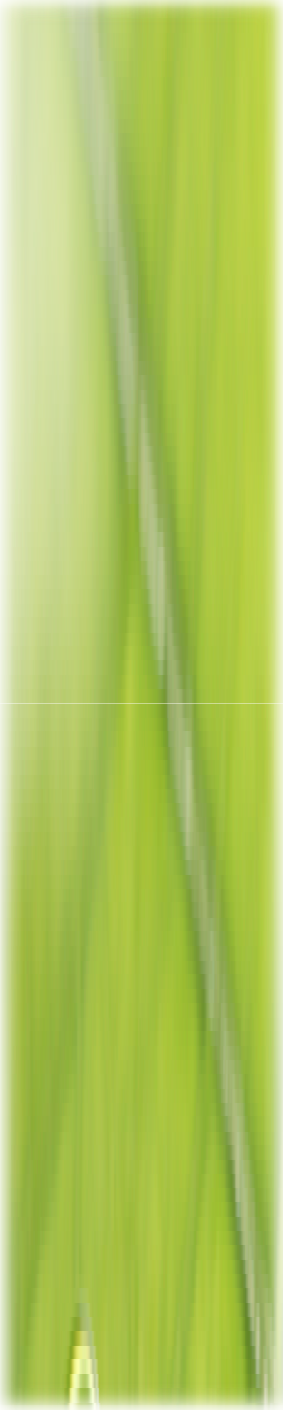
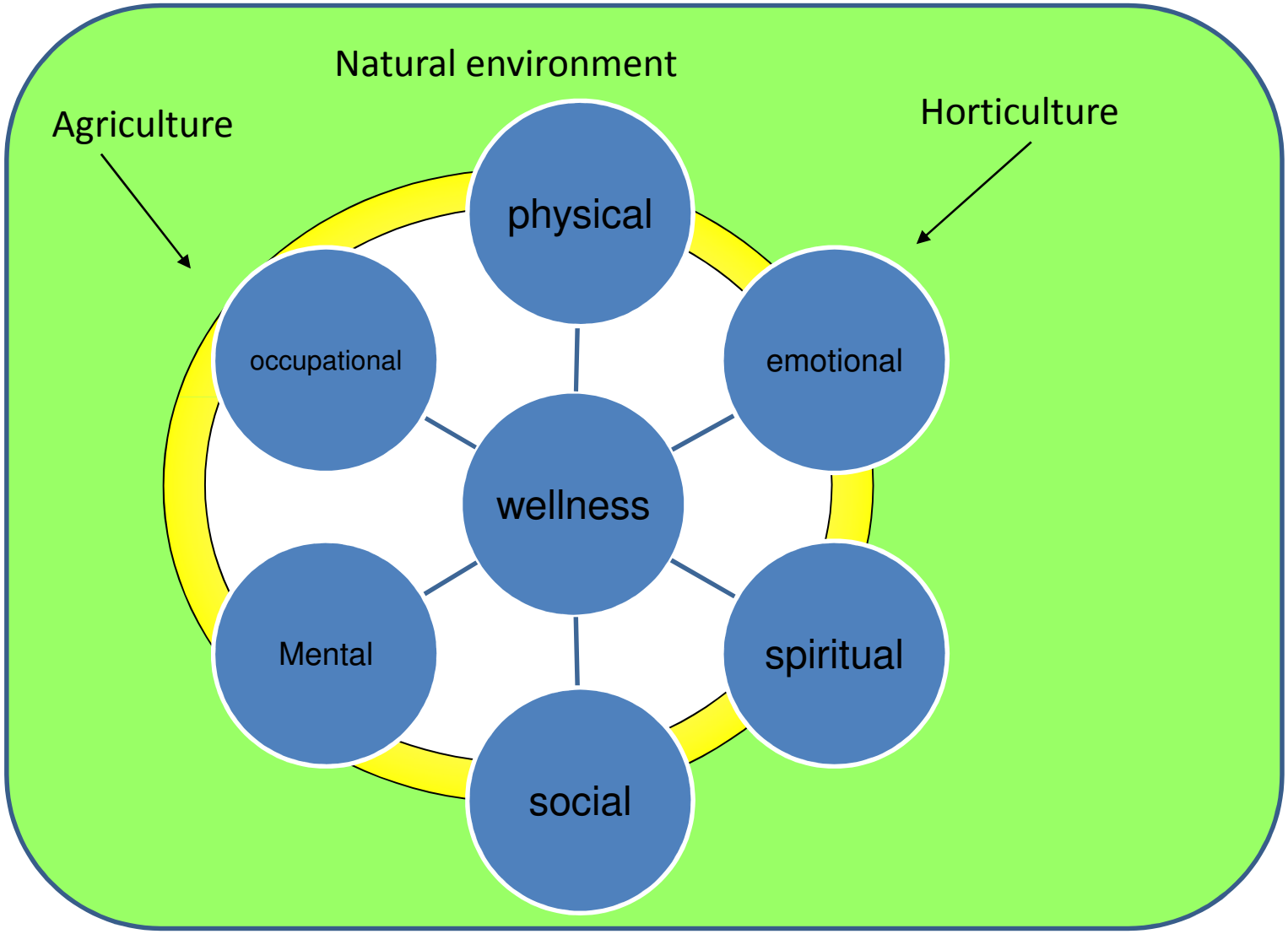


Conclusion

- This exploratory study identified that farm activities have positive influences on the subjective well-being of people with psychiatric disabilities.
- Agricultural and horticultural work training bring along rehabilitation outcomes especially in occupational, physical & mental, social & spiritual aspects of wellness.

Relationship between agricultural and horticultural rehabilitation and wellness of people with psychiatric disability in New Life Farm



Studies (2)

- The Effect of Horticultural Program on Stress and Work Performance for People with Mental Illness
- Conducted by Occupational Therapist in 2009

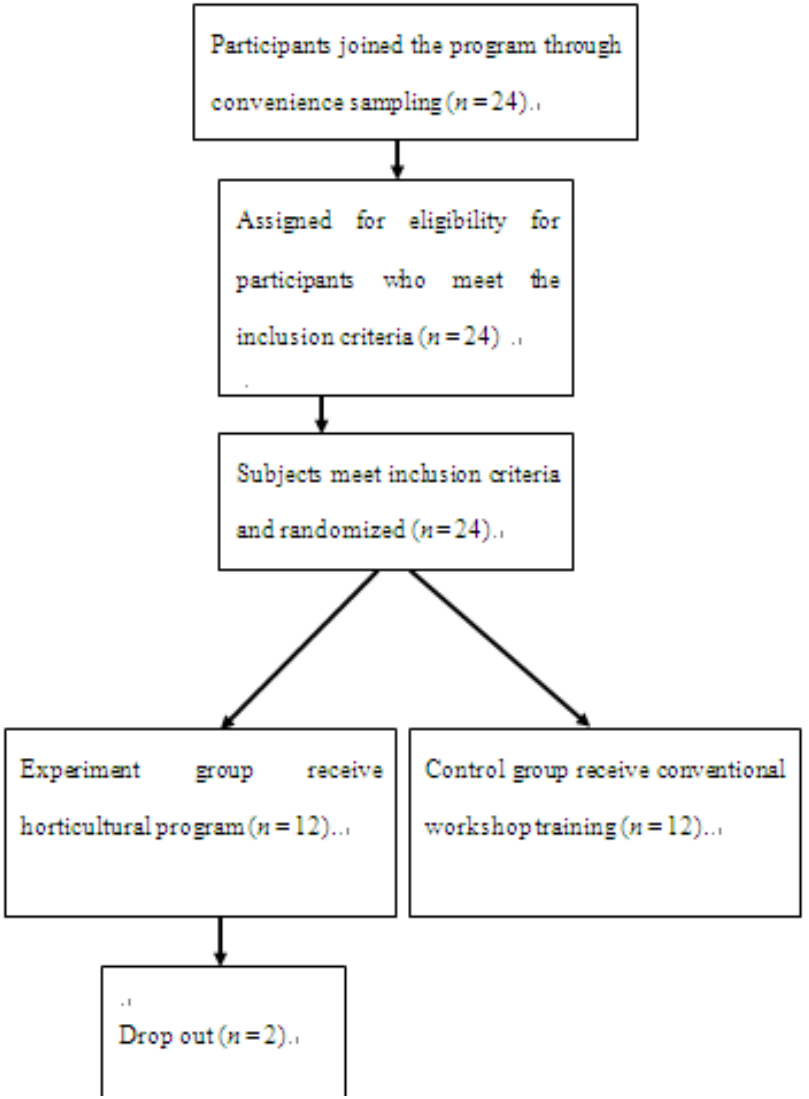
Objective

- To examine the impacts of horticultural program on stress coping, work behavior and quality of life for people with mental illness.

Methodology

- Design:
  - randomized control trial with pre-test, post-test assessment
  - 24 participants were recruited
  - Randomly assigned to experimental an control group
    - Inclusion criteria: Receiving vocational rehabilitation in sheltered workshop
    - Having a diagnosis of schizophreni spectrum disorder, bipolar disorde or major depression
    - Having interest in horticulture program
    - Exclusion criteria:

      Major medical problems that could interfere with participation in horticulture
  - Pre-test and post-test were done by single-blinded assessors (voluntary research assistants)



Methodology

- Measures:
  - Demographic data of participants
  - Statistical data of the following assessments
    - Depression Anxiety Stress Scale 21 – Chinese Version (DASS21-C) (Taouk, Lovibond, & Laube, 2001)
    - Work Behavior Assessment (WBA) (Work Behavior Assessment Guideline, NLPRA, 2005)
    - Personal Wellbeing Index - Chinese Version (PWI-C) (Lau *et al*., 2004)
  - Qualitative data from focus group

Program Description

- Title: 身心放鬆園藝之旅
- Format
  - No. of sessions: 10
  - No. of participants: 10
  - Duration of each session: 1 hour
  - Session structure:

    Horticultural activities

    Group discussion and sharing

e.g.1

e.g.2

Table 1. Session titles and Objectives of the Horticulture Activity Program.

No.	Session Title	Session Objectives
1.	Orientation (Sensory, Activity, Farm, Display & Practical Gardens)	• Introduction to the program. • Garden tour.
2.	Organic Tips (Practical Garden)	• Give an introduction to organic farming. • Review life story and successes in coping with life events.
3.	Cultivation and growth (Farm Garden)	• Teach and practice watering and fertilizing plants. • Improve understanding about importance of protective factors in coping with stress.
4.	Small steps toward great success (Farm Garden)	• Teach and practice weeds removal and loosening soil. • Sharing of experience related to coping strategies.
5.	The Great day (Farm Garden)	• Teach harvesting skills, and how to examine and taste vegetables. • Share about their past interests and successful events.
6.	Herbs for Relaxation (Sensory Garden)	• Introduction to herbs, and make drawing of and identify different herbs. • Share experiences related to their personal interests.
7.	Be Tough as a Scarecrow (Activity Garden)	• Make a scarecrow. • Share experience related to handicraft project and coping with stress.
8.	Taste the Herbs (Activity Garden)	• Make herb tea bags. • Share strategies related to self-management of diet.
9.	Bringing it to Life (Activity Garden)	• Teach the procedures of potting plants. • Share their hopes, wishes, and future.
10.	Grow with Support (Display Garden)	• Visit and introduction to greenhouse. • Sharing on the activity group experience.

next

Example of Program Description

7	Be as Tough as a Scarecrow (Activity Garden)	• Make a scarecrow • Share experience related to handicraft project and stress coping

Example of Program Description

5	The Great day (Farm Garden)	• Teach harvesting skills, and how to examine and taste vegetables. • Sharing of interests and successes

Results: Demographic data

Table 2. Comparison of demographic variables and baseline measures between experimental and control groups.

Variables	Experimental Group (%)	Control Group (%)	*p*
Demographic			
Age	45.3 (10.38)[a]	43.3 (11.7)[a]	.56[b]
Gender			
Male	8 (67%)	9 (75%)	.37[c]
Female	4 (33%)	3 (25%)	
Diagnosis			
Schizophrenia	10 (83%)	12 (100%)	----
Other psychiatric illness	2 (17%)	0 (0%)	
Education			
No formal education	1 (8%)	0 (0%)	.32[c]
Primary	6 (50%)	3 (25%)	
Junior secondary	4 (34%)	6 (50%)	
Senior secondary or above	1 (8%)	3 (25%)	
Outcome Measures			
DASS total	21.8 (11.9)[a]	16.1 (14.2)[a]	0.32[b]
Depression subscale	14.6 (9.1)[a]	9.3 (8.9)[a]	0.74[b]
Anxiety subscale	15.0 (7.8)[a]	9.8 (8.7)[a]	0.84[b]
Stress subscale	12.6 (7.7)[a]	11.3 (10.8)[a]	0.17[b]
WBA total	59.9 (11.1)[a]	65.9 (14.6)[a]	0.30[b]
work habit subscale	7.2(1.5)[a]	7.7 (2.1)[a]	0.38[b]
work performance subscale	24.2(6.2)[a]	28.0(8.5)[a]	0.44[b]
work related social and emotion subscale	28.5(5.3)[a]	30.3 (4.8)[a]	0.90[b]
PWI	49.5 (11.8)[a]	53.2 (14.9)[a]	0.53[b]

[a] Values shown are the Means and SD are shown in brackets.

[b] p-values for t-tests

[c] p-values for χ^2 tests.

- No significant difference at baseline in demographic data
- No significant difference at baseline in DASS21-C, WBA, PWI-C

Results: Independent t-test

Table 3. Comparison of change scores between experimental and control groups

Outcome variable	Experimental Group (n = 10)	Control Group (n = 12)	p
DASS			
Depression subscale	-9.20 (9.15)	-1.17 (8.33)	.04*
Anxiety subscale	-9.00 (7.62)	0.67 (7.10)	.01**
Stress subscale	-6.00 (5.33)	-0.5 (6.79)	.05
Total	-24.20 (17.78)	-0.50 (6.78)	.01*
WBA			
Work habit subscale	0.10 (0.32)	0.16 (0.72)	.79
Work performance subscale	2.70 (3.06)	0.92 (1.17)	.08
Work related social and emotion subscale	0.90 (2.18)	0.42 (0.90)	.49
Total	3.70 (4.42)	1.50 (2.28)	.15
PWI-C	.60 (14.21)	1.50 ((6.07)	.84

*p < .05, ** p < 0.05

Significant result found in DASS and all subgroups

Results: Semi-structured Focus group

- Emotional impacts
  - release work stress and enjoy in natural environment.

G:同組員見面傾計，比之前熟左好多，感覺受到尊重

B:參加園藝活動時感覺好輕鬆，平衡倒返工時既壓力
D:每天休息時都會回憶起園藝活動時的片段，很愉快

- Social impacts
  - improvement in social skills, extending social interaction with others and felt respectful.

A:每天回家後與家人商討當天的園藝活動，家人亦很高興地和我分享感受

- Physical impacts
  - Feeling healthier but the tasks are quite physically demanding

A:肩膀很累，有點痛，但可接受。

D:吸收陽光感覺舒服，曬住亦覺健康

Result: Semi-structured Focus group

- Occupational impacts
  - learn new skills about horticulture and handicraft
  - Improve work performance in workshop
  - Higher motivation to attend workshop training.

C:學到有機種植知識及技巧

B:我學識有機耕種後，可以同外訪參觀人士分享有機耕種的知識

- Spiritual impacts
  - Enhance in self-confidence
  - Felt spiritually connected with nature
  - Increasing sensibility with plants

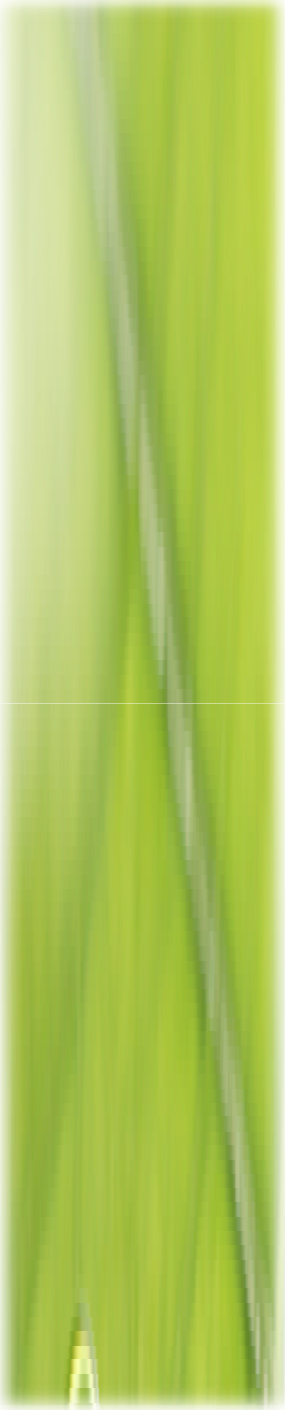
E:那盆栽是屬於我自己的，平時做工作是幫人做，現在是做給自己，感到很滿足

Discussion

1. Statistical results support the effectiveness of Horticultural program in reducing stress, depression and anxiety.
   - Participants in focus group mentioned their subjective feeling about positive effects on their stress and emotion.
   - Like previous studies,

     a. positive effects on stress identified (Kim & Mattson, 2002; Rodiek, 2002 ; Son et al., 2004; Dijkstra, Pieterse & Pruyn, 2008).

     b. positive effects on depression identified (Kim & Mattson, 2002; Son et al., 2004; Wichrowski, 2005; Lee, Ku & Ro, 2008).



Discussion

- Attention Restoration Theory (Kaplan & Kaplan, 1989)
  - Therapeutic effect of environmental factor of horticulture on mental health.
  - Natural landscape provided restorative environment and played a significant role in the recovery from mental fatigue.

- Dijkstra at el., 2008
  - presence of plants leads to higher perceived attractiveness of the environment and stress reduction.

Discussion

2. The statistical results did not support horticultural program is effective in improving work behavior.

- Unlike the subjective feeling in focus group.

Occupational impacts

- learn new skills about horticulture and handicraft
- Improve work performance in workshop
- Higher motivation to attend workshop training.

C:學到有機種植知識及技巧

B:我學識有機耕種後，可以同外訪參觀人士分享有機耕種的知識

- Unlike previous study,

  - Son at el (2004) twice a week for 5 months (around 40 sessions)
  - Perrins-Margalis at el (2000) twice a week for six weeks (around 12 sessions)

- In our program, only 10 sessions in 2 weeks which may be too short for participants to change and to build up work behavior.

Discussion

Table 3. Comparison of change scores between experimental and control groups

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DASS			
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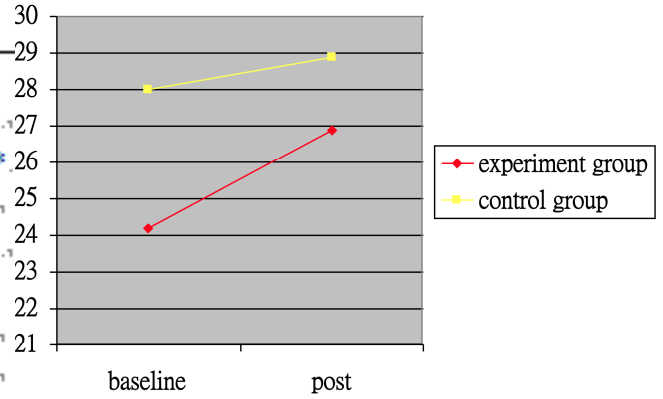


- A marginally significant result was obtained in work performance sub-scale of the WBA (p = 0.08).
- It is likely that a horticultural program with higher intensity of training is needed to improve the overall and specific work performance.

Discussion

3. The statistical result do not support the effectiveness of horticultural program on improving the quality of life of subjects.
   - Unlike the subjective feeling in focus group.
   - Questions in Personal wellbeing index- 'How people satisfied with their life as a whole' (Lau *et al.*, 2004)'

1. 你對你整個人生的個人際遇，總括來講，有幾滿意呢？你會俾幾多分呢?

0…1…2…3…4…5…6…7…8…9…10

   - There is a need to use a more refined instrument or extend the duration of the program

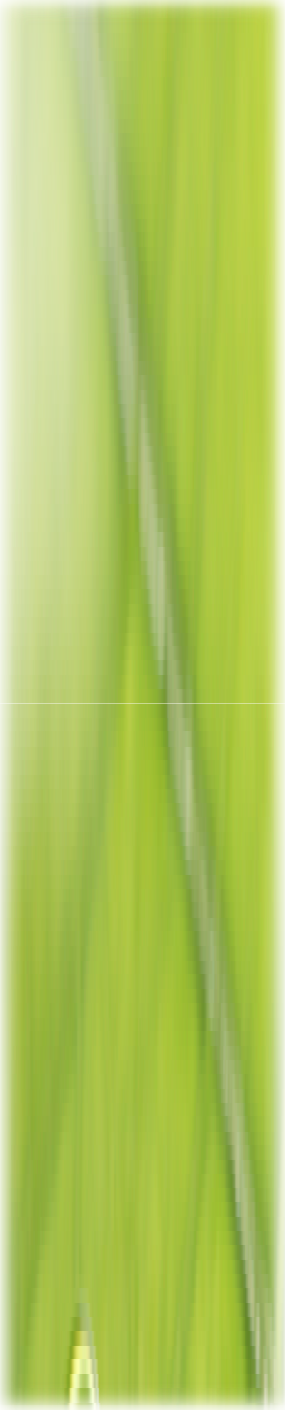
Limitations

- The sample size (24) is relatively small in this pilot study.
- Aim to recruit homogeneous group of clients with diagnoses of schizophrenia and psychosis, however, there are two subjects in the study with other psychiatric illness.
- No follow up assessment on lasting effects

Conclusion

- Horticulture program is effective to reduce stress for people with mental illness but there was no significant impact on work behavior and quality of life

- Further study
  - Larger sample size
  - Follow up assessment
  - Higher intensity and a long duration



Plants and people share the rhythm of life. They both evolve and change, respond to nurture and climate, and live and die. The biological link allows a person to make an emotional investment in a plant, which is safe and non-threatening. (Lewis 1996)

"Let the peace of Farm brings peace to our mind and heart!"

Thank you!