Measures of Expressed Emotion & its Predictive Validity of Relapse in Schizophrenia among Chinese People

Siu-man Ng, RSW, RCMP, PhD
Department of Social Work & Social Administration
The University of Hong Kong

Anti-psychotics started widely used in 1950’s

- “Asylums” ➔ Discharging chronic mental patients home
- Relapse rate soon found to be HIGH!!
- Family “emotional climate” a risk factor (Brown, Carstairs & Topping, 1958; Brown & Rutter, 1966)
- “Expressed emotion” (EE)
  - “Affective attitudes and behaviors of a significant other toward a psychiatric patient”
High EE & relapse of schizophrenia
(Vaughn & Leff, 1976)

• Three components
  1. Criticism, and/or
  2. Hostility, and/or
  3. Emotional over-involvement (EOI)

  9-month relapse rate

<table>
<thead>
<tr>
<th>Family low EE</th>
<th>Family high EE</th>
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<tbody>
<tr>
<td>On drugs</td>
<td>On drugs</td>
</tr>
<tr>
<td>10%</td>
<td>53%</td>
</tr>
<tr>
<td>No drugs</td>
<td>No drugs</td>
</tr>
<tr>
<td>15%</td>
<td>92%</td>
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</tbody>
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Meta-analysis of high EE → relapse
(Butzlaff & Hooley, 1998)

• Identified 27 studies (all in Western countries)
• 24 studies (89%):
  – High EE significantly predicts
    • Higher relapse rate
    • More hospital readmission
Intervention studies
(De Jesus Mari & Streiner, 1994; Dixon, Adams & Lucksted, 2000; Kuipers, 1992; Pharoach, Mari & Streiner, 1999)

• Family intervention programs aim to reduce high EE ➔ Reduce relapse rate
• Rigorous RCT’s still awaited
• Extremely labor intensive ➔ practical?
• OR: Incorporate into psychoeducation programs for new onset patients & their family?

Studies of EE in Chinese/Eastern populations

• Not many studies
• Examining the construct (Healey, Tan & Chong, 2006; Lee & Arthur, 2005; Sun & Cheung, 1997)
• Multi-item scale development
  – Level of EE Scale (Chien & Chan, 2009)
• Predict relapse of schizophrenia? Inconsistent findings
  – Study in HK: Yes (Ng, Mui, Cheung & Leung, 2001)
  – Study in Singapore & Malaysia: not significant (Tan, 2005)
Technical issues

- Measures of EE
  - Observing carer vs. perceptions of patients
  - Interview/coding vs. self-report questionnaire
- Cultural variations
  - Different criteria & cutoff?
  - Even basic face & content validity?
- Cause or outcome?
  - Confounding variables
    - e.g. work volition/habit, disturbing behaviors, drug compliance

Camberwell Family Interview (CFI)
(Brown, 1958; Rutter & Brown, 1966)

- A semi-structured interview
- Administered with a significant other shortly after patient’s admission
  - Illness history, symptomatology, irritability & quarrelling, quality of relationship, amount of contact between patient & relative
- Audio-taped for coding
  - Frequency counts: Critical comments, positive remarks
  - Likert Scale: Hostility (0-3), EOI, warmth (0-5)
CFI

• High EE
  – Critical comments: 6 or more, and/or
  – Hostility: score 1-3, and/or
  – EOI: score 3-5

CFI

• Still widely regarded as the best measure of EE
• But NOT widely used, because it
  – Takes time
  – Needs specially trained staff
  – Involves carer
Other interview format measures

• Five Minute Speech Sample (FMSS) (Gottschalk & Gleser, 1969; Magana et al., 1985)
  – Interview with carer
  – Underestimate EE score on CFI ~20-30%
  – Weak evidence of predicting schizophrenic relapse
• Patient’s Perception Interview (Mintz et al., 1995)
  – Interview with patient
  – Correlated with FMSS; No/little further info

Questionnaires – by patients

• Level of Expressed Emotion Scale (Cole & Karzarian, 1988)
• Influential Relationships Questionnaire (Parker, Tupling & Brown, 1984)
• Perceived Criticism Scale (Hooley & Teasdale, 1989)
• Family Emotional Involvement and Criticism Scale (Shields et al., 1992)
Questionnaire – by relatives

- Patient Rejection Scale (Kreisman et al., 1979)
- Questionnaire Assessment of Expressed Emotion (Docherty et al., 1990)
- Adjective Checklist (Friedmann & Goldstein, 1993)
- Family Attitude Scale (Cavanaugh et al., 1997)

By both patient & relative
- Family Environment Scale (Moos & Moss, 1981)

LEE Scale
(Cole & Karzarian, 1988)

- More widely used
- 60 items, 4 factors
- Other versions:
  - Dutch (Gerlsma et al., 1992)
    - 38 items, 3 factors
  - Chinese (Chien & Chan, 2009)
    - 52 items, 4 factors
Lee Scale

• 4 factors: Conceptually determined; Not by EFA
  1. Intrusiveness
  2. Emotional response
  3. Negative attitude towards the illness
  4. Tolerance & expectations towards the patient
• 15 true-or-false questions for each factor
• Total 60 items:
  – 30 negatively worded & 30 positively worded

Lee Scale - psychometric properties

• Cutoff: median
• Cronbach’s alpha: 0.84 - 0.89
• Test-retest reliability: 0.67 – 0.82
• Correlation with CFI: 0.4
• Predictive validity
  – Only total score & Intrusiveness subscore
**LEE Scale**

– factor structure not robust

- The 4 factors were pre-determined conceptually
  - Couldn’t survive factor analysis
  - The Chien’s Chinese version
    - 60 items \(\rightarrow\) 52 items; maintain the same 4-factor structure
    - But the factor loading matrix looks unstable: Many “significant loadings” are just marginally 0.40+
  - The Dutch version, thru EFA, produced a shortened, 3-factor version

**LEE Scale**

- Positively worded items

- Half of the items (i.e. 30) are positively worded
  \(\rightarrow\) Reverse coding \(\rightarrow\) measure high EE

- A big assumption here:
  - Absence of positive \(\rightarrow\) Presence of negative

- Cultural factors
  - Chinese cultures
    - More reserved in giving positive emotional responses
    - “Absence of positive” NOT necessarily implies “presence of negative”
  - Dutch version: Removed most negatively worded items
Concise Chinese LEE Scale (Ng & Sun, 2011)

• Measure high EE directly by negatively worded items
  ➔ Removed the 30 positively worded items
• N = 188 Chinese schizophrenic patients
• EFA provided a 12-item, 3-factor solution
• Good psychometric properties
  – Optimized factor loading pattern (0.6-0.8)
  – Good internal consistency & construct validity
• Conceptual coherence
  – 3 factors: Criticism, Hostility, EOI
  – Exactly matching the high EE structure

12-item Concise Chinese LEE Scale

• Basic psychometric properties satisfactory
• Further validation underway:
  – CFA
  – Concurrent validity
    • Agreement with CFI
  – Predictive validity
    • Cutoff level with maximal differentiation power
Further basic research also desirable

- Face & content validity
- Cross-cultural applicability

Intervention studies

- Inform design of intervention
- Evaluate outcome of intervention
- Types of intervention
  1. Specific to high EE
  2. Incorporated into psychoeducation program
The ultimate goal

*Change the course of illness of persons with schizophrenia!*