

# Going Beyond: An Adventure- and Recreation-Based Group Intervention Promotes Well-Being and Weight Loss in Schizophrenia

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**Objective:** To undertake a preliminary study to assess the feasibility of clinical implementation and evaluate the effectiveness of a novel adventure- and recreation-based group intervention in the rehabilitation of individuals with schizophrenia.

**Methods:** In a 2-year, prospective, case-control study, 23 consecutively referred, clinically stabilized schizophrenia patients received the new intervention over an 8-month period; 31 patients on the wait list, considered the control group, received standard clinical care that included some recreational activities. Symptom severity, self-esteem, self-appraised cognitive abilities, and functioning were documented for both groups with standardized rating scales administered at baseline, on completion of treatment, and at 12 months posttreatment.

**Results:** Treatment adherence was 97%, and there were no dropouts. Patients in the study group showed marginal improvement in perceived cognitive abilities and on domain-specific functioning measures but experienced a significant improvement in their self-esteem and global functioning ( $P < 0.05$ ), as well as a weight loss of over 12 lb. Improvement was sustained over 1 year with further occupational and social gains.

**Conclusion:** In the context of overcoming barriers to providing early intervention for youth and preventing metabolic problems among older adults with schizophrenia, adventure- and recreation-based interventions could play a useful complementary role.

(Can J Psychiatry 2006;51:575–580)

Information on funding and support and author affiliations appears at the end of the article.

## Clinical Implications

- The changing profiles and needs of individuals with severe mental illness living in the community warrant the development of novel interventions to engage patients in a therapeutic alliance.
- Going Beyond could help to address the needs of 2 subgroups of people treated for schizophrenia—younger patients requiring early intervention and adults on long-term antipsychotic treatment who are at risk of developing metabolic complications.
- Multidisciplinary teams involved in providing early intervention for psychosis and assertive community treatment programs should consider incorporating adventure- and recreation-based treatments into the repertoire of their interventions.

## Limitations

- Small sample size, partial blinding, and lack of randomization in subject allocations are relative methodological limitations of the study.
- The new intervention may not be suitable or uniformly effective in all subgroups of schizophrenia patients.
- Mental health facilities in some locations may not have the necessary staff and facilities, limiting the applicability of adventure- and recreation-based programs.

**Key Words:** schizophrenia, adventure, recreation, psychoeducation, early intervention, metabolic complications

Deinstitutionalization and the ensuing community care created new challenges that necessitated the formulation of creative solutions for managing people with severe mental illness in the community. Research on “expressed emotions” led to the growth of family intervention and psychoeducational programs, concerns about stigma and community reintegration led to the development of social skills training, recognition of the role of stress in precipitating relapses of illness warranted advances in stress management techniques, and the problem of persistent positive symptoms compelled the use of cognitive-behavioural therapy (1). Despite these developments, community care remains an evolving work-in-progress. Some of the barriers to care are well-known and include comorbid substance abuse and treatment nonadherence, whereas others are new, such as enticing mentally ill youth into early intervention programs and integrating lifestyle modification programs to prevent metabolic problems associated with long-term antipsychotic therapy. These issues demand novel therapeutic strategies and creative models of service delivery. This paper describes the development and preliminary evaluation of a new adventure- and recreation-based therapeutic intervention.

### ***Therapeutic Aspects of Adventure and Recreation***

The use of adventure and recreational activities as means of fostering personal growth are rooted in the principles of experiential learning. Kurt Hahn popularized the philosophy of “learning by doing” to address the problems of lack of motivation, initiative, fitness, and self-discipline among the beleaguered youth of the 1940s (2). Hahn’s “outward bound philosophy” led to the formation of a network of schools, camps, and outdoor centres aimed at inspiring youth through unorthodox educational methods. Despite their popularity in nonclinical settings, there have been no attempts at establishing their therapeutic value in the rehabilitation of individuals treated for schizophrenia (3).

Lack of motivation, structured routine, initiative, and physical fitness are impediments to successful rehabilitation and recovery among people treated for schizophrenia. Conventional rehabilitation programs based on cognitive and behavioural learning principles have had limited success in addressing these issues. Going Beyond, a novel therapeutic intervention based on experiential learning theory and adventure and recreational activities, has been developed to address the physical, psychological, and social limitations of people recovering from schizophrenia and other severe mental illnesses. A brief description of the program is provided below, followed by the results of a preliminary investigation designed to examine its feasibility, effectiveness, and limitations in people receiving treatment for chronic schizophrenia.

### ***Going Beyond: A Description of the New Intervention***

The development of Going Beyond was guided by the following principles:

1. Adventure and recreational content should include activities that are feasible, available, accessible, acceptable, affordable, and likely to be effective.
2. Individual activities should be integrated into a structured therapeutic package and delivered in a closed-group format over an optimal period of time that is neither too short nor too long.
3. The intervention should be a time-limited therapeutic contract amenable to objective evaluation.
4. The process and content of the intervention and effort involved should be explicit and suitable for replication and integration into mental health services elsewhere.

On the basis of these premises, Going Beyond was designed to include a summer module and a winter module, each consisting of 8 weekly sessions. The list of activities was chosen for the likely benefits expected and the researchers’ cumulative experience. The summer module included camping, canoeing, kayaking, rock climbing, high and low ropes courses, and a picnic. The winter module included skating, snow shoeing, skiing, snowboarding, ice fishing, indoor rock climbing, and bowling. Each activity usually lasted a full day, and camping trips occurred over 3 days. The activities were coordinated and supervised by a trained recreation therapist, a registered nurse, a social worker, and an occupational therapist. Each therapeutic session was preceded by brain storming, planning, and preparation involving the participants and group leaders. The summer module was offered during July and August and the winter module in January and February. The group members were encouraged to complete both modules and to maintain additional weekly contacts with the treatment team in the intervening period.

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#### **Abbreviations used in this article**

ANOVA	analysis of variance
ASIS	Adult Self-Image Scale
GAF	Global Assessment of Functioning
PCD	perceived cognitive deficit
PANSS	Positive and Negative Syndromes Scale
SD	standard deviation
SIP	Sickness Impact Profile
SSTICS	Subjective Scale to Investigate Cognition in Schizophrenia

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## Pilot Study on Effectiveness

We investigated the potential therapeutic benefits of the Going Beyond program, using a prospective, case-control, pre- and posttreatment study design with blinded evaluation of outcomes. The study group comprised the first 23 subjects referred and enrolled in the experimental intervention; the remaining 31 individuals on the wait list formed the control group. The study spanned 20 months; participants in the study group received the therapeutic intervention over an 8-month period, and their clinical status was monitored during, on completion, and for an additional 12 months postintervention. Subjects in the control group continued to receive standard clinical care, including the usual recreational activities offered through the clinic, and participated in the same schedule of evaluations. Recreational activities for the control group comprised movie nights or dances at monthly intervals, a summer picnic, and a Christmas party. Standard clinical services did not offer adventure-based activities, and attendance at the sessions was optional.

### Subjects

The entry criteria to receive the new intervention included a diagnosis of schizophrenia or schizoaffective disorder, clinical stability of 6 months or longer (absence of admissions or significant exacerbation of symptoms), and stable physical health status. The research protocol was approved by the local research ethics board, and all study participants provided written informed consent. A total of 54 participants were evaluated at baseline, of whom 23 were included in the experimental group (2 parallel cohorts); the rest formed the control group. None of the participants required hospitalization over the course of the study.

### Methods

All participants underwent screening by a physician to ensure their suitability to participate in the intervention. The range of outcomes evaluated included symptom severity, GAF, self-esteem, self-appraised cognitive dysfunction, and health-related psychosocial adjustment. Interviewer-administered instruments included the PANSS (4) and the GAF (5); self-administered rating scales included the ASIS (6), the SSTICS (7), and the SIP (8). The psychometric characteristics of the instruments have been well-established in severely mentally ill patient populations. In addition, participants' weight was recorded at quarterly intervals throughout the study.

We assessed participants prior to enrolment (baseline), on completion of the intervention (8 months), and 1 year after intervention completion. The extended follow-up was intended to examine the long-term sustained benefits of the intervention. The evaluation team was blinded to the treatment status of the participants. Participants, however, could

not be blinded, owing to the nature of the intervention. Scores from individual rating scales were entered into a database, and statistical analysis was carried out with SPSS Version 11.2. We analyzed changes in each of the domains, using repeated measures ANOVA, with type of intervention as a between-groups variable and time of evaluation (baseline, study end, and 12 months postintervention) as a within-subjects variable. We set significance levels at  $P < 0.05$ .

In addition to assessing the feasibility and acceptability of the new intervention, we tested the specific hypothesis that the experimental intervention (Going Beyond), when compared with standard clinical care, would be significantly more effective in reducing symptoms and improving perceived cognitive abilities, self-esteem, and global functioning over a period of 12 months after the intervention.

### Results

Sociodemographic and illness characteristics of the study group and the control subjects are summarized in Table 1, and changes in symptoms, self-esteem, functioning, and perceived cognitive deficits are presented in Table 2.

Participants in the study group were slightly younger, and men were relatively overrepresented, although these differences were not statistically significant. There were no significant differences between the groups at baseline in terms of symptom severity and other outcome parameters. Attendance rates for the study group and the control group were 97% and 72%, respectively, and the participation rate in the evaluations was 100% for all study subjects. Differences between the scores on the rating scales at baseline and 12 months postintervention are summarized in Table 2. There was little change in symptom scores for both groups over time. A review of the within-group and between-group differences on the ANOVA indicated that participants in the study group reported marginal improvement in perceived cognitive deficits (SSTICS) and functioning (SIP) but that there were significant improvements in self-esteem (ASIS) and global functioning (GAF). These benefits were sustained over the longer term, as demonstrated by the stability of scores at the 12-month evaluation ( $P < 0.05$ ).

In addition to the changes captured on the rating scales, there were other significant findings noted among the study group participants. There was a strikingly significant weight loss (mean 12 lb) among study subjects over the course of the year, whereas there was a marginal weight gain (mean 9 lb) in the control group. A review of the qualitative reports compiled during the study revealed various positive experiences described by the participants not captured by the structured rating scales. These included the satisfaction derived from group participation, feelings of accomplishment, the thrill of adventure and challenge, and the development of mutually

Table 1 Sample description		
Characteristics	Intervention group ( <i>n</i> = 23)	Control subjects ( <i>n</i> = 31)
	Mean (SD)	Mean (SD)
Age, years	32.04 (7.51)	40.83 (9.44)
Illness duration, years	12.2 (5.3)	14.6 (4.2)
	<i>n</i> (%)	<i>n</i> (%)
Sex		
Male	19 (82.6)	23 (74.2)
Female	4 (17.3)	8 (25.8)
Education		
Primary	12 (52.17)	12 (38.7)
Secondary	7 (30.4)	9 (29)
College	4 (17.39)	7 (22.6)
University	0 (0)	3 (9.7)
Occupation		
Employed	3 (13.04)	4 (12.9)
Unemployed	20 (86.9)	27 (88.1)
Marital status		
Married or common law	2 (8.6)	3 (9.7)
Single, divorced or widowed	21 (91.3)	28 (91.3)
Living arrangement		
Independent living	5 (21.7)	12 (38.7)
Family home	10 (43.4)	5 (16.1)
Group or boarding home	7 (30.4)	12 (38.7)
Other	1 (4.34)	2 (6.4)

trusting relationships with peers and therapists. Participants in the intervention group also described a changed perspective on life and reported setting up new goals for themselves, such as pursuing studies or looking for work.

## Discussion

The study demonstrated that the selected set of adventure and recreational activities were acceptable and popular in this patient population, as suggested by the high rates of compliance with the treatment sessions and the evaluation schedule. This prospective, nonrandomized, case-control trial, shows that the new intervention was effective in improving self-esteem, perceived cognitive abilities, and overall psychosocial adjustment, to variable extents. Considering the methodological limitations of the study, the effectiveness of the new intervention requires replication in a longer-term, randomized controlled trial in a larger sample of patients. The preliminary results of the study, however, suggest various promising directions.

Outdoor and recreational activities have always been intuitively appealing in mental health care, although their effectiveness has not been formally established. Activities such as gardening, bowling, and sports were a part of the therapeutic armamentarium in the Victorian asylums (3). Closure of the large psychiatric hospitals led to a near extinction of these potentially valuable treatment modalities; there has not been any attempt to recreate such programs or evaluate their role in modern psychiatric services.

The potential of adventure and recreational therapies is two-fold: for the subjects, to improve motivation, self-esteem, and a sense of belonging; and for the mental health professionals, to establish better rapport and overcome the barriers in delivering care for individuals with severe mental illness. Qualitative reports suggest that adventure and recreational activities serve as a vehicle to engage unmotivated, reluctant, and noncompliant patients; to provide the scope to educate them about their illness, treatment, and rehabilitation; and to

**Table 2 Changes in outcome measures at the end of the intervention and after 12 months of follow-up**

Outcome measures	Active intervention group (n = 23)			Control subjects (n = 31)			Analysis of variance Effect Group × time <sup>f</sup> F, df, and P*
	Baseline	At the end of the intervention	12 months post intervention	Baseline	At the end of the intervention	12 months after the intervention	
PANSS <sup>a</sup>	71.34 (11.81)	65.47 (12.3)	67.13 (11.56)	66.58 (8.9)	65.34 (10.2)	64.03 (8.4)	F (1,52) = 1.29, P < 0.26
GAF <sup>b</sup>	53.26 (3.74)	59.38 (4.61)	58.27 (3.09)	54.19 (4.10)	54.37 (5.2)	55.25 (4.0)	F (1,52) = 8.94, P < 0.05
SIP <sup>c</sup>	32.13 (14.7)	20.52 (13.7)	22.95 (12.9)	34.12 (18.03)	35.6 (17.27)	34.16 (17.0)	F (1,52) = 4.98, P < .01
ASIS <sup>d</sup>	14.08 (4.06)	22.9 (5.31)	19.34 (4.43)	15.77 (5.33)	16.71 (5.62)	15.5 (4.9)	F (1,52) = 8.52, P < 0.05
SSTICS <sup>e</sup>	37.3 (16.06)	30.63 (15.48)	29.3 (14.8)	36.8 (13.92)	37.2 (12.8)	37.48 (13.3)	F (1,52) = 4.41, P < 0.04

<sup>a</sup>30-item rating scale with total score ranging between 30 and 210; higher score indicative of greater symptom severity  
<sup>b</sup>Single-item scale with score ranging between 0 and 90; higher score representing superior functioning  
<sup>c</sup>63-item rating scale with scores ranging between 0 and 63; higher score representing greater disability  
<sup>d</sup>18-item self-administered rating scale with score ranging between 0 and 36; higher score indicative of greater self-esteem  
<sup>e</sup>21-item rating scale with score ranging between 0 and 84; higher score indicative of greater frequency of perceived cognitive deficits  
<sup>f</sup>Based on 12-month follow-up data  
\*Statistical significance P < 0.05

cultivate a healthy lifestyle. Study participants, especially the younger patients, seemed to benefit from finding a source of identity, universality, and fraternity; from externalization of interests, hobbies, and skills; and from acquisition of social skills, learning from each other, and resolution of family conflicts. Considering these benefits, such programs are likely to be complementary to pharmacologic interventions and enhance the benefits of early intervention in psychosis (9).

Preliminary results also suggest that Going Beyond helps to address the problems of physical inactivity, unhealthy lifestyle, and weight gain and may prevent the physical ailments common among middle-aged individuals with schizophrenia. The weight loss noted in the study group was significant and was presumably related to the sustained physical activity spanning more than a year. This observation raises an interesting possibility that physical activity programs based on adventure and recreation are more enticing and superior in sustaining participants' motivation than are the standard exercise programs. If these findings are replicated in larger trials, the practice implications would be enormous in terms of addressing weight gain, type 2 diabetes, and other metabolic abnormalities observed during long-term antipsychotic therapy. There are anecdotal reports that, among people with substance abuse problems, eating disorders, and personality disorders, and in mentally ill offenders, adventure and

recreational programs could foster a more favourable attitude toward disability and could increase self-efficacy, improve independent living skills and social skills, enhance self-image, and improve sense of responsibility (10,11).

**Funding and Support**

This pilot study was an independent clinical investigation, sponsored by St Joseph's Healthcare, and supported in part by an unrestricted educational grant from Novartis. The authors have no conflict of interest with regard to the treatment interventions discussed in this report.

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Manuscript received December 2005, revised, and accepted March 2006.  
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**Résumé : Aller plus loin : une intervention de groupe fondée sur l'aventure et les loisirs favorise le bien-être et la perte de poids dans la schizophrénie**

**Objectif :** Ce rapport décrit une étude préliminaire visant à évaluer la faisabilité d'une application clinique et l'efficacité d'une nouvelle intervention de groupe fondée sur l'aventure et les loisirs dans le rétablissement de personnes souffrant de schizophrénie.

**Méthodes :** Dans une étude prospective cas-témoin de 2 ans, 23 patients souffrant de schizophrénie adressés consécutivement et cliniquement stabilisés ont reçu la nouvelle intervention sur une période de 8 mois; 31 patients de la liste d'attente, considérés comme étant le groupe témoin, ont reçu des soins cliniques standard qui comprenaient certaines activités de loisirs. La gravité des symptômes, l'estime de soi, les capacités cognitives auto-évaluées et le fonctionnement ont été documentés pour les deux groupes à l'aide d'échelles d'évaluation normalisées administrées au départ, à la fin du traitement, et à 12 mois après le traitement.

**Résultats :** L'observance du traitement a été de 97 %, et il n'y a pas eu d'abandon. Les patients du groupe de l'étude montraient une amélioration marginale des capacités cognitives perçues et à une mesure du fonctionnement spécifique du domaine, mais connaissaient une amélioration significative de l'estime de soi et du fonctionnement global ( $P < 0,05$ ), de même qu'une perte de poids de plus de 12 lb. L'amélioration s'est maintenue sur plus d'un an avec d'autres gains professionnels et sociaux.

**Conclusion :** Dans le contexte de surmonter les obstacles à l'intervention précoce auprès des jeunes et de prévenir les problèmes métaboliques chez les adultes souffrant de schizophrénie, les interventions fondées sur l'aventure et les loisirs pourraient jouer un rôle complémentaire utile.