Relationships between Work-Family Spillover, Compensation and Mental Health Condition among Japanese Nurses: Focusing on Multiple Roles Map Descriptions

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To discuss a possibility of the Multiple Roles Map (MRM) program as the practical approach for the mental health management among Japanese nurses, this study examined the relationships between frequencies of the Positive Spillover (PSP), Negative Spillover (NSP) and Compensation (COM) effects described in the MRM form and their mental health condition. As the results, five or more number of PSP descriptions in the MRM form negatively related with high risk group of GHQ-12 (normal: 0-5 point, high risk: 6-12 point, adjusted OR=0.30, 95%CI=0.12-0.73). Furthermore, in the case of six or more number of PSP descriptions, adjusted OR was 0.26 (95%CI=0.08-0.85). Moreover, frequencies of NSP and COM didn't relate with high risk category of GHQ-12. Namely, this study showed the evidence that a total number of PSP description was the most sensitive indexes in the MRM form to assess the poor mental health condition. Especially, we should focus on the four or less number of PSP because it related with high risk group in the mental health condition.

Keywords: Work-family conflict, Positive spillover, Negative spillover, Compensation, Nurse

1. Introduction

Since Japanese nurses engaged in the multiple roles such as nurse, preceptor, parent and partner, the mental health support for keeping a good work-life balance was necessary (Yamada et al.,2012). One of our contributions was development of the Multiple Role Map (MRM) program (Yamada et al., 2010, 2011). By using of MRM program, we succeeded in collecting detailed episodes about good relationship between two roles (Positive Spillover: PSP1), stressful relationship between two roles (Negative Spillover: NSP2), stress coping relationship between two roles (Compensation: COM3) and no relation (Segmentation: SEG4).

Although the MRM program enabled to show practical findings for the intervention, statistical evidence was not examined yet. Hence, as the first step toward statistical MRM study, this study examined the relationships between frequencies of PSP, NSP and COM described in the MRM form and mental health condition.

Hypothesis 1: Frequency of PSP is negatively correlated with poor mental health condition
Hypothesis 2: Frequency of NSP is positively correlated with poor mental health condition
Hypothesis 3: Frequency of COM is negatively correlated with poor mental health condition

1PSP: Experiences in which psychological and physiological states spill over from one role to another role in relation to one’s skills, behavior, positive mood, sense of accomplishment and support (Grzywacz & Marks, 2000, Hanson et al., 2006).
2NSP: Experiences in which skills, behavior patterns (i.e. type of activities), strain, emotions, beliefs and attitudes spill over negatively from one role to another role(Geurts & Demerouti, 2003).
3COM: Experiences in which dissatisfaction in one role leads to trying to find more satisfaction in other roles (Roehlinget et al., 2003).
4SEG: Segmentation indicates irrelevance between two roles, in which psychological and physiological states remain independent (Roehlinget et al., 2003).

2. Methods
2-1. Participants
This study gained the cooperation of two hospitals in Japan. The participants were 118 nurses (male=7, female=111). Their mean age was 37.3 (SD=±10.4) yrs and the seniority was 12.5 (SD=±9.4) yrs.

2-2. Procedures
After the informed consent process, we distributed the MRM from (A3 size) with guideline and questionnaire to the participants. They described the PSP, NSP and COM episodes caused in the multiple roles as worker (e.g. nurse or midwife), manager (e.g. preceptor, chief, leader), friend, parent (mother or father), partner (e.g. wife, husband, girlfriend, boyfriend) and child (e.g. daughter or son), and private time (role-free time) in the MRM form. Additionally, they answered the 12-item General Health Questionnaire (GHQ-12, Goldberg & Williams, 1988) and individual attribution in the questionnaire. High score in the GHQ-12 showed poor mental health conditions and range of the high risk group scores was 6-12 points.

2-3. Data analysis
We designed Pearson’s correlation coefficient (r) with p-value and Logistic Regression Analysis (LRA) for the data analysis.

2-4. Ethics
This study was approved by the medical ethical committee of Nagoya City University Graduate School of Medical Sciences.

Figure 1. The MRM form (A3 paper size) and guideline for the description.

3. Results
As the results of Pearson’s correlation coefficient, frequency of PSP was negatively correlated with GHQ12 scores ($r=-3.68$, $p<0.001$). However, frequencies of NSP and COM didn’t associate with GHQ scores (NSP-GHQ12: $r=-0.05$, $p=0.581$, COM-GHQ12: $r=0.01$, $p=0.951$). In the RLA, we adjusted age, sex, hospital and managerial post. As the results, five or more number of PSP descriptions in the MRM form negatively related with high risk group of GHQ-12 (normal: 0-5 point, high risk: 6-12 point, adjusted OR=0.30, 95%CI=0.12-0.73). In the case of six or more number of PSP descriptions, adjusted OR was 0.26 (95%CI=0.08-0.85). Frequencies of NSP and COM didn’t relate with high risk group of GHQ-12. These results accepted the hypothesis 1 and rejected the hypotheses 2-3.

Table 1. Relationships between frequencies of the PSP, NSP and COM and the poor mental health condition measured by the GHQ-12.

<table>
<thead>
<tr>
<th>Variables in MRM</th>
<th>Cut-off points of a frequency of description</th>
<th>Crude OR (95%CI)</th>
<th>Adjusted OR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSP</td>
<td>0-4 4&lt;</td>
<td><strong>0.63</strong> (0.47 - 0.83)</td>
<td><strong>0.30</strong> (0.12 - 0.73)</td>
</tr>
<tr>
<td></td>
<td>0-5 5&lt;</td>
<td><strong>0.74</strong> (0.61 - 0.89)</td>
<td><strong>0.26</strong> (0.08 - 0.85)</td>
</tr>
<tr>
<td>NSP</td>
<td>0-4 4&lt;</td>
<td><strong>0.73</strong> (0.51 - 1.06)</td>
<td><strong>0.46</strong> (0.20 - 1.03)</td>
</tr>
<tr>
<td></td>
<td>0-5 5&lt;</td>
<td><strong>0.94</strong> (0.72 - 1.21)</td>
<td><strong>0.77</strong> (0.33 - 1.81)</td>
</tr>
<tr>
<td>COM</td>
<td>0-2 2&lt;</td>
<td><strong>0.83</strong> (0.52 - 1.33)</td>
<td><strong>0.73</strong> (0.31 - 1.74)</td>
</tr>
<tr>
<td></td>
<td>0-3 3&lt;</td>
<td><strong>0.93</strong> (0.72 - 1.18)</td>
<td><strong>0.85</strong> (0.35 - 2.08)</td>
</tr>
</tbody>
</table>

PSP: Positive Spillover, NSP: Negative Spillover, COM: Compensation

4. Discussion

This study showed a possibility that poor mental health condition among working nurses with over the cut-off point 6 in the GHQ-12 could be estimated from the description of the MRM form. Interestingly, the most sensitive index was the total number of the PSP episodes. Before this investigation, we thought that the amount of the NSP episodes positively related with poor mental health condition because many empirical studies and theoretical studies of the NSP assumed the positive relationship. Additionally, at the beginning, we also assumed the negative relationship between the COM effects and poor mental health condition because the COM effects could be regarded as one of the stress coping strategies. However, these hypotheses were rejected by the results of the LRA.

On the basis of these evidences, it is said that some mental health support was necessary especially for nurses described four or less number of the PSP episodes in the MRM form. For example, practice for recalling the PSP episodes may be effective to promote their good mental health conditions. In the future research, we expect to product more effective approach for the mental health management through more elaborate analysis of the MRM form.

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References


