# Designing a life of wellness

Evaluation of the program at Concordia Arms

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## **Purpose of report**

The purpose of this report is to communicate the results of the pre-/post-test assessment of Designing a Life of Wellness at Concordia Arms, an apartment complex for adults aged 65 years and older. Concordia Arms is managed by Wilder Supportive Housing, a division of Wilder Foundation. This is an abbreviated version of the report that was prepared for the demonstration program at Wilder's Humboldt campus. A brief literature review, a description of the curriculum, and a description of the development of the demonstration program at Wilder may be found in the report on the demonstration program at the Humboldt campus (Wilder Research Center, 2003).

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<sup>&</sup>quot;Humboldt campus" refers to Wilder's supportive housing for older adults located at 508/510 and 516 Humboldt on the West Side of Saint Paul.

## **Program description**

Designing a Life of Wellness, developed by the Department of Occupational Therapy at the College of Saint Catherine, utilizes a proactive approach to enhance personal management of life choices and actions. A primary program goal is to enable program participants to retain control over their own lives, remaining autonomous in their life choices and planning. The program focuses on the importance of meaningful activity and social participation for health and well-being, strategies to remove personal and environmental barriers to wellness, promotion of healthy behaviors, and advocacy and support for achieving wellness goals.

The program was offered to residents at Concordia Arms after these residents had served as the control group for the demonstration program initially offered at the Wilder Foundation Humboldt campus. Like the demonstration program, the program at Concordia Arms was a six month program with weekly group sessions, including outings, which ran from September 2002 through February 2003.

## **Research questions and methods**

The primary research question asked in this study was, "Did the intervention significantly affect factors of well being and quality of life of the program participants?" The aspects of well-being include: physical functioning, limitations due to physical and mental disability, bodily pain, perceived health, social functioning, and mental health. The SF-36 Health Survey, a measure of functional status and well-being, was used to collect the outcome data. This instrument is described in greater detail below.

For this research project, we used a quasi-experimental (non-random), pre-test/post-test design. Using the SF-36, the data were collected on the first day of the program and at the end of the program six months later.

#### **Expected impact of intervention on SF-36 subscales**

We expected results at Concordia Arms to be similar to previous studies. Findings from the Humboldt campus demonstration program show that the Designing a Life of Wellness intervention had a statistically significant impact on the Role-Physical subscale mean scores (p=.024) of the Humboldt campus participants. In addition, findings from previous research conducted by the College of Saint Catherine indicates that the program significantly improves the Vitality and Social Functioning subscales and the Mental Health summary score (Vitality, Social Functioning, Role-Emotional, and Mental Health subscales) of the SF-36 Health Survey (Matuska, in press). Lastly, a previous study of a similar program revealed that the Designing a Life of Wellness intervention may have a significant impact on states of well being, such as life satisfaction, perceived health, and various social, emotional and mental health components of quality of life (Clark, 1998).

### Sample

The residents at Concordia Arms were initially invited to participate in the demonstration program research as the control group. A recruitment flyer was used to invite them to be part of the research project. The flyer made it clear that they would not be participating in the program during the initial research period, but that they would have an opportunity to participate in the program September 2002 through February 2003. The flyer was posted in the mailroom or elevators in the apartment building. An information session was held in the apartment complex to explain the research. If those attending the information session chose to participate, they gave informed consent and completed the assessment during the information session.

The post-tests of those persons in the control group who chose to later participate in the program were then used as the pre-tests for the evaluation of the program at Concordia Arms. As shown in Figure 1, four of the 15 residents completing post-tests as control group participants went on to participate in at least 50 percent of the group sessions during the course of the program at Concordia Arms. Their control group post-tests were used as pre-tests for the evaluation of the program offered at Concordia Arms. Additionally, 14 residents who did not participate in the demonstration program control group completed pre-tests at the start of the Concordia Arms program; however, only four of these new participants participated in at least 50 percent of the programs sessions and completed post-tests. Thus, as presented in Figure 1, eight of the 29 persons completing pre-tests for the program at Concordia Arms (former control group participants and new participants) completed post-tests at the completion of the program at Concordia Arms.

#### 1. Sample completion of post-tests

Number of control group post- tests for the Humboldt program (a)	Number of control group post-tests converted to pre-tests (b)	Number of new pre-tests (c)	Number of new participants completing post-tests (d)	Number of potential post-test completions (a+c)	Total post- tests completed (c+d)
15	4	14	4	29	8

The general characteristics of the program participants reflected the characteristics of the Concordia Arms resident population. Concordia Arms serves a primarily white population (97%), and the average age of residents at Concordia Arms is 80 years.

#### Assessment tool

The assessment tool that was administered at the beginning and the completion of the intervention is the SF-36v2 Health Survey. A copy of the assessment tool is provided in the appendix.

#### SF-36

The SF-36 was developed out of the Medical Outcomes Study (MOS), which was a study of the variations in physician practice styles and patient outcomes in different health care systems spanning the 1980s. The purpose of the MOS was to test the feasibility of self-administered patient questionnaires and generic health scales for those with chronic

conditions, including older adults (Ware, Snow, Kosinski & Gandek, 2000). The SF-36, which was one of the MOS surveys developed, is considered a generic measure of health-related quality of life outcomes; that is, it measures those outcomes most likely to be directly affected by disease and treatment (2000). For the evaluation of Designing a Life of Wellness, we used the SF-36 Version 2.0 (SF-36v2). Version 2.0 was recommended by Ware, Kosinski, and Dewey (2000), because of the improved instructions and item wording, improved layout, and increased comparability in relation to translation and cultural adaptations.

All subscale scores are standardized based on national norms generated by published data using the SF-36v2 Health Survey. The values assigned to the scales range from one to five with one subscale ranging from one to three. The most favorable response is represented by the higher number.

The SF-36v2 covers eight domains:

- Physical Functioning
- Role-Physical
- Role-Emotional (role of emotional functioning on daily life)
- Bodily Pain
- General Health
- Vitality (energy/fatigue)
- Social Functioning
- Mental Health (nervousness and depression)

#### **Physical functioning**

The Physical Functioning subscale is a 10-item scale that measures type and extent of physical limitations such as lifting and carrying groceries, climbing stairs, bending, kneeling, and walking moderate distances. The response categories of this subscale range from "yes, limited a lot," "yes, limited a little," to "no, not limited at all."

#### Role-physical and role-emotional

The Role-Physical subscale is a four-item scale that measures role limitations due to physical health conditions. Questions comprising the subscales ask about limitations in

type of work or other usual activities, reducing the amount of time spent in work or usual activities, and difficulty performing work or usual activities due to physical health conditions. The response categories of this subscale range from "all of the time," "most of the time," some of the time," "a little of the time," to "none of the time."

The Role-Emotional subscale is a three-item scale that measures role limitations due to mental health conditions. Questions comprising the subscales ask about limitations in type of work or other usual activities, reducing the amount of time spent in work or usual activities, and difficulty performing work or usual activities due to emotional problems. The response categories of the first question, which asks how much pain the respondent has experienced during the past 4 weeks, range from "all of the time," most of the time," "some of the time," "a little of the time," to "none of the time." The response categories of the second question, which asks how much the pain experienced during the past four weeks interfered with normal activities, range from "not al all," "a little bit," "moderately," "quite a bit," to "extremely."

#### **Bodily pain**

The Bodily Pain subscale is a two-item scale that measures the intensity of bodily pain or discomfort and the impact of pain or discomfort on normal activities. The response categories of this subscale range from "none," "very mild," "mild," "moderate," "severe,"

#### General health

The General Health subscale is a five-item subscale that measures the respondent's perception of his/her own health status, health status relative to his/her peers, and expectations for future health status. The five response categories of the first question, which asks the respondent to rate his/her own health, ranges from "excellent," "very good," "good," "fair," to "poor." The other four questions use a four-point response scale ranging from "definitely true," "mostly true," don't know," "mostly false," to "definitely false."

#### Vitality

The Vitality subscale is a four-item subscale that measures energy level and fatigue. The response categories of this subscale range from "all of the time," "most of the time," "some of the time," a little of the time," to "none of the time."

#### Social functioning

The Social Functioning subscale is a two-item subscale that measures the quantity and quality of social activities of the individual respondent. Specifically, the respondent is

asked if his/her physical health or emotional problems affected social activities. The response categories of the first question, which asks to what extent has physical health or emotional problems interfered with normal activities during the past four weeks, range from "not at all," "slightly," moderately," "quite a bit," to "extremely." The response categories of the second question, which asks how much time has physical health or emotional problems interfered with normal activities during the past four weeks, range from "all of the time," "most of the time," "some of the time," a little of the time," to "none of the time."

#### Mental health

The Mental Health subscale is a five-item subscale that measures feelings of nervousness and depression or on the contrary, feelings of peacefulness, happiness, or calmness. The response categories of this subscale range from "all of the time," "most of the time," "some of the time," a little of the time," to "none of the time."

#### Data analysis

Using paired sample t-tests to compare the changes in the SF-36, the pre- and post-test scores were analyzed for the group. The purpose of the paired t-tests was to identify the direction of change in scores between the pre- and post-tests as well as determine if these changes were statistically significant. It is important to note that the small numbers of respondents in the group limits the statistical power behind this test.

#### Missing data

Missing data were handled according to published procedures (Ware, Kosinski & Dewey, 2000). If a respondent failed to answer a question on the SF-36, the average of the transformed scores of the respondent's responses to other items in that scale were used as the response for the missing item. However, in this analysis, there were no missing data on the SF-36 pre- or post-tests.<sup>2</sup>

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Question 2 on the SF-36 was eliminated from the analysis, because of a typographical error in the pretest questionnaire. The question asks, "Compared to one year ago, how would you rate your health in general now?" The response categories should be "much better now than one year ago," "somewhat better now than one year ago," "about the same as one year ago," "somewhat worse than one year ago," and "much worse now than one year ago." However, the response categories on the pre-test form read, "much better now than one week ago," "somewhat better now than one week ago," "about the same as one week ago," "somewhat worse than one week ago," and "much worse now than one week ago." This question represents "health transition" over the course of one year and is not directly relevant to the evaluation of the Designing a Life of Wellness program.

## **Findings**

#### Comparison of pre-and post-tests

By comparing the change in mean scores from the pre- and post-tests of the program participants using the paired sample t-test, we found improvement in the mean scores on all subscales, with the exception of Role-Emotion and Mental Health, as shown in Figure 2. The direction of change of the mean scores for these two subscales is incongruous with the findings of the evaluation of the program at the Humboldt campus.

Findings of the analysis of the Concordia Arms pre- and post-tests do not support the findings of the evaluation of the demonstration program at the Humboldt campus or the findings of Matuska's study (in press). Based on our previous analysis and Matuska's study, using the paired t-test procedure, we had expected a statistically significant difference in the Role-Physical subscale, Mental Health subscale, Vitality subscale, Social Functioning subscale, or the Mental Health summary (a combination of Vitality, Social Functioning, Role-Emotional, and Mental Health subscales) scores. However, no change of statistical significance was found at p = .05 between the pre- and post-tests mean scores for any of the subscales. This means that although the program had a positive effect on participants' scores on these scales, with the exception of the Mental Health and the Role-Emotion subscale, we cannot say with confidence that the difference between the pre- and post-test scores is due to exposure to the program or one that happened through chance.

#### 2. Comparison of SF-36 pre- and post-test mean scores (t-tests)

Physical functioning	Role- physical	Bodily pain	General health	Vitality	Social functioning	Role- emotional	Mental health
Improved	Improved	Improved	Improved	Improved	Improved	Worsened	No change

## **Conclusions**

Using a quasi-experimental design, we attempted to measure the effect of the program on independent older adults living in a supportive housing environment. Noting the limitations of the study (lack of randomness and small numbers of participants that limit the power of the statistical tests), the Designing a Life of Wellness program appears to have a positive effect on the ability of participants to perform work or daily activities despite participants' physical condition or general health. However, due to the limitations of the study, the effect of the intervention at Concordia Arms cannot be confirmed.

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# **Appendix**

Outcomes: SF-36 pre- and post-test mean scores (t-tests) SF-36

## Outcomes: SF-36 pre- and post-test mean scores (t-tests)

Scale	Pre-test mean	Post-test mean	Change, mean	p-value (2-tailed)
(Note: an increase in mean repre	esents improvement)			
Physical Functioning	33.50	33.56	0.06	.98
Role-Physical	35.12	37.57	2.45	.49
Bodily Pain	43.10	43.95	0.85	.80
General Health	39.97	40.66	0.69	.87
Vitality	36.48	44.68	8.20	.14
Social Functioning	45.26	50.71	5.45	.20
Role-Emotional	40.82	36.93	-3.89	.23
Mental Health	48.95	48.95	0.00	1.00

## The SF-36v2 Health Survey

#### **Instructions for Completing the Questionnaire**

Please answer every question. Some questions may look like others, but each one is different. Please take the time to read and answer each question carefully by filling in the bubble that best represents your response.

#### **EXAMPLE**

**This is for your review.** Do not answer this question. The questionnaire begins with the section **Your Health in General** below.

For each question you will be asked to fill in a bubble in each line:

1.	How strongly do you agree o	<sup>r</sup> disagree with each of the	following statements
----	-----------------------------	--	----------------------

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
a) I enjoy listening to music.	0	•	0	$\circ$	0
b) I enjoy reading magazines.	•	$\circ$	0	0	$\circ$

Please begin answering the questions now.

## Your Health in General

1. In general, would you say your health is:

Excellent	Very good	Good	Good Fair		
O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	GH01

Compared to one year ago, how would you rate your health in general now?

Much better now than one year ago	Somewhat better now than one year ago	About the same as one year ago	Somewhat worse now than one year ago	Much worse now than one year ago
O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$

Please turn the page and continue.

HT

3. The following questions are about activities you might do during a typical day. Does <u>your health</u> now limit you in these activities? If so, how much?

mon mine you in those desiration in out mount				
	Yes, limited a lot	Yes, limited a little	No, not limited at all	
a) Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	PF01
b) <b>Moderate activities</b> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	PF02
c) Lifting or carrying groceries	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	PF03
d) Climbing several flights of stairs	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	PF04
e) Climbing <b>one</b> flight of stairs	O <sub>1</sub>	$\bigcirc_2$	O <sub>3</sub>	PF05
f) Bending, kneeling, or stooping	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	PF06
g) Walking more than a mile	O <sub>1</sub>	$\bigcirc_2$	O <sub>3</sub>	PF07
h) Walking several hundred yards	O <sub>1</sub>	$\bigcirc_2$	O <sub>3</sub>	PF08
i) Walking one hundred yards	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	PF09
j) Bathing or dressing yourself	O <sub>1</sub>	$\bigcirc_2$	O <sub>3</sub>	PF10
				j

4. During the <u>past 4 weeks</u>, how much of the time have you had any of the following problems with your work or other regular daily activities <u>as a result of your physical health?</u>

	All of the time	Most of the time	Some of the time	A little of the time	None of the time	
a) Cut down on the <b>amount of time</b> you spent on work or other activities	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	O <sub>4</sub>	$\bigcirc_5$	RP01
b) Accomplished less than you would like	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	O <sub>4</sub>	$\bigcirc_5$	RP02
<ul> <li>c) Were limited in the kind of work or other activities</li> </ul>	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	O <sub>4</sub>	O <sub>5</sub>	RP03
<ul> <li>d) Had <b>difficulty</b> performing the work or other activities (for example, it took extra effort)</li> </ul>	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	O <sub>4</sub>	$\bigcirc_5$	RP04

During the <u>past 4 weeks</u> , how much of the time have you had any of the following problems with your work or other regular daily activities <u>as a result of any emotional problems</u> (such as feeling depressed or anxious)?							
шор, ососи			All of the time	Most of the time	Some of the time	A little of the time	None of the time
	on the <b>amount</b> work or other acti		O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	O <sub>4</sub>	○5
b) Accomp	lished less than	you would like	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	○5
c) Did work than usu	or other activities al	less carefully	01	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	○5
	<u>past 4 weeks,</u> to ormal social activ						ems inter
Not at all	Slightl	y Mo	oderately	Qui	te a bit	Extr	emely
O <sub>1</sub>	$\bigcirc_2$		$\bigcirc_3$		$\bigcirc_4$	(	$\bigcirc_5$
How much <u>k</u>	odily pain have	you had durir	ng the past	4 weeks?			
None	Very mild	Mild	Mod	erate	Severe	Ver	y severe
O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$		)4	$\bigcirc_5$		$\bigcirc_6$
Not at all	A little b		oderately		te a bit		emely
For each qu	tions are about lestion, please gof the time durin	ive the one ar	nswer that o				
a) did you fe	eel full of life?		O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	O <sub>5</sub>
b) have you	been very nervo	us?	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$
	felt so down in th		O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$
d) have you	felt calm and pea	aceful?	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$
e) did you h	ave a lot of energ	ıy?	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$
f) have you felt downhearted and depressed?			O <sub>1</sub>	$\bigcirc_2$	O <sub>3</sub>	$\bigcirc_4$	$\bigcirc_5$
g) did you f	eel worn out?		O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$
h) have you	ı been happy?		O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	O <sub>4</sub>	$\bigcirc_5$
i) did you fe	eel tired?		O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$

# 10. During the <u>past 4 weeks</u>, how much of the time has your <u>physical health or emotional problems</u> interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time	
$O_1$	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	SF02

11. How TRUE or FALSE is each of the following statements for you?

The first fixed of fixed to gate of the following statements for your										
	Definitely true	Mostly true	Don't know	Mostly false	Definitely false					
a) I seem to get sick a little easier than other people	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	GH02				
b) I am as healthy as anybody I know	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	GH03				
c) I expect my health to get worse	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	GH04				
d) My health is excellent	O <sub>1</sub>	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	GH05				