portion of the participants appear to have had personal crises that caused them to lose all contact with their care managers for extended periods of time.

Another way to strengthen the program might be to have care managers devote additional resources to helping individuals overcome the barriers to receiving depression treatment. Perhaps earlier and greater reliance on telephone counseling (rather than just care management) might also have produced larger effects on depression symptoms, because it would have provided a form of treatment that did not require individuals to leave their homes. Future interventions should also consider a system whereby care managers are able to directly coordinate the patients' care with the health care providers. Past studies within the Group Health Cooperative system have found larger effects and have shown benefits for depressed patients participating in telephone care management — although primarily within a non-Medicaid population.<sup>8</sup> In these studies, care managers were able to work within a single health care system with the mental health providers and could directly communicate with them to coordinate care. Because such a collaborative approach was not possible for WtW, care managers could only advise or guide the participants on ways to better navigate health care and how to advocate for themselves.

Finally, although there is evidence that telephone care management is a relatively inexpensive means of reducing depression for more affluent populations, existing telephone care management models may not be intensive or comprehensive enough for low-income populations — in particular, Medicaid participants with children. For future interventions, it would be important to consider whether Medicaid and other low-income populations require more intensive interventions that extend beyond telephone care management, possibly including in-person components that address critical barriers to in-person treatment. If researchers can identify groups that are less likely to receive treatment, that might suggest approaches that could be used to encourage treatment.

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<sup>7</sup>Kim et al. (2010).

<sup>8</sup>Simon, Ludman, and Rutter (2009); Simon et al. (2004).

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## Chapter 1

# Description of the Working toward Wellness (WtW) Study

This report presents 36-month results from a random assignment evaluation of a one-year program that provided telephonic care management to encourage depressed parents, who were Medicaid recipients in Rhode Island, to seek treatment from mental health professionals. The study, called “Working toward Wellness” (WtW), was conducted as one of four studies in the Enhanced Services for the Hard-to-Employ Demonstration and Evaluation Project, which is testing strategies to improve employment and other outcomes for low-income parents and others who face serious barriers to employment. The project is sponsored by the Administration for Children and Families and the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services (HHS), with additional funding from the Department of Labor. WtW is being evaluated by MDRC in partnership with United Behavioral Health (UBH) and Group Health Cooperative (GHC). UBH delivered the care management services, and GHC designed the intervention and provided technical assistance and training to UBH staff.

For the period covered by this report — 36 months following random assignment — the focus has been on assessing the success of WtW’s efforts to improve depression symptoms and work-related outcomes, two years after the end of the intervention. This report describes results from the 36-month follow-up data on depression severity, the use of mental health services, and employment. A detailed description of the study’s design, the random assignment procedures, and the sample intake process can be found in the previously published 6- and 18-month reports.<sup>1</sup> Readers should refer to the 18-month report for a more comprehensive description of the implementation process and of the intervention’s results.

## Background on the WtW Program

Although there is considerable evidence that individuals with depression benefit from psychotherapy and medications, only about one-fifth of depressed individuals are in treatment.<sup>2</sup> In low-income communities, there may be less knowledge about depression treatment and lower quality of care available than in higher-income communities, and individuals are more likely to be depressed but less likely to receive treatment.

Low-income populations experience numerous barriers to depression care and often find it difficult to seek help and engage in a therapeutic relationship. For instance, in addition to

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<sup>1</sup>The 6-month results are reported in Kim, LeBlanc, and Michalopoulos (2009), and the 18-month results are reported in Kim et al. (2010).

<sup>2</sup>Kessler et al. (2003).

possessing fewer social and economic resources that support treatment, individuals from poor and minority backgrounds sometimes face stigma attached to seeking mental health treatment, as well as language barriers in their attempts to interact with treatment providers.<sup>3</sup> Due in part to having less knowledge about depression and fewer treatment options, their rates of depression treatment are low relative to those for the general population.<sup>4</sup> Among those who do seek treatment, many struggle to maintain an ongoing relationship with a mental health professional,<sup>5</sup> which is a serious problem, given the episodic nature of depressive symptoms. As a result, many patients relapse.

Despite the challenges in providing depression treatment to poor and disadvantaged populations, previous studies have shown that depression treatments can be effective for them. For example, Miranda et al. — targeting low-income, minority women — provided intensive outreach and supportive services to facilitate in-person depression treatment.<sup>6</sup> Although the target population faced multiple barriers to care, the researchers found that an intervention consisting of intensive outreach and in-person psychotherapy was effective in increasing treatment and improving depression outcomes. Unfortunately, such interventions are uncommon because they can be very expensive and are difficult to implement broadly.

A less expensive but still promising approach to encouraging individuals who are experiencing depression is the use of telephone-based outreach and care management to offer and maintain evidence-based treatment.<sup>7</sup> Such programs tend to require fewer resources because the management of care takes place entirely by telephone; it includes outreach activities that help to get depressed individuals to seek treatment from a medical professional, as well as the follow-up activities that support patients between doctor visits — such as encouraging them to fill prescriptions, take medications, and keep follow-up appointments. Randomized controlled trials have demonstrated that telephone care management interventions can successfully encourage primary care patients and employed workers to talk with mental health specialists, increase their use of antidepressants, reduce their depression, and even improve their work performance and job retention.<sup>8</sup> Experimental research also suggests that telephone care management of depression is cost-effective, resulting in cost savings for employers through its impact on the number of days that individuals are free from depressive symptoms and the consequent improvements in workplace productivity.<sup>9</sup> In short, existing research suggests that the identification of at-risk cases, telephone-based outreach, psychotherapy and medication-adherence monitoring, and

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<sup>3</sup>Gonzalez et al. (2010); Miranda et al. (2003); Miranda et al. (2006).

<sup>4</sup>Kessler et al. (2003); Melfi, Croghan, and Hanna (1999); Roy-Byrne, Joesch, Wang, and Kessler (2009).

<sup>5</sup>American Psychiatric Association (2000).

<sup>6</sup>Miranda et al. (2006).

<sup>7</sup>“Evidence-based” refers to in-person psychotherapy and antidepressant pharmacotherapy.

<sup>8</sup>Katzelnick et al. (2000); Simon et al. (2004); Wang et al. (2004).

<sup>9</sup>Wang et al. (2007).



brief, structured psychotherapy over the telephone are well accepted by patients and can significantly improve both clinical and work-related outcomes.<sup>10</sup>

## **The WtW Evaluation**

The WtW study was modeled after another structured telephone depression intervention that was offered outside a primary care setting, the Work Outcomes Research and Cost-Effectiveness Study (WORCS, previously known as the Workplace Depression Study).<sup>11</sup> That study focused on active employees of large corporations from different industries, including workers at various income levels, who were covered by employer-sponsored health insurance. The WtW study was adapted for more disadvantaged and hard-to-reach populations. For example, because these populations are more difficult to engage in treatment, a structured psychoeducational program that was designed for telephone administration — also called “the phone program” — was used to engage the individuals when they resisted seeking treatment.

To study WtW, individuals who had children and who were receiving Medicaid in Rhode Island and were eligible for mental health services through UBH were screened by telephone for depression. Those who were found to have depressive symptoms as defined by a clinical assessment using the Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR) questionnaire and who agreed to participate were assigned to the study. The evaluation used a random assignment design, meaning that each study participant was randomly assigned to either a program group, which received the intervention’s mental health services, or a control group, which did not. Individuals scoring 6 or higher on the QIDS-SR questionnaire — which is defined as a mild or higher level of depression — were included in the study. Participants in the program group were eligible to receive telephone care management from master’s-level clinicians (“care managers”) employed by UBH. The control group received usual care that included referrals to mental health treatment providers in the community. Random assignment ensures that all characteristics of the two groups are similar at baseline, so that any substantial differences that later emerge can be attributed to the program with confidence.

The WtW care managers call individuals who are suffering from depression to encourage them to seek treatment, help them find and make appointments with mental health professionals, make sure that they are keeping appointments and taking prescribed medications, educate them about how depression will affect them and how treatment can help them, and provide support and counseling by telephone to individuals who are reluctant to seek treatment in the community. It was hoped that encouraging people to seek treatment and alleviate their depression would help more of them return to work or become more productive at jobs they already

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<sup>10</sup>Simon et al. (2004); Smith et al. (2002a); Smith et al. (2002b); Wells et al. (2000).

<sup>11</sup>Wang et al. (2007).

held. Although telephone care management has been shown to be effective in treating depression with some populations,<sup>12</sup> this is the first study of the approach with low-income Medicaid recipients who have children. Moreover, because WtW is provided telephonically, it could represent a relatively inexpensive way for social service agencies to aid individuals with depression. It was also hoped that the program might improve work productivity and increase employment if short-term improvements in depression subsequently lead to a greater interest and capacity to seek and retain employment.

## **Recruitment and Characteristics of the Sample Members**

The recruitment of sample members began with a list of Medicaid recipients in Rhode Island who received Medicaid through UBH. Because no information was available on who was suffering from depression, a letter describing the study and containing an initial “screener” was sent to a total of 19,120 parents receiving Medicaid. Although the return rate was expected to be low because recruiting participants by mail has proved to be difficult in previous studies, this recruitment mode was used because there was interest in learning how effective this relatively inexpensive recruitment method might be.

A total of 4,053 people returned the mailed screener, and 1,613 of them were identified as being at risk for depression; care managers attempted to contact these people. If an individual was reached by telephone, the care manager first asked permission to ask a set of questions about how the person was feeling. If the person consented, the care manager administered the QIDS-SR.<sup>13</sup> The care managers were able to reach 1,073 of the 1,613 individuals. They were unable to reach 540 of them because of wrong numbers or no telephone or because the care managers were unable to reach the target individual in the household.

If the person’s responses indicated that she or he met the criteria for depression,<sup>14</sup> the care manager explained the random assignment study and asked whether the individual agreed to take part in the research. If the person agreed, the care manager determined whether the individual would be randomized to the program or control group and asked for additional socio-demographic, health, and child-related baseline information. A total of 507 individuals agreed to be in the study, and 133 declined (their reasons for declining were not given). Another 433

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<sup>12</sup>Wang et al. (2007).

<sup>13</sup>The QIDS-SR is designed to determine whether the person meets the criteria for being diagnosed with major depression over the past seven days. For more information on the QIDS-SR, see Rush et al. (2003).

<sup>14</sup>To be eligible for the study, the person had to have a QIDS-SR score higher than 5. The scores on the QIDS-SR range from 0 (not depressed) to 25 (very severely depressed). Although the QIDS-SR is typically coded so that scores range from 0 to 27, in this study the range was limited to 0 to 25 because individuals who answered positively to questions about suicide were excluded. The change in the upper boundary of possible scores is an adaptation of this instrument for telephonic administration by the Workplace Depression Study research team.

individuals were ineligible because they did not meet the study's criteria. The most common reasons for ineligibility were that the individuals were already receiving treatment (39 percent), were not depressed (32 percent), had no children (19 percent), or presented other factors for consideration (10 percent: bipolar, alcohol or drug dependent, or suicidal risk).

Of the 499 individuals in the study, 245 were randomly assigned to the program group, and 254 were assigned to the control group. As Table 1.1 shows, 90 percent of the participants are women, and their average age at baseline was 35. About half of them had a General Educational Development (GED) certificate or a high school diploma when they entered the study, and a quarter had some education beyond high school. A little less than half of sample members are white; approximately one-third are Hispanic; and 12 percent are African-American. Less than half (44 percent) were employed at the time of random assignment.

A key goal of the WtW intervention was to get people into treatment for depression. At baseline, about 73 percent of the sample answered yes to "ever received prior treatment from a professional specifically for things like sadness, feeling unworthy, or loss of interest." Although the Medicaid population's rates of using mental health services are generally high, this sample's high rate at baseline could be due to self-report bias: it is difficult to figure out how individuals interpreted the phrase "prior treatment." Alternatively, the high rate of prior treatment could mean that these participants were amenable to receiving treatment and might have been more inclined to seek it than individuals who had never received treatment. Perhaps those who previously received treatment were more comfortable completing the screener questionnaire. On the other hand, it is possible that prior experience in unsuccessful treatment could have resulted in the belief that treatment may not be effective or may not result in improvement.

The study includes individuals who are comparable demographically to previous studies of care management for people suffering from depression. However, the participants in the current study were more severely depressed than studies that have focused on employed populations.<sup>15</sup> Although the average score on the QIDS-SR was about the same for the program group and the control group, there were slight variations within the groups in the distribution of depression levels at baseline. A higher percentage of the program group had moderate depression while a higher percentage of the control group had severe depression. Also, a higher percentage of the program group reported receiving treatment within the past year. The outcome analyses at the three follow-up periods control for these baseline differences to ensure that the impacts can be attributed to the program and not to the depression differences at baseline.

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<sup>15</sup>Wang et al. (2007).

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Table 1.1**

**Selected Characteristics at Baseline, by Research Group Status**

**Rhode Island: Working toward Wellness**

Characteristic	Program Group	Control Group	Total
<b><u>Depression severity</u></b>			
Total score on QIDS-SR <sup>a</sup> (%)		**	
Mild (6-10)	11.4	15.4	13.4
Moderate (11-15)	45.7	32.7	39.1
Severe (16-20)	31.4	38.6	35.1
Very severe (21-25)	11.4	13.4	12.4
Average score on QIDS-SR	15.2	15.6	15.4
<b><u>Sociodemographic characteristics</u></b>			
Gender (%)			
Female	89.0	90.6	89.8
Age (%)			
18-25	15.5	10.6	13.0
26-35	35.5	43.7	39.7
36-45	32.2	30.3	31.3
46-maximum age (62)	16.7	15.4	16.0
Average age (years)	35.5	35.4	35.4
Race/ethnicity (%)			
White	43.3	47.2	45.3
Hispanic <sup>b</sup>	35.1	31.5	33.3
Black/African-American	13.1	11.8	12.4
Other	6.1	5.5	5.8
Marital status (%)			
Single	37.0	37.7	37.4
Married or lives with partner	39.9	41.3	40.6
Divorced, separated, or widowed	23.0	21.0	22.0
Average number of adults in household	1.6	1.7	1.6
Highest degree/diploma (%)			
High school diploma or GED certificate	51.9	56.2	54.1
Technical or 4-year college degree	23.9	20.9	22.4
No high school diploma or GED certificate	24.3	22.9	23.6

(continued)

**Table 1.1 (continued)**

Characteristic	Program Group	Control Group	Total
Number of children ages 0-18 per participant	1.9	1.9	1.9
Currently employed (%)			
Yes	42.0	44.9	43.5
No	54.7	53.1	53.9
Number of months on the current job (%)			
Not currently employed	54.7	53.1	53.9
Less than 6 months	10.2	10.6	10.4
6-24 months	13.1	14.6	13.8
More than 24 months	15.9	17.7	16.8
Number of hours worked per week at current job (%)			
Not currently employed	54.7	53.1	53.9
0-9 hours	2.0	2.8	2.4
10-29 hours	10.6	15.7	13.2
30 or more hours	24.9	22.4	23.6
Earnings per hour before taxes at current job (%)			
Not currently employed	54.7	53.1	53.9
\$7.00 or less	7.8	8.7	8.2
\$7.01 - \$9.00	9.8	11.4	10.6
\$9.01 - \$12.00	12.2	12.6	12.4
\$12.01 - \$15.00	6.9	5.9	6.4
More than \$15.00	4.5	4.7	4.6
<b><u>Prior treatment (%)</u></b>			
Ever received treatment from professional	76.2	70.6	73.4
Age of the first time talked to professional			
Never talked to professional	23.7	29.1	26.5
20 or younger	22.0	21.3	21.6
21-30	26.5	25.2	25.9
31-40	16.7	16.9	16.8
Older than 40	9.8	5.9	7.8
Received treatment within the past year	44.4	35.1 **	39.7
Received antidepressant medication within the past year	39.9	35.3	37.6

(continued)

**Table 1.1 (continued)**

Characteristic	Program Group	Control Group	Total
<b><u>Alcohol/drug use (%)</u></b>			
Has at least one alcoholic drink in a typical week			
Yes	30.2	29.9	30.1
No	33.5	31.9	32.7
Uses any type of recreational drug in a typical month			
Yes	2.9	4.7	3.8
No	42.4	43.7	43.1
<b><u>Self-reported health (%)</u></b>			
How would you rate your health?			
Excellent/very good	16.3	19.3	17.8
Good	35.9	39.0	37.5
Fair/poor	45.7	41.0	43.3
<b><u>SSI/SSDI benefits (%)</u></b>			
Participant currently receiving SSI or SSDI	2.9	4.0	3.4
Household currently receiving SSI or SSDI	18.2	16.3	17.2
Sample size	245	254	499

SOURCE: MDRC calculations from Rhode Island baseline data.

NOTES: Chi-square tests were conducted to determine statistical significance for categorical variables, and they apply to the entire distribution. For other variables, two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

Respondents with missing data are not reported in this table; as a result, the distribution of some categories may not total 100 percent.

<sup>a</sup>Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR), which determines whether the person meets the criteria for being diagnosed with major depression over the past seven days.

<sup>b</sup>Sample members are coded as Hispanic if they answered "Yes" to Hispanic ethnicity.

## Data Sources

Study participants completed three follow-up surveys — at 6, 18, and 36 months after random assignment — which produced outcome data, including data on depression, health-related outcomes, and child outcomes. Depression was assessed using the QIDS-SR at the 6-, 18-, and 36-month follow-up survey points. All surveys were conducted by telephone. UBH provided claims data on the use of behavioral and physical health care services and prescription drugs.

These data cover the use of services only through 24 months following random assignment because medical claims data beyond that point were incomplete.

The following data sources were used to generate this 36-month report on WtW:

- **Baseline survey.** As described above, UBH care managers conducted an interview with sample members at baseline, immediately before random assignment. The survey collected information on participants' demographic characteristics, prior mental health treatment, health status, current and previous employment, and household composition.
- **Medical claims data.** United Behavioral Health (UBH) provided claims data on the use of behavioral and physical health care services and prescription drugs. This information was provided only as long as individuals received services from UBH. Although all individuals were receiving services through UBH at random assignment, by 24 months following random assignment, 60 percent remained on the UBH rolls.<sup>16</sup>
- **36-month survey.** A third follow-up survey was fielded with all sample members about 36 months after they were randomly assigned. Similar to the 6- and 18-month surveys, the 36-month survey obtained outcome data on depression, other health outcomes, employment, participation in outreach programs other than WtW, receipt of behavioral health services not covered in Medicaid claims data, and material hardship. The survey was completed by 429 participants, for an overall response rate of 86 percent (86.5 percent of the program group and 85.4 percent of the control group). A survey response bias analysis was done to examine the effect of a possible selection bias, but there were no significant differences in the baseline characteristics of the survey respondents and nonrespondents.

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<sup>16</sup>Appendix Table A.1 presents selected characteristics of sample members at baseline as analyzed by UBH enrollment status at 24 months following random assignment. Those no longer enrolled at 24 months had slightly lower average baseline depression scores, were more likely to be married, and were more likely to be employed. Appendix Table A.2 shows that among those who were no longer enrolled in UBH at 24 months, the only different baseline characteristic is that those in the program group were more likely to have received treatment in the past year than members of the control group. It is unlikely that the difference between being enrolled and no longer being enrolled had any effect on the outcomes because the program and control groups were equally divided on this dimension.

## The Implementation of the WtW Program

The WtW program was administered and staffed by UBH. The care managers were master's-level, licensed clinicians with training in either social work or counseling psychology who had previous experience in the assessment and treatment of depression. At the start of the intervention, the care managers received on-site training from GHC staff in the provision of telephone care management of depression. Chapters 3 and 4 of the WtW 18-month report include detailed descriptions of the implementation of the one-year intervention.<sup>17</sup> The key questions regarding the implementation of the program were whether care managers were able to engage members of the program group and what challenges they faced in helping individuals to seek treatment.

The WtW intervention had three phases: (1) telephone engagement and assessment of people who were assigned to the program group, where the goals were to make contact, establish a relationship, and assess treatment needs; (2) treatment initiation, where the goal was to make a successful referral to evidence-based, in-person treatment, as appropriate; and (3) treatment monitoring, where the goal was to keep track of treatment retention and progress, including adherence to antidepressant medication. In the engagement and assessment phase, the care managers were to begin building rapport and to establish a trusting relationship with the participants while learning about their circumstances and their experiences with depression. This included discussions relating to the participants' employment status and work goals, any other health-related challenges, child care and other caregiving responsibilities, and transportation issues. Then, as appropriate, care managers were to encourage participants to seek in-person treatment with a mental health professional. Once treatment had been initiated, the care managers were expected to monitor the participants' progress, paying careful attention to common warning signs that they might be disengaging from care and, if so, advocating on their behalf. Since failure to show up for an appointment is common, it was expected that the care managers would frequently need to remind the participants of appointments. All contacts between care managers and clients took place via telephone.

When individuals who were in need of care resisted seeking treatment, an alternative was offered: a structured psychoeducational program designed for telephone administration. Called "the phone program," for short, this approach was based on a workbook entitled *Creating a Balance*,<sup>18</sup> which clients were to work through under a care manager's guidance. The phone program was distinct from routine efforts to engage and assess participants in that it was designed to facilitate an ongoing relationship between care managers and participants. This was not providing therapy by telephone but, rather, a way to maintain engagement and continue to encourage the participants to seek treatment.

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<sup>17</sup>Kim et al. (2010).

<sup>18</sup>Kinder et al. (2006); the workbook is unpublished and is an adapted version of one previously developed by Simon, Ludman, and Tutty (2006).



Care managers faced some challenges in implementing the WtW intervention as planned. First, although care managers successfully contacted 91 percent of those assigned to the program group, it took considerable effort to make contacts. The contact-to-attempt ratio is about 30 percent — meaning that the care managers made about 3.5 attempts for each contact. The average number of contacts was about nine per participant (8.8 contacts) over the yearlong intervention. Second, it was difficult to closely monitor the participants' progress because although it was originally expected that the care managers would provide feedback to clinicians in the community regarding the WtW participants as they progressed in treatment, the direct coordination with the providers did not happen.

Such a collaborative approach — whereby care managers and clinicians work together — was difficult to orchestrate in the case of WtW because the care managers worked for UBH while the community clinicians worked in a variety of settings outside UBH. The community clinicians were contracting to offer care not only with UBH but also with a number of other health care organizations. To be sensitive to participants' privacy rights and to potential concerns about contact between the care managers and the clinicians, the care managers were required to obtain written permission from both the participants and the providers before performing the liaison function. Unfortunately, it was very difficult for the care managers to obtain this written permission from either party, and consequently the care managers could not perform this role. As a result, care managers could only advise or guide the participants on ways to better navigate health care and how to advocate for themselves.

Another challenge in implementing the intervention was that the alternative and less intensive “phone program” typically did not lead to in-person treatment. The workbook for the telephone program, which was mailed to clients, was designed to help them recognize and manage symptoms of stress and depression. It used telephone care management to teach clients specific steps for managing stress and overcoming depression in the long run. The phone program was designed primarily as a tool for encouraging clients to start discussing the issues related to their depression, with the ultimate goal of getting them into in-person treatment. Therefore, the care managers were expected to continue discussing the option of in-person treatment with clients who began working in the phone program. However, for many who used it, the phone program became an end in itself, and, according to the case note data, it does not appear that the phone program typically led to in-person treatment.



## Chapter 2

# Effects of WtW on Health Care and Health Outcomes

### The Use of Health Care Services: Mental Health

The first question addressed by this report is whether the Working toward Wellness (WtW) program in Rhode Island increased the use of mental health services through 24 months. To investigate this, Figure 2.1 shows the percentage of participants who received mental health treatment on a monthly basis through the 24 months following random assignment. The estimated effect of WtW is the difference in outcome levels between the program group and the control group.

Figure 2.1 shows that the biggest gap in the two research groups' receipt of mental health services occurred in the first six months. That difference started to decline after about Month 7, and there was no difference by the end of the one-year intervention. Indeed, after the intervention ended, there were no statistical differences in the use of mental health services between the program and the control groups.<sup>1</sup> In other words, WtW resulted in a temporary increase in use of mental health services that did not last beyond the intervention.

By increasing visits to mental health professionals — particularly psychiatrists and other physicians — the program was expected to increase the likelihood that participants would fill an antidepressant or other psychotherapeutic medication. Figure 2.2 explores this by showing the percentages of participants who filled prescriptions for psychotherapeutic drugs on a monthly basis during the 24 months following random assignment. A higher proportion of the participants in the program group filled prescriptions for psychotherapeutic drugs during the first 12 months, and the line graph also shows that the gap started to grow between the program and the control groups after 18 months. However, these differences are not statistically significant. Although, overall, about 60 percent of the participants filled at least one prescription for a psychotherapeutic drug, less than a quarter of them filled these prescriptions in a given month. The data suggest that a majority of the participants filled at least one prescription for depression but did not fill the prescriptions at a high rate throughout the follow-up period.

These results through 24 months following random assignment are consistent with the 18-month findings. As stated above, it is important to note that although this report presents impacts for the 24-month period, the higher likelihood of the program group members' receiving mental health services is mostly attributed to impacts that occurred during the first 12 months of the intervention.

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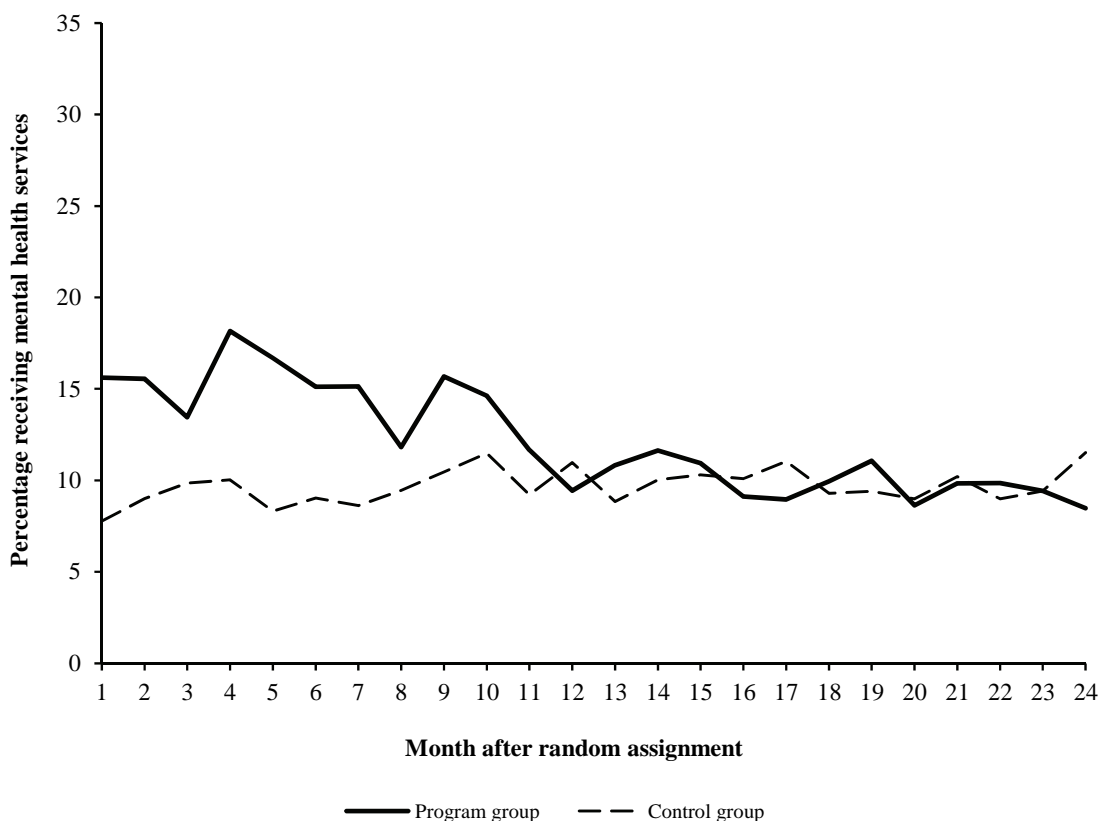
<sup>1</sup>Appendix Tables A.3 and A.4 present the impacts for Months 1 to 12 and Months 13 to 24.

The Enhanced Services for the Hard-to-Employ Demonstration

Figure 2.1

Percentage Receiving Mental Health Services, by Month

Rhode Island: Working toward Wellness



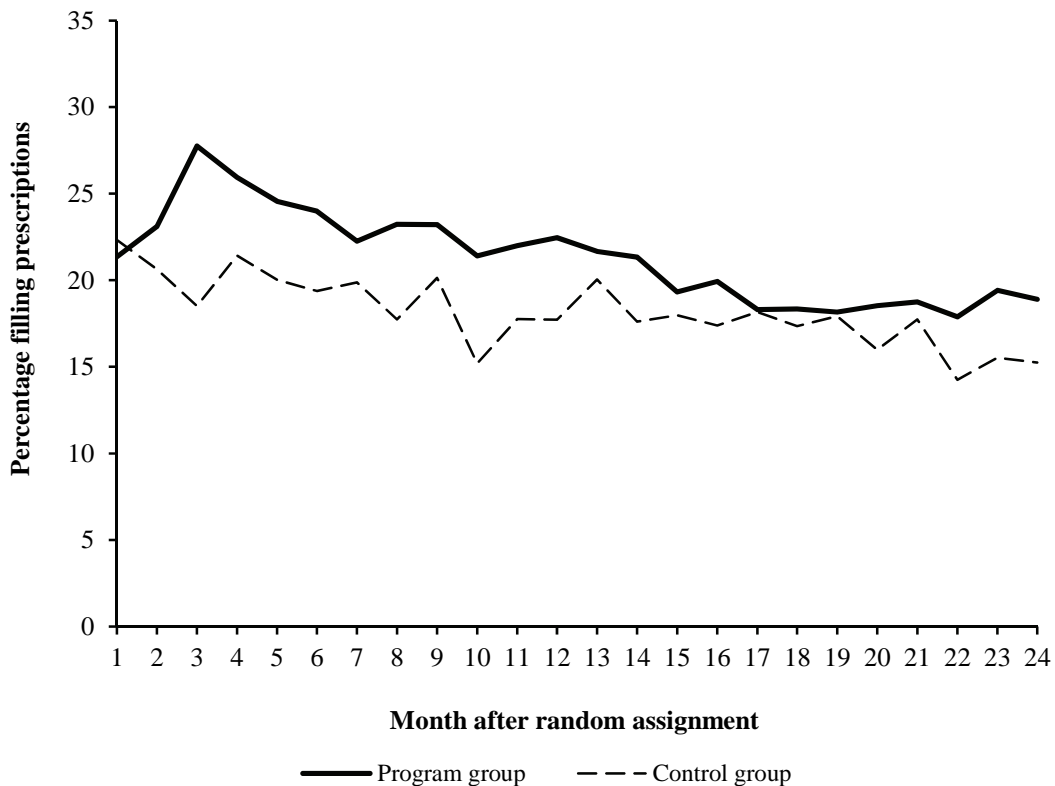
SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health medical claims data.

Table 2.1 presents more details about the estimated effects of WtW on the use of mental health and chemical dependency services during the 24 months following random assignment. During the two-year follow-up period, telephone care management had a modest effect on increasing the use of in-person treatment, which is defined as any visit to a psychiatrist, primary care doctor, psychologist, or social worker/counselor with a primary diagnosis related to mental health. Program group members were slightly more likely to use any mental health services in general: about 51 percent of the program group, compared with about 42 percent of the control

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Figure 2.2**

**Percentage Filling Prescriptions for Psychotherapeutic Drugs, by Month  
Rhode Island: Working toward Wellness**



SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health prescription claims data.

NOTES: Percentages shown are adjusted for pre-random assignment characteristics.

group. This is an impact of 9 percentage points, which is lower than that of a previous study with a similar intervention but with a non-Medicaid population.<sup>2</sup> This impact on the use of mental health services is also smaller than was found in studies that were conducted in health care systems where the care managers had direct access to the health care providers and facilitated

<sup>2</sup>Wang et al. (2007).

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Table 2.1**

**Estimated Impacts on Use of Mental Health and Chemical Dependency Services  
in Twenty-Four Months Following Random Assignment**

**Rhode Island: Working toward Wellness**

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
<b><u>Use of mental health services, by type (%)</u></b>				
Received mental health services	50.8	41.5	9.3 **	0.032
Psychiatrist	25.6	16.7	8.9 **	0.015
Primary care physician	23.0	16.8	6.2 *	0.081
Psychologist	6.8	2.9	4.0 **	0.043
Clinical social worker/counselor <sup>a</sup>	34.4	29.0	5.4	0.190
Visited emergency department for mental health services	6.1	2.0	4.1 **	0.021
Hospitalized for mental health services	5.9	2.6	3.4 *	0.066
Received chemical dependency services	8.9	8.4	0.5	0.837
<b><u>Number of visits for mental health services, by type</u></b>				
Number of mental health visits	6.7	4.8	1.9	0.154
Psychiatrist	1.7	1.1	0.6 *	0.097
Primary care physician	0.5	0.4	0.1	0.420
Psychologist	1.0	0.1	0.9 **	0.019
Clinical social worker/counselor	3.1	3.2	-0.1	0.940
Number of visits to emergency department for mental health services	0.1	0.0	0.1 **	0.018
Number of days hospitalized for mental health services	0.6	0.2	0.4 **	0.032
Number of chemical dependency visits	2.5	3.1	-0.6	0.654
Sample size (total = 499)	245	254		

SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health medical claims data.

NOTES: Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

<sup>a</sup>Includes claims for one program group member who received services at a behavioral health clinic.

easier communication with them.<sup>3</sup> These previous studies showed that the impact on the use of mental health services or medication for depression during a one-year intervention was an increase of about 10 to 20 percentage points.

The overall increase in the use of mental health services varied by type of service. For example, a higher percentage of the program group (26 percent) than of the control group (17 percent) visited a psychiatrist. Program group members were also more likely to see a psychologist about a mental health issue. Furthermore, a higher percentage of the program group than of the control group received mental health services from their primary care physicians. There was no difference in the total number of mental health visits during the 24 months following random assignment, but the program group had more visits to psychiatrists and psychologists than the control group did. The participants in the program group, however, were 3.4 percentage points more likely than those in the control group to have had a mental health-related hospitalization. Although the numbers are small, those in the program group spent, on the average, 0.4 day more in the hospital than the control group did.

Table 2.2 provides more details about the use of prescription medications over the entire two-year follow-up period and shows that there was no difference in the filling of antidepressant prescriptions between the program and the control groups for the 24-month period as a whole. Although a high percentage of the participants — 63 percent of the program group and 57 percent of the control group members — filled at least one prescription for psychotherapeutic drugs, the only significant impact was among the program group members, who were more likely to fill prescription medications for the psychotherapeutic drugs that are not antidepressants.<sup>4</sup> These other psychotherapeutic drugs were generally antianxiety medications, which are often prescribed along with or instead of antidepressants. One role of the care managers was to monitor participants' compliance with prescribed drugs, but the data do not show that the program group was more likely to continue receiving psychotherapeutic medications during the intervention. The number of filled prescription medications in Table 2.2 indicates the total number of filled prescriptions, which could be for new prescriptions or refills.

## **Health Outcomes: Depression and Health Status**

The six-month findings indicate that the program's short-term effects on the use of mental health services and the filling of appropriate medications reduced the number of people with the most severe depression and improved depression severity on average among Hispanic sample members, for whom the effects on treatment were larger. At 36 months, the question is

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<sup>3</sup>Unützer, Schoenbaum, Druss, and Katon (2006); Wells et al. (2000).

<sup>4</sup>Although the goal was to increase the use of antidepressants, the data used for this analysis indicate only whether a prescription was filled, not whether it was used.

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Table 2.2**

**Estimated Impacts on Prescription Medications Filled in Twenty-Four Months Following Random Assignment**

**Rhode Island: Working toward Wellness**

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
<b><u>Prescription medications filled, by type (%)</u></b>				
Filled a prescription for psychotherapeutic drugs	63.0	57.4	5.6	0.167
Antidepressant drugs	55.7	51.8	3.9	0.351
Other psychotherapeutic drugs	38.7	27.6	11.1 ***	0.005
Filled a prescription for adequate therapeutic dosage	39.3	37.3	2.0	0.644
Filled a prescription for nonpsychotherapeutic drugs	90.2	91.7	-1.5	0.567
<b><u>Number of filled prescription medications, by type</u></b>				
Number of filled prescriptions for psychotherapeutic drugs				
Antidepressant drugs	5.1	4.4	0.7	0.250
Other psychotherapeutic drugs	2.2	1.8	0.4	0.346
Number of filled prescriptions for nonpsychotherapeutic drugs	21.1	19.2	1.8	0.321
Sample size (total = 499)	245	254		

SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health prescription claims data.

NOTES: Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

The number of filled prescription medications indicates the total number of filled prescriptions, which could be for new prescriptions or refills.

whether a temporary boost in use of mental health services could have long-lasting effects on depression severity.

To measure depression severity, the QIDS-SR was administered.<sup>5</sup> This commonly used depression scale includes a 16-item questionnaire to measure the severity of depressive symptoms. The scores usually range from 0 to 27, but the range was limited to 0 to 25 in this study because any individuals who answered positively to the questions relating to suicide were

<sup>5</sup>Rush et al. (2003).



excluded from the study and were immediately referred for treatment. Scores of 5 or less indicate no depression; 6 to 10 indicate mild depression; 11 to 15 indicate moderate depression; 16 to 20 indicate severe depression; and 21 to 25 indicate very severe depression.

Table 2.3 shows the estimated effects of the WtW program on depression severity and health outcomes at 36 months following random assignment. The average QIDS-SR score at 36 months was 11.6 for the program group and 11.9 for the control group — scores that are almost identical to the scores at the 18-month follow-up. The 36-month scores indicate that the WtW population continued to have slightly higher depression levels after the end of the intervention.

Because it was thought that the average QIDS-SR score could be masking important effects of the program on different levels of depression severity, the next set of outcomes in Table 2.3 shows the distribution of depression severity 36 months following random assignment. At the 18-month point, there was a significant change in the overall distribution of depression severity: the earlier analysis shows that there was a reduction in the number of people who suffered from very severe depression. However, the same analysis at 36 months following random assignment shows that the overall distribution of the depression scores between the program and the control group is no longer statistically significant. Table 2.3 also shows that there is no difference in the proportion of individuals whose depression “shifted” — worsened, did not change, or improved.

Previous clinical trials indicate that a full recovery from depression is difficult to achieve but that continued treatment results in improvement in depressive symptoms. A majority of patients respond to depression treatment and show improvement, whether the treatment involves antidepressants alone or combined with psychotherapy. However, fewer patients achieve remission, which is defined as an almost-complete absence of symptoms and a return to normal day-to-day functioning. Although the improvements are important, it should be noted that, in this study, being in the program group did not significantly increase the likelihood that someone would have recovered from depression, as indicated by a QIDS-SR score of less than 6. At the 36-month follow-up point, about the same percentage (17 percent) in both the program and the control group had recovered from depression. (At 18 months, recovery was reported by 17 percent of the program group and 15 percent of the control group.) Remission rates from clinical antidepressant treatment in the past are 18 percent to 45 percent, and the rate varies depending on the type of treatment and medication.<sup>6</sup> Treatments that combine antidepressants with psychotherapy have similar remission rates, usually showing more improvement with time: from 18 percent remission at 6 months to 26 percent remission at 12 months.<sup>7</sup>

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<sup>6</sup>Rush et al. (2006); Silverstone and Ravindran (1999); Thase, Entsuah, and Rudolph (2001).

<sup>7</sup>Wang et al. (2007).

The Enhanced Services for the Hard-to-Employ Demonstration

Table 2.3

Estimated Impacts on Depression Severity and Health  
Thirty-Six Months Following Random Assignment

Rhode Island: Working toward Wellness

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
<b><u>Depression outcomes: QIDS-SR<sup>a</sup> depression scale</u></b>				
Mean depression score at 36 months	11.6	11.9	-0.3	0.609
Severity of depression at 36 months (%)				
Out of depression	17.1	16.5	0.6	0.876
Mildly depressed	24.4	22.7	1.7	0.689
Moderately depressed	33.2	31.2	2.0	0.667
Severely depressed	19.8	23.0	-3.2	0.434
Very severely depressed	5.5	6.6	-1.1	0.618
Shift in depression, by category <sup>b</sup> (%)				
Depression worsened by 2 categories	1.6	4.0	-2.4	0.145
Depression worsened by 1 category	11.5	14.6	-3.1	0.338
No categorical shift in depression	28.6	27.3	1.3	0.777
Depression improved by 1 category	31.3	29.8	1.4	0.754
Depression improved by 2 or more categories	26.0	24.4	1.6	0.688
Substantial improvement <sup>c</sup> (%)	24.9	25.9	-1.0	0.823
Recovery at 36 months <sup>d</sup> (%)	17.1	16.5	0.6	0.876
<b><u>Health status</u></b>				
General health (%)				
Poor	9.6	11.8	-2.3	0.455
Fair	31.0	27.3	3.7	0.420
Good	34.5	35.4	-1.0	0.838
Very good	22.1	19.8	2.3	0.572
Excellent	2.8	5.6	-2.8	0.170
Sample size (total = 429)	212	217		

SOURCE: Measures of depression and health are based on MDRC calculations using data from responses to the 36-month survey.

NOTES: Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

Respondents with missing data are not included in this table; as a result, the distribution of some categories may not total 100 percent.

<sup>a</sup>Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR), which determines whether the person meets criteria for being diagnosed with major depression over the past seven days.

<sup>b</sup>Scores on QIDS-SR depression scale fall into the following categories: very severe depression, severe depression, moderate depression, mild depression, no depression.

<sup>c</sup>Substantial improvement is indicated by a 50 percent or higher reduction in the QIDS-SR score.

<sup>d</sup>Recovery is indicated by a QIDS-SR score of 5 or less.

Another way for clinicians to consider someone to have improved substantially is when the depression score declines by more than 50 percent. For example, someone would be considered to have improved if the depression score declined from 10 to 5 or from 20 to 10. As Table 2.3 shows, the rates of substantial improvement are not significantly different between the two research groups. Not surprisingly, as was the case at the 18-month follow-up, there were no significant differences between the groups in their self-reported general health status at 36 months.

## **Employment**

As part of the Hard-to-Employ evaluation, WtW was intended ultimately to improve such employment-related outcomes as employment rates, earnings, and productivity. As shown in Table 2.4, however, the program had little effect on employment-related outcomes. About half the participants in both research groups reported being employed at the 36-month follow-up point, showing little change from the baseline, when a little less than half reported being employed. Among those who were employed, the control group had a slightly higher wage than the program group. On average in the United States, about half of the families receiving Medicaid have at least one full-time worker, and about a third of the families have no workers.<sup>8</sup> When the baseline measures for the WtW intervention were taken, the unemployment rate in Rhode Island was also comparable to the national average, at 5.4 percent.<sup>9</sup> The 36-month survey did not include questions related to participation in employment services or educational activities. Because the 36-month survey had more questions about the participants' children and because it was thought at the time that administrative data on employment services would be available for this analysis, these questions about service participation were removed from the survey.

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<sup>8</sup>Kaiser Family Foundation (2010).

<sup>9</sup>Rhode Island Department of Labor and Training (2004).

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Table 2.4**

**Estimated Impacts on Employment-Related Outcomes  
Thirty-Six Months Following Random Assignment**

**Rhode Island: Working toward Wellness**

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Has had any paid job since random assignment (%)	70.5	74.0	-3.5	0.408
Currently employed (%)	47.2	50.2	-2.9	0.553
Currently working odd jobs (%)	2.7	1.1	1.7	0.231
Earnings per hour before taxes at most recent job since random assignment or last interview (%)				
Not employed since random assignment or last interview	26.8	24.9	1.9	0.651
Less than \$5.00	5.3	1.3	4.0 **	0.026
\$5.00 - \$6.99	6.0	2.9	3.0	0.145
\$7.00 - \$8.99	10.8	21.3	-10.5 ***	0.004
\$9.00 or more	46.3	45.1	1.3	0.788
Days of missed work, at current job, since random assignment (%)				
Not currently employed	53.6	50.9	2.8	0.576
0	25.0	24.9	0.1	0.990
1-5	17.7	21.9	-4.2	0.290
6-9	2.0	0.4	1.6	0.134
10 or more	1.8	1.5	0.2	0.847
Average earnings per hour before taxes at most recent job since random assignment or last interview <sup>a</sup>	10.9	12.3	-1.4 *	0.056
Average number of days of missed work, at current job, since random assignment <sup>b</sup>	1.9	1.7	0.2	0.791
Work performance in the past 4 weeks is higher than other workers (%)				
All or most of the time	22.9	24.6	-1.7	0.689
Only some or none of the time	21.3	20.7	0.7	0.872
Monthly income (\$)				
Household income	1,843	1,770	73	0.504
Individual income	1,250	1,215	35	0.673
Sample size (total = 429)	212	217		

SOURCE: Measures of employment are based on MDRC calculations using data from responses to the 36-month survey.

NOTES: Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

Respondents with missing data are not reported in this table; as a result, the distribution of some categories may not total 100 percent.

<sup>a</sup>This measure includes only those employed since random assignment.

<sup>b</sup>This measure includes only those currently employed.

## Chapter 3

### Effects of WtW on Participants' Children

Building on a foundation of research that shows that children and adolescents of clinically depressed parents face a number of risks,<sup>1</sup> the evaluation of the Working toward Wellness (WtW) program in Rhode Island added a component specifically designed to address how an intervention that is targeted at parents' depression might affect their children. Given the lack of research on depressed parents in the context of poverty, this research was intended to fill an important gap in this area of study. Notably, while investigating the effects of changes in parents' depression was the primary impetus for the inclusion of outcomes for children in this study, the program may have other pathways of influence besides changes in parents' depression — especially if care managers supported parents by arranging for services for their children. While not explicitly part of the model, care managers were supposed to provide support for parents if asked, and their children were of key concern for such conversations. Indeed, the implementation research suggests that these supports were provided in interactions between the care managers and the parents.

Older children of depressed parents are the focus of this component of the WtW study. This chapter focuses on children between ages 8 and 14 at baseline. Although the original study design called for a study of both younger children (up to age 5) and older children, the sample size for the younger children was too small to permit analysis of the program impacts for this sample. This is a limitation, given that depression can interfere with children's development of emotion-regulatory skills that are central to their early development. However, while there is reason to expect negative effects of maternal depression for children of different ages, adolescence may be a particularly vulnerable period.<sup>2</sup> Research has found that maternal depression contributes to difficult adjustment during adolescence in low-income families,<sup>3</sup> as well as to depression among the adolescents themselves, particularly among girls after puberty.<sup>4</sup> It may be that the hormones of puberty interact with any biological tendencies and social stresses among adolescents of depressed parents, making children particularly vulnerable during this period.

At the 18-month follow-up point, the WtW program had few effects on parenting and on outcomes for children. Based on parental and youth reports of their mental health, social skills, and self-esteem, effects of the WtW program were extremely rare. Although there were a

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<sup>1</sup>Beardslee, Rigby, Versage, and Gladstone (1998); Downey and Coyne (1990); Goodman and Gotlib (1999, 2002).

<sup>2</sup>Beardslee (1986); Gelfand and Teti (1990).

<sup>3</sup>McLoyd, Jayaratne, Ceballo, and Borquez (1994).

<sup>4</sup>For a review, see Beardslee et al. (1998); also see Angold, Costello, and Worthman (1998).

few effects on youths' use of medical services (including a reduction in services for mental disorders among children), these did not lead to measureable improvements in children's outcomes as assessed by children themselves.

This report allows one more look at the effects of WtW on children, to see whether any changes in parents' participation in mental health services or reductions in severe depression that were observed early in the follow-up period may affect outcomes for children much later — three years after their parents entered the study and two years after the program ended. As discussed below, very few effects on children were observed at this later point, perhaps because effects on adults were attenuated. A few effects on medical services were observed, but those effects did not correspond to data from the surveys conducted with the parents or the youth themselves — both of which show no differences in outcomes for children of parents assigned to the WtW group and those assigned to the control group. These findings are discussed in detail below.

## The Child Study

The central aim in undertaking the child study was to conduct an in-depth follow-up with older children — those youth making the transition to early and late adolescence (who were ages 8 to 14 at the point of random assignment). Information was collected from three key sources: (1) Medicaid claims data on medical service utilization and prescription medications filled for children until Month 24 of follow-up;<sup>5</sup> (2) a parent survey, to understand parents' perceptions of their own parenting and reports of their children's behavior, fielded at Month 36 of follow-up; and (3) a youth survey conducted with children themselves, also fielded at Month 36 of follow-up. At the time these surveys were conducted, the children were between ages 11 and 17.

Figure 3.1 shows how the child sample was selected from the broader sample of parents in this study. Starting with the universe of 976 children of parents in the WtW sample who were age 19 or younger, 92 children were excluded because their fathers, rather than mothers, were participating in the study.<sup>6</sup> Among the resulting child sample of 884 children, there were 358 children between ages 8 and 14 at the point of random assignment. The in-depth data collection for the child study includes a subset of these children — with up to two children selected from

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<sup>5</sup>Results from health claims data are presented only through 24 months because there are no follow-up data for about a quarter of participants beyond that point.

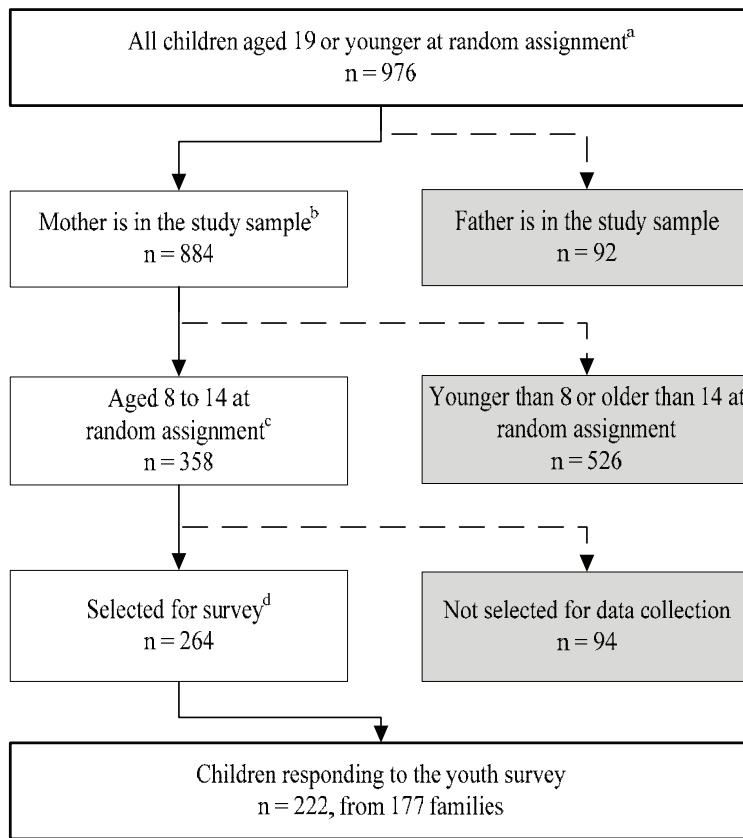
<sup>6</sup>The decision was made to exclude children of fathers because prior research on the effects of depression had focused on the negative effects of maternal depression on children.

## The Enhanced Services for the Hard-to-Employ Demonstration

Figure 3.1

### Sample Intake Flowchart for the Child Add-On Study

#### Rhode Island: Working toward Wellness



NOTES: <sup>a</sup>This sample size excludes children in families who were enrolled at baseline but dropped out of Medicaid before the first sets of data were collected.

<sup>b</sup>Three children had both a father and a mother in the study sample. These children were included in the analysis sample under the experimental group status of their mothers.

<sup>c</sup>Direct child assessments were conducted with focal children aged 5 years or younger at random assignment (n = 117) but were excluded from this report due to the small sample size.

<sup>d</sup>For each participating mother, up to two children younger than 5 or between 8 and 14 years of age at the time of random assignment were originally selected to be in the fielded child sample. The selection process prioritized the selection of one younger and one older child per family. The analyses presented in this report only include children in the older age range.

each family as the focus of the child study.<sup>7</sup> Using this sample selection procedure, 264 children ages 8 to 14 were selected for in-depth data collection at 36 months. The resulting sample for the analyses presented in this chapter are 222 children, from 177 families, who had completed the youth survey, reflecting a 84 percent response rate for this group of children.

## **Children’s Medical Services Utilization, Clinical Diagnoses, and Prescription Medications Filled**

First, the effects of the WtW intervention on children’s receipt of medical services were examined, based on Medicaid claims information collected from administrative sources of data. Common diagnoses for older children — including respiratory diseases, infections, and mental disorders, as well as routine health exams — are the focus of the analyses. The results of these analyses are presented in Table 3.1. Notably, these analyses should be viewed as effects on the *use* of services, not on the *presence or absence of diagnoses* per se. The percentage and number of medical service use only provide information on whether children were treated for particular diagnoses. This might be either a positive outcome (if children were less likely to be diagnosed with a condition) or a negative outcome (if children equally likely to be diagnosed were now not being provided with medical care). Moreover, the analyses reflect the cumulative use of services from the time of random assignment until 24 months of follow-up, which is consistent with the information presented in earlier chapters from this data source.

The top panel of Table 3.1 shows that children in both the WtW group and the control group experienced high rates of medical services utilization: 90 percent of both groups received any medical services over the 24 months following random assignment. Adolescents in the WtW group received slightly fewer services than those in the control group — about 3 fewer services, on average.

The second panel of Table 3.1 examines these effects by physician diagnosis, showing that there were no significant differences between the WtW and control groups in their use of medical services for respiratory disorders or routine health exams. Significant differences were observed in children’s rates of diagnoses for mental disorders and, within mental disorders, for depressive disorders specifically. The effect is small: a reduction of about 2 services, on average, with a diagnosis of mental disorders for children of parents in the WtW group,

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<sup>7</sup>Since the original design of the study called for conducting data collection with two focal age groups (children age 5 and younger and children ages 8 to 14), up to two children in each family were selected across the two age categories. In selecting these children, there was a preference for the selection of one younger and one older focal child per family. That is, if parents had both a child age 5 or younger and a child age 8 to 14, one child in each age group was selected as the focus of the child study. If not, up to two children were selected in either one of the two age categories. However, the younger child sample are excluded from this report because the most reliable measures of children’s functioning — direct assessments of their cognitive outcomes and emotional well-being — were collected on only a very small sample of children.



**The Enhanced Services for the Hard-to-Employ Demonstration**

**Table 3.1**

**Estimated Impacts on Children’s Medical Services Utilization, Clinical Diagnoses,  
and Prescription Medications Filled in Twenty-Four Months  
Following Random Assignment**

**Rhode Island: Working toward Wellness**

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
<b><u>Total medical services utilization</u></b>				
Ever received any medical services (%)	90.3	90.8	-0.5	0.892
Number of medical services received	6.9	9.7	-2.7 **	0.024
<b><u>Number of medical services, by diagnosis</u></b>				
Respiratory diseases	0.9	1.1	-0.2	0.415
Asthma	0.3	0.3	0.0	0.931
Nonasthmatic	0.6	0.8	-0.2	0.461
Mental disorders	1.0	3.0	-2.0 **	0.042
Depressive disorders/reactions <sup>a</sup>	0.2	0.9	-0.7 *	0.099
Infectious and parasitic diseases	0.5	0.9	-0.3 *	0.078
Routine health exam	1.0	1.0	0.0	0.985
<b><u>Total prescriptions filled</u></b>				
Ever filled any prescription (%)	77.3	78.4	-1.1	0.853
Number of prescriptions filled	9.0	9.8	-0.8	0.661
<b><u>Number of filled prescriptions, by type</u></b>				
Psychotherapeutics	1.7	0.4	1.3 **	0.016
Antihistamines	0.7	0.8	-0.1	0.817
Antiasthmatics	0.7	2.1	-1.4 **	0.030
Anti-infectives	1.0	0.9	0.1	0.700
Sample size (total = 212)	104	108		

SOURCES: Measures of medical services utilization, clinical diagnoses, and prescription medications filled are based on MDRC calculations using United Behavioral Health medical and prescription claims data.

NOTES: This table includes sample members randomly assigned between November 2004 and October 2006. The sample is restricted to children aged 8 to 14 at random assignment who responded to the 24-month youth questionnaire.

Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

<sup>a</sup>Includes diagnoses of major depressive disorder, affective psychosis not otherwise specified, bipolar/manic depressive disorder, adjustment reaction with depression, and depressive disorder not elsewhere classified.

compared with children of parents in the control group. There was also a small reduction in the number of services for infections. Again, these effects are on the services that children received, not on whether they were diagnosed.

Turning to the bottom panel of Table 3.1, there were a few differences between children in the WtW and control groups on their filling of prescription medications. There were no impacts on the filling of prescriptions for antihistamine or for anti-infective medications. There was a small difference between the program and control groups on their filling of psychotherapeutic medications, with slightly higher rates among the children of parents in the WtW group. At the same time, slightly fewer prescriptions for antiasthmatics were filled for children of parents in the WtW group than for children of parents in the control group.

Notably, many of these same intervention effects on children's health care utilization and receipt of prescription drugs were also observed at the 18-month follow-up point; impacts were found on medical services received, services with diagnoses of mental disorders (and depressive disorders in particular), total prescriptions received, and number of prescriptions for psychotherapeutic drugs and antiasthmatics. As in the current set of analyses, these analyses showed a pattern of reductions for the WtW group compared with the control group in some medical services and prescriptions (with the exception of prescriptions for psychotherapeutic drugs, which showed a greater number for the WtW group than the control group). Thus, additional analyses were conducted to determine the extent to which the cumulative effects observed up to 24 months reflect impacts that emerged early or later in the follow-up period; see Appendix Table A.5. Consistent with the fact that the parents' interactions with care managers ended after the one-year intervention, many fewer effects on adolescent health care utilization occurred in the 18- to 24-month period than in the first 18 months. More specifically, during the 18- to 24-month period, there were no statistically significant impacts on services for mental health disorders (which were found in the period up to 18 months). By contrast, in the 18- to 24-month period, statistically significant impacts were observed only for the total number of medical services received, for services for infectious diseases, and for the number of prescriptions filled for asthma.

These effects on adolescent service utilization are quite surprising, given the few effects observed on parents' depression. It is plausible that there is some route to impacts on adolescent service use that is not through parents' depression. For example, perhaps the care managers gave parents advice about how to handle their adolescents' emotional issues that steered parents toward a slightly different pattern of service use than the would have found on their own, regardless of any effect on parents' depression. Given that the link between the WtW intervention and adolescents' service use is not clear, and given that the data presented here measure services and not diagnoses, little should be made of these findings at this point. Moreover, it is critical to examine the effects of the WtW program on the home environment

and on children's well-being, using the surveys that were fielded directly to parents and to adolescents. Analyses of these data are presented below. Without corresponding data from these sources (that is, without observed benefits to children), it is difficult to know whether the WtW intervention actually altered children's health outcomes favorably or unfavorably, based on these findings.

## **Parental Reports of Emotional Climate in the Home, Parenting, and Outcomes for Children**

A key mediator of any effects of the WtW intervention on participants' children, if the program were effective, would be the emotional climate of the home environment and the parenting that the children experienced. Therefore, part of this component of this study included a survey of parents regarding their expression of negative emotions in the home, their experience with parenting stress, and their parenting practices. Information was also collected from parents about their children's behavior.

Table 3.2 presents analyses comparing scores for parents in the WtW group and parents in the control group. The analyses focus on the sample of parents whose children were ages 8 to 14 at random assignment, for whom data were collected. Not surprisingly, given the limited impacts on parents' depression, no differences were found between parents in the WtW group and the control group on any of the measures presented. There are no statistically significant differences in parents' reports of their expression of negative emotion and their parenting stress, nor in their reports of parenting behavior. And there are no differences in parents' reports of children's positive or problematic behavior.

## **Children's Self-Reported Mental Health**

Finally, information was collected directly from the adolescents to assess the effects of WtW on youths' own reports of their depressive symptoms, anxiety, social skills (self-control and loneliness), and self-esteem. Results are shown in Table 3.3. As discussed in more detail in the 18-month report, children in this sample are, unsurprisingly, demonstrating levels of mental health problems that are similar to the levels of adolescents from families with a history of depression (and higher than the levels of adolescents without such family histories).<sup>8</sup>

Consistent with few effects on parents' depression, Table 3.3 shows no statistically significant differences between adolescents of parents in the WtW group and their control group peers on any of the measures shown. That is, there are no differences between children of parents assigned to the WtW and control groups in their self-reported levels of depression and anxiety, social skills, and self-esteem. Given this, it is not at all clear that the reduction in

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<sup>8</sup>Glied and Pine (2002).

The Enhanced Services for the Hard-to-Employ Demonstration

Table 3.2

**Estimated Impacts on Mothers' Reports of Emotional Climate in the Home,  
Parenting Behavior, and Child Behavior Thirty-Six Months Following Random Assignment  
Rhode Island: Working toward Wellness**

Outcome	Score Range	Average Scale Score			P-Value
		Program Group	Control Group	Difference (Impact)	
<b><u>Emotional climate in the home</u></b>					
Mother's expression of negative dominant feelings	10 - 50	23.6	23.3	0.3	0.724
Parenting stress	8 - 40	21.4	21.4	0.0	0.991
Sample size (total = 222)		106	116		
<b><u>Parenting behavior</u></b>					
Communication	8 - 32	25.9	25.4	0.4	0.338
Limit setting	12 - 48	30.9	30.0	0.9	0.319
Involvement	9 - 36	29.4	28.6	0.8	0.133
Autonomy granting	4 - 16	11.1	11.2	-0.1	0.784
Frequency of disciplinary action	1 - 4	1.8	1.8	0.0	0.653
<b><u>Child behavior</u></b>					
Positive behavior	1 - 5	3.8	3.9	-0.1	0.376
Problem behavior	1 - 5	2.5	2.5	0.0	0.905
Externalizing problems	1 - 5	2.5	2.5	0.0	0.818
Internalizing problems	1 - 5	2.5	2.4	0.1	0.620
Sample size (total = 244)		121	123		

SOURCE: Measures of emotional climate, parenting behavior, and child behavior are based on MDRC calculations using data from responses to the 36-month parent survey.

NOTES: The sample is restricted to parents of children aged 8 to 14 at random assignment who responded to the 36-month youth questionnaire.

See Appendix B for descriptions of the measures used.

For the findings presented in the first panel, the parent is the unit of analysis. For the findings presented in the second panel, the child is the unit of analysis, and standard errors are adjusted to account for the shared variance between children within the same family.

Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

medical services that is reported in Table 3.1 is related to any benefit for children. If the reduction in services were caused by a reduction in actual diagnosis among all children (instead of solely in *service-seeking*), there would have been corresponding effects in children's own reports of their well-being.

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Table 3.3**

**Estimated Impacts on Children’s Self-Reports of Mental Health  
Thirty-Six Months Following Random Assignment  
Rhode Island: Working toward Wellness**

Outcome	Score Range	Average Scale Score			P-Value
		Program Group	Control Group	Difference (Impact)	
<b><u>Mood and anxiety measures</u></b>					
Depressive symptoms (as measured by the MFQ)	0 - 66	13.3	13.3	0.0	0.996
MFQ score is clinically significant <sup>a</sup> (%)		14.3	16.0	-1.7	0.719
Depressive symptoms (as measured by the CDI-S)	0 - 20	2.9	2.2	0.6	0.190
Anxiety symptoms	1 - 5	2.1	2.1	0.0	0.781
<b><u>Social skills measures</u></b>					
Self-control in social situations	0 - 16	8.5	8.2	0.3	0.483
Loneliness and social dissatisfaction	16 - 80	28.9	28.1	0.9	0.576
<b><u>Self-esteem measures</u></b>					
Global self-worth <sup>b</sup>	1 - 4	3.3	3.2	0.1	0.416
Positive feelings about physical appearance	1 - 4	2.9	3.0	0.0	0.769
Positive feelings about scholastic competence	1 - 4	2.9	2.8	0.1	0.301
Sample size (total = 219)		108	111		

SOURCE: Measures of mental health are based on MDRC calculations using data from responses to the 36-month youth survey.

NOTES: The sample is restricted to children aged 8 to 14 at random assignment.

MFQ = Mood and Feelings Questionnaire. CDI-S = Children’s Depression Inventory, Short Form.

See Appendix B for descriptions of the measures used.

Results in this table are adjusted for pre-random assignment characteristics. Standard errors are adjusted to account for the shared variance between children within the same family.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

<sup>a</sup>A score of 29 or higher on the MFQ is considered clinically significant, based on the finding by Daviss et al. (2006) that this score optimally discriminated between youth with and without a major depressive episode.

<sup>b</sup>Global self-worth is measured by a single item that asks whether they are happy being the way they are or wish they were different; responses range from 1 to 4, with a 4 being highest self-worth.



## Chapter 4

# Implications of the Findings

Working with low-income people — who have significant and, typically, multiple barriers to treatment — presents numerous challenges. While there have been other studies of care management models that are designed to help people with varying health and behavioral health needs, few have focused on helping public assistance recipients receive in-person treatment for depression. WtW is the first random assignment study of a telephone care management intervention that was targeted specifically to Medicaid recipients who were experiencing depression. The WtW study found that care managers were able to engage the participants by telephone and encourage them to seek in-person treatment. Nearly everyone in the program group was successfully contacted at least once, but it was difficult to maintain engagement with them. The WtW intervention had a modest impact on the use of mental health treatment services overall. The challenge appears to be in encouraging individuals beyond initial engagement and sustaining them in treatment.

The impacts on the use of mental health service lasted through 24 months following random assignment, but the significant cumulative impacts are attributed to the impacts during the first 12 months of the intervention. The results suggest that it was difficult to sustain treatment. Examining mental health service use by month revealed that the difference between the program and the control groups started to decline after about the Month 7 of the intervention, and there were no differences by the end of the intervention and beyond 12 months. Also, although about 51 percent of the program group and 42 percent of the control group received any mental health service during the 24 months following random assignment, far fewer were receiving in-person treatment at any given month.

In addition, although there was no overall difference in filling prescriptions for antidepressant medications, program group members were more likely to fill prescriptions for other psychotherapeutic drugs. Often, antianxiety medications are prescribed along with antidepressants for people suffering from depression. Similar to the impact on the use of mental health services, this impact on other psychotherapeutic drugs was not sustained, and there was no difference between the program and the control groups beyond 12 months.<sup>1</sup>

Also, according to the survey results at 36 months following random assignment, the program did not significantly reduce depression or have an effect on employment, which is consistent with results at the 18-month follow-up. Earlier results on depression severity seemed to suggest that the intervention was perhaps more effective for the very severely depressed. Yet, at

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<sup>1</sup>See Appendix Table A.4 for more information on Months 1 to 12 and Months 13 to 24.

36 months following random assignment, there were no significant lasting effects on depression severity. There were also no differences in employment outcomes.

Given the limited effects on parents' depression that resulted from their participation in the WtW program, it is not surprising that few effects were observed for participants' children. These findings are consistent with results at the 18-month follow-up. Overall, the story is one of very little going on in terms of program effects on participants' children.

One factor contributing to the lack of impact on depression may be that the study sample was already a highly served population. When recruiting participants, it was not possible to narrow the potential study population to individuals who may have been at risk of having depression, and so the sample includes only about 10 percent of those whom the study attempted to recruit. Furthermore, it is possible that individuals who had been treated for depression in the past were more likely to respond to the recruitment letter and to agree to participate in the study. About 73 percent of the participants reported ever having received treatment for depression, and 40 percent of them had the treatment in the prior year. The program may not have succeeded in reaching people who were less inclined to get treatment (but who might have benefited more from it) because the outreach to recruit participants was conducted only by mail. Recruitment methods such as in-person screenings at social service agencies might have discovered more individuals with untreated depression and might have resulted in a more representative sample. This is a speculation, however, and there are no data to directly assess these assumptions.

On the other hand, given that the WtW participants experienced many life stressors that often prevented them from receiving continuous treatment, recruiting individuals without prior depression treatment might have found a group who had even greater barriers to treatment. The relatively modest effect on the use of mental health services may be highlighting the multiple challenges to treatment and the competing demands faced by low-income parents. According to extensive case notes compiled by the care managers,<sup>2</sup> study participants faced both eventful and chronic stressors, including persistent worries and strains related to financial hardship and single parenting.<sup>3</sup> These stressors may have limited or overwhelmed participants' efforts to seek or maintain in-person care. Moreover, a portion of the participants appear to have had personal crises that caused them to lose all contact with their care managers for extended periods of time.

Future intervention should consider a system whereby care managers are able to directly coordinate the patients' care with the health care providers. Past studies within the Group Health Cooperative (GHC) system have found larger effects and have shown benefits for depressed patients participating in telephone care management — although primarily within a

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<sup>2</sup>Kim et al. (2010).

<sup>3</sup>Avison and Davies (2005); Pearlin (1999); Pearlin, Aneshensel, and LeBlanc (1997).



non-Medicaid population.<sup>4</sup> In these studies, care managers were able to work within a single health care system with the mental health providers and could directly communicate with them to coordinate care. As GHC employees, these care managers were also able to access the system's patient databases to schedule appointments and to determine whether patients had kept those appointments. Moreover, they were able to communicate directly with the in-person treatment providers, as all were part of GHC. Such a collaborative approach was not possible for the WtW study. Care managers found that providers were unwilling to talk with them about their patients because the care managers worked for United Behavioral Health (UBH) while the community clinicians worked in a variety of settings outside UBH.

Finally, although there is evidence that telephone care management is a relatively inexpensive means of reducing depression for more affluent populations, existing telephone care management models may not be intensive or comprehensive enough for low-income populations — in particular, Medicaid participants with children. A study conducted by Miranda et al., which targeted low-income, minority women who faced multiple barriers to care, found promising results.<sup>5</sup> However, that intervention was not telephonic. Instead, it offered more intensive, in-person outreach to participating women, and it provided such support services as child care and transportation to facilitate participation in in-person treatment. Viewed alongside the current study, such work may be used to suggest that Medicaid and other low-income populations might require more intensive interventions that extend beyond telephone care management, possibly including in-person components that address critical barriers to in-person treatment. If groups or characteristics that are less likely to receive treatment can be identified, that might suggest approaches that could be used to encourage treatment.

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<sup>4</sup>Simon, Ludman, and Rutter (2009); Simon et al. (2004).

<sup>5</sup>Miranda et al. (2006).



Appendix A

## **Supplemental Tables**



**The Enhanced Services for the Hard-to-Employ Demonstration**

**Appendix Table A.1**

**Selected Characteristics at Baseline, by UBH Enrollment Status  
in Month 24 Following Random Assignment**

**Rhode Island: Working toward Wellness**

Characteristic	Enrolled	Not Enrolled	Total
<b><u>Depression severity</u></b>			
Total score on QIDS-SR <sup>a</sup> (%)			
Mild (6-10)	11.3	16.6	13.4
Moderate (11-15)	39.0	39.2	39.1
Severe (16-20)	35.7	34.2	35.1
Very severe (21-25)	14.0	10.1	12.4
Average score on QIDS-SR	15.6	15.0 *	15.4
<b><u>Sociodemographic characteristics</u></b>			
Gender (%)			
Female	93.0	84.9	89.8
Age (%)			
18-25	14.3	11.1	13.0
26-35	40.3	38.7	39.7
36-45	30.7	32.2	31.3
46-maximum age (62)	14.7	18.1	16.0
Average age (years)	34.9	36.2	35.4
Race/ethnicity (%)			
White	45.7	44.7	45.3
Hispanic <sup>b</sup>	35.0	30.7	33.3
Black/African-American	11.3	14.1	12.4
Other	5.3	6.5	5.8
Marital status (%)		***	
Single	43.0	28.9	37.4
Married or lives with partner	35.2	48.7	40.6
Divorced, separated, or widowed	21.8	22.3	22.0
Average number of adults in household	1.6	1.7	1.6
Highest degree/diploma (%)			
High school or GED certificate	54.9	52.8	54.1
Technical or 4-year college degree	20.0	25.9	22.4
No high school diploma or GED certificate	25.1	21.3	23.6

(continued)

**Appendix Table A.1 (continued)**

Characteristic	Enrolled	Not Enrolled	Total
Number of children ages 0-18 per participant	1.9	1.9	1.9
Currently employed (%)			
Yes	42.3	45.2	43.5
No	55.3	51.8	53.9
Number of months on the current job (%)			
Not currently employed	55.3	51.8	53.9
Less than 6 months	11.7	8.5	10.4
6-24 months	12.7	15.6	13.8
More than 24 months	14.7	20.1	16.8
Number of hours worked per week at current job (%)			
Not currently employed	55.3	51.8	53.9
0-9 hours	2.0	3.0	2.4
10-29 hours	12.3	14.6	13.2
30 or more hours	23.0	24.6	23.6
Earnings per hour before taxes at current job (%)		**	
Not currently employed	55.3	51.8	53.9
\$7.00 or less	9.0	7.0	8.2
\$7.01 - \$9.00	13.3	6.5	10.6
\$9.01 - \$12.00	10.3	15.6	12.4
\$12.01 - \$15.00	4.7	9.0	6.4
More than \$15.00	3.7	6.0	4.6
<b><u>Prior treatment (%)</u></b>			
Ever received treatment from professional	74.1	72.4	73.4
Age of the first time talked to professional			
Never talked to professional	25.7	27.6	26.5
20 or younger	20.3	23.6	21.6
21-30	28.7	21.6	25.9
31-40	15.7	18.6	16.8
Older than 40	7.7	8.0	7.8
Received treatment within the past year	38.7	41.1	39.7
Received antidepressant medication within the past year	37.7	37.4	37.6

(continued)

**Appendix Table A.1 (continued)**

Characteristic	Enrolled	Not Enrolled	Total
<b><u>Alcohol/drug use (%)</u></b>			
Has at least one alcoholic drink in a typical week		*	
Yes	33.0	25.6	30.1
No	29.0	38.2	32.7
Uses any type of recreational drug in a typical month			
Yes	3.0	5.0	3.8
No	41.0	46.2	43.1
<b><u>Self-reported health (%)</u></b>			
How would you rate your health			
Excellent/very good	18.0	17.6	17.8
Good	37.0	38.2	37.5
Fair/poor	44.3	41.7	43.3
<b><u>SSI/SSDI benefits (%)</u></b>			
Participant currently receiving SSI or SSDI	2.7	4.5	3.4
Household currently receiving SSI or SSDI	17.5	16.8	17.2
<b>Sample size</b>	<b>300</b>	<b>199</b>	<b>499</b>

SOURCE: MDRC calculations from Rhode Island baseline data.

NOTES: For categorical variables, chi-square tests were conducted to determine statistical significance. For other variables, two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

Respondents with missing data are not reported in this table; as a result, the distribution of some categories may not total 100 percent.

<sup>a</sup>Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR), which determines whether the person meets the criteria for being diagnosed with major depression over the past seven days.

<sup>b</sup>Sample members are coded as Hispanic if they answered "Yes" to Hispanic ethnicity.

The Enhanced Services for the Hard-to-Employ Demonstration

Appendix Table A.2

Selected Characteristics at Baseline of Those Not Enrolled in UBH in  
Month 24 Following Random Assignment, by Research Group

Rhode Island: Working toward Wellness

Characteristic	Program Group	Control Group	Total
<b><u>Depression severity</u></b>			
Total score on QIDS-SR <sup>a</sup> (%)			
Mild (6-10)	12.1	21.0	16.6
Moderate (11-15)	45.5	33.0	39.2
Severe (16-20)	33.3	35.0	34.2
Very severe (21-25)	9.1	11.0	10.1
Average score on QIDS-SR	15.0	15.0	15.0
<b><u>Sociodemographic characteristics</u></b>			
Gender (%)			
Female	84.8	85.0	84.9
Age (%)			
18-25	14.1	8.0	11.1
26-35	35.4	42.0	38.7
36-45	32.3	32.0	32.2
46-maximum age (62)	18.2	18.0	18.1
Average age (years)	35.7	36.6	36.2
Race/ethnicity (%)			
White	46.5	43.0	44.7
Hispanic <sup>b</sup>	27.3	34.0	30.7
Black/African-American	13.1	15.0	14.1
Other	9.1	4.0	6.5
Marital status (%)			
Single	30.6	27.3	28.9
Married or lives with partner	48.0	49.5	48.7
Divorced, separated, or widowed	21.4	23.2	22.3
Average number of adults in household	1.7	1.7	1.7
Highest degree/diploma (%)			
High school or GED certificate	49.0	56.6	52.8
Technical or 4-year college degree	30.6	21.2	25.9
No high school diploma or GED certificate	20.4	22.2	21.3

(continued)



**Appendix Table A.2 (continued)**

Characteristic	Program Group	Control Group	Total
Number of children ages 0-18 per participant	1.8	1.9	1.9
Currently employed (%)			
Yes	43.4	47.0	45.2
No	52.5	51.0	51.8
Number of months on the current job (%)			
Not currently employed	52.5	51.0	51.8
Less than 6 months	10.1	7.0	8.5
6-24 months	14.1	17.0	15.6
More than 24 months	18.2	22.0	20.1
Number of hours worked per week at current job (%)			
Not currently employed	52.5	51.0	51.8
0-9 hours	1.0	5.0	3.0
10-29 hours	12.1	17.0	14.6
30 or more hours	27.3	22.0	24.6
Earnings per hour before taxes at current job (%)			
Not currently employed	52.5	51.0	51.8
\$7.00 or less	7.1	7.0	7.0
\$7.01 - \$9.00	8.1	5.0	6.5
\$9.01 - \$12.00	14.1	17.0	15.6
\$12.01 - \$15.00	9.1	9.0	9.0
More than \$15.00	4.0	8.0	6.0
<b><u>Prior treatment (%)</u></b>			
Ever received treatment from professional	74.7	70.0	72.4
Age of the first time talked to professional			
Never talked to professional	25.3	30.0	27.6
20 or younger	24.2	23.0	23.6
21-30	25.3	18.0	21.6
31-40	16.2	21.0	18.6
Older than 40	9.1	7.0	8.0
Received treatment within the past year	46.9	35.4 *	41.1
Received antidepressant medication within the past year	36.7	38.0	37.4

(continued)

**Appendix Table A.2 (continued)**

Characteristic	Program Group	Control Group	Total
<b><u>Alcohol/drug use (%)</u></b>			
Has at least one alcoholic drink in a typical week			
Yes	23.2	28.0	25.6
No	40.4	36.0	38.2
Uses any type of recreational drug in a typical month			
Yes	3.0	7.0	5.0
No	49.5	43.0	46.2
<b><u>Self-reported health (%)</u></b>			
How would you rate your health			
Excellent/very good	17.2	18.0	17.6
Good	33.3	43.0	38.2
Fair/poor	45.5	38.0	41.7
<b><u>SSI/SSDI benefits (%)</u></b>			
Participant currently receiving SSI or SSDI	2.0	7.1	4.5
Household currently receiving SSI or SSDI	17.2	16.3	16.8
Sample size	99	100	199

SOURCE: MDRC calculations from Rhode Island baseline data.

NOTES: For categorical variables, chi-square tests were conducted to determine statistical significance. For other variables, two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

Respondents with missing data are not reported in this table; as a result, the distribution of some categories may not total 100 percent.

<sup>a</sup>Quick Inventory of Depressive Symptomatology-Self Report (QIDS-SR), which determines whether the person meets the criteria for being diagnosed with major depression over the past seven days.

<sup>b</sup>Sample members are coded as Hispanic if they answered "Yes" to Hispanic ethnicity.

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Appendix Table A.3**

**Estimated Impacts on Use of Mental Health and Chemical Dependency Services  
in Twelve Months and Between Thirteen and Twenty-Four Months  
Following Random Assignment**

**Rhode Island: Working toward Wellness**

Outcome	0-12 Months		13-24 Months	
	Difference (Impact)	P-Value	Difference (Impact)	P-Value
<b><u>Use of mental health services, by type (%)</u></b>				
Received mental health services	9.4 **	0.026	4.4	0.282
Psychiatrist	6.8 **	0.031	6.2 **	0.045
Primary care physician	5.6 *	0.077	2.1	0.423
Psychologist/clinical social worker/counselor <sup>a</sup>	8.5 **	0.027	-1.3	0.703
Visited emergency department for mental health services	3.2 ***	0.009	1.2	0.392
Hospitalized for mental health services	3.2 **	0.045	0.8	0.441
Received chemical dependency services	0.0	0.915	0.0	0.839
<b><u>Number of visits for mental health services, by type</u></b>				
Number of mental health visits	1.5 **	0.032	0.8	0.408
Psychiatrist	0.4	0.122	0.2	0.269
Primary care physician	0.1	0.218	0.0	0.947
Psychologist/clinical social worker/counselor	1.0 *	0.086	0.6	0.502
Number of visits to emergency department for mental health services	0.0 ***	0.009	0.0	0.223
Number of days hospitalized for mental health services	0.3 **	0.032	0.1	0.451
Number of chemical dependency visits	-0.4	0.630	-0.2	0.815
<b>Sample size (total = 499)</b>				

SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health medical claims data.

NOTES: Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

<sup>a</sup>Includes claims for one program group member who received services at a behavioral health clinic.

The Enhanced Services for the Hard-to-Employ Demonstration

Appendix Table A.4

Estimated Impacts on Prescription Medications Filled in Twelve Months and Between Thirteen and Twenty-Four Months Following Random Assignment

Rhode Island: Working toward Wellness

Outcome	0-12 Months		13-24 Months	
	Difference (Impact)	P-Value	Difference (Impact)	P-Value
<b><u>Prescription medications filled, by type (%)</u></b>				
Filled a prescription for psychotherapeutic drugs	7.3 *	0.070	3.3	0.450
Antidepressant drugs	6.5	0.105	1.1	0.797
Other psychotherapeutic drugs	9.3 **	0.015	4.3	0.222
Filled a prescription for adequate therapeutic dosage	6.0	0.119	-1.6	0.690
Filled a prescription for nonpsychotherapeutic drugs	1.0	0.729	1.9	0.635
<b><u>Number of filled prescription medications, by type</u></b>				
Number of filled prescriptions for psychotherapeutic drugs				
Antidepressant drugs	0.4	0.293	0.4	0.311
Other psychotherapeutic drugs	0.3 *	0.094	0.1	0.693
Number of filled prescriptions for nonpsychotherapeutic drugs				
	0.9	0.336	0.9	0.445
Sample size (total = 499)				

SOURCE: Measures of health service utilization are based on MDRC calculations using United Behavioral Health prescription claims data.

NOTES: Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

**The Enhanced Services for the Hard-to-Employ Demonstration**

**Appendix Table A.5**

**Estimated Impacts on Children’s Medical Services Utilization, Clinical Diagnoses,  
and Prescription Medications Filled Between Eighteen and Twenty-Four Months  
Following Random Assignment**

**Rhode Island: Working toward Wellness**

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
<b><u>Total medical services utilization</u></b>				
Ever received any medical services (%)	61.1	65.2	-4.1	0.575
Number of medical services received	1.7	2.4	-0.7 *	0.055
<b><u>Number of medical services, by diagnosis</u></b>				
Respiratory diseases	0.1	0.2	-0.1	0.236
Asthma	0.0	0.0	0.0	0.761
Nonasthmatic	0.1	0.2	-0.1	0.300
Mental disorders	0.4	0.6	-0.2	0.502
Depressive disorders/reactions <sup>a</sup>	0.1	0.1	0.0	0.419
Infectious and parasitic diseases	0.1	0.3	-0.2 ***	0.008
Routine health exam	0.2	0.3	0.0	0.502
<b><u>Total prescriptions filled</u></b>				
Ever filled any prescription (%)	46.5	46.9	-0.4	0.954
Number of prescriptions filled	1.9	2.2	-0.3	0.618
<b><u>Number of filled prescriptions, by type</u></b>				
Psychotherapeutics	0.3	0.2	0.2	0.262
Antihistamines	0.2	0.1	0.0	0.797
Antiasthmatics	0.1	0.5	-0.3 *	0.097
Anti-infectives	0.2	0.2	0.1	0.371
Sample size (total = 212)	104	108		

SOURCES: Measures of medical services utilization, clinical diagnoses, and prescription medications filled are based on MDRC calculations using United Behavioral Health medical and prescription claims data.

NOTES: This table includes sample members randomly assigned between November 2004 and October 2006. The sample is restricted to children aged 8 to 14 at random assignment who responded to the 18-month and the 24-month youth surveys.

Results in this table are adjusted for pre-random assignment characteristics.

Two-tailed t-tests were conducted to determine statistical significance. Statistical significance levels are indicated as follows: \* = 10 percent; \*\* = 5 percent; and \*\*\* = 1 percent. The significance level indicates the probability that the impact estimated would be this large if the program had zero true effect.

<sup>a</sup>Includes diagnoses of major depressive disorder, affective psychosis not otherwise specified, bipolar/manic depressive disorder, adjustment reaction with depression, and depressive disorder not elsewhere classified.



**Appendix B**

**Measures Used in This Report**





## Parental Report Measures

### Emotional Climate in the Home

**Mother's expression of negative dominant feelings.** The negative dominant subscale of the Self-Expressiveness in the Family Questionnaire (SEFQ)<sup>1</sup> was used to assess the frequency of parents' expressions of anger and hostility in the home. The 10 items, each ranging from 1 (never) to 5 (always), are summed to create a scale score ranging from 10 to 50, with 50 indicating the highest level of negative dominant emotional expression. This scale achieved high internal reliability ( $\alpha = 0.80$ ).

**Parenting stress.** Selected items from the Parental Distress subscale of the Parenting Stress Index, Short Form,<sup>2</sup> were used to assess the stress associated with the parenting role. Sample items include "You often have the feeling that you cannot handle things very well" and "You feel trapped by your responsibilities as a parent." The 8 items making up the scale are each scored on a scale of 1 to 5 and are summed to create a scale score ranging from 8 to 40, with 40 indicating the greatest level of parenting stress. This scale achieved high internal reliability ( $\alpha = 0.81$ ).

### Parenting Behavior

**Parent-child communication, limit-setting, involvement, and autonomy-granting** were assessed using selected items from four subscales of the Parent-Child Relationship Inventory (PCRI),<sup>3</sup> confirmed in psychometric work conducted on this sample. All items are scored on a scale of 1 to 4. Scale scores are calculated as the sum of item scores, with high scores indicating more positive parenting practices.

- The **communication scale** consists of 8 items measuring how well the parent communicates with the child. Items include "[Child] generally tells you when something is bothering him or her" and "[Child] would say that you are a good listener." This scale achieved moderate internal reliability ( $\alpha = 0.75$ ).
- The **limit-setting scale** consists of 12 items measuring the quality of the parent's disciplinary techniques. Items include "You sometimes give in to [child] to avoid a tantrum" and "You often lose your temper with [child]." This scale achieved high internal reliability ( $\alpha = 0.86$ ).

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<sup>1</sup>Halberstadt et al. (1995).

<sup>2</sup>Abidin (1995).

<sup>3</sup>Gerard (1994); Coffman, Guerin, and Gottfried (2006).

- The **involvement scale** consists of 9 items measuring the parent’s closeness with the child. Items include “You spend a great deal of time with [child]” and “You feel very close to [child].” This scale achieved high internal reliability ( $\alpha = 0.85$ ).
- The **autonomy-granting scale** consists of 6 items measuring the parent’s comfort level with granting autonomy to the child. Items include “You can’t stand the thought of [child] growing up” and “You worry a lot about [child] getting hurt.” This scale achieved only marginally acceptable internal reliability ( $\alpha = 0.62$ ).

**Parenting discipline** was assessed using 6 items adapted from prior studies of low-income parents (the New Hope Project — an employment-based antipoverty initiative in two inner-city areas in Milwaukee).<sup>4</sup> These items assessed the frequency, in the prior week, with which parents had punished the child by grounding, taking away privileges, sending child to room, spanking, threatening to punish, yelling, or scolding. All items are assessed on a 4-point scale ranging from 1 (never) to 4 (four or more times). The scale score was computed by taking the mean of the item scores, resulting in a score ranging from 1 to 4, with 4 indicating the greatest mean frequency of parental discipline. This scale achieved moderate internal reliability ( $\alpha = 0.76$ ).

### **Child’s Behavior**

**Positive behavior** was assessed using the Positive Behavior Scale.<sup>5</sup> The scale consists of 25 items tapping children’s social competence (11 items, including “[Child] gets along well with other kids”); compliance (9 items, including “[Child] usually does what I tell [him/her] to do”); and autonomy (5 items, including “[Child] is independent, does things [him/her] self”). All items are assessed on a scale from 1 (never) to 5 (all of the time). The scale score is computed by taking the mean of the item scores, resulting in a score ranging from 1 to 5, with 5 indicating the highest level of positive behaviors. This scale achieved high internal reliability ( $\alpha = 0.91$ )

**Problem behavior** was assessed using the Problem Behaviors scale of the Social Skills Rating System (SSRS).<sup>6</sup> The scale consists of 11 items. Items include both those tapping children’s externalizing (acting out) and internalizing (withdrawn) behavior problems. All items are assessed on a scale from 1 (never) to 5 (all of the time). The scale score is computed by

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<sup>4</sup>Huston et al. (2008).

<sup>5</sup>Quint, Bos, and Polit (1997); Epps, Eun Park, Huston, and Ripke (2003).

<sup>6</sup>Gresham and Elliot (1990).

taking the mean of the item scores, resulting in a score ranging from 1 to 5, with 5 indicating the highest level of externalizing or internalizing behaviors.

- The **externalizing subscale** consists of 6 items measuring children’s aggressive or angry behaviors. Items include “[Child] fights with others” and “[Child] gets angry easily.” This subscale achieved high internal reliability ( $\alpha = 0.87$ ).
- The **internalizing subscale** consists of 5 items measuring children’s withdrawn or depressed behaviors. Items include “[Child] appears lonely” and “[Child] acts sad or depressed.” This subscale achieved moderate internal reliability ( $\alpha = 0.74$ ).

## Youth Self-Report Measures of Mental Health

### Mood and Anxiety

**Depressive symptoms** were assessed with two measures: the Mood and Feelings Questionnaire (MFQ)<sup>7</sup> and the Children’s Depression Inventory, Short Form (CDI-S).<sup>8</sup>

- The MFQ is a 33-item measure that assesses children’s mental, physiological, and behavioral states during the past two weeks that may be indicative of depression. For example, items include “I felt miserable or unhappy,” “I was less hungry than usual,” “I slept more than usual,” and “I thought that life wasn’t worth living.” Responses to each item range from 0 (not true) to 2 (true); items are summed to produce a total score ranging from 0 to 66, with 66 indicating the highest level of depressive symptoms. Children who scored above 28 on the MFQ were considered to have “clinically significant” levels of depressive symptoms, based on findings that this score optimally distinguished youth with and without a diagnosis of major depressive disorder.<sup>9</sup>
- The CDI-S measures children’s feelings of sadness, irritability, hopelessness, self-worth, and social acceptance experienced during the past two weeks. For example, children respond to such statements as “I am sad all the time,” “Nobody really loves me,” and “Nothing will ever work out for me.” The measure consists of 10 items ranging from 0 to 2, with 2 indicating the high-

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<sup>7</sup>Angold and Costello (1987).

<sup>8</sup>Kovacs (1992).

<sup>9</sup>Daviss et al. (2006).

est level of depressive symptoms. Total scores are calculated by summing the individual item scores and range from 0 to 20. Unlike the MFQ, there is no established clinical cut-point for the CDI-S.

**Anxiety symptoms** were assessed using 13 items selected from the Revised Manifest Anxiety Scale,<sup>10</sup> as revised for the New Hope study.<sup>11</sup> These items measure anxiety symptoms, such as worry, fear, nervousness, sleep disturbances, and difficulty concentrating. For example, children are asked how often they feel that they “worry a lot of the time,” “have trouble going to sleep at night,” and “have trouble making up your mind.” Responses for each item range from 1 (never true) to 5 (always true). The scale score is computed by taking the mean of the item scores, resulting in a score ranging from 1 to 5, with 5 indicating the highest level of anxiety symptoms.

### **Social Skills**

**Self-control in social situations** was assessed using items from the self-control subscale of the Social Skills Rating System (SSRS).<sup>12</sup> Eight items measuring children’s self-control were used, including “How often do you ignore other children when they tease you or call you names?” and “How often do you take corrections given by your parents without getting angry?” Each item has a response scale of 0 (never) to 2 (very often). Total scores are calculated as the sum of the item scores and may range from 0 to 16, with 16 indicating the most self-control.

**Loneliness and social dissatisfaction** was assessed using a measure called the Loneliness and Social Dissatisfaction Scale (LSDS).<sup>13</sup> This 16-item scale assesses children’s feelings of social acceptance and support by asking them to respond to such statements as “It’s easy for you to make new friends,” “You feel alone,” and “You get along with other kids.” Each item has a response range of 1 (never true) to 5 (always true), with some items reverse-coded so that a response of 5 always indicates greater feelings of loneliness and social dissatisfaction. Items are summed to produce the total scale score, which ranges from 16 (low loneliness) to 80 (high loneliness).

### **Self-Esteem**

**Self-esteem** was assessed using the Self-Perception Profile for Children.<sup>14</sup> This widely used measure includes subscales on children’s self-perceived scholastic competence, social

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<sup>10</sup>Reynolds and Richmond (1990).

<sup>11</sup>Bos et al. (1999).

<sup>12</sup>Gresham and Elliot (1990).

<sup>13</sup>Asher, Hymel, and Renshaw (1984).

<sup>14</sup>Harter (1985).

acceptance, physical appearance, athletic competence, behavioral conduct, and global self-worth. For this project, only the scholastic competence and physical appearance subscales were used, in addition to one item on global self-worth. Each item in the scale asks children to think about two different kinds of kids — those with higher self-assessments on a particular characteristic and those with lower self-assessments — and asks them to decide whether they are more like the first or the second group of kids. Then, children are asked to decide whether they are *sort of* like those kids or *really* like those kids. This results in an item score between 1 (low perceived competence) and 4 (high perceived competence). The mean of the item scores is used as the total scale score.

- The **global self-worth** item asks children whether they are happy being the way they are or wish they were different.
- The 6-item **physical appearance** subscale includes such questions as whether they are happy with the way they look and whether they wish their body were different.
- The 6-item **scholastic competence** subscale includes such questions as how good they are at their schoolwork, how smart they think they are compared with other kids their age, and whether they remember what they learn.



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*A Two-Generational Child-Focused Program Enhanced with Employment Services: Eighteen-Month Impacts from the Kansas and Missouri Sites of the Enhanced Services for the Hard-to-Employ Demonstration and Evaluation Project.*  
2011. JoAnn Hsueh, Erin Jacobs, and Mary Farrell.

*Working toward Wellness: Telephone Care Management for Medicaid Recipients with Depression, Eighteen Months After Random Assignment.*  
2010. Sue Kim, Allen LeBlanc, Pamela Morris, Greg Simon, and Johanna Walter.

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## About MDRC

MDRC is a nonprofit, nonpartisan social and education policy research organization dedicated to learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York City and Oakland, California, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are proactively shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for ex-offenders and people with disabilities, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.