Efficacy of Integrative-Body-Mind-Spirit Group Intervention for Parents of Children with Eczema: A Randomized, Wait-list Controlled Clinical Trial

Yat-Lui Fung, Hiu-Tin Leung, Celia H. Y. Chan, Bobo H. P. Lau, Cecilia L. W. Chan

The University of Hong Kong

Author Note

Yai-Lui Fung, Department of Social Work and Social Administration, The University of Hong Kong.

We thank the staff of The Hong Kong Society for Rehabilitation and The Boys' and Girls' Clubs Association of Hong Kong for their contributions in implementing intervention programme in this project. This research was supported by UBS Optimus Foundation.

Correspondence concerning this article should be addressed to Dr. Celia H. Y. Chan, Associate Professor in Department of Social Work and Social Administration, The University of Hong Kong. Contact: chancelia@hku.hk

Abstract

Objectives: This randomized controlled trial evaluated the effects of a psychosocial intervention developed based on the Integrative Body-Mind-Spirit (IBMS) model that aimed to enhance the wellbeing of parents of children with eczema. Methods: Ninety-one families were randomly allocated to either the six-session intervention group (n = 48) or the wait-list control group (n = 43) and completed the randomized trial. For both groups, a range of psychosocial outcome measures were taken before the intervention (T_0), post-intervention (T_1), and six weeks after the intervention (T_2). Results: Relative to the control group, the intervention group was significantly improved over time in their levels of perceived stress, depression, and a number of holistic wellbeing measures, including non-attachment, afflictive ideation, and general vitality. Discussion: The results provided empirical support for an IBMS-informed psychosocial intervention in reducing stress and depression and enhancing wellbeing among parents of children with eczema.

Keywords: eczema, psychosocial intervention, stress, depression, wellbeing

Efficacy of Integrative-Body-Mind-Spirit Group Intervention for Parents of Children with Eczema: A Randomized, Wait-list Controlled Clinical Trial

Atopic Dermatitis, commonly known as Eczema, is a chronic skin disease with pruritic inflammation, which creates a worldwide public health problem. Prevalence in children is 15-30% while in adults it can be up to 10% (Archer, 2013; Fortson, Feldman, & Strowd, 2017). Noticeably, 45% of patients start to experience eczema during their early infancy, i.e. from their first six months of life, 60% grow out of the symptoms when they reach their teens, while about half continue to persist into adulthood (Archer, 2013; Ring, 2016). In view of the growing trend and the frequent outbreak of childhood eczema in the industrialised and developed countries, a recent research study proposed to identify the prevalence of the disease in Hong Kong based on the International Study of Asthma and Allergies in Childhood (ISAAC) survey (Lee, Lau, Wong, & Tian, 2017). From this, it is predicted that the local prevalence of eczema will significantly increase especially for children in primary schools, which will eventually introduce a substantial health and economic burden for the children, their parents, and their communities (El-Heis et al., 2017; Lee et al., 2017).

Previous studies indicated that not only will children with eczema (here-after 'children' unless otherwise specified) suffer from daytime tiredness, diminished self-esteem, emotional distress, irritability and psychological disturbance (Archer, 2013; Maksimović et al., 2012; Ring, 2016), their parents who are their primary caregivers (here-after 'parents' unless otherwise specified), can also experience interruption of daily routines, poor physical condition, emotional instability and reduction of social activities (Andersson et al., 2016; Carmen et al., 2018; Ho et al., 2010). Although eczema is not considered a life-threatening disease, the incurable and life-long nature of the unbearable itch may introduce emotional and psychological challenges to patients and family members, especially children and their

parents (Andersson et al., 2016; Carmen et al., 2018; Fortson et al., 2017; Ho et al., 2010; Kelsay, Klinnert, & Bender, 2010; Maksimović et al., 2012).

Parental stress of children with eczema generally comes from the feelings of uncontrollability and unpredictability in the caregiving process. Repeated failure of treatment episodes, and the endless struggle through various treatment alternatives can trigger emotional distress (El-Heis et al., 2017; Santer, 2014). However, it is also common for parents to internalize their stress and feelings, because emotional support from family members can rarely be attained, particularly in light of tension among family members due to their diversified opinions in handling the problem (Neill, Cowley, & Williams, 2013). In addition, the inflamed and reddish skin can easily lead to social stigmatization for the children, which can further induce negative emotions for their parents (Meyer, Kobylecka, Gold, & Barber, 2014). Furthermore, the unpredictable nature of the disease can also seriously affect family daily routines and the social life of the parents. The combined effect of these risk factors can eventually propel parents towards a deterioration of mental health. In most circumstances, parents consider their primary role as caregivers for their children, and their own wellbeing is set aside and given a lower priority.

It is crucial to identify the type of guidance and support that parents require. Although literature suggests that some non-pharmacological training programmes have been developed for parents of children with eczema, most of them focus on treatment compliance and symptom management, while the wellbeing of parents is seldom mentioned (Ersser et al., 2014; Farasat, 2014). Regarding the psychosocial needs of the parents, it is important to address their emotional needs arising from caregiving and build up their capacity in order to deal with their caregiving stress and accommodate the enduring nature of the eczema of their children. Among various types of intervention models, psychological group counselling has been considered as one of the most effective strategies in supporting the parents with

caretaking roles. During group experience, parents' caregiving experience can be normalized and they can learn new ways of coping from group members with similar experience (Leung & Chan, 2015; Rashid, 2015; Rentala, Fong, Nattala, Chan, & Konduru, 2015).

In terms of non-pharmacological treatment options, various psychosocial therapy approaches have been developed. Research studies found that psychological interventions reduce severity and itching intensity for eczema patients, but more vigorous empirical evidence is still required (Chida, Steptoe, Hirakawa, Sudo, & Kubo, 2007). Cognitive Behavioural Therapy was found to improve the psychological functioning of eczema patients even if the severity of the disease remained the same (Wittkowski & Richards, 2007). However, the small sample sizes of various research studies (Wittkowski & Richards, 2007) may limit the generalizability of their findings.

Psychological interventions for eczema patients were first developed in the 1980's and structural education programmes have been developed in the past two decades (Chida et al., 2007; Staab et al., 2006). These included cognitive behavioural therapy, stress management, behavioural therapy, brief dynamic psychotherapy, autogenic training, and aromatherapy (Chida et al., 2007). In the present literature, there is still a paucity of evidence-based and theory-based psychological and educational intervention for children with eczema and their parents. Wenninger et al. (2000) developed a Berlin Parental model for the management of children with eczema. The result was inconclusive although some improvement in quality of life (QoL) and coping skills of parents was found. In addition, other programmes have also been found to be useful only in improving the severity of children's skin conditions and pruritus intensity (Blessmann Weber et al., 2008; Staab et al., 2006; Weisshaar et al., 2008). Kupfer et al. (2010) later modified the Berlin model and created a more comprehensive structured parent-child education programme, but the result only revealed certain psychological benefits and the overall effectiveness of the programme

was still uncertain. The Eczema Education Programme (EEP) for parents was recently launched (Ersser et al., 2013) but evidence on parental satisfaction was inconclusive (Jackson, Ersser, Dennis, Farasat, & More, 2014).

Although research findings have supported parental training for managing childhood eczema as an effective adjunct to conventional dermatological intervention, these programmes were restricted to addressing compliance to treatment procedures, use of emollients and topical medication, with little intervention on the psychosocial impact of the disease. The psychosocial distress and needs of parents were not properly addressed and remain under-researched (Farasat, 2014).

It is believed that parents of children with eczema can be empowered in terms of physical, psychological and social wellbeing which are crucial for improving their QoL in the caregiving process. The current study adopts a strength-based social work approach, an Integrative Body-Mind-Spirit (IBMS) model (Chan et al., 2000; Lee et al., 2018), which aims to enhance the holistic wellbeing of the parents of children with eczema (Fung et al., 2019). We hypothesize that the holistic wellbeing of the parents of children with eczema will be significantly improved by the intervention based on IBMS model.

Method

Participants

Parents of children with eczema aged from 6 to 11 years (primary school students) were recruited through social media, agency newsletter, website postings, and referrals from community healthcare providers. Participants who were interested could elect to complete a brief online survey, which included medical history regarding the skin condition of the children. Eligible participants were invited to attend a pre-group interview where informed consent was obtained and self-administered questionnaire was completed. The pre-group interviews were conducted by experienced social workers.

The children should be between the ages of 6 and 11 which is the age range of the primary school students in the location of the research study. The child should be between the ages of 6 and 11 (primary school students). Besides, the child should be clinically diagnosed with eczema only with no other major chronic diseases. The parent should be either the father or mother of the child with eczema and have a key role in taking care of the child for at least 6 months. Finally, all participants should be able to express themselves in Cantonese.

Sample Size Calculation

We determined the desired sample size of the study by power analysis (Faul, Erdfelder, Lang, & Buchner, 2007). With reference to other similar studies conducted by the team, this research study was expected to have a moderate effect size of around 0.25. Taking the assumption of 0.8 as power, 0.05 as significance criterion and 0.5 as the correlation among repeated measures (ANOVA, repeated measures, between factors), a total of 86 participants were needed in total as calculated by the statistical software G-Power 3.1.9.2. Assuming an attrition rate of 10%, the total number of participants was expected to be 96 (i.e. 48 in each group).

Design

This is a randomized, wait-list controlled clinical trial. After obtaining participants' informed consent and getting the baseline measurement completed, participants were randomly assigned to either an intervention group (IG) or a wait-list control group (WLCG) The randomization was conducted by using a random number generator in Excel. Allocation of intervention was revealed to the research coordinators, group leaders and participants after completing the basement measurements.

Participants of the IG were asked to complete questionnaires at three time-points: at baseline (T_0), after the 6-session psychosocial intervention (T_1), and six weeks after the psychosocial intervention (T_2). Participants of the WLCG were asked to complete

questionnaires at baseline (T_0), 6 weeks after T_0, and at 12 weeks' follow-up (T_3). After the T_1, participants of WLCG received the 6-session psychosocial intervention for the sake of ethical consideration. Figures 1 and 2 show the process flow of this current study based on the CONSORT (Consolidated Standards of Reporting Trials) guideline (Reveiz & Krleža-Jerić, 2010).

Psychosocial Intervention

A psychosocial intervention programme based on the IBMS protocol was customized for parents of children with eczema. The programme consisted of six 3-hour consecutive weekly sessions. IBMS intervention approach was an empirically supported social work intervention model which adopted a strength-based perspective in patient empowerment. It focused on the interplay between exercise, emotions and physical wellbeing, the spiritual transformation of traumatic experiences, and the acceptance of adversity through the philosophical concepts of forgiveness and letting go (Chan, Ho, & Chow, 2000; Lee et al, 2018). This integrated Eastern health practices with meaning-making and body techniques (Chan, Ng, Ho, & Chow, 2006; Chan & Yan, 2015; Leung & Chan, 2015; Leung, Chan, Ng, & Lee, 2009; Lee et al, 2018), and provided a set of physical exercises that lead to explicit articulation in spiritual transformation through suffering and pain under a meaning-oriented framework (Chan, Chan, & Ng, 2006; Chan & Ho, 2012; Lee et al., 2007). The model aimed to empower individuals to regain their self-healing capabilities, maintain harmony and balance at intrapersonal, interpersonal, and transpersonal levels (Ng et al., 2006). It also affirmed the importance of the discovery of meaning especially in adverse life situations and has developed meaning focused measurements (Ho, Chan, & Chan, 2007). The details intervention programme can be found in protocol paper previously published by the research team (Fung et al., 2019). The customized IBMS protocol for this research study has also been registered in the Clinical Trials Centre of The University of Hong Kong with registration

number HKUCTR-2234 (www.hkuctr.com).

Fidelity of IBMS

In order to ensure the competence and adherence concern in the current clinical trial, experienced social workers and counselors who have received standardized professional training on IBMS intervention model conducted the intervention programme. The training involved three full-day session with didactic teaching on the theoretical underpinnings of IBMS, as well as practice training and experiential learning of the IBMS-informed techniques. Intervention fidelity to the protocol was monitored by completion of session specific checklists of all required IBMS activities. The checklist would be reviewed and completed by the implementer of the programme, and would be returned to the research team for further examination. On-site supervision was provided by IBMS trainers to address clinical concerns.

Ethical Consideration

The objectives and the procedure in the study were clearly explained to all participants and written informed consent was collected from them before data collection. Participation was entirely voluntary and participants had the right to terminate their participation at any time during the study without any negative consequences. Ethical approval was obtained as per the standard procedure indicated by the Human Research Ethics Committee of The University of Hong Kong (www.rss.hku.hk/integrity/ethics-compliance/hrec Reference: EA1612023).

Measurements

The selection of measurement tools was based on a) the relevancy of the scales with the primary and secondary outcomes of this study, b) psychometric properties of the scales, c) availability of the validated scales in the Chinese version, and d) license to use (LTU) of the scales. Five scales were selected for this study:

1) Holistic Wellbeing Scale (HWS) was developed based on the conceptualization of wellbeing and spirituality, which comprised two aspects of spiritual dimensions (Affliction and Equanimity) and seven subscales (HWS Non-Attachment, HWS Afflictive Emotion, HWS Afflictive Sensation, HWS Afflictive Ideation, HWS Mindful Awareness, HWS General Vitality, HWS Spiritual Self Care) with reported Cronbach's alphas (internal consistency reliability) ranging from .670 to .892 (Chan, Chan, & Chan, 2014);

2) Perceived Stress Scale (PSS) with reported Cronbach's alpha (internal consistency reliability) of .84, was used to measure the stress exerted by parents (Cohen, Kamarck, & Mermelstein, 1983);

3) Patient Health Questionnaire (PHQ-9) with reported Cronbach's alpha (internal consistency reliability) of .89, was used to measure the depression levels of the parents (Kroenke, Spitzer, & Williams, 2001);

4) Generalized Anxiety Disorder Scale (GAD-7) with reported Cronbach's alpha (internal consistency reliability) of .92, was used to measure the anxiety level of the parents (Spitzer, Kroenke, Williams, & Löwe, 2006); and

5) Dermatitis Family Impact (DFI) with reported Cronbach's alpha (internal consistency reliability) of .85, was developed by Lawson, Lewis-jones, Finlay, Reid, and Owens (1998) to measure the effect of childhood atopic dermatitis on family function.

Data Analysis

Demographic characteristics of the participants were first analysed using Chi-Square Tests of Independence and Independent Samples T-test. Baseline data (T_0) on the mean scores for all the outcome variables (and their subscales if applicable) were then examined between the intervention group and control group.

The General Linear Model (GLM) for repeated measures was used to evaluate the changes in the outcome variables at three time points (Before intervention: T_0, Immediately

after intervention: T_1, Six weeks after intervention: T_2). The GLM was first performed for the outcome variables to identify the within-subject main effect (Time), and the interaction effect between the group across the timeline (Time X Attended Group). Pairwise comparisons among the mean scores at the three time points in the intervention group were then conducted.

Result

Demographics

During the recruitment period (50 days), 222 potential families were recruited by the nine service centres. After the initial screening process, 59 families were excluded due to duplication of application, failure to meet inclusion criteria (e.g. children were not within the age range of the study, children had skin disease but not eczema), or declining to participate after knowing the details of the programme. Subsequently, 163 families were randomized into the intervention group and control group. However, after randomization, 50 families declined to participate due to the conflict with their schedules. As a result, 113 families (58 in intervention group, 55 in control group) were able to complete the initial assessment (T_0). During the intervention period, ten families (6 in intervention group, 4 in control group) decided to quit the programme due to other commitments, and 12 families (4 in intervention group, 8 in control group) failed to complete the follow up assessment (T_1, T_2). Finally, data from 91 families (48 in intervention group, 43 in control group) were collected for analysis. In view of the original recruitment estimation of 86 families (43 in intervention group, 43 in control group), the existing sample size should be able to provide a reasonable justification for the effect size (0.25) and power (0.8) of the study.

Table 1 summarizes the characteristics of the demographic variables. The average age of the parents was 41 (intervention group: 41.52; control group: 41.07), and most of them were female (intervention group: 91.67%; control group: 83.72%). More than half of them

were employed on a full-time basis (intervention group: 54.17%; control group: 60.47%), while one-third of them were homemakers (intervention group: 33.33%; control group: 32.56%). Around three quarters of them have received either secondary or tertiary education (intervention group: 84.78%; control group: 72.09%). Most parents were married/cohabited (intervention group: 89.58%; control group: 95.35%) and half of them had no religion (intervention group: 50%; control group: 55.81%). No specific pattern in family monthly income could be observed although it was noted that seven families in the control group were recorded with a relatively high income (> HK$80,000).

Chi-Square tests of independence were performed for the nominal and ordinal demographic variables (gender, employment status, education level, marital status, religion, family income) between the participants in the intervention and control groups. No significant difference was found between the two groups in terms of gender (X^2 (1) = 1.348, p = .246), employment status (X^2 (4) = 3.959, p = .412), education level (X^2 (3) = 5.005, p = .171), marital status (X^2 (3) = 2.885, p = .41), religion (X^2 (5) = 3.113, p = .683), and family income (X^2 (8) = 10.601, p = .225). An Independent Samples T-test was performed on the mean scores of age. No significant difference was found in age between the intervention group (M = 41.52, SD = 5.57) and control group (M = 41.07, SD = 5.28); t (86) = 0.388, p = .699.

Furthermore, Independent Samples T-test was performed to compare the mean scores of all the outcome variables between the intervention group and the control group before the intervention was conducted. No significant difference was identified.

In general, there was no significant difference in the demographic characteristics and the baseline result of the outcome variables between the intervention group and the control group.

General Linear Model and Post-hoc Analysis

The General Linear Model (GLM) for repeated measures was used to evaluate the changes in the outcome variables at three time points (before intervention: T_0, immediately after intervention: T_1, six weeks after intervention: T_2). GLM was first performed for the outcome variables to identify the interaction effect between the group across the timeline (Time × Group). Post-hoc pairwise comparisons with t-tests among the mean scores at the three time points in the intervention group and the control group were then conducted to help interpret any significant interactions found. The GLM results and that of the post-hoc t-tests can be found in Table 2.

The results of the GLM revealed that there was a significant interaction effect for perceived stress as measured by PSS, $F (2, 178) = 4.13$, $p = .018$, $h_p^2 = .044$. Post-hoc t-tests suggested that the intervention group, but not the controlled group, underwent a significant reduction in perceived stress from T0 to T1, $t (48) = -4.56$, $p < .001$. Cohen's effect size value ($d = -0.73$) suggested a moderate to high practical significance. This reduction is remained significant at follow-up (T2), $t (48) = -2.99$, $p = .004$, with a moderate Cohen's effect size ($d = -0.55$), although at this point the control group showed a more modest but significant reduction in this measure, $t (46) = -2.15$, $p = .037$, with a small to moderate Cohen's effect size ($d = -0.26$).

A significant interaction effect was also detected for the levels of depression as measured by PHQ9, $F (2, 178) = 8.59$, $p < .001$, $h_p^2 = .088$. Post-hoc t-tests revealed that the intervention group underwent a significant reduction in depression from T0 to T1, $t (48) = -5.62$, $p < .001$. Cohen's effect size value ($d = -0.65$) suggested a moderate to high practical significance. There was a significant (partial) rebound from T1 to T2, $t (48) = 2.89$, $p = .006$, with a small to moderate Cohen's effect size ($d = 0.28$), but a significant overall reduction from T0 to T2, $t (48) = -3.60$, $p = .001$, with a small to moderate Cohen's effect size ($d = -$

0.36) could be identified. The control group, on the other hand, did not undergo any significant changes across time in this measure.

As for anxiety as measured by GAD7, GLM did not detect a significant Time × Group interaction effect. However, post-hoc comparisons indicate that the intervention group underwent a significant reduction in this measure from T0 to T1, t (48) = -3.10, p = .003, with a small to moderate Cohen's effect size (d = -0.38), whereas the control group underwent a significant increase in anxiety from T1 to T2, t (46) = 2.91, p = .006, with a small Cohen's effect size (d = 0.16).

Family function as measured by DFI did not exhibit a significant Time × Group interaction effect in the GLM. Post-hoc analysis however, suggested that both the intervention and the control groups underwent significant overall reduction in this measure from T0 to T2, t (46) = -5.31, p < .001, with a moderate to large Cohen's effect size (d = -0.66), and t (46) = -6.63, p < .001, with a moderate to large Cohen's effect size (d = -0.76) respectively.

There was no significant interaction effect detected for HWS Afflictive Sensation. However, post-hoc comparisons indicated that the intervention group, underwent a significant decrease in this measure across time, between the period of T0 to T1, t (46) = -2.24, p = .03, with a small to moderate Cohen's effect size (d = -0.3), as well as the period between T0 and T2, t (46) = -2.04, p = .047, with a small Cohen's effect size (d = -0.26).

A significant Time × Group interaction effect for HWS Afflictive Ideation by GLM, F (2, 178) = 3.97, p = .021, h_p^2 = .043. Post-hoc comparisons showed that the control group, but not the intervention group, underwent a significant increase in this measure between T0 and T1, t (46) = 2.44, p = .019, with a small to moderate Cohen's effect size (d = 0.33), and that this effect was largely maintained at follow-up (T2), t (46) = 2.20, p = .033, with a small Cohen's effect size (d = 0.29).

GLM also found a significant Time × Group interaction effect for HWS Non-attachment, F (2, 178) = 4.43, p = .013, h_p^2 = .047. Post-hoc analysis revealed that the control group, but not the intervention group, underwent a significant increase in this measure from T0 to T1, t (46) = -2.59, p = .013, with a small Cohen's effect size (d = -0.25),

There was no significant interaction effect detected for HWS Mindful Awareness. Nonetheless, post-hoc comparisons indicated that the control group, but not the intervention group, underwent a significant decrease in this measure across time, between the period of T0 to T1, t (46) = -3.12, p = .003, with a moderate Cohen's effect size (d = -0.44), as well as the period between T0 and T2, t (46) = -3.34, p = .002, with a moderate Cohen's effect size (d = -0.50).

As for HWS General Vitality, GLM revealed that there was a significant Time × Group interaction, F (2, 178) = 3.39, p = .036, h_p^2 = .037. Post-hoc comparisons showed that the intervention group, but not the control group, underwent a significant increase in this measure between T0 and T1, t (48) = 2.45, p = .018, with a small Cohen's effect size (d = 0.27), and between T0 and T2, t (48) = 2.23, p = .031, with a small Cohen's effect size (d = 0.24).

Finally, as for HWS Afflictive Emotion and Spiritual Self-care, neither GLM nor post-hoc t-tests detected any significant effects.

Discussion and Application to Practice

The customized IBMS intervention programme could effectively improve the holistic wellbeing (HWS), reduce stress level (PSS) and reduce depression (PHQ9) of the parents of children with eczema. The results of this study implied the importance of psychosocial therapy in eczema caregiving, and generated a new non-pharmacological perspective in eczema management in addition to the conventional treatment approaches.

Contemporary findings from the literature suggested that parents of children with eczema have suffered from various kinds of psychological and social distress in the caregiving process. Although parental training was found to be an effective adjunct to conventional intervention programmes on symptom management, there was little focus on the psychosocial impacts of the disease for parent-child dyads, and the wellbeing of parents has thus inadvertently been understated. Further empirical evidence on the effectiveness of existing education programmes for parents was required, and that more attention should be given to improving the mental health of parents.

In the current study, result of the outcome variables indicated that the IBMS intervention programme could effectively improve the parental condition in a number of areas, including holistic wellbeing (HWS), stress levels (PSS) and depression levels (PHQ9). To date, this is possibly the first psychosocial research study that assisted parents to acquire the necessary skills to enhance their own physical, mental, and spiritual conditions and to improve their holistic wellbeing in the caregiving process. The customized IBMS protocol successfully engendered change for parents towards the direction of a life with reduced stress and depression and better holistic wellbeing. The results from the intervention programme also provided strong evidence on the effectiveness of psychosocial therapy in eczema control, which can in turn identify new direction for managing the disease to compliment conventional treatment approaches. This is a unique and crucial finding in this current study, especially when treatment of eczema has typically been considered from a pharmacological perspective.

Traditionally, eczema was treated as a ‘disease of a child’ that required substantial medication and treatment, and the caregiving journey of the parents could be disturbing and unsettling. However, the results of this research study have shown that eczema could also be considered as a ‘condition of a family’ that required proper management starting from the

psychological perspective of the parents. This shift of paradigm has created a new dimension in the current social work practices, as well as family counselling approaches. In addition to the conventional pharmacological treatment provided by medical professionals, social workers could play a key role in improving the holistic wellbeing of the parents by implementing IBMS intervention approach, which would eventually enhance parent-child relationship and increase the resilience of the family in adverse condition (Lee et al., 2018; Ruckstaetter et al., 2017).

Nevertheless, some parents also argued that eczema could sometimes be improved 'naturally' without going through any specific treatment procedures. The necessity of psychosocial intervention was therefore questionable. Nevertheless, the impact of eczema on the psychosocial wellbeing of both parents and their children was frequently understated (Ersser et al., 2014; Farasat, 2014), perhaps due to the lack of awareness of people in mental health when managing eczema. The feelings of shame and guilt of parents were not easily identified and measured, but the implications could be disastrous to parent-child relationships (Cohen-Filipic & Bentley, 2015; Ruckstaetter, Sells, Newmeyer, & Zink, 2017; Tangney, 2002). The outbreak of eczema was multifaceted and some parents suggested that it was unpredictable, but could sometimes be seasonal and have certain patterns (for example during school examination periods, or change in the weather). While childhood eczema in a mild form of severity may be controlled through regular application of ointments or medication, the chance of childhood eczema in a moderate or severe form being improved 'naturally' was unlikely. A long-term treatment process would easily generate psychological stress for parents that should surely be carefully attended.

Furthermore, it is important to define what intervention protocol would be applicable for different groups of participants. Baseline data analysis in this current study suggested that parents who were divorced/separated and widowed required more attention and support, and

the parents of female children expressed more worries and had greater difficulty relaxing. These groups of parents should receive more attention in future intervention programmes. The protocol should be customized to address the psychological and emotional issues encountered by these parents. Regarding the gender of parent participants, although no statistically significant difference was found on the outcome variables between the two gender groups, only 12% of participants (11 out of 91) in this programme were male parents, so more investigation is required in future studies to identify any gender specific needs. Future studies should also consider the developmental stages of children in different age ranges, and the protocol should be adjusted accordingly.

Literature suggested that there was a significant correlation in QoL between parents and their children (Dodington, Basra, Finlay, & Salek, 2013; Kelsay et al., 2010). While a reduction in the QoL of children due to the symptoms of eczema tended to negatively affect the wellbeing of their parents, an improvement in the QoL of children would also result in an enhancement of the wellbeing of parents. Similarly, this might imply that if the wellbeing of parents could be improved effectively, the QoL of children would also eventually be enhanced. Indeed, recent studies have suggested that parental stress may increase the risk of childhood eczema, which created a cyclic effect between parents and children (Chang et al., 2016; Elbert et al., 2017; Wang, Wen, Chiang, Lin, & Guo, 2016). Furthermore, providing social support for parents can also reduce the outbreak of childhood eczema (Letourneau et al., 2017). However, by emphasizing the psychosocial intervention for the parent-child dyads, there was no intention to downplay the importance of the medical treatment process taken by the children. Parents should continue to seek medical advices, and pharmacological treatment should not be stopped. Nevertheless, physical health was only one of the six dimensions of QoL, and other dimensions including living environments, social relationships, mental health, level of independence, and spiritual life should not be inadvertently neglected (The Whoqol,

1998). Therefore, improving QoL did not necessarily imply an improvement in physical symptoms only. Indeed, some parents commented that after attending the programme, they and their children were more confident and skilful in facing the challenges brought about by eczema, even if the skin condition remained the same.

Nevertheless, severity of the eczema was not considered in this study, which might involve different kinds of caregiving activities, and hence implied variations in parental attitude, behaviour and perception on caregiving burden and stress. This study only focused on parents of children between the ages of 6 and 11 (primary school students). Parental stress in taking care of children with eczema in other age ranges should not be understated.

References

Andersson, N. W., Hansen, M. V., Larsen, A. D., Hougaard, K. S., Kolstad, H. A., & Schlünssen, V. (2016). Prenatal maternal stress and atopic diseases in the child: A systematic review of observational human studies. *Allergy*, *71*, 15-26.

Blessmann Weber, M., De Tarso Da Luz Fontes Neto, P., Prati, C., Soirefman, M., Mazzotti, N., Barzenski, B., & Cestari, T. (2008). Improvement of pruritus and quality of life of children with atopic dermatitis and their families after joining support groups. *Journal of the European Academy of Dermatology and Venereology, 22*, 992-997.

Archer, C. B. (2013). Atopic eczema. *Medicine, 41*, 341-344.

Carmen, W. H. C., Bernard, M. H. L., Yun-Hong, L., Alexandra, R. B. A., Natasha, A., Melody, J., & Ka Ming, C. (2018). The association between maternal stress and childhood eczema: A systematic review. *International Journal of Environmental Research and Public Health, 15*, 395.

Chan, C. H. Y., Chan, T. H. Y., & Chan, C. L. W. (2014). Translating Daoist concepts into integrative social work practice: An empowerment program for persons with depressive symptoms. *Journal of Religion & Spirituality in Social Work: Social Thought, 33*, 61-72.

Chan, C. L. W., Chan, T. H. Y., & Ng, S. M. (2006). The Strength-focused and Meaning-oriented Approach to Resilience and Transformation (SMART): A body-mind-spirit approach to trauma management. *Social Work in Health Care, 43*, 9-36.

Chan, C. L. W., & Ho, A. H. Y. (2012). *Dignity in the betwixt and between of life and death: ritual actions for establishing structure and finding meaning among Chinese terminal cancer patients*. Paper presented at the The 33rd Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine (SBM), New Orleans, LA., 11-14 April 2012. , New York.

Chan, C. L. W., Ho, P. S. Y., & Chow, E. (2000). *A body-mind-spirit model in health: An eastern approach*: Haworth Social Work Practice Press.

Chan, C. L. W., Ng, S. M., Ho, R. T. H., & Chow, A. Y. M. (2006). East meets west: Applying eastern spirituality in clinical practice. *Journal of Clinical Nursing, 15*, 822-832.

Chan, C. L. W., & Yan, B. (2015). Health social work. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences, 2nd edition* (Vol. 10, pp. 716–724). Oxford, UK: Elsevier.

Chida, Y., Steptoe, A., Hirakawa, N., Sudo, N., & Kubo, C. (2007). The Effects of Psychological Intervention on Atopic Dermatitis. *International Archives of Allergy and Immunology, 144*, 1-9.

Chang, H. Y., Suh, D. I., Yang, S.-I., Kang, M.-J., Lee, S.-Y., Lee, E., . . . Hong, S.-J. (2016). Prenatal maternal distress affects atopic dermatitis in offspring mediated by oxidative stress. *The Journal of Allergy and Clinical Immunology, 138*, 468-475.e465.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385-396.

Cohen-Filipic, K., & Bentley, K. (2015). From every direction: Guilt, shame, and blame among parents of adolescents with co-occurring challenges. *Child & Adolescent Social Work Journal, 32*, 443-454.

Dodington, S. R., Basra, M. K. A., Finlay, A. Y., & Salek, M. S. (2013). The Dermatitis Family Impact questionnaire: A review of its measurement properties and clinical application. *British Journal of Dermatology, 169*, 31-46.

El-Heis, S., Crozier, S. R., Healy, E., Robinson, S. M., Harvey, N. C., Cooper, C., . . . Godfrey, K. M. (2017). Maternal stress and psychological distress preconception: Association with offspring atopic eczema at age 12 months. *Clinical & Experimental Allergy, 47*, 760-769.

Elbert, N. J., Duijts, L., Dekker, H. T., Jong, N. W., Nijsten, T. E. C., Jaddoe, V. W. V., . . . Pasmans, S. G. M. A. (2017). Maternal psychiatric symptoms during pregnancy and risk of childhood atopic diseases. *Clinical & Experimental Allergy, 47*, 509-519.

Ersser, S. J., Cowdell, F., Latter, S., Gardiner, E., Flohr, C., Thompson, A. R., . . . Drury, A. (2014). Psychological and educational interventions for atopic eczema in children. *Cochrane Database of Systematic Reviews, 2014*.

Ersser, S. J., Farasat, H., Jackson, K., Dennis, H., Sheppard, Z. A., & More, A. (2013). A service evaluation of the Eczema Education Programme: an analysis of child, parent and service impact outcomes. *British Journal of Dermatology, 169*, 629-636.

Farasat, H. (2014). Cochrane review update: psychological and educational interventions for atopic eczema in children. *Community Practitioner, 87*, 11.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Fortson, E. A., Feldman, S. R., & Strowd, L. C. (2017). *Management of atopic dermatitis : Methods and challenges*: Springer.

Fung, W. K., & Lo, K. K. (2000). Prevalence of skin disease among school children and adolescents in a student health service center in Hong Kong. *Pediatric Dermatology, 17*, 440-446.

Fung, Y., Lau, B. H. P., Tam, M. Y. J., Xie, Q., Chan, C. L. W., & Chan, C. H. Y. (2019). Protocol for psychosocial interventions based on Integrative Body-Mind-Spirit (IBMS) model for children with eczema and their parent caregivers. *Journal of Evidence-Informed Social Work, 16*, 36-53.

Ho, R., Chan, C., & Chan, T. (2007). Developing an outcome measurement for meaning-making intervention with Chinese cancer patients. *Psycho-Oncology, 16*, 843-850.

Ho, R. C. M., Giam, Y. C., Ng, T. P., Mak, A., Goh, D., Zhang, M. W. B., . . . Van Bever, H. P. (2010). The influence of childhood atopic dermatitis on health of mothers, and its impact on Asian families. *Pediatric Allergy and Immunology, 21*, 501-507.

Hon, K. L., Leung, T. F., Wong, Y., Ma, K. C., & Fok, T. F. (2004). Skin diseases in Chinese children at a pediatric dermatology center. *Pediatric Dermatology, 21*, 109-112.

Jackson, K., Ersser, S. J., Dennis, H., Farasat, H., & More, A. (2014). The Eczema Education Programme: intervention development and model feasibility. *Journal of the European Academy of Dermatology and Venereology, 28*, 949-956.

Kelsay, K., Klinnert, M., & Bender, B. (2010). Addressing psychosocial aspects of atopic dermatitis. *Immunology and Allergy Clinics of North America, 30*, 385-396.

Kupfer, J., Gieler, U., Diepgen, T. L., Fartasch, M., Lob-Corzilius, T., Ring, J., . . . Schmid-Ott, G. (2010). Structured education program improves the coping with atopic dermatitis in children and their parents—a multicenter, randomized controlled trial. *Journal of Psychosomatic Research, 68*, 353-358.

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9. *Journal of General Internal Medicine, 16*, 606-613.

Lawson, Lewis-jones, Finlay, Reid, & Owens. (1998). The family impact of childhood atopic dermatitis: the Dermatitis Family Impact questionnaire. *British Journal of Dermatology, 138*, 107-113.

Lee, A. M., Chan, C. L. W., Leung, P. P. Y., Tang, V. Y. H., Sham, J. S. T., Ho, J. W. C., & Cheng, J. Y. Y. (2007). Disorientation and reconstruction: The meaning searching pathways of patients with colorectal cancer. *Journal Of Psychosocial Oncology, 25*, 77-102.

Lee, M. Y., Chan, C. H. Y., Chan, C. L. W., Ng, S.-M., & Leung, P. P. Y. (2018). *Integrative Body-Mind-Spirit social work: An empirically based approach to assessment and*

treatment. Oxford: Oxford University Press.

Lee, S. L., Lau, Y. L., Wong, H. S., & Tian, L. (2017). Prevalence of and risk factors for childhood asthma, rhinitis, and eczema in Hong Kong: Proposal for a cross-sectional survey. *JMIR research protocols, 6*, e106.

Letourneau, N. L., Kozyrskyj, A. L., Cosic, N., Ntanda, H. N., Anis, L., Hart, M. J., . . . Giesbrecht, G. F. (2017). Maternal sensitivity and social support protect against childhood atopic dermatitis. *Allergy, Asthma, and Clinical Immunology : Canadian Society of Allergy and Clinical Immunology, 13*, 26.

Leung, P. P. Y., & Chan, C. L. W. (2015). Working with Chinese families impacted by cancer: An integrative body-mind-spirit approach. In G. Christ, C. Messner, & L. Behar (Eds.), *Handbook of Oncology Social Work: Psychosocial Care for People with Cancer* (pp. 305-312). Oxford, UK: Oxford University Press.

Leung, P. P. Y., Chan, C. L. W., Ng, S. M., & Lee, M. Y. (2009). Towards body-mind-spirit integration: East meets west in clinical social work practice. *Clinical Social Work Journal, 37*, 303-311.

Maksimović, N., Janković, S., Marinković, J., Sekulović, L. K., Živković, Z., & Spirić, V. T. (2012). Health-related quality of life in patients with atopic dermatitis. *Journal of Dermatology, 39*, 42-47.

Meyer, R. M. L., Kobylecka, M., Gold, J. I., & Barber, B. A. (2014). Examining the association between parental stress related to child illness and child pain across acupuncture treatments. *Medical Acupuncture, 26*, 23-30.

Neill, S. J., Cowley, S., & Williams, C. (2013). The role of felt or enacted criticism in understanding parent's help seeking in acute childhood illness at home: a grounded theory study. *International Journal of Nursing Studies, 50*, 757.

Ng, S. M., Chan, C. L. W., Lee, A. M., Chan, C. H. Y., Chan, T. H. Y., Yau, J. K. Y., & Lau, J.

(2006). Group debriefing for people with chronic diseases during the SARS pandemic: Strength-focused and meaning-oriented approach for resilience and transformation (SMART). *Community Mental Health Journal, 42*, 53-63.

Rashid, T. (2015). Positive psychotherapy: A strength-based approach. *The Journal of Positive Psychology, 10*, 25-40.

Rentala, S., Fong, T. C. T., Nattala, P., Chan, C. L. W., & Konduru, R. (2015). Effectiveness of body-mind-spirit intervention on well-being, functional impairment and quality of life among depressive patients - a randomized controlled trial. *Journal of Advanced Nursing, 71*, 2153-2163.

Reveiz, L., & Krleža-Jerić, K. (2010). CONSORT 2010 (Vol. 376, pp. 230-230).

Ring, J. (2016). *Atopic dermatitis : Eczema*: Springer.

Ruckstaetter, J., Sells, J., Newmeyer, M. D., & Zink, D. (2017). Parental apologies, empathy, shame, guilt, and attachment: A path analysis. *Journal of Counseling & Development, 95*, 389-400.

Santer, M. (2014). Childhood eczema treatment: The barriers. *Nursing times, 110*, 23.

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine, 166*, 1092-1097.

Staab, D., Diepgen, T. L., Fartasch, M., Kupfer, J., Lob-Corzilius, T., Ring, J., . . . Gieler, U. (2006). Age related, structured educational programmes for the management of atopic dermatitis in children and adolescents: multicentre, randomised controlled trial. *BMJ (Clinical research ed.), 332*, 933.

Tangney, J. P. (2002). *Shame and guilt*. New York: New York : Guilford Press.

The Whoqol, G. (1998). The World Health Organization quality of life assessment (WHOQOL): Development and general psychometric properties *Social Science*

Medicine, 46, 1569-1585.

Wang, I. J., Wen, H. J., Chiang, T. L., Lin, S. J., & Guo, Y. L. (2016). Maternal psychologic problems increased the risk of childhood atopic dermatitis. *Pediatric Allergy and Immunology, 27*, 169-176.

Weisshaar, E., Diepgen, T. L., Bruckner, T., Fartasch, M., Kupfer, J., Lob-Corzilius, T., . . . Gieler, U. (2008). Itch intensity evaluated in the German Atopic Dermatitis Intervention Study (GADIS): correlations with quality of life, coping behaviour and SCORAD severity in 823 children. *Acta dermato-venereologica, 88*, 234.

Wenninger, K., Kehrt, R., von Rüden, U., Lehmann, C., Binder, C., Wahn, U., & Staab, D. (2000). Structured parent education in the management of childhood atopic dermatitis: The Berlin model. *Patient Education and Counseling, 40*, 253-261.

Wittkowski, A., & Richards, H. (2007). How beneficial is cognitive behaviour therapy in the treatment of atopic dermatitis? A single-case study. *Psychology, Health & Medicine, 12*, 445-449.

Wolter, S., & Price, H. N. (2014). Atopic dermatitis. *The Pediatric Clinics of North America, 61*, 241-260.

Table 1: Demographic Characteristics of Participants

		Intervention Group		Control Group		
		n	%	n	%	*p* value
Gender	Male	4	8.33%	7	16.28%	0.246
	Female	44	91.67%	36	83.72%	
Employment	Full time	26	54.17%	26	60.47%	0.412
	Part time	5	10.42%	2	4.65%	
	Retired	0	0.00%	1	2.33%	
	Homemaker	16	33.33%	14	32.56%	
	Unemployed	1	2.08%	0	0.00%	
Education level	Primary	2	4.17%	0	0.00%	0.171
	Secondary	19	39.58%	17	39.53%	
	Tertiary	20	41.67%	14	32.56%	
	Postgraduate	7	14.58%	12	27.91%	
Marital status	Single	1	2.08%	1	2.33%	0.41
	Married/Cohabited	43	89.58%	41	95.35%	
	Divorced/Separated	2	4.17%	1	2.33%	
	Widowed	2	4.17%	0	0.00%	
Religion	No religion	24	50.00%	24	55.81%	0.683
	Catholic	5	10.42%	4	9.30%	
	Christian	14	29.17%	11	25.58%	
	Buddhism	4	8.33%	3	6.98%	
	Others	1	2.08%	1	2.33%	
Family income (in HK$)	<10,000	2	4.17%	0	0.00%	0.225
	10,000-19,999	9	18.75%	4	9.30%	
	20,000-29,999	10	20.83%	8	18.60%	
	30,000-39,999	7	14.58%	6	13.95%	
	40,000-49,999	6	12.50%	4	9.30%	
	50,000-59,999	4	8.33%	4	9.30%	
	60,000-69,999	3	6.25%	2	4.65%	
	70,000-79,999	1	2.08%	2	4.65%	
	>80,000	1	2.08%	7	16.28%	
	No answer	5	10.42%	6	13.95%	

Table 2: Changes in outcome measures over time for the intervention and control groups

	T0	T1	T2	Time × Group		(T1 – T0)		(T2 – T1)		(T2 – T0)	
Outcome measures / Group	M (SD)	M (SD)	M (SD)	*F* (2, 178)	h_p^2	*t*	*d*	*t*	*d*	*t*	*d*
Perceived Stress (PSS)											
Intervention	22.1 (4.3)	18.7 (5.0)	19.3 (5.8)	4.13*	.044	-4.56***	-0.73	0.76	0.11	-2.99**	-0.55
Control	21.7 (4.3)	21.3 (4.6)	20.5 (4.8)			-0.53	-0.09	-1.32	-0.17	-2.15*	-0.26
Depression (PHQ9)											
Intervention	7.3 (4.3)	4.7 (3.7)	5.8 (4.1)	8.59***	.088	-5.62***	-0.65	2.89**	0.28	-3.60**	-0.36
Control	6.6 (5.4)	6.7 (5.5)	6.8 (5.8)			0.36	0.02	0.05	0.02	0.36	0.04
Anxiety (GAD7)											
Intervention	6.2 (4.2)	4.7 (3.7)	5.5 (4.1)	0.94	.010	-3.10**	-0.38	2.00	0.20	-1.65	-0.17
Control	6.5 (5.0)	5.7 (5.4)	6.6 (5.8)			-1.39	-0.15	2.91**	0.16	0.17	0.02
Family Function (DFI)											
Intervention	14.5 (6.5)	10.3 (5.6)	10.5 (5.5)	1.60	.018	-5.07***	-0.69	0.45	0.04	-5.31***	-0.66
Control	16.8 (5.4)	14.0 (5.8)	12.6 (5.7)			-4.60***	-0.50	-2.28*	-0.24	-6.63***	-0.76
Afflictive Emotion (HWS)											
Intervention	24.3 (9.9)	24.3 (8.4)	24.6 (8.7)	0.55	.006	-0.57	0.00	0.33	0.04	-0.27	0.03
Control	22.8 (8.7)	24.6 (8.4)	24.9 (9.2)			0.64	0.21	0.41	0.03	1.01	0.23
Afflictive Sensation (HWS)											
Intervention	24.3 (8.6)	21.8 (8.3)	22.2 (7.8)	1.15	.013	-2.24*	-0.30	0.37	0.05	-2.04*	-0.26
Control	22.8 (10.5)	22.3 (9.6)	22.4 (10.3)			-0.43	-0.05	0.17	0.01	-0.36	-0.04
Afflictive Ideation (HWS)											
Intervention	13.3 (7.9)	12.4 (7.5)	12.8 (6.9)	3.97*	.043	-1.13	-0.12	0.56	0.06	-0.61	-0.07
Control	11.1 (5.6)	13.0 (5.8)	12.9 (6.8)			2.44*	0.33	-0.16	-0.02	2.20*	0.29
Non-attachment (HWS)											
Intervention	32.1 (8.9)	33.4 (6.6)	33.8 (6.7)	4.43*	.047	1.35	0.17	0.50	0.06	1.43	0.22
Control	34.4 (7.6)	32.5 (7.6)	32.6 (7.5)			-2.59*	-0.25	0.03	0.01	-1.93	-0.24
Mindful Awareness (HWS)											
Intervention	29.8 (5.3)	29.7 (4.9)	29.3 (5.1)	2.51	.027	-1.16	-0.02	-0.57	-0.08	-0.57	-0.10
Control	30.5 (4.6)	28.5 (4.5)	28.1 (5.0)			-3.12**	-0.44	-0.66	-0.08	-3.34**	-0.50
General Vitality (HWS)											
Intervention	23.3 (6.7)	25.1 (6.6)	24.9 (6.9)	3.39*	.037	2.45*	0.27	-0.43	-0.03	2.23*	0.24
Control	24.3 (7.3)	23.9 (6.9)	24.1 (7.3)			-0.85	-0.06	0.36	0.03	-0.29	-0.03
Spiritual Self-care (HWS)											
Intervention	18.4 (4.8)	18.9 (4.6)	18.6 (4.6)	0.85	.010	0.77	0.11	-0.44	-0.07	0.31	0.04
Control	17.6 (4.9)	17.3 (3.9)	16.7 (4.8)			-0.59	-0.07	-0.87	-0.14	-1.45	-0.19

Note. M = mean. SD = standard deviation. h_p^2 = Partial Eta squared. *d* = Cohen's *d*. PSS = Perceived Stress Scale; PHQ9 = Patient Health Questionnaire; GAD7 = Generalized Anxiety Disorder Scale; DFI = Dermatitis Family Impact; HWS = Holistic Wellbeing Scale. * $p < .05$. ** $p < .01$. *** $p < .001$.

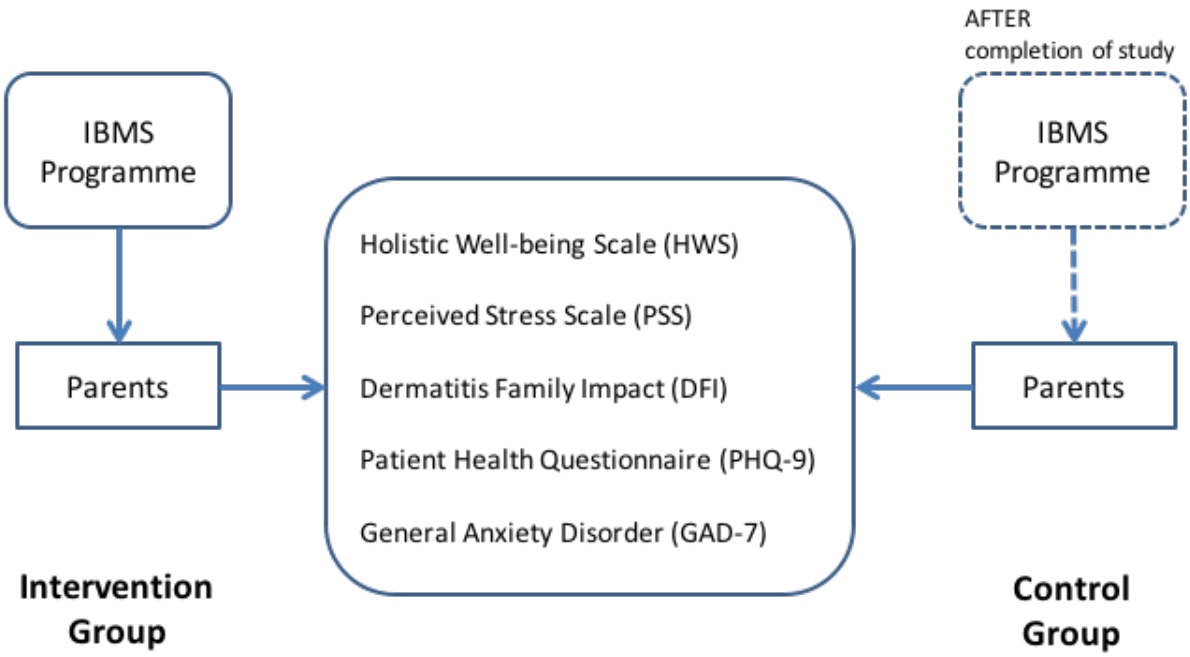

Figure 1: Schematic Model of the Intervention

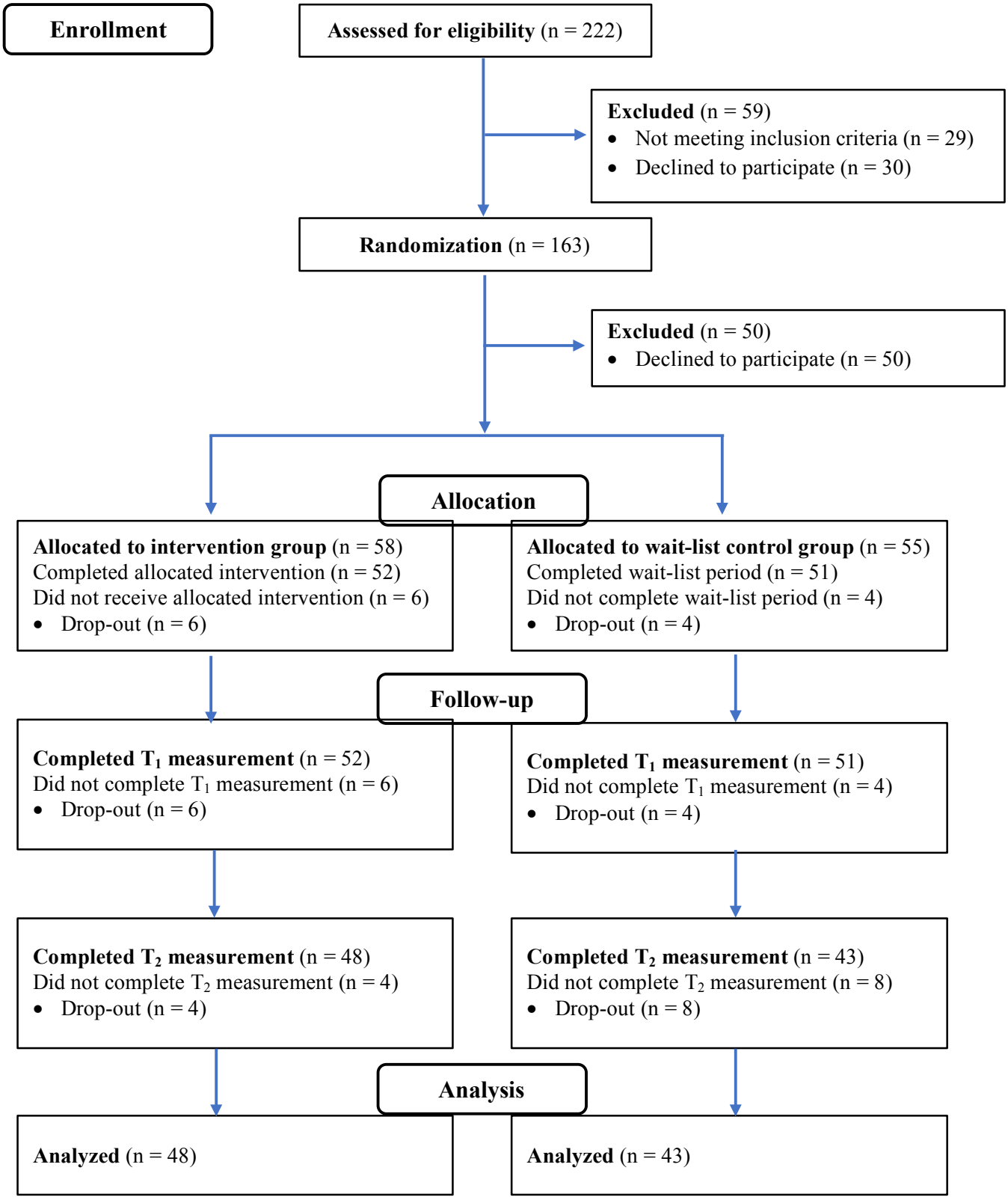

Figure 2: CONSORT Workflow of the Study