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A Nurse-led *Parental Eczema Education* Programme for Chinese Parents of Children with Eczema: A Randomised Controlled Trial

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Rationale:

What is Eczema?

- Chronic skin disorder.
- Not infectious but flare up repeatedly, ? *Incurable*.
- Eczema is estimated to be affecting more than 160,000 children (from age 0 to 14), 30% of Hong Kong children.

Methods:

A Summary of the Evaluation of the PEE Programme

| | |
|---|---|
| Aim | To evaluate the effectiveness of the PEE programme on disease severity of child, parental self-efficacy, treatment adherence, quality of life of family members |
| Study design | Single-blind, 2-arm, parallel-group randomised controlled trial (RCT) with a follow-up measurement at 3 months after the commencement of the intervention |
| Targeted Population (Child-parent dyads) | Child participants: 3 months to 12 years old with moderate-to-severe eczema Parent participants: Parents of children meeting the above criteria, able to read & understand Chinese Exclusion criteria: children with acute or chronic illness requiring systemic treatment; involved in other interventional studies; parents with psychiatric disorder |
| Mode of Delivery | 1. 20-minute one-to-one teaching session with newly-designed educational booklet 2. 10-minute for 2 demonstration video clips watching (7 minutes + 3 minutes) 3. Home-based online group sharing forum through a designated website (twice per week for 3 months) |
| Contents of intervention | 1. Health education sessions on eczema management-related knowledge and suggestions to prevent and control the exacerbation of eczema. 2. Demonstration video clips on application of emollient, wet wrap, progressive relaxation exercise. 3. Group sharing among parent participants; nurse acts as facilitator |
| Intervener | Single intervener (Registered nurse with 8-year working experience in paediatric care and knowledge in conducting research) |
| Outcome measures | Primary: Disease severity of the child Secondary: Parental self-efficacy in carrying out eczema treatment Adherence to eczema treatment Quality of life of families with eczematous children |

Key project materials

| | | |
|-----------------------------------|---|--|
| Educational booklet (67 pages) | Demonstration videos x2 (10 minutes) | Group sharing (through online platform) |
| | | |

A nurse-led Parental Eczema Education is the way out of childhood eczema in Hong Kong



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Nothing to declare

Results:

Comparison of demographic data between the control and intervention groups (*n*=136)

| Characteristics | Control (n=68) | Intervention (n=68) | P-value |
|--|----------------|---------------------|---------|
| Parent participants' characteristics | | | |
| Age (years) [age range from 26 to 50 years] | 37.7±4.6 | 37.6±5.0 | †0.957 |
| Relationship | | | |
| Father | 4 (2.9) | 3 (2.2) | #0.698 |
| Mother | 64 (47.1) | 65 (47.8) | |
| Ethnicity | | | |
| Hong Kong, China | 54 (39.7) | 53 (39.0) | #0.834 |
| Mainland China | 14 (10.3) | 15 (11.0) | |
| Educational level | | | |
| ≤ Secondary school | 24 (17.6) | 36 (26.5) | #0.038 |
| > Secondary school | 44 (32.4) | 32 (23.5) | |
| Occupation | | | |
| With Full-time job | 38 (27.9) | 36 (26.5) | #0.731 |
| Without Full-time job | 30 (22.1) | 32 (23.5) | |
| Child participants' characteristics | | | |
| Age (months) [age range from 5 months to 143 months] | 73.5±40.3 | 65.9±44.0 | †0.294 |
| Gender | | | |
| Male | 37 (27.2) | 41 (30.1) | #0.488 |
| Female | 31 (22.8) | 27 (19.9) | |
| Age of onset (months) [age range from 0.5 month to 108 months] | 11.9±19.4 | 8.3±12.4 | †0.195 |
| Severity category by SCORAD | | | |
| Moderate (25-50) | 47 (34.6) | 33 (24.3) | #0.015 |
| Severe (>50) | 21 (15.4) | 35 (25.7) | |

Results expressed in number (percentage) or mean (standard deviation).

** Analysed by †independent t test or #Pearson χ^2 test as appropriate.

Generalised estimating equation (GEE) models for the comparison of the disease severity, parental self-efficacy, treatment adherence and quality of life of family members across time between the control and intervention groups

| | B (95% CI) | p-value |
|------------------------------|--------------------------|---------|
| <i>Total score of SCORAD</i> | | |
| Group | 9.05 (4.02 , 14.07) | <0.001 |
| T1 | -3.51 (-6.19 , -0.83) | 0.010 |
| Group*T1 | -16.98 (-21.04 , -12.92) | <0.001 |

| | B (95% CI) | p-value |
|-----------------------|-----------------------|---------|
| <i>Skin hydration</i> | | |
| Group | -2.08 (-5.47 , 1.31) | 0.229 |
| T1 | -1.59 (-3.26 , 0.09) | 0.064 |
| Group*T1 | 7.50 (4.85 , 10.16) | <0.001 |

| | B (95% CI) | p-value |
|-------------|-----------------------|---------|
| <i>TEWL</i> | | |
| Group | 1.64 (-0.11 , 3.17) | 0.035 |
| T1 | -0.30 (-1.13 , 0.54) | 0.487 |
| Group*T1 | -1.57 (-3.11 , -0.04) | 0.045 |

| | B (95% CI) | p-value |
|------------------------------------|-----------------------|---------|
| <i>Extra doctor's consultation</i> | | |
| Group | 0.44 (0.10 , 0.77) | 0.011 |
| T1 | -0.32 (-0.54 , -0.10) | 0.004 |
| Group*T1 | -0.56 (-0.90 , -0.21) | 0.001 |

| | B (95% CI) | p-value |
|--------------------------------|------------------------|---------|
| <i>Total score of C-PASECI</i> | | |
| Group | -4.03 (-13.75 , 5.69) | 0.416 |
| T1 | 3.19 (-0.71 , 7.08) | 0.109 |
| Group*T1 | 29.39 (22.64 , 36.14) | <0.001 |

| | B (95% CI) | p-value |
|------------------------------|-----------------------|---------|
| <i>Total score of C-PETS</i> | | |
| Group | 0.86 (-1.30 , 3.03) | 0.436 |
| T1 | -0.66 (-1.58 , 0.26) | 0.162 |
| Group*T1 | -4.93 (-6.51 , -3.35) | <0.001 |

| | B (95% CI) | p-value |
|-------------------------------|-----------------------|---------|
| <i>Total score of C-FDLQI</i> | | |
| Group | 4.11 (2.47 , 5.76) | <0.001 |
| T1 | -0.82 (-1.46 , -0.18) | 0.012 |
| Group*T1 | -3.55 (-4.56 , -2.54) | <0.001 |

Only the model estimates of regression coefficients (B) of the dummy variables for the group with 95% confidence interval (CI) [Group: 0=Control; 1=Intervention], time points [T0=baseline and T1=after intervention]; time points and group interaction terms (Group*T0 and Group*T1) are shown for the GEE model.

Abbreviations:
C-FDLQI= Family Dermatology Life Quality Index in Chinese version; C-PASECI = Parental Self-Efficacy with Eczema Care Index in Chinese version; C-PETS= Chinese version of the Problematic Experiences of Therapy Scale version; GEE= generalised estimating equation; SCORAD=SCORING Atopic Dermatitis; TEWL=Trans-epidermal water loss

Conclusions:

Over 90% of the parents were satisfied with the programme. The study supports that a nurse-led parental education programme that provided evidence-based information and encouraged peer support could improve health outcomes in children with eczema and their parents.