

Memory Enhancement for Mature Adults

In an effort to promote memory-enhancing techniques aimed at improving memory recall in Edmonton's aging population, Alberta Health Services (AHS) created a program for mature adults, focusing on self-efficacy, training techniques and healthy lifestyle factors to enhance memory. The program's multidisciplinary team, composed of occupational therapists (OTs), nurses, pharmacists and dietitians, created a six-week course titled *Boosting Your Memory*. Since the program's inception in 1999, a total of 2,139 people aged 50 years and older have gained confidence in their ability to remember and have demonstrated improved memory performance.

By Amy Lau, BSc, OT

In 1999, in order to serve an aging population, Alberta Health Services (AHS) in Edmonton sought to identify areas of concern for seniors aged 65 years and older residing in local independent-living housing. Of the 200 seniors surveyed, all indicated they had memory concerns and wanted to learn memory-enhancement techniques to improve their recall.

In response to this evidence, the team of occupational therapists (OTs) in the AHS's Community Rehabilitation Program spearhead-

ed an initiative to develop a memory-enhancement program to address this need.

The program's primary goal is to help seniors promote positive beliefs about their memory, learn ways to improve their memory performance and recall, and adopt a healthy lifestyle to enable and extend independent daily living.

The Memory Enhancement Pilot Program

The team examined a wide range of literature related to memory-enhancement techniques. Of particular interest were existing memory-enhancement programs for older adults, programs that focused on self-efficacy,¹⁻⁴ and evaluations through self-report and objective measurements.⁵⁻⁷ The team based the program's design on M.D. Caprio-Prevette and P.S. Fry's *Me-*

memory Enhancement Program for Older Adults,¹ and drew extensively from Gary Small's *The Memory Bible*,⁸ and Cynthia R. Green's *Total Memory Workout*.⁹

Guided by the feedback from the survey and the literature review, and using an occupational therapy framework designed to encourage people to engage in occupations that foster health and well-being in their everyday living,¹⁰ the team developed a pilot program which focused on three major components:

1. self-efficacy;
2. memory training techniques; and
3. lifestyle factors that affect memory.

Participants had to be 65 years of age and older, and could not have had a previous diagnosis of dementia or dementia-related disease. The program itself was geared towards seniors in the community who wanted to learn more

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about improving their memory. Participants met for a total of 12 hours, two hours each week for six consecutive weeks.

In June of 2000, nine months after the initial survey the Occupational Therapy Services for Seniors team piloted the first program in one of the housing units where the seniors resided. All 18 participants were 65 years of age and older, with one male and 17 females. During the pilot program, the team recognized the value of a community-based program as several people in attendance had previous contact, and all lived in the local independent-living housing units. This factor, coupled with the attendees' common aspirations, helped to forge deep social connections as they learned about and practiced their newfound memory-enhancing skills.

At the end of the six weeks, the participants demonstrated improved memory performance on a 10-word recall test, and increased confidence about their own memory. According to their feedback to the program's facilitator, all 18 participants reported they enhanced their memory capability, particularly in the areas of long-term recall and self-confidence.

A month after the pilot program, the team ran a second workshop in a local seniors drop-in centre, attracting interest primarily through word of mouth. Although the maximum number of participants was set at 30, up to 10 more individuals attended the first day to gain access to the class. Furthermore, at the beginning of the pilot

Table 1

Multidisciplinary Topics Discussed by OTs, Nurses and Pharmacists

- How memory works
- Normal changes in memory due to aging
- Memory-boosting practices and habits
- Memory training techniques to help remember and retrieve memories
- Thoughts and feelings about memory and forgetfulness
- Various factors that affect memory (*i.e.*, nutrition, physical activities, sleep, medication and stress)

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project, the team received numerous requests from senior groups, church groups, senior centers, and other organizations in the community expressing their interest in attending and/or hosting a memory-enhancement class.

The Multidisciplinary Team Approach

By November of 2000, approximately six months after the initial program launch and after two successful sessions, the team looked to expand the services they were providing during the sessions and approached community nurses and dietitians from the AHS, as well as community pharmacists. Representatives from each professional group, including the OTs, conducted research in their own field in order to add a multidisciplinary ex-

pertise to the memory-enhancement program (Table 1).

The nursing partners developed the sessions *Active Body, Active Mind* and *How to get a Good Night Sleep*, while the local pharmacists participating in the program gathered input from numerous community and AHS pharmacists, and developed the presentation *Medication and Memory*. Dietitians produced the evidence-based presentation on *Smart Nutrition*, whereas the OTs focused on the sessions *Memory Tools, Good Memory Practices, Habits, Belief in Yourself* and *Relax and Remember*. This group also helped with the overall compilation and integration of the expert knowledge of occupational therapy, nursing, pharmacy and nutrition into one unique memory-enhancement program as seen in the abridged course outline (Figure 1).

Figure 1

Alberta Health Services (AHS) Memory Enhancement Program: Abridged Course Outline

Session 1

- Introduction
- Course objectives: *Healthy heart, healthy brain*
- Course outline
- Goal-setting: *What I want to get out of this program*
- Break
- How memory works
- How to make it work better
- Memory tool: *Active observation*
- Summary and homework

Session 2

- Review
- Memory tools: *Association, picture in your mind and name recall*
- Break
- Believe in yourself: *Relationship between thoughts, feelings and memory, changing your point of view*
- Summary and homework

Of note, this is an example of the first 2 sessions; there are 6 sessions in total.
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From the first two OTs in the pilot program, Boosting Your Memory has grown to have a collaborative multidisciplinary team of approximately 25 nurses, OTs, pharmacists and dietitians.

Boosting Your Memory, the program name, was copyrighted in 2001. The program itself is run by an OT from the AHS who coordinates the overall operation of the program in the Edmonton area and surrounding communities. This OT works with the team to standardize and review the facilitation approach, presentation materials and client workbooks. Together with the clinical practice nurse, she also provides training for new team members to learn how to facilitate program sessions.

Program Growth

From the program's inception to mid-2002, as the content matured and best practices were confirmed, the team developed and standardized the facilitators' program manual and handouts to guide the process and content of each session. It was also recognized that factors modulating the risk of developing cardiovascular disease may also play a similar role in dementia.¹¹ Based on this concept, the team began to weave the theme of what is good for

the heart is also good for the brain. Thus, information regarding good management of hypertension, diabetes, hypercholesterolemia, the importance of physical and mental activities, and the effects of smoking and diet were integrated into the program's content.

By April 2009, 118 *Boosting Your Memory* six-week workshops were completed in senior centers, senior organizations and health centers, and various senior groups in churches and senior housing complexes in Edmonton. To date, 2,139 mature adults have attended the *Boosting Your Memory* program.

From the first two OTs in the pilot program, *Boosting Your Memory* has grown to have a collaborative multidisciplinary team of approximately 25 nurses, OTs, pharmacists and dietitians. Typically, these individuals facilitate programs in their communities along with other responsibilities and roles. Also, the program expanded from the city of Edmonton to the surrounding areas as more facilitators were trained to run programs in their communities. While the content is consistent, facilitators utilize their unique settings, the group dynamic and the community's resources to ensure effectiveness for the particular group.

Client Population

The pilot program was restricted to seniors older than 65 years, but research has shown people might experience memory decline at approximately 50 years of age.⁹ Thus, the age criteria for the pro-

gram's inception was changed from 65 years and older to 50 years and older. Subsequent sessions have attracted people from 40 years to 90 years of age and older, with the mean participant age being 66 years. About 90% of the participant population are women, but the number of men has steadily increased. Of note, couples often attend sessions together to provide support.

The participant's education level varied from limited education to those holding PhDs. Of those who responded to the question about education, about 75% had Grade 12 or post-secondary education.

The criteria for the program has remained the same, targeting older community-dwelling adults who would like to learn more about their memory and improve their mental capacities, as well as older adults who are proactive, learning ways to reduce the risk of developing dementia or dementia-related diseases.

Participants often expressed their feelings of anger, fear and hopelessness generated around aging and the increased risk of having poor memory. One participant, whose mother had been diagnosed with dementia, expressed her own personal fears and the reassurance she felt after completing the program: "Everybody forgets. I feel hopeful after attending this workshop because there is something I can do to improve my memory."

Program Evaluation

Method. In 2002, an evaluation committee helped to develop an

evaluation designed to improve *Boosting Your Memory*. Yearly evaluations were completed in 2003, 2004 and 2005 by 482 clients. While structured evaluations are no longer completed, each program session asks participants for feedback at the end of the group, and participants complete a pre- and post-objective memory test for their own review.

For the evaluation period (2002 to 2005), participants completed a pre- and post-evaluation, including an objective memory test and a subjective rating of their own memory performance. In addition, a three-month

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evaluation and follow-up questionnaire was completed with participants by mail for 2003 and 2004.

Objective test. Participants completed a 10-word test at the initial and the final session.⁸ Results showed that more than 70% of the participants demonstrated improved performance in the objective tests. One such individual was a participant needing 24-hour oxygen who expressed his sadness about his weakened state. The gentleman, approximately 60 years of age, did not miss a session, but needed to get up every 30 minutes to visit the bathroom. During the 10-word test conducted in the first class, he recalled two out of 10 items. In the

post-test during the last session, he recalled seven out of 10 items. The participant expressed his excitement to the class, and was encouraged that he had gained back some sense of control and self-confidence.

Self-rating one's memory. On the program evaluation form, participants were asked to rate their memory on a scale of very poor, poor, fair, good, very good or excellent at the beginning of the workshop.

Prior to taking the course, 40% of participants rated their memory as excellent, very good, or good. At the final session, 86% rated their memory as excellent, very good or

good. Additionally, a three-month follow-up evaluation was completed after the workshops in 2002 and 2003. A total of 200 questionnaires were sent out and 108 were returned. Of these, 76% of participants still rated their memory as excellent, very good or good.

The information provided was very helpful in continuing to support the program with resources and expand it into surrounding areas.

Looking Forward

As the team continues to gain knowledge from sessions and participant feedback, the program continues to evolve and the content continues to be enriched. To support more

practical assimilation, each participant takes part in activities and exercises during the session, and is assigned homework to practice and apply the memory-enhancing techniques and concepts in their everyday life. Celebrations and acknowledgement of the participants' achievements are now built into the last class of the workshop series.

In addition to reviewing content, we continue to evaluate and revise how we present the materials in order to enhance adult learning. The team incorporates techniques to further strengthen participants' knowledge that enable them to not only set

goals, but to implement their action plans. Thus, the program strives to help participants make changes in their everyday living that will ultimately improve their well-being and quality of life (QoL).

Previously, the target population had been viewed as people with two different interests: those who promoted heart health and those who promoted brain health. This program represents an integration of both. Addressing concerns about memory will subsequently improve the participants' overall well-being and QoL. From the participant feedback and facilitator observations,

Boosting Your Memory has improved the older adults' confidence and performance of their memory. It also helped participants change their everyday lifestyle practices to promote brain health in the areas of nutrition, physical activity, sleep hygiene, stress management and medication management.

Boosting Your Memory is fast approaching its tenth year, and AHS is celebrating the unique contribution the program is making to adults as young as 40 years, and those who are well into their 90s. The team is looking forward to continued improvement and expansion of their work.

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