Declarative title: Do people with schizophrenia improve equally in learning to cook in a clinic and at home?

Structured Abstract

Research Objective: The purpose of this study was to compare learning of cooking skills in two contexts (home compared to clinic) for individuals with long-term schizophrenia.

Design: Quasi-experimental design with pre and post measures.

Setting: The cooking lessons were held either in a clinic setting or in the home environment. The clinic setting was a classroom with a kitchen on a quiet floor of a university building. Minimal distractions existed and the environment remained calm and organized. Since most participants lived in group homes, the kitchens of those environments were described as cluttered with equipment and supplies. On many occasions staff and other residents interrupted the cooking sessions, which may have affected the attitude or the focus of the participants.

Participants: The forty-four participants were people who received the diagnosis of nonparanoid schizophrenia (n=19) or schizoaffective disorder (n=25) at least five years prior to the beginning of the study. All participants showed negative symptoms of schizophrenia. The age range of the participants was 27-62 years, with a mean age of 45.5 years (SD=8.5). Most participants were men (n=26). Most (n=38) lived in one of 12 group homes; the remaining six lived in supported apartments. All participants could access a kitchen. Twenty-five had cooked or, at the time of the study, were preparing some of their own meals, while 19 had minimal exposure or experience in cooking. Participants were matched on cognitive level; one of each pair was randomly assigned to either a clinic or home cooking group, with the other assigned to the remaining group.

Outcome Measures: Cognitive level of participants to their matched pair was measured with the Allen Cognitive Level Screen (ACLS-90) administered by the principal investigator. Cooking skill was assessed using the Kitchen Task Assessment-Modified (KTA-M) both before and after the intervention. The KTA-M was developed in a previous study by the author. It combined the cooked pudding task of the Kitchen Task Assessment (KTA; Baum & Edwards, 1993) with a scoring system to evaluate cooking performance adapted from the Rabideau Kitchen Evaluation Revised (Neistadt, 1991). Each one of the 40 steps of the task was scored on a six point ordinal scale of 0-5. A total score was obtained with 200 representing maximal independence. Face validity, and interrater and test-retest reliability of the KTA-M were demonstrated in an earlier pilot study by the author.

Intervention: Each participant was seen individually four times, on a weekly basis, in the designated site by a research associate blind to the study purpose. During the first session, the KTA-M was administered. Afterwards, the cooking lesson began, emphasizing the aspects of cooking required to perform the cooked pudding task. Each participant received a handout listing ten steps necessary for cooking simple food (such as washing hands before cooking). Each guideline was discussed with references to the cooked pudding task. During the second session, participants made a sandwich, emphasizing seven of the ten guidelines. The third session was dedicated to learn how to cook ramen soup and integrating all the cooking guidelines. Finally, at the fourth session, the KTA-M was administered a second time to measure change.

Main Findings: One significant difference was found at baseline between participants in the two groups: the home group mean score on the KTA-M was significantly higher than of the clinic group (t=-2.07, df =42, p<0.026). Participants in both groups scored significantly higher on the KTA-M after cooking lessons (t = 5.57, df = 21, p< 0.0001 for the clinic group; t=7.81, df = 21, p< 0.0002 for
the home group). The author asserts that this difference reflects the learning of the cooking skill. A greater variability was observed in the clinic group, as the participants with the two lowest KTA-M scores were assigned to this group. Participants with initial lower KTA-M had significantly more change in KTA-M than individuals with initially high KTA-M scores (t = -3.39, df = 37, p<0.001). There were no statistically significant differences in scores on KTA-M between the two groups based on where the learning took place (b = -1.8, df = 42, p<0.23).

Conclusions: Participants assigned to the home environment performed better initially than the clinic group. This finding is interesting in light of the clinical observation that interruptions and distractions in the home environment should have made the learning process more challenging. This raised the question of the role of the context: does that difference reflect the supporting role of a familiar environment or can it be explained by other unaccountable differences between the two groups? Were the lowest scores observed in the clinic group due to the unfamiliarity of the clinic setting or are they artifacts of randomization? Learning new skills in the home was not better than learning in the clinic for people with schizophrenia in this study. Further research on the effect of context on learning for people with cognitive dysfunction and schizophrenia is recommended.

Contact details of authors of appraised paper:
Linda Duncombe, Sargent College of Health and Rehabilitation Sciences, Occupational Therapy Department, Boston University, Boston, USA:
E-mail address: duncombe@bu.edu

Commentary on Duncombe (2004)

This study focuses on a very relevant aspect of occupational therapy interventions for people with schizophrenia: how and where skills must be taught to ensure better functional outcomes. The author demonstrated a good integration of how cognitive processes may affect learning in individuals with schizophrenia, as was apparent in the literature review, the sampling strategy and the intervention protocol. Duncombe was also quite transparent and thorough in the description of the research protocol and the limitations of the study. Despite the quality of this paper, one may be perplexed by a few aspects of the study, notably the choice of outcome measures, the differences between the two groups and how this research informs clinical practice.

Measurement Issues
Duncombe wanted to measure the learning of cooking skills. The acquisition or learning of skills is demonstrated and measured more easily than the application or performance of skills in the relevant environment (Anthony, Cohen, Farkas & Gagne, 2002). While learning relates to the capacity of the person to acquire a skill, performance conveys how the individual uses this skill in the real life context (Goldstein, 1981). Generalization of the learning in a real-life context remains a challenge for most psychoeducation and skill training programs (Anthony et al., 2002; Deleu & Lalonde, 1999), hence the need for teaching skills in the environment where they will be used (Corrigan, 2003; Test & Stein, 2000). Even if the author wanted to examine the impact of the context on the learning of cooking skills, the ultimate test lies in the ability of the person to apply those skills on a day-to-day basis. No efforts were made to gather complementary data describing how the learning was reflected in participants’ occupational performance.

continued on page 12
To match participants in the two groups, the cognitive abilities of participants were measured by the ACLS-90. Although there is little evidence of its validity, the ACLS-90 is used widely in the U.S. as a gold standard for screening cognitive functioning. Duncombe thoroughly describes how the outcome measure was chosen. The Kitchen Task Assessment (KTA) (Baum & Edwards, 1993) and the Rabideau Kitchen Evaluation-Revised (RKE-R) were considered. For the purpose of this commentary, it is worthwhile to review what those tools measure. The KTA measures the cognitive support a person needs to complete a cooking task (Baum & Edwards, 1993; Gitlin, 2005). It never was intended to be a measure of cooking skills, as observations focus on only one activity, and scoring is related to the executive functioning demonstrated through that activity. While the RKE-R focuses on the assessment of cognitive and perceptual abilities of an individual, it also measures light meal preparation skills; but primarily, the RKE-R is used to “determine the functional sequencing ability” of the clientele for whom it was intended originally (Neistadt, 1994, p. 433). It could be argued that the KTA-M cannot assess effectively occupational performance more than the original assessment tools from which it is derived. Is it a true reflection of the functional outcome for which occupational therapists strive? One could argue that the KTA-M measures strictly a cooking task and not the ability to cook. The summation of the KTA-M items by the author is controversial as there is an increased awareness that mathematical operations, like creating a total score, are strongly discouraged within an ordinal scale (Ancelle, 2002; Stein & Cutler, 2001), because it cannot be assumed that the differences between scores are equal within or across different items of the scale.

**Issues in comparing groups**

Baseline measures of cooking skills demonstrated that the control group scores were significantly lower than those of the experimental group. Since the groups were not equivalent at baseline, it makes the comparison between groups more challenging. This could have been compounded by the researcher’s focus not on the final score of the KTA-M but on the change from the baseline to final scores for the two groups. As the author noted, there was a ceiling effect; this means that the participants who performed well at baseline could not improve their scores as much after the intervention. One may wonder to what extent their final score is a true reflection of their learning or compounded by the limitations of the assessment tool. In this context, given that the possibilities for improvement were different between the two groups and that they may not have been well captured by the outcome measure, it remains difficult to conclude anything on the effect of the learning environment. Perhaps the experimental and control group should have been paired not only on the cognitive level of the participants but also on their cooking skills. Culture was not discussed or considered as a variable, although it may have impacted on cooking performance.

**Intervention Issues**

Duncombe never discussed the possible impact of the similarities between what was taught during the training program and the task of the KTA-M. This may also explain part of the change observed between the baseline and final scores. To reduce researcher bias, research associates who participated in the administration and in the training of participants were blind to the purpose of the study. The author, however, fails to control another source of bias: since the research associates were aware of the baseline scores, this may have affected the training they provided, or more importantly, the research associates’ final assessment. The question remains: is the change related to the learning of cooking skills or how the individuals learned to perform better on the next administration of the KTA-M? This issue is of relevance to research, but also to practice when therapists are evaluating outcomes by using a pre and post intervention tool. How can we best ensure that we are not “teaching to the test”?

**Applications to Research and Practice**

Despite those concerns, this article remains rele-
vant to research and practice. It demonstrates the challenges involved in the design of research protocols focusing on occupational performance. Choosing outcome measures and reducing bias are challenging tasks as researchers strive to develop a protocol that reflects what practitioners would do in real life without, at the same time, compromising the robustness of their findings. There is a substantial consensus that in-vivo learning is preferable to minimize issues related to generalization and transferability of skills, and this article does not produce sufficient evidence to challenge this belief. The discussion section of the paper alludes to considerations in each setting that should be kept in mind. The study raises some thought provoking, although ambivalent, results and points out the need for continued research. Therapists in practice are encouraged to continue focusing on interventions to improve functional living skills and performance in occupations, including cooking. The challenge is not only to find the setting that best meets the learning needs of the client, but also to identify measures of the functional performance of cooking, rather than simply the learning of the task without application to everyday occupational performance.

— Catherine Vallée. Catherine is a PhD candidate in biomedical sciences at the Université de Montréal. She is also a teaching associate at the University of Ottawa and a trainee for the Research in Addiction and Mental Health Policy and Services (RAMHPS)-CIHR training program. She may be reached at: cvallee@uottawa.ca.

References

Interested in reading more CAPs?
Column editor Lori Letts and the CAPs Advisory Group have now completed three CAPs. These are available online to CAOT members and also by PDF through CAOT Publications. Email publications@caot.ca with the name of the CAP and issue date.

Brief occupational therapy increased self-management behaviour in adults with early rheumatoid arthritis but had no effect on functional or health status at two year follow-up. November, 2005

Systematic review of the literature concluded that there is an evidence base for occupational therapy interventions with people aged 60+ living independently in the community. January, 2006

Clinical reporting by occupational therapists and speech pathologists falls short of therapists’ intentions and parental expectations. March, 2006

If you are interested in writing a structured abstract or commentary, please email Lori Letts at: lettsl@mcmaster.ca