

ORIGINAL ARTICLE

Use of nature in a multi-family therapy for Chinese families of adolescents with attention deficit hyperactivity disorder: A photo-elicitation study

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Abstract

This article reports the therapeutic resources in the natural outdoors that were conducive to the therapeutic process in a multi-family therapy (MFT) for enhancing the self-efficacy and collective family efficacy of Chinese families of adolescents with attention deficit hyperactivity disorder (ADHD) in Hong Kong. Photo-elicited interviews with adolescents with ADHD and parent focus groups were employed to explore the participatory experiences of the families. A total of thirteen Chinese families of adolescents (aged 11–15 years) with ADHD participated in this study (fourteen adolescents with ADHD, eight fathers and ten mothers). The present study explored the potential therapeutic resources in the natural outdoors, namely a change in the group environment, spaciousness and darkness. The use of the natural outdoors in MFT proved to be a strategy useful for creating a naturalistic group setting within which family participants can more easily enact changes.

KEYWORDS

ADHD, darkness, multi-family therapy, nature, photo-elicitation, spaciousness

Practitioner points

- Clinical use of therapeutic resources in the natural outdoors in MFT was found helpful to induce inter- and intra-personal changes in Chinese families of adolescents with ADHD
- A salient change in the therapeutic setting was found to provide a space for family members to explore the roles and behaviour of one another in a different way
- Helping professionals should consider making use of the resources available outdoors to facilitate the therapeutic process of change

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is one of the most common adolescent neurodevelopmental disorders (Faraone et al., 2003). Similar prevalence rates for adolescent ADHD have been reported worldwide, with the rate being about 3–4% in Western countries (Costello et al., 2011), and 3.9% in Chinese societies such as Hong Kong (Leung et al., 2008). Previous studies have documented that adolescents with ADHD have lower self-efficacy than their counterparts (Major et al., 2013).

Adolescents who received firm family support were found to be stronger in self-efficacy and more likely to achieve social integration (Torres & Solberg, 2001). However, the family relationships of adolescents with ADHD in Hong Kong could be disturbed by the socially discriminatory culture (Ho et al., 2011) and the highly industrialised living environment of the city (Chan et al., 2021). A multi-family therapy (MFT) designed for use in the natural outdoors in Hong Kong was developed in 2019 to enhance the self-efficacy of Chinese adolescents with ADHD, promote collective family efficacy and strengthen the social support network of these Chinese families (J. W. K. Lo & J. L. C. Ma, unpublished). The present study aims to identify the therapeutic resources present in the natural outdoors that were helpful in promoting changes in the parent–adolescent interactions of the families who participated in the MFT.

ADHD, self-efficacy and collective family efficacy

It has been suggested that self-efficacy beliefs are the significant determinants of an individual's positive developmental trajectory (Bandura, 1997). However, ADHD symptoms have been found to impose a direct negative effect on self-efficacy (Major et al., 2013). This reduction in competence may discourage individuals with ADHD from confronting stressful events, which may consequentially maintain an ongoing loop of disappointment with the self and reinforce a low self-efficacy (Newark & Stieglitz, 2010).

Having a quality parent–child relationship is important for the self-development of adolescents with ADHD. A positive parent–child relationship was found to be particularly influential in promoting positive beliefs about the future in Chinese children with ADHD who were in late childhood and early adolescence (Ma et al., 2017). Collective family efficacy, or beliefs held by family members that they can work together as a whole to produce desired outcomes, plays a prominent role in the management of family relationships (Bandura et al., 2011). Recent research has shown that this collective family efficacy emerges as a factor that protects adolescents

from developing externalising and internalising problems (Kao et al., 2020). Collective support from the family was found to protect Chinese adolescents with ADHD from developing a severe ADHD symptom trajectory (Tsai et al., 2017).

The Hong Kong context and the challenges to Chinese families of adolescents with ADHD

Families who are raising a hyperactive child in a Chinese society such as Hong Kong often experience social discrimination (Ho et al., 2011). Limited social support available to Chinese parents of children with ADHD has been associated with increased parenting stress (Si et al., 2020), which may reduce the psychological capacity of the parents to support their children.

The highly industrialised and densely populated living environment of Hong Kong may also affect the manifestation of ADHD symptoms and the family relationships of adolescents with ADHD. Previous studies have revealed that children with ADHD tend to behave in a less socially acceptable manner and elicit more ADHD-type behaviour when they were engaged in an industrialised environment, compared with how they do in a 'green' setting (e.g., Van den Berg & Van den Berg, 2011). A recent study reported that the high population density in Hong Kong was associated with an increase in the anxiety levels of people living there (Chan et al., 2021), which may be elevating tensions in the family relationships of adolescents with ADHD.

In consideration of the need for social support for Chinese families of adolescents with ADHD and the growing body of evidence demonstrating the impact of the physical environment on people with ADHD, in 2019 a multi-family therapy (MFT) intervention, incorporating use of the natural outdoors in Hong Kong, was developed to strengthen the self-efficacy of Chinese adolescents with ADHD and promote collective family efficacy and social support for these Chinese families. This intervention was found to help induce new perspectives on the challenges involved and facilitate mutual support among Chinese parents of adolescents with ADHD, in particular among those who are mothers and younger parents (J. W. K. Lo & J. L. C. Ma, unpublished).

Multi-family therapy and the use of the natural outdoors

Multi-family therapy (MFT) is an evidence-based intervention that facilitates changes in families by instilling multiple perspectives, generating multiple possibilities and mobilising multiple resources within the group context (Asen et al., 2001). Previous literature has demonstrated the effectiveness of MFT as a treatment approach for families of children with mental health needs (Gelin et al., 2018). Recent empirical studies in Hong Kong have demonstrated the efficacy of MFT in changing the parental perception of the children's ADHD symptoms (Ma et al., 2018) and promoting positive changes in the parent-child relationship as viewed from the children's perspective (Ma et al., 2019).

Working with adolescents with emotional and behavioural problems such as ADHD in a natural environment has been reported to be a common practice in the West (Davis-Berman et al., 1994). It has been reported that integrating individual and group therapy with challenging tasks promoted positive outcomes in adolescents such as reducing distress (Russell, 2003). A Delphi study by Burg (1994) suggested that family group psychotherapy conducted in the natural outdoors seems to be beneficial to the development of family strengths, and pinpointed the need for more process research on the use of natural environments in this intervention modality.

Despite the potentially positive results from working with families in green settings, the majority of clinical interventions for families of adolescents with ADHD in Hong Kong are conducted indoors and have failed to make use of the healing potential of the natural environment. Many adolescents with emotional and behavioural problems, such as ADHD, have previously experienced expulsion from typical outdoor camps because of stigmatisation (Randel et al., 2015). This exclusion may further reinforce their sense of social isolation. Little has been done to explore the therapeutic benefit of organising MFT in an outdoor setting in Hong Kong.

The present study aims to answer the research question: How was the natural environment helpful in inducing the changes observed in the self-efficacy of the Chinese adolescents with ADHD and the family relationships experienced by the participants in the MFT?

Multi-family therapy for Hong Kong Chinese families of adolescents with ADHD

The present MFT model (J. W. K. Lo & J. L. C. Ma, unpublished) aims to achieve four principal objectives: (1) promoting an understanding of the adolescents' developmental challenges as well as their strengths; (2) enhancing awareness of multiple possibilities for family relational patterns; (3) providing a supportive platform for mutual exchanges between the participating families; and (4) enhancing the adolescents' self-efficacy and the collective efficacy of their families.

Five MFTs were conducted in the present study. Each MFT lasted for 3 months, with a total intervention of 40 h (Table 1). First, two full-day programmes were conducted in an indoor setting on the university campus on Sundays to build up trust and mutual support among the families (16 h). Then, about 2 weeks later, a 2-day-1-night multi-family camp was conducted in an outdoor setting in the Hong Kong countryside (16 h). About 1 month later, a full-day reunion was conducted on the university campus (8 h).

Physical setting of the multi-family camp

The multi-family camp was conducted at a campsite located on a distant island in the Hong Kong countryside which took at least an hour to travel to from the city centre. The venue for the MFT family camp was carefully selected according to the framework of landscape proposed by Abraham et al. (2010), which suggested that different landscape characteristics may have different positive effects on the mental and social well-being of individuals. For example, having access to large and open green areas was suggested to promote individuals' positive emotions, while wilderness experience was suggested to promote social bonding and support. Hence, the campsites selected in the present study were characterised by (1) a large area of grassland surrounded by tall trees, (2) an absence of high-rise buildings and few man-made structures and (3) minimal light pollution.

Typical programme in a multi-family camp

When the families arrived at the campsite, each adolescent was given time to set up a tent for his/her family all by him/herself, whilst the parent sharing group was held about 30 m away from the adolescent group. This physical distance was intended to set up an invisible boundary between the two parallel groups while promoting inter-generational observations at the same time.

TABLE 1 The typical group programmes of the MFT for Chinese families of adolescents with ADHD

	Family day (day 1)	Family day (day 2)	Family camp (day 3)	Family camp (day 4)	Family Reunion
AM	Inter-familial energising games Intra-familial activity: family badge	Inter- and intra- familial activity: blindfold	Nil	Parallel group: • Men's kitchen • Wife's time • Adolescent's time Joint meal Joint activity	Inter-familial activity
Noon	Lunch	Joint meal	Nil	Lunch	Lunch
PM	Parallel group: • Parent sharing • Adolescent's time Joint activity	Parallel group: • Parent sharing • Adolescent's time Joint activity	Parallel group: • Parent sharing • Adolescent's time (tent-setting) Joint meal Family solo walk	Joint activity Review and consolidation	Parallel group: • Parent sharing • Adolescent's time

During the evening, a family solo walk was conducted, in which each adolescent walked together with his or her family members in the dark along a hiking trail next to the campsite. In the middle of the family solo walk, the families entered the tree maze. In the maze, all family members were blindfolded and they searched for the exit together. This activity was intended to offer a wilderness experience to family members to try resolving problems collectively in the dark, which in turn may help promote their relational bonding and support.

METHODS

Participants

Thirteen Chinese families of adolescents with ADHD were involved in the present study, including fourteen adolescents with ADHD (mean age 12.9 years; eight males and six females), eight fathers (mean age 50.6 years) and ten mothers (mean age 45.9 years). All of them had participated in one of the MFTs conducted from July 2017 to August 2018. Among these thirteen families, eleven featured both parents and two were single-parent families. Eight families had a monthly income that was below the median household income in Hong Kong (HK\$32,300; £3,046) (Census and Statistics Department, 2018). Nine of the adolescents with ADHD were on medication.

Ethical considerations

This study was given ethical approval by the Committee of Survey and Behavioural Research Ethics of the Chinese University of Hong Kong. All participants in the present study were informed of the ethical issues regarding the study, completed a written informed consent form

before joining the MFT session and took part on a voluntary basis. An agreement for maintaining confidentiality within the group was made with the participating families at the beginning of the first session. The participating families were free to withdraw from the study at any time without any penalty. To protect the privacy of the participating families in the present study, the authors did not include any identifying materials in this article.

METHODS

In the present study, photos produced by the family participants during the MFTs were collected and used in the individual interviews with the adolescents and the parental focus groups.

There are two reasons for using photos in the present study. First, photos have been discovered to be a useful tool for enriching the content shared by the participants in interviews (Booth & Booth, 2003). It has been suggested that the use of photos in data collection can stimulate a more in-depth human experience than can be stimulated by written or spoken words only, especially when the environmental basis of a subjective group experience cannot be easily assessed by written or spoken words (Harper, 2002). Second, the use of photos in data collection was found to be an appealing tool for engaging children and adolescents (Gant et al., 2009). Photo elicitation interviews have been employed in studies exploring children's experiences of outdoor adventures (Loeffler, 2004).

In the present study, each participant was given a disposable film camera on the first day of the MFT and was told to capture any moments of the group they felt were memorable. The resulting photos were compiled into a separate photo album for each participant and were distributed to them prior to the interviews.

Photo-elicited individual interviews with adolescents with ADHD

Fourteen individual interviews with adolescents with ADHD were conducted. As an established rapport with children and adolescents favours a deeper exploration of personal experiences (Irwin & Johnson, 2005), interviews with the adolescents in the present study were conducted either by the first author, who was the main MFT leader, or a university student at the bachelor or master's level who had previously participated as a helper in the MFT. The interviewer reviewed the photo album with the adolescent who took the photos and, following a semi-structured interview guideline, asked questions about the contents of the photos and the meaning the adolescent ascribed to his or her personal nature-related experience (Table 2). Each interview lasted for 30–60 min. All interview conversations were recorded.

Photo-elicited parent focus groups

Three parent focus group interviews ($N_{\text{family}} = 13$, $N_{\text{father}} = 8$, $N_{\text{mother}} = 10$) were conducted, each lasting for 60–90 min. Prior to the focus group interviews, parents were given time to review their own photo albums. The focus group interviews were conducted by interviewers who were experienced in leading MFT and had not been involved in any group processes in the present study. Following a semi-structured interview guideline (Table 2), the parents

TABLE 2 The semi-structured interview guidelines*Questions for the interviews*

1. Please describe the photos that you have taken during the MFT.
 - (i) When and where did you take this photo?
 - (ii) What was happening at that moment?
 - (iii) What impressed you the most at that moment?
2. Which photo in this album do you like the most? Why?
3. Did you experience any differences in yourself (i.e., emotionally, psychologically and behaviourally) during the family camp?
4. Did you experience any differences in the way of relating to your family members?
5. Any special elements in the natural outdoor environment or the activities in the camp that may have contributed to the differences?
6. Did you gain a new understanding about yourself and your family after joining the MFT? What was that and how did it relate to your experience in the camp?

were asked about their outdoor experiences in the MFT. All interview conversations were recorded.

DATA ANALYSIS

Analysis of the data collected from adolescent interviews and parent focus groups followed the guidelines in polytextual thematic analysis (Gleeson, 2012). The photos were looked over in different orders, such as singly or in groups, to capture the recurring patterns of the photos in terms of form and content. This process focused mainly on producing descriptions of the elements existing inside the visual data, but did not attempt to translate nor interpret the visual symbols into written text.

A coding scheme was then developed for analysing the photos (Table 3). Initial themes that arose from this stage of the analysis were used to refine the interview guidelines. This was an attempt to help probe more deeply into discussions about the subjective experiences of participants while being exposed to a natural environment as well as being in different social interactions in the group process.

The data collected from the interviews were analysed following the guidelines for thematic analysis (Braun & Clarke, 2006). NVivo 12 was adopted to organise the unstructured data into generalised codes and themes (Table 4). Data collection and analysis of the data from the interviews were conducted in parallel processes until data saturation was reached.

To put to rest any concerns about confidentiality, codes were substituted for the names of participants, that is, 'a1' refers to the adolescent with ADHD of family 1, 'f3' refers to the father of family 3 and 'm13' refers to the mother of family 13.

RESULTS

Helpful aspects of the natural outdoor environment

Derived from the data, three helpful characteristics of holding the MFT group in the natural outdoor context were identified, including 'a change in the group environment', 'spaciousness' and 'darkness'.

TABLE 3 The initial coding scheme for analysing the photos

Aspects	Codes	Sub-codes
Content of the physical environment	Indoors	Campus activity rooms, canteens
	Outdoors	Football pitch, barbeque areas, hiking trail
	Natural environment	Trees, grassland, darkness, sky, sea, animals
Content of the social environment	Inter-personal interactions	Intra-familial interactions, inter-familial interactions, interactions with worker team
	Group activities	Indoor activities, outdoor activities, intra-familial activities, inter-familial activities, activities alone
Forms of the images	Shooting angle	Zooming out in a distance, close-up of oneself, close-up of family member, close-up of other group members

TABLE 4 Data analysis of qualitative data

	Themes	Sub-themes
The helpful aspects of the natural outdoors	A change in the group environment	Change from urban space to countryside space Temporary escape from daily routine tasks Living together with other families
	Spaciousness	A large piece of grassland A wide sea view
	Darkness	Family solo walk Feeling of being unsafe
Changes experienced by the families	An increase in the self-efficacy of the adolescents with ADHD	Overcoming challenging tasks and frustration Receiving support from parents
	An increase in emotional control of the adolescents with ADHD	Private space Psychological autonomy
	Strengthening the sense of family agency of the parents	Overcoming challenging tasks with family members Awareness of family strengths

In general, these three characteristics of the physical group context were perceived to be helpful in inducing different intermediate psychological effects in the parents and the adolescents. ‘Enhancement of positive emotions’ was reported by the parents, whilst the adolescents revealed they had experienced a ‘reduction in psychological distress’. An intermediate interactional effect, a ‘promotion of inter- and intra-familial attentiveness and responsiveness’ was also narrated by both the parents and the adolescents. These intermediate effects were important in that they were conducive to the evolvement of changes in family relationships.

A change in the group environment

Participation in the MFT was described by both the parents and the adolescents as a time for a 'family vacation' which gave them temporary relief from work and daily routine tasks. Participants perceived that this temporary escape from daily stressors was important for enabling them to be more committed and devoted to the group.

We would stay home for the whole day if we didn't join the group... Either I would be pushing him to study or he would lock himself in the room playing computer games... Coming here gave us a break. (m1)

This overt change in the group environment, from indoors to outdoors and from a familiar urban space to a less familiar countryside space, not only explicitly 'isolated' or 'separated' the participating families from their daily stressors, but it was also conducive to improvements in individual psychological conditions. The parents shared that they experienced an enhancement in positive emotions, such as calmness and peacefulness, whilst the adolescents noted that they experienced a reduction in psychological distress, such as academic pressure and worries about being punished. These changes induced openness and acceptance in the family members.

I like to plan everything... the unpredictability here has made me open to things that I cannot control... I used to be very upset if my daughter didn't go to sleep on time... but now, I realized that it is negligible. (m8)

It was like a family trip... nothing to worry about on the trip... like being scolded by mother for not helping her... this helped us relax together and broadened our horizons. (a2)

As described by the family participants, the multi-family camp provided a time for families to experience 'living together'. Both parents and adolescents emphasised the importance of having 'ordinary daily activities', such as preparing meals, cleaning and hanging around, to promote development of a very close relationship between group members. Some parents even described the group as being like a 'big family' and like a 'home'.

As we went camping together... which meant we really lived together for some time...we had plenty of time to understand each other and we overcame the challenges [in the camp] together...I would rank our relationship as being just below that of my family [members]but much closer than normal friends (a8)

Two major components of the natural outdoors, 'spaciousness' and 'darkness', were identified from the photo-elicited narratives as being helpful for promoting positive interactions between family members in the group process.

Spaciousness

When the parents and adolescents looked at their photos, they described how they loved this large piece of grassland and the wide sea view which they seldom got a chance to see in the urban



PHOTO 1 Spaciousness

areas. This spaciousness of the natural outdoors promoted a feeling of psychological freedom among the adolescents and a feeling of broad-mindedness among the parents.

I feel so free when lying on it. (a9, Photo 1).

Some parents who have conflictual relationships with their children particularly described their experience of immersing themselves in the spacious natural outdoors as an experience that had increased their intra-familial attentiveness towards one another and allowed them to gain an alternative perspective from which to view the behaviour of their children.

This environment is incredibly important...Everything was done together... I had plenty of time to attend to what they were doing... and they would also attend to me... We never pay attention to each other on normal days. (f4)

When we played freely on the grassland ... I felt carefree and became more attentive to his strengths rather than being picky about his problems... this is a dramatic change for me. (m3)

Darkness

In the narratives, many of the adolescents and their parents shared that the family solo walk was their most impressive moment at the camp. Some of the parents and adolescents mentioned that they felt frustrated while walking in the dark, but at the same time, they were most impressed by the feeling of being cared for by the people surrounding them. The darkness heightened the sensitivity of group members to the needs of others as well as boosting their openness to receiving care and support from others.

It was so dark that I could barely see the trail...We walked hand-in-hand... and it was the care expressed by others that impressed me the most. (a2)

This was the first time I felt that I was being taken care of by my daughter! She took my hands and alerted me to the obstacles ahead. (m4)

An increase in the self-efficacy of the adolescents with ADHD

Some participating adolescents experienced an enhancement in their self-efficacy after participating in the MFT. Walking in the dark in the tree maze was described by the adolescents as being something they were afraid of but also as an activity that provided an opportunity for them to interact with their parents in an alternative way, and thus it elicited changes in their self-efficacy.

I used to be a follower, but I was impressed with myself when I self-initiated becoming the leader for the first time, even though I was very frightened at that moment. My mother was standing behind me, and my father kept telling me 'Don't be scared'. (a3)

An increase in emotional control of the adolescents with ADHD

One adolescent with ADHD enjoyed the time she spent jogging alone in the outdoor area of the campsite. This adolescent has suffered from self-hatred for years since her experience of school bullying in primary school. Now she felt that staying in the natural outdoors by herself increased her psychological autonomy, which in turn made her more able to self-regulate her emotions.

This is the first time that I could stay away from 'the dark shades [of my traumatic interpersonal experience in the past]' ... I jogged on the island at dawn ... It was apparently different to jog in the woodland... things on my two sides pass by quickly... I feel freer... If I can jog in this kind of environment every day, I think 'the dark shades' in my mind would be gone! (a9)

Being alone in the darkness in the natural outdoors induced a state of calmness in another adolescent, which freed her mind from self-criticism (a3, Photo 2). This adolescent with ADHD was also diagnosed with psychosis. She studied in a renowned secondary school. The high academic pressure and expectations from others had put her under high stress. For this adolescent, darkness in the natural outdoors provided a private space where she could enjoy



PHOTO 2 Darkness

temporary relief from the intrusive thoughts and enjoyed some private time being with her inner self.

I took this photo at 4 a.m....I felt like I was alone on a planet... I treasured this private space... I felt calm to be with myself in this space... (How did you spend your time in this space?)... thinking... but interestingly... neither negative nor positive thoughts about myself. (a3, Photo 2)

Strengthening the sense of family agency of the parents

Some parents became aware of their family strengths in the MFT. A mother related that, after working closely on challenging tasks with her family, she experienced a strong bonding with her family, which encouraged her to rebuild trust and belief in her family regarding overcoming the difficult inter-personal situations that they have encountered in society.

The problems that I had in the past became reduced in scale... Of course the difficulty is still there... but I realized that my family actually has strong cohesion... we would do things together and committedly. (m9)

DISCUSSION

The findings of the present study have enriched existing knowledge regarding incorporating the use of a natural environment in facilitating the MFT group process. Consistent with previous nature-related studies (e.g., Berger & McLeod, 2006), the results of the present study suggest that during the MFT process the natural environment not only contributes as a supplier of materials and physical space, but also plays the role of a catalyst for promoting therapeutic changes in self-efficacy, parent-child relationships and the inter-family relationships of Chinese adolescents with ADHD.

Apart from the beneficial effects exposure to nature has on the behavioural and emotional aspects of adolescents with ADHD (Van den Berg & Van den Berg, 2011), the findings of the present study suggested that contact with nature, even in the short term, potentially benefits family relationships of Hong Kong Chinese adolescents with ADHD. Despite its small sample size and exploratory nature, the findings of the present study shed light on the following two possible mechanisms of change induced by the natural environments that may help promote the family relationships of adolescents with ADHD.

First, parents' perception of their children's behaviour became more strength-focused instead of problem-focused when they were engaged in the natural outdoors. On the one hand, adolescents with ADHD may display more strengths (e.g., creativity and the willingness to take risks) in the rural outdoors, as suggested in social-ecological and evolutionary theories (Lo & Ma, 2019), and shown in previous empirical studies (e.g., Van den Berg & Van den Berg, 2011). On the other hand, the spaciousness of the natural environment may instil a state of mindfulness in the parents (Howell et al., 2011) or an 'internal sense of spaciousness' (Rapgay et al., 2011, p. 111). One's state of mind may become less encumbered by habitual responses, emotions and cognitions. The parents in the present study reported that they were less engrossed in their perceptions of their children's problems, and more mindfully attentive to the strengths of their children and the present moments that they were relationally experiencing.

Second, the natural outdoors offered the families a physical setting that is qualitatively entirely different from their ordinary living setting. This salient change in the therapeutic setting was found in the present study to provide a space for family participants to explore and experience the roles and behaviour of one another in a different way, which is consistent with the findings of previous studies (e.g., Berger & McLeod, 2006).

In this study, inclusion of a multi-family camp in MFT was found to facilitate the group process development for Chinese families of adolescents with ADHD. The usual common practice is to conduct MFT indoors (e.g., Ma et al., 2018). The findings of this study suggested that changing the group setting from indoors to outdoors through the use of a multi-family camp can intensify the emotional closeness of the families and accelerate the multi-level interactions between them within this experience-rich group context.

The outdoor family camp serves as one of the major activities in the present MFT model; however, it should not be considered a stand-alone activity that is separate from other MFT activities. It could be challenging for families to go camping with other newly met families, as camping necessitates intensive collaboration to tackle the uncertain circumstances arising in the natural environment. Frustration and defensiveness, instead of feelings of security and openness, may be induced in the camp if adequate mutual trust between the families has not been established beforehand. The common practice for a family-based intervention camp is that it usually lasts for 3–5 full days (e.g., McLendon et al., 2009). Given that the majority of Hong Kong families are usually fully occupied with work and schooling on weekdays, the family camp in the present study can only be carried out on weekends. Meeting the families at the university campus meetings to set up the group norms and build mutual trust prior to the family camp is therefore important.

Some recent nature-related literature has identified types and qualities of natural environments that could be of benefit to individuals psychologically (Wyles et al., 2019). Given that there is a lack of research on how the physical setting, such as a natural environment, may influence the change process of family group psychotherapy (Ewert & McAvoy, 2000), we suggest that helping professionals such as marriage and family therapists who work with families of adolescents with ADHD and other mental health needs should further explore and make good use of the resources readily available in the natural environment, and that this would be likely to facilitate the therapeutic process of change.

LIMITATIONS

The results of the study should be interpreted cautiously owing to the potential threat of social desirability bias affecting the quality of the data. To minimise the possible occurrence of this bias, this study followed the low-moderator-involvement approach (Schrivver et al., 2017) and adopted triangulation by multiple interviewers during data collection. Second, objectivity in the data analysis may have been influenced by a researcher playing the role of both therapist and investigator. Despite this, the dual role of a researcher was suggested to be an advantage by allowing more flexible and enriched interactions between the process and the outcomes (Bochner, 1981). Yet, because of limited resources, this study lacks member-checking. This may have led to a potential investigator bias that might call into question the trustworthiness of the results.

RECOMMENDATIONS

It is recommended that future studies explore further the potential healing power of nature on the basis of a wider diversity of natural environments and the clinical use of these resources in MFT. Future studies with increased rigour would also be needed to confirm that the change process in MFT can be enhanced by a natural outdoor setting.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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