“Regain Momentum” (RM) Socially Withdrawn Youth Counseling Program IV

「重拾動力」隱蔽青年輔導計劃(第四期)

Programme Evaluation Report

Abstract

Aim: The purpose of this study was:

i. to evaluate the efficacy of the ‘Regain Momentum’ programme (Phase IV) (RMIV) in improving the socially withdrawn behaviours, self-esteem and perceived employability of withdrawn youth aged 10-24 years old; and
ii. to explore the usefulness of providing psycho-education to parent/carers in engaging them to work with the socially withdrawn child at home.

Method: A pre-post evaluation study design was used to assess the changes in the behavioural and psychosocial well-being of the participants. Three measurement tools were used for the youth participants: the 25-items Hikikomori Questionnaire (HQ25), the Rosenberg Self-Esteem Scale (RSES) and the Perceived Employability Self-Efficacy Scale (PES). For the parent/carers, instruments used were Behaviour of the Withdrawn Youth at home, the Family Difficulties Scale in Children with Hikikomori (FamDiff), the Adaptive Behaviour Scale for Hikikomori (ABS-H) and the HK Chinese version World Health Organization Quality of Life BREF (WHOQOL).

Findings: In this phase, 123 youth and 88 parent/carers have completed the pretest questionnaire. At posttest, questionnaires from 99 youth and 78 parent/carers were successfully enumerated. Findings from RMIV was consistent with results of the previous phases. Improvement was found in socially withdrawn behaviour ($p<0.0005$), self-esteem ($p<0.0005$) and perceived employability ($p<0.05$) of the youth participants. The percentage of re-engaging in studying has increased 5 times (10.1% at pretest to 51.5% at posttest). None of the participants was at work at pretest, at posttest 15.2% were gainfully employed. Consistency across phases was also found in the attractiveness of the AAI components for socially withdrawn youths who might otherwise be unwilling to seek help. The inclusion of a psycho-education component for parent/carers in this phase was found to be helpful to a certain extent. Parent/carers experienced less problematic behaviour and more prosocial behaviour of the socially withdrawn child, felt that their child have become more adaptive ($p<0.05$), and have experienced less family difficulties. However, the perceived quality of life of parent/carers was found to have a slight negative change. Contextual factors such as COVID-19 might have an adverse effect on the general psychosocial well-being of Hong Kong people at large. More resources for service and in-depth counselling may be needed for the parent/carers.

Introduction

1. The RM programme was an initiative started in 2013 by the Chinese Evangelical Zion Church with funding from the Fu Tak Iam Foundation Limited. This document reported findings in the fourth phase of the RM program (RMIV) from July 1, 2019 to June 30, 2022. Ethics approval has been obtained from the Human Research Ethics Committee (HREC), The University of Hong Kong, for the research component of the programme (EA1907005)

2. Service data from the previous phases have shown a trend of reducing age at intake. Participants under 15 years old has increased from 16.2% in 2013 to 31.6% in 2017. To cater for the increasing need for service in this younger population, the target age of beneficiaries has expanded to 10-24 years old in RMIV. Furthermore, with the increasing number of this younger age group, engaging the family became critical in the intervention. In RMIV, an additional component to engage the parents/carers was included.

3. Similar to previous phases of the project, an individually tailored multimodal intervention method was employed. While components such as hotline inquiry, assessment by clinical psychologists, individual and group counselling and the use animal-assisted intervention (AAI) remained the core services, latest development in this field has been incorporated to enhance the programme protocol. Intervention strategies were guided by a conceptual framework developed by Dr. Tim Li[1]. Early engagement and psycho-education (by case and by group) for the parent/carer was included in response to recent researches on the challenges and needs of families of withdrawn youth[2][3][4].

4. A total of 123 youth participants and 90 parents / carers have participated in the questionnaire research. For the parent/carer questionnaires, 88 were valid at pretest[5]. At posttest, 99 questionnaires were successfully enumerated for youth and 78 for parent/carer participants.

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[1] Li, M.H. (2015). From Invisible to Visible: Identifying, Understanding, and Helping Socially Withdrawn Youth (Unpublished doctoral thesis), p124. University of Hong Kong, Hong Kong.

[2] Nonaka, S., Shimada, H., & Sakai, M. (2019). Characteristics of Family Interaction of Individuals with Hikikomori (Prolonged Social Withdrawal) From the Viewpoint of Behavior Theory. *Japanese Psychological Research*, *61*(3), 153-165. https://doi.org/10.1111/jpr.12219

[3] Nonaka, S., Shimada, H., & Sakai, M. (2018) Assessing adaptive behaviors of individuals with hikikomori (prolonged social withdrawal): development and psychometric evaluation of the parent-report scale. *International Journal of Culture and Mental Health*, 11:3, 280-294, DOI: 10.1080/17542863.2017.1367411

[4] Funakoshi A, Miyamoto Y. Significant factors in family difficulties for fathers and mothers who use support services for children with hikikomori. Psychiatry Clin Neurosci. 2015 Apr;69(4):210-9. doi: 10.1111/pcn.12230. Epub 2014 Sep 24. PMID: 25131493.

[5] A number of youth cases, both parents have filled in the questionnaires. One parent was the carer of two cases. The questionnaire count was 90. If both parents have filled in the questionnaire, the one reported not a main carer was excluded. If both parents reported to be a main carer, both questionnaires were included in the analysis. For the parent with two youth participants under his/her care, only questionnaire was included in the analysis.

5. It should be noted that RMIV has overlapped with the COVID-19 pandemic. Although it was not the focus of the programme or the evaluation study, its adverse effects on the psychosocial well-being of the Hong Kong population at large might have an impact on the service targets. [6][7]

Methods

6. A pre-test / post-test quantitative research design was used to collect data using a structured questionnaire from both the youth participants and the parent/carers.
7. For the youth participants, the goals were to assess changes in the behavioural and psychosocial well-being, as well as level of (re)-engagement in the community. Measures included:

- Study and work status (constructed)

- Social, psychological, and behavioural well-being

25-item Hikikomori Questionnaire (HQ25) (Teo et al., 2018)[8]

This scale consisted of 25 items. Respondents were asked their extent of agreeing to statements regarding socialization, isolation, and emotional support. The total score was 100. A lower score indicated a lesser tendency to social withdrawal (hikikomori). In a sample of 399 participants from clinical and community settings, a cut-off score of 42 was reported[9].

Rosenberg Self-Esteem Scale (RSES) (Rosenberg., 1965)[10]

This scale consisted of 10 items to assess the overall sense of self-worth or self-acceptance of the respondent. Score ranged from 0 to 30. A lower score indicated a lower self-esteem.

[6] Choi EPH, Hui BPH, Wan EYF, Kwok JYY, Tam THL, Wu C. COVID-19 and Health-Related Quality of Life: A Community-Based Online Survey in Hong Kong. Int J Environ Res Public Health. 2021 Mar 20;18(6):3228. doi: 10.3390/ijerph18063228. PMID: 33804725; PMCID: PMC8003940.
[7] Choi EPH, Hui BPH, Wan EYF. Depression and Anxiety in Hong Kong during COVID-19. Int J Environ Res Public Health. 2020 May 25;17(10):3740. doi: 10.3390/ijerph17103740. PMID: 32466251; PMCID: PMC7277420.
[8] Teo AR, Chen JI, Kubo H, Katsuki R, Sato-Kasai M, Shimokawa N, Hayakawa K, Umene-Nakano W, Aikens JE, Kanba S, Kato TA. Development and validation of the 25-item Hikikomori Questionnaire (HQ-25). Psychiatry Clin Neurosci. 2018 Oct;72(10):780-788. doi: 10.1111/pcn.12691. Epub 2018 Jul 27. Erratum in: Psychiatry Clin Neurosci. 2019 Sep;73(9):603. PMID: 29926525; PMCID: PMC6221010.
[9] Ibid.
[10] Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Perceived Employability Self-efficacy Scale (PES) (Houser & Oda, 1990) [11]

This scale consisted of 15 items to assess an individual's perceived ability to act and deal with situations that may facilitate their career development. Score ranged from 15 to 75. A higher score indicates a higher confidence in their employability.

- Experience and perception of companion animals and the AAI component

  To assess the attitude of the participants towards dogs in general and the companion dog(s) involved in the programme in particular, two scales were included in the questionnaire, they were:

  Attitude toward dogs Scale (ADS) (Kakestani et al, 2011)[12]

  This scale consisted of 12 items to preliminarily assess respondents' attitude towards dogs. The mean score ranges from 1 to 3, a lower mean score indicated a more positive attitude towards dogs.

  Pet Bonding Scale (PBS) (Johnson, 2003)[13]

  This scale specifically assessed the perception of the companion dog(s) in the AAI component of the programme. It consisted 26 items with mean score ranged from 1 to 5. A lower mean score indicated a more positive perception on the role of the companion dog(s) encountered in the AAI component.

8. For the parent/carer questionnaire, the purpose was to explore their experience in caring for the socially withdrawn child, the challenges they faced, their needs and their overall well-being. Measures included in the structured questionnaire were:

   Behaviour of the withdrawn youth at home (Funakoshi & Miyamoto, 2015)[14]

   Sixteen items were identified as potential factors that contributed to difficulties experienced by families with socially withdrawn children. It consisted of eight items of problematic behaviour (e.g. violence in the house), five items on scope of activities of the child (e.g going out with reservations), and three items on the child's attitude

[11] Houser, R., & Oda, E. A. (1990). The perceived employability scale. Honolulu: University of Hawaii, Department of Counselor Education.

[12] Lakestani, N., Donaldson, M., Verga, M. et al. (2011). Attitudes of children and adults to dogs in Italy, Spain, and the United Kingdom. *Journal of Veterinary Behavior*, 6, 121-129.

[13] Johnson, M. (2003). Center for the study of animal wellness: Pet Bonding Scale, CSAWPBS. In Anderson, D.C.Assessing the human-animal bond: a compendium of actual measures. United States of America: Purdue University.

[14] Funakoshi, A., & Miyamoto, Y. (2015). Significant factors in family difficulties for fathers and mothers who use support services for children with hikikomori. *Psychiatry and Clinical Neurosciences, 69*.

towards the family (e.g. rejecting some of the family members). A 'yes' and 'no' answer was elicited and the number of problematic behaviour in each category was counted.

The Family Difficulties Scale in Children with Hikikomori (Funakoshi, 2011)[15]

This is a preliminary instrument developed to assess the difficulties experienced by parents with children with hikikomori. It consisted of 18 items to explore support for the parents in services availability, marital cooperation etc. Score ranged from 18 to 72. A lower score indicated a more supportive environment in community resources and family support.

Adaptive Behaviours Scale for Hikikomori (ABS-H)[16]

The purpose of this scale was to assess the adaptive behaviours of individuals with hikikomori (e.g., asks someone other than the family to help). It consisted of 26 items with a score ranged from 0 to 78. A higher score indicated more adaptive behaviour exhibited by the hikikomori child as perceived by the parent.

HK Chinese version World Health Organization Quality of Life BREF (WHOQOL-BREF(HK))[17]

The WHOQOL is a well-development instrument to assess the multi-dimensional life quality of the respondent including an overall QOL, overall health, as well as physical, psychological, social and an environmental domain. The 28-item Chinese version developed in Hong Kong was adapted to assess the overall quality of life of the parent with a hikikomori child in Hong Kong. Score ranges from 0 to 100. A higher score indicates a better life quality.

Findings on primary target (socially withdrawn youth)

<u>Profile of the participants</u>

9. As expected, participants of RMIV were much younger than the previous three phases. Percentage of those under 15 years of age comprised 41.5% of the sample (as compared with 31.6% in RMIII). For those in the age group of 15-19 and 20-24, the percentage was 43.9%

[15] Funakoshi, A. (2011). Study of Parental Difficulties in Families With Hikikomori Syndrome Children (Social Withdrawal). Unpublished paper.

[16] Nonaka, S., Shimada, H., & Sakai, M. (2018). Assessing adaptive behaviors of individuals with hikikomori (prolonged social withdrawal): development and psychometric evaluation of the parent-report scale. *International Journal of Culture and Mental Health*, *11*(3), 280-294. https://doi.org/10.1080/17542863.2017.1367411

[17] Leung K.F., Tay S.M., Chu M.L. & Cheng Ng S.W. (2003). Development of the interview version of the HK Chinese version World Health Organisation Quality of Life BREF [WHOQIL-BREF(HK) – interview version]. Final report submitted to the Expert Subcommittee on Grant Applications & Awards (25 March 2003)

and 14.6% respectively; which was similar to that of RMIII (15-19: 42.1%; 20-24: 14.5%). As compared with previous stages where male and female ratio was around 6:4, RMIV sample has a rather different male to female ratio of 4.6:5.4. At intake, over half of them were at junior secondary level (52.8%), 26% at senior secondary. The percentage of those at primary school level has reached a rather high level of 17.1% (as compared to 6.6% in the third phase). (Table I)

Table I: Sociodemographic characteristics of participants

Variable		*f*	*%*
Gender			
	Male	56	45.5
	Female	67	54.5
Age			
	<15	51	41.5
	15-19	54	43.9
	20-24	18	14.6
Education			
	Primary	21	17.1
	Junior secondary	65	52.8
	Senior secondary	32	26.0
	Post-secondary	5	4.1
N=123			

10. Table II showed the occupation of the youth participants. Only 13.7% of those age under 15 reported to be in full-time study and 82.4% reported to be absent from school persistently or have completed/ dropout from school. For participants aged 15 and above, school absenteeism was also the most common concern, 90.3% were school absentees or have completed/ dropout from school. Only 8.3% reported to be in full-time study and none reported to have a paid job.

Table II: Participants by studying and work status

Study/ Work status	*Less than 15 n=51*		*15 and above n=72*	
	f	*%*	*f*	*%*
Study status				
Full-time study	7	13.7	6	8.3
Full-time student status but chronic absenteeism	41	80.4	30	41.7
Part-time study/ distance learning	1	2.0	1	1.4
Completed school / dropout	1	2.0	35	48.6
Missing	1	2.0	0	0.0
Work status				
Had paid job, average working hours ≥35 hours	0	0.0	0	0.0
Had paid job, average working hours ≤35 hours	0	0.0	0	0.0
Looking for work	0	0.0	20	27.8
Unable to work due to health problem	0	0.0	4	5.6
Student status but chronic absenteeism	41	80.4	36	50.0
Studying	9	17.6	6	8.3
Other	0	0.0	6	8.3
Missing	1	2.0	0	0.0

11. All participants were living either with their parent(s) and/or non-parent carer. Over half of them were living with both parents (53.7%) and 40.7% were from single parent family (34.2% from single mother and 6.5% from single father). A few participants (5.7%) were living with non-parent carer such as grandparent(s), aunt etc. Among all participants, 37.5% were a single child. (Table III)

Table III: Participants by living status

Family composition	***f***	***%***
Both parents		
Single child	20	16.3
With sibling(s)	46	37.4
Sub-total	**66**	**53.7**
Single parent: mother		
Single child	15	12.2
With sibling(s)	27	22.0
Single parent: father		
Single child	6	4.9
With sibling(s)	2	1.6
Sub-total	**50**	**40.7**
Non-parent carer (only)		
Single child	5	4.1
With sibling(s)	2	1.6
Sub-total	**7**	**5.7**
Total	**123**	**100**

Social withdrawal behaviour

12. The development of the HQ-25 scale was based on both 'healthy' community sample recruited at Kyushu University campus and clinical samples from psychiatric hospitals and clinics. Respondents were asked to indicate their extent of agreement on a Likert Scale from 0 to 4 on 25 statements relating to social and emotional aspects of their behaviour (e.g., 'I stay away from other people', 'I spend most of my time at home', 'I can share my personal thoughts with several people'). Score ranged from 0 to 100 and a higher score reflected a more severe social withdrawal condition. The cut-off score for the sample with which the scale was developed was reported to be 42. However, it should be noted that when HQ-25 was developed, only those >15 and <50 were recruited as participants. Whereas in our current sample, around 40% were under 15 years old. The HQ-25 mean score for the RMIV sample was 53.8 at intake and the standard deviation was 15.8. Bearing in mind the generalizability of the scale, caution should be taken in comparing the cut-off score and that of the current sample.

13. Using 6 months as a general guideline to categorized individuals as socially withdrawn, and under six-months as at-risk group, 85.3% of the youth participants reported to experience the problem for 6 months and more. Over one-third of the participants (34.1%) have experienced this problem for more than three years. (Table IV)

Table IV: Participants by duration of problem

Duration of problem	***f***	***%***
>1 month and ≤ 3 months	8	6.5
>3 month and ≤ 6 months	10	8.1
>6 month and ≤ 1 year	16	13.0
>1 year and ≤ 2 years	24	19.5
>2 years and ≤ 3 years	23	18.7
>3 years	42	34.1
Total	**123**	**100**

14. With regard to help-seeking behaviour, 44.6% had previous contact with some form of social services, usually from school social work service or family service. A few of them (3.3%) had work-related training such as courses offered by the Vocational Training Council. However, around half (52.9%) did not receive any service from either social services or work-related training institutes. (Table V)

Table V: Participants by previous training or social services received

Training / social services received	***f***	***%***
Social Services (n=121)	54	44.6
Training (n=123)	4	3.3
Nil (missing (n=121)	64	52.9

Mental health status

15. Among the participants, 43.1% reported to experience some form of mental health issues. This was by far the highest percentage across all the phases since the commencement of RM (phase I: 20.6%; phase II: 26.9%; phase III: 18.4%). Among them, a large majority (79.2%) reported to experience from depression, anxiety and/or social anxiety. As mentioned before, the adverse psychosocial impact of COVID-19 might be a factor in the high percentage of depression and anxiety. (Table VI)

Table VI: Participants by ever diagnosed as having mental health problem

	f	*%*
Mental Health problems	53	43.1
depression/anxiety/social anxiety	*42*	*79.2*
OCD	*1*	*1.9*
Schizophrenia/manic depression	*5*	*9.4*
missing	*5*	*9.4*
No mental health problems	67	54.5
missing	3	2.4
Total	**123**	**100.0**

Experiences with companion animals

16. A total of 67.5% of the participants reported to have experience with companion animal(s) currently (33.3%) or previously (34.2). Among them, the most common was small animals such as fish (54.2%), turtle (43.4%) and guinea pig (32.5%). Only 19 participants had experience in living with dogs (22.9%). For those who had experience with companion animal(s), 59% reported to have taken part in caring for them, and only 10 were domestic dogs. Therefore, we could assume that in this sample, only few have had close relationship with dogs. Table VII illustrated participants who had experience with companion animals (current and previous) and their preference to participate in the AAI component of the programme. Figures showed that participants with current/previous experience were more likely to prefer AAI component. (Table VII)

Table VII: Experience with companion animals by preference in AAI component

Experience with companion animal	**AAI preferred (n=83)**		**AAI not preferred (n=40)**		**Total**	
	f	*%*	*f*	*%*	*f*	*%*
current / previous	70	84.3	13	15.7	83	100
Never (missing=1)	27	69.2	12	30.8	39	100
Total	**97**	**79.5**	**25**	**20.5**	**122**	**100**

17. To explore if the AAI component could facilitate engagement of this group of socially withdrawn youth, participants were asked if they would join the programme if there were no AAI component. A total of 38.3% of the participants stated that they 'would not' (13.1%) or 'probably would not' (25.2%) participate in RMIV if there were no AAI component. The AAI component of RM remained a useful strategy to engage this group of 'hard to engage' group.

18. Trained domestic dogs were involved in the RM AAI component. As a person's attitude towards dogs may influence participants' receptiveness and behaviour in interacting with the trained dogs, the Dog Attitude Scale[18] was used to explore their overall attitude. The scale consisted of 12 statements on perceptions of dogs in general, e.g., 'dogs are dirty', 'I am scared of dogs', 'dogs are fun' etc. Mean score ranged from 1 to 3 and a lower score reflected a more positive attitude. In this sample, at intake, the mean score was 1.2, indicating a relatively positive attitude towards dogs in general.

19. Given the age of the participants and the overall less common practice of having domestic dogs in the household, an additional item was added to ask if participants' attitude was influenced by their family members (My family does not like me to come close to dogs). Results showed that a majority (73%) of the participants stated that their family have not objected to their interaction with dogs. No objection from families and the relatively positive attitude of the youth participants ensured the acceptance of the AAI component of most of the participants at intake.

Outcome measures

20. Two categories of outcome were assessed at the end of the intervention period; first, behavioural changes with respect to social withdrawal behaviours and re-engagement in the community and second, changes in psychosocial well-being. Ninety-nine participants have completed the posttest questionnaire[19].

behavioural changes

21. Social withdrawal behaviours: Changes in the extent of the agreement to the HQ-25 scale were illustrated in Table VIII. Summation score decreased from 53.8 to 48.1 ($p<0.0005$), showing statistically significant reduction in social withdrawal behaviors.

[18] Lakestani, N., Donaldson, M., Verga, M. et al. (2011). Attitudes of children and adults to dogs in Italy, Spain, and the United Kingdom. *Journal of Veterinary Behavior*, 6, 121-129.

[19] Seventeen participants have not completed the post test and seven have joined RMIV less than four months. These cases were excluded from the outcome analysis

Table VIII Participants by changes in socially withdrawal behaviours

	Mean		Std. Deviation		95% confidence level	
	T0	*T1*	*T0*	*T1*	*t*	*Sig.(2-tailed)*
HQ25	53.8	48.1	15.8	16.4	3.666	0.000***

***p<0.0005

22. Re-engagement in community: Re-engagement of the participants in the community was assessed by their study and work status. Table VIII illustrated the differences before and after the intervention. Considerable improvement was observed. Among participants under 15 years old, full-time study has increased from 10.3% at pretest to 56.4 % at posttest. Prolonged absence from school has dropped from 87.2% at pretest to only 25.6% at posttest. For participants who were over 15 years old, many have resumed full-time study, from 8.3% at pretest to 36.7% at posttest. From none at pretest, 20% of those over 15 years old have gainful employment either full-time or part-time at posttest. (Table IX)

Table IX Participants by differences in study and/or work status

Study/ Work status*	***Less than 15 n=39***				***15 and above n=60***			
Study status	*To*		*T_1*		*To*		*T_1*	
	f	*%*	*f*	*%*	*f**	*%*	*f**	*%*
Full-time study	4	10.3	22	56.4	5	8.3	22	36.7
Full-time student status but chronic absenteeism	34	87.2	10	25.6	25	41.7	5	8.3
Part-time study/ distance learning	0	0.0	1	2.6	1	1.7	6	10.0
Completed school / dropout	0	0.0	6	15.4	29	48.3	27	45.0
Missing	1	2.6	0	0.0	0	0	0	36.7
Work status	*To*		*T_1*		*To*		*T_1*	
	f	*%*	*f*	*%*	*f**	*%*	*f**	*%*
Had paid job, average working hours ≥35 hours	0	0.0	1	2.6	0	0.0	3	5.0
Had paid job, average working hours ≤35 hours	0	0.0	2	5.1	0	0.0	9	15.0
Looking for work	0	0.0	3	7.7	18	30.0	10	16.7
Unable to work due to health problem	0	0.0	0	0.0	4	6.7	3	5.0
Student status but chronic absenteeism	34	87.2	23	59.0	31*	51.7	5	8.3
Studying	4	10.3	9	23.1	5	8.3	25	41.7
Missing	1	2.6	00	0.0	0	0.0	0	0.0
Other	0	0.0	1	2.6	2	0	5	8.3

*This included cases reported to be studying part-time / distance learning and reported to have completed school / dropout

Psycho-social outcomes

23. Table X reported the changes in the two psychosocial measures before and after the intervention. Positive changes were observed in the summation scores of measures in self-esteem and perceived employability and the differences were statistically significant. Summation score for self-esteem changed from 23.5 to 26.9 ($p<0.0005$) and 43.5 to 47.0 ($p<0.05$) for perceived employability. Participants felt more positive about themselves, and their sense of self-worth has increased after the intervention. They were also more confident in their ability to prepare themselves for work.

Table X Participants by changes in RSES and PES scores

	Mean		Std. Deviation		95% confidence level	
	T0	*T1*	*T0*	*T1*	*t*	*Sig.(2-tailed)*
RSES	23.5	26.9	4.8	4.5	-6.891	0.000***
PES	43.5	47.0	10.0	11.8	-2.668	0.009*

*p<0.05, ***p<0.0005

<u>Comparison between those who had and had not participated in the AAI component(s)</u>

Characteristics of AAI and non-AAI participants

24. A preliminary analysis was conducted to explore key characteristics of AAI and non-AAI participants.

Table XI Participants by key characteristics of participants by AAI component(s) participation

Variable		**AAI (n=61)**		**Non-AAI (n=36)**		**Total (N=97)***	
		f	*%*	*f*	*%*	*f*	*%*
Gender	Male	13	34.2	25	65.8	38	100
	Female	48	81.4	11	18.6	59	100
Age	<15	27	73.0	10	27.0	37	100
	15-19	28	58.3	20	41.7	48	100
	20-24	6	50.0	6	50.0	12	100
Duration of problem	< 1 year	16	57.1	12	42.9	28	100
	1 to 2 yrs	10	58.8	7	41.2	17	100
	2-3 yrs	13	76.5	4	23.5	17	100
	>3 yrs	22	62.9	13	37.1	35	100

*missing = 2

25. Table XI illustrated key characteristics of the two groups. It was noted that the AAI group was overrepresented in female (AAI: 81.4%; non-AAI: 18.6%); those less than 15 years old (AAI: 73%; non-AAI: 27%); and participants experiencing the problem for more than 2 years (cumulating frequencies of 2-3 years and >3 years; AAI: 67.3%; non-AAI: 32.7%).

26. Among AAI participants, the most common activities were group (42.4%) and individual (30.5%). Table XII illustrated the frequency and type of AAI activity participated:

Table XII: Participants by type of AAI activity

	N=59*	
Type of activity	***f***	***%***
Group	25	42.4
Individual	18	30.5
Grooming	15	25.4
Home visit	8	13.6
others	1	1.7

*Missing=2

Behavioral and psychosocial outcomes

27. To explore if there was any difference in impact on participants who have/ have not participated in the AAI components, comparison on their behavioural and social-psychological measures were made. Group A (n=61) referred to those who have participated in the AAI component and Group B (n=36) referred to those who have not. Table XIII illustrated the differences in each measure.

28. In terms of their social withdrawal behaviours, although both groups have shown positive change in HQ25, statistically significant difference was found only for those who have participated in one or more AAI component(s).

29. For psychosocial measures, positive changes have shown in both groups in their self-esteem and perceived employability. However, improvements in participants who have joined one or more AAI component(s) showed statistically significance in all measures. For participants who did not join the AAI component, statistically significant difference was found only in RSES but not for their perceived employability. (Table XIII)

Table XIII Participants by changes in HQ25, RSES and PES

Scale	Mean		Std. Deviation		95% confidence level	
	T0	*T1*	*T0*	*T1*	*t*	*Sig.(2-tailed)*
HQ25						
A	56.8	50.6	15.2	15.5	3.146	0.003**
B	47.4	44.0	15.5	17.4	1.518	0.141
RSES						
A	22.4	25.9	5.0	4.8	-4.957	0.000***
B	25.1	28.1	3.9	3.1	-5.899	0.000***
PES						
A	42.1	45.8	1.3	1.5	-2.187	0.033*
B	45.5	48.4	9.9	11.8	-1.316	0.197

*p<0.05, **p<0.005, ***p<0.0005

Group A (n=61) – AAI component; Group B (n=36) – no AAI component; missing = 2

30. The general trend of the difference between the AAI and non-AAI group was basically similar to that in the previous three phases

Role of therapy dog

31. Among participants who have participated in the AAT component(s), a Pet Bonding Scale (PBS) was used to assess their perceived role of the therapy/visiting dogs. In this scale, the role of the dog was conceptualized into three dimensions: unconditional acceptance from the animal (UA), feelings of reciprocity (RC), and positive feelings / attachment to the therapy/visiting dog (PA). A Likert Scale of 1 to 5 were. A lower mean score indicated a more positive attitude

32. Statements that ranked the highest in participants' perception were: 'The visiting dogs/therapy dog are (not) boring' (PA, M=2.1), 'The visiting dogs/therapy dog make me feel better' (PA, M=2.2), 'The visiting dogs/therapy dog make me feel happy' (PA, M=2.2), 'The visiting dogs/therapy dog help me feel secure' (PA, M=2.2) (Table XIII). Overall, participants perceived the role of the dog(s) in the AAI component as bring positive feelings. The subscale on positive feelings / attachment also ranked the highest among the AAI participants. (Table XIV)

Table XIV: Mean score of Pet Bonding Scale

Pet Bonding Scale (n=60)	Mean
Positive feelings / attachment	
The visiting dogs/therapy dog are (not) boring*.	2.1
The visiting dogs/therapy dog make me feel better	2.2
The visiting dogs/therapy dog make me feel happy.	2.2
The visiting dogs/therapy dog help me feel secure.	2.2
I will remember the visiting dogs/therapy dog after the programme.	2.3
The visiting dogs/therapy dog takes my mind off my troubles.	2.3
I look forward to the visiting dogs/therapy dog sessions.	2.4
I make the visiting dogs/therapy dog feel happy.	2.4
The visiting dogs/therapy dog give me energy.	2.5
I miss the visiting dogs/therapy dog between visits	2.5
I look forward to getting up in the morning on days when I will see the visiting dogs/therapy dog.	2.8
I would like to have the visiting dogs/therapy dog come to my home.	2.8
I feel attached to the visiting dogs/therapy dog.	2.8
I tell others about the visiting dogs/therapy dog.	2.9
Subscale score	**2.5**
Unconditional acceptance	
The visiting dogs/therapy dog doesn't judge me.	2.3
The visiting dogs/therapy dog accepts me just the way I am.	2.3
The visiting dogs/therapy dog likes me	2.4
The visiting dogs/therapy dog is always glad to see me.	2.5
The visiting dogs/therapy dog prefers me to others.	2.6
The visiting dogs/therapy dog has become my friend.	2.9
Subscale score	**2.5**
Reciprocity	
I talk to the visiting dogs/therapy dog.	2.5
The visiting dogs/therapy dog knows when I feel happy.11.	2.6
The visiting dogs/therapy dog tries to comfort me.14.	2.7
The visiting dogs/therapy dog knows when I feel bad	2.8
The visiting dogs/therapy dog understands what I say.	2.9
I confide in the visiting dogs/therapy dog.	3.2
Subscale score	**2.8**
Total Scale	**2.5**

*recoded item

Findings on secondary target (parent/carer)

Profile of the parent/carer

33. Eighty-eight valid parent/carer questionnaires were enumerated. Table XIV reported the sociodemographic characteristics of the parent/carer. Among them, a large majority were the mother 75% of the youth participants, fathers comprised 15.9% of the sample. Five respondents were non-parent carer such as grandmother or aunt. This echoed with findings from the participants where some were living with their non=parent carer. In terms of age, 39.8% were in the age range of 41-50, and 22.7% were in the age range of 51-60. The mean age was 48. Half of the parent/carer respondents attained senior secondary or above education. 54.5% were gainfully employed either part-time or full-time and 36.4% were full-time parent/carer. Around 70% of the parent/carers had household income less than the median household income of HK$28,300. (Table XV).

Table XV: Characteristics of parent/carers

Variable		*f*	*%*
Relationship with participant	Mother	66	75.0
	Father	14	15.9
	Stepfather	1	1.1
	other	5	5.7
	missing	2	2.3
Age	30 - 40	10	11.4
	41 – 50	35	39.8
	51 – 60	20	22.7
	>60	3	3.4
	missing	*20*	*22.7*
Education	No education	3	3.4
	Primary	11	12.5
	Junior secondary	26	29.5
	Senior secondary	34	38.6
	Post-secondary & above	10	11.4
	missing	*4*	*4.5*
Employment status	Part-time employment	12	13.6
	Full-time employment	36	40.9
	Looking for employment	3	3.4
	Retired	2	2.3
	Full-time parent/carer	32	36.4
	missing	*3*	*3.4*
Household income	<HK$5000	9	10.2
	HK$5000-HK$9000	9	10.2
	HK$10000-HK$19999	38	43.2
	HK$20000-HK$29999	9	10.2
	HK$30000-HK$39999	5	5.7
	>HK$40000	11	12.5
	missing	*7*	*8.0*
N=88			

Parent/carer's experience with their socially withdrawn child

34. To understand the experience of the parent/carers with their socially withdrawn child, the age at which such behaviour started, duration of the behaviour and their help-seeking behaviour was explored. More than half of the parent/carers (58%) reported that their child started to manifest socially withdrawn behaviour at aged between 11-15, and 20.5% stated the age of onset being 16-20. Nine cases (10.2%) reported the age of onset at under 10 years old. Overall, the mean age reported was 13.6, SD=2.8. For duration of the problem, around 20.5% reported to be between 1- <2 years, 21.6% between 2-<3 years, and 19.3% stated the duration being more than three years. Half of the parent/carers reported that their socially withdrawn child have been diagnosed with mental health problems, among them, depression / anxiety was the most common (68.2%).

35. Comparing the self-report on duration of the problem of the youth participants and their parent/carers' experience, the general trend in percentage was similar for durations under 3 years, however, for those over 3 years, the self-report percentage was much higher (self-report: 34.1%, parent/carer report: 19.3%). That said, in the parent/carers' questionnaire missing value for this question was also high (18.2%). It was not known if the parent/carer was not aware of when the problem started, or it was due to other reason. Percentage in self-report mental health problem by youth participants was slightly less than those reported by the parent/carers (self-report 43.1%, parent/carer report 50%). For type of mental health issues, depression and anxiety were among the most common report for both the youth participants (79.2%) and the parent/carer (68.2%). Among the parent/carers, 12.5% reported they have no idea if their children have mental health problem or not. (Table XVI)

36. In terms of behaviour of the socially withdrawn child at home, disorderly diet and sleeping patterns were reported by over 40% of the parent/carer, 47.4%, n=42 & 44.3%, n=39 respectively. 22.7% (n=20) of the parent/carers reported 'authoritative attitude in the home. 17% (n=15) also reported other behaviours they felt problematic, including sleeping all day, on mobile phone for a long time, non-communicative, not interested in self-grooming etc.). In terms of scope of activities, staying at home (77.3%, n=68), staying in one's room (47.7%, n=42) and going out with reservations (34.1%, n=30) were most frequently reported by parent/carers. Over half of the parent/carers reported that the socially withdrawn child did not show any rejection toward any of the family members (58%, n=51), around one third (29.5%, n=26) were reported to reject some of the family members, including father, mother, grandparents etc. (Table XVI)

Help-seeking behaviour of the parent/carer's

37. Parent/carers were asked if they have sought help for the socially withdrawn behaviours of their child. A majority of them had and the most common was from school social worker (79.5%). 45.5% have sought help from psychiatrists or social worker from youth center. Around one third have sought help from psychologists (38.6%) or school teacher (37.5%). Other source of help included family social worker and members from church. Only 5 parents did not seek any help due to lack of knowledge of either the problem or where to seek help. (Table XVII)

Table XVI Parent/carers' experience with the socially withdrawn child

Variable		*f*	*%*
Age socially withdrawn behaviour started	≤10	9	10.2
	11<15	44	50.0
	15-19	23	26.1
	20-24	2	2.3
	missing	*10*	*11.4*
Duration of the socially withdrawn behaviour	<6 months	9	10.2
	6 months - <1 year	9	10.2
	1 year - < 2 years	18	20.5
	2 years - < 3 years	19	21.6
	>3 years	17	19.3
	missing	*16*	18.2
Mental health issue	Yes	44	50.0
	Depression/Anxiety	*30*	*68.2*
	ADHD/ASD	*4*	*9.1*
	Schizophrenia	*1*	*2.3*
	*Missing/not specified**	*9*	*20.5*
	No	28	31.8
	Don't know	11	12.5
	missing	*5*	*5.7*
Behaviour at home (*(Funakoshi & Miyamoto, 2015)*[20]			
Problematic behaviours	Disorderly Diet	42	47.7
	Disrupted sleep patterns	39	44.3
	Authoritative attitude in the home	20	22.7
	other	15	17.0
	Self-injury	10	11.4
	Destructive behaviour	10	11.4
	Compulsive behaviour	9	10.2
Scope of activity for the past month	Staying at home	68	77.3
	Staying in one's room	42	47.7
	Going out with reservations	30	34.1
	Participating in social activities	24	27.3
	Going out freely, excluding social activities	18	20.5
Attitude to family for the past month	Not rejecting family members	51	58.0
	Rejecting some of the family members	26	29.5
	Rejecting all of the family members	6	6.8
N=88			

*a general term given (e.g. 心理病, 情緒病) without specific diagnosis

[20] Funakoshi, A., & Miyamoto, Y. (2015). Significant factors in family difficulties for fathers and mothers who use support services for children with hikikomori. *Psychiatry and Clinical Neurosciences, 69*.

Table XVII Parent/carers by services received

Type of services		*f*	*%*
School social worker		70	79.5
Psychiatrist		40	45.5
Youth center social worker		40	45.5
Psychologist		34	38.6
School teacher		33	37.5
others		8	9.1
None		5	5.7
Reason	*Not aware that child needed help*	*3*	*60*
	Not aware of any service	*3*	*60*
N=88			

Changes in behaviour of the socially withdrawn child by parent/carer's experience

38. To explore if the parent/carers observed any differences in the socially withdrawn child's behaviour before and after the intervention, the same set of questions on their behaviours at home were asked again at posttest. Table XVI showed general positive change in the behaviours of the socially withdrawn child observed by the parents. For problematic behaviours, there was a decrease in the percentage in all items. For scope of activity, percentage reported on withdrawn behaviours such as staying at home, staying in one's room or going out with reservations have decreased, and pro-social behaviours such as participating in social activities and going out freely have increased slightly. Family relationships with regard to attitude to other family members were also reported to be improved. Percentage reported to show no rejection to other family members has increased and there was a decrease in rejecting some of the family members. (Table XVIII)

Table XVIII Changes in behaviour of the socially withdrawn child by parent/carer's experience

Variable		***T0***		***T1***	
		N=88		***N=78***	
Behaviour at home (*(Funakoshi & Miyamoto, 2015)*[21]		***f***	***%***	***f***	***%***
Problematic behaviours	Disorderly Diet	42	47.7	32	41.0
	Disrupted sleep patterns	39	44.3	26	33.3
	Authoritative attitude in the home	20	22.7	10	12.8
	other	15	17.0	12	15.4
	Self-injury	10	11.4	0	0.0
	Destructive behaviour	10	11.4	8	10.3
	Compulsive behaviour	9	10.2	4	5.1
Scope of activity for the past month	Staying at home	68	77.3	44	56.4
	Staying in one's room	42	47.7	29	37.2
	Going out with reservations	30	34.1	14	17.9
	Participating in social activities	24	27.3	22	28.2
	Going out freely, excluding social activities	18	20.5	19	24.4
Attitude to family for the past month	Not rejecting family members	51	58.0	63	80.8
	Rejecting some of the family members	26	29.5	9	11.5
	Rejecting all of the family members	6	6.8	3	3.8

Changes in experiences of the parent/carers

39. Two scales were used to further assess the experiences of the parent/carers towards their socially withdrawn child before and after the intervention: in their perceived changes in the socially withdrawn child at home (ABS-H) [22] and difficulties in their family and personal experiences (Family Difficulties Scale (FamDiff))[23]. ASB-H assessed the perceived adaptive behaviour of the socially withdrawn child at home with a higher score indicated more adaptive behaviour at home. FamDiff assessed parent/carers' service and family support with a lower score reflecting a higher level of support. (Table XIX)

Table XIX Participants by changes in carer's family difficulties and ABS-H

	Mean		Std. Deviation		95% confidence level	
	T0	*T1*	*T0*	*T1*	*t*	*Sig.(2-tailed)*
ABS-H	24.1	26.6	9.9	9.8	-2.138	0.036*
FamDiff	48.1	46.5	6.0	6.7	1.864	0.067

*p<0.05

[21] Funakoshi, A., & Miyamoto, Y. (2015). Significant factors in family difficulties for fathers and mothers who use support services for children with hikikomori. *Psychiatry and Clinical Neurosciences, 69*.

[22] Nonaka, S., Shimada, H., & Sakai, M. (2018). Assessing adaptive behaviors of individuals with hikikomori (prolonged social withdrawal): development and psychometric evaluation of the parent-report scale. *International Journal of Culture and Mental Health*, *11*(3), 280-294. https://doi.org/10.1080/17542863.2017.1367411

[23] Funakoshi, A. (2011). Study of Parental Difficulties in Families With Hikikomori Syndrome Children (Social Withdrawal). Unpublished paper.

40. Positive changes were found in the ABS-H and the FamDiff scales. Mean value changed from 24.1 to 26.6 and 48.1 to 46.4 respectively. However, the change was only statistically significant for ABS-H ($p<0.05$), i.e. adaptive behaviour of the socially withdrawn child at home.

Changes in Quality of life (WHOQOL)

41. WHOQOL assess the overall psychosocial well-being of the parent/carers. A higher score indicated better quality in the respective life domain. Table XX illustrated the difference in score before and after the intervention.

42. A slight negative change was found in the overall WHOQOL (M=92.6 at pretest to M=90.6 at posttest) and several domains within this scale, including physical (M=21.2 at pretest to M=20.6 at posttest), psychological (M=23.3 at pretest to M=22.8 at posttest), and environmental (M=25.7 at pretest to M=25 at posttest). No or very slight positive change was found in the overall life quality (M=3.0 at pretest to M=3.1 at posttest), overall health (M=3.1 at both pretest and posttest) and social domains (M=9.7 at both pretest and posttest).

Table XX Participants by changes in WHOQOL

	Mean		Std. Deviation		95% confidence level	
	T0	*T1*	*T0*	*T1*	*t*	*Sig.(2-tailed)*
WHOQOL (overall)	92.6	90.6	13.9	14.1	1.500	.138
Life quality	3.0	3.1	0.7	0.7	-1.210	.230
health	3.1	3.1	0.9	0.8	.121	.904
physical	21.2	20.6	3.6	3.3	1.503	.137
Psychological	23.3	22.8	4.3	4.4	1.179	.242
Social	9.7	9.7	1.6	1.5	.200	.842
environmental	25.7	25.0	4.7	4.6	1.310	.194

43. To understand the apparent lack of positive impact on the WHOQOL despite self-report and perceived improvements in the social withdrawn behaviours of the socially withdrawn child, one possible explanation was that the parent/carers have encountered challenges beyond their experience with the socially withdrawn child. In RMIV, intervention was focused on changing the psychosocial behaviours of the withdrawn child. Under this ambit, the intervention component with the parent/carers focused on psychoeducation regarding understanding and working with their socially withdrawn child instead of providing in-depth counselling for the parent/carers on their other concerns. Furthermore, the impact of COVID-19 hit hard on people's psychosocial health globally. A recent study in Hong Kong found that COVID-19 has adverse impact on all aspects of the health-related quality of life. In addition, uncertainty about future finance and employment was also found to be a source of stress and was negatively

related to overall marital and family functioning. [24] The implementation of RMIV overlapped with several waves of the COVID-19 pandemic over the period 2019-2022, it was likely that many of the parent/carers were also affected by the negative effects of the pandemic which have affected their score in the WHOQOL score.

Discussion and Conclusion

44. Since the implementation of the RM project in 2013, the proportion of participants under 15 years old continued to increase. In RMIV, it comprised around 40% of the population. It was possible that potential referrers were more aware of the issue and the source of help. In addition, in response to experience from previous phases, the agency has officially expanded its service eligibility to 10 years old and this might encourage at risk young people to seek help earlier.

45. Another feature in the profile of the participants was the relatively higher percentage of youth participants reported to be suffering from some form of mental health issues. This has increased quite considerably since phase I of RM, from 20.6% in phase I, 26.9% in phase II, 18.4% in phase III to 43.1% in RMIV. The prolonged state of COVID-19 might also be contributed to the higher percentage of mental health issues. In a local community-based study of 500 respondents, around ¼ said that their mental health had deteriorated since the pandemic[25].

46. In terms of programme outcome measures, it was found that the programme was effective in improving the behavioural and psychosocial health of the participants. The inclusion of the parent/carer in the intervention protocol provided a different perspective in the behavioural and psychosocial changes of the socially withdrawn youth. Self-report of the youth participants indicated statistically significant positive changes in their withdrawn behaviours ($p<0.0005$), self-esteem ($p<0.0005$) and perceived employability ($p<0.05$).

47. Perception of the parent/carers on their socially withdrawn child echoed with the self-report. There was a decrease in frequency in all items of problematic behaviours such as disorderly diet, disrupted sleep patterns authoritative attitude in the home and destructive behaviours. Parent/carers also reported an increase in frequency in pro-social behaviours such as less frequency in staying at home or in room and more ready to go out. A better family relationship was also observed by the parents where rejecting attitude of the socially withdrawn child has decreased.

[24] Choi EPH, Hui BPH, Wan EYF, Kwok JYY, Tam THL, Wu C. COVID-19 and Health-Related Quality of Life: A Community-Based Online Survey in Hong Kong. Int J Environ Res Public Health. 2021 Mar 20;18(6):3228. doi: 10.3390/ijerph18063228. PMID: 33804725; PMCID: PMC8003940.

[25] Choi EPH, Hui BPH, Wan EYF. Depression and Anxiety in Hong Kong during COVID-19. Int J Environ Res Public Health. 2020 May 25;17(10):3740. doi: 10.3390/ijerph17103740. PMID: 32466251; PMCID: PMC7277420.

48. Another indicator on effectiveness of RMIV was re-engagement in the community in terms of their study and work status. From only 10.1%[26] reported to be studying full or part-time and none in gainful employment before the intervention. At posttest, 51.5% has resumed study full or part-time[27], and 15.2% was in gainful employment full or part-time[28].

49. Again, consistent with the trend found in other phases, the inclusion of the AAI component was an incentive for some in taking the first step to seek help. In RMIV, the percentage has increased to 38.3%. This might mean that the opportunity to interact with dogs was even more attractive to a younger age cohort of socially withdrawn youth.

50. When the outcome measures were further explored by those who have and have not joined the AAI component, improvements appeared to be more significant for those who have joined the AAI component. Statistical significant improvements were found in all aspects of their behavioural psychosocial well-being (HQ25, RSES, PES) for those who joined the AAI component whereas only RSES was found to be significant for those who have not joined the AAI component.

51. The inclusion of parent/carers in the intervention protocol proved to be useful to help them understand the behaviour of their socially withdrawn child. Although not statistically significant, their experience in family difficulties has alleviated to a certain extent. The WHOQOL scores indicated the need for more resources and intensive counselling for parent/carers.

52. The overall consistent positive findings of RM and the increasing number of participants demonstrated that the RM intervention model is a useful approach in working with the socially withdrawn young people in Hong Kong.

[26] 4 cases under 15 and 5 (4+1) cases over 15. 10/99*100=10.1%

[27] 23 cases (22+1) under 15 and 28 cases (22+6) over 15. 51/99*100=51.5%.

[28] 3 cases (1+2) under 15 and 12 cases (3+9) over 15. 15/99*100 =15.2