Intragroup and Intergroup Conflict at Work, Psychological Distress, and Work Engagement in a Sample of Employees in Japan

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Abstract: The possible associations of intragroup and intergroup conflict at work with psychological distress and work engagement were investigated in a cross-sectional study in a manufacturing factory in Japan. A self-administered questionnaire was sent to all employees, and 255 responses were returned (a response rate of 84%). Data from 247 workers (187 males and 60 females) with no missing values were analyzed. Intragroup and intergroup conflict at work, psychological distress, and work engagement were measured by the NIOSH-GJSQ, K6, and Utrecht Work Engagement Scale (UWES-9), respectively. An ANCOVA was conducted to compare K6 and UWES-9 scores among the tertiles on intragroup conflict or intergroup conflict scores, adjusting for demographic and occupational variables as well as worksite social support, separately for males and females. Intragroup conflict was associated with greater psychological distress for males (p for trend=0.009). Intergroup conflict was marginally significantly associated with psychological distress for both males and females (p for trend=0.050 and 0.051, respectively). Contrary to expectation, intergroup conflict was significantly associated with greater work engagement for females (p for trend=0.024). For males, intragroup and intergroup conflict at work may increase psychological distress; for females, intergroup conflict may increase both psychological distress and work engagement.

Key words: Interpersonal relations, Job stress, Social support, Depressive symptoms, Cross-sectional study, Gender difference

Introduction

The quality of human relationships at work plays an important role in the perception of stress and work strain1–6). Interpersonal conflicts are very prevalent in occupational settings7) and have often been identified as a leading source of workplace stress8–10). Such interpersonal conflicts could be caused by injustice, inequity, unfairness, or incompetence of the employees11). Persistent conflict at work has been shown to be detrimental to the work climate and to negatively affect the

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physical and psychological well-being of employees\(^{12}\). Interpersonal conflict does not necessarily imply a lack of social support, but it is thought to be a stronger predictor of psychological distress than is social support\(^{13}\). Without denying that human relationships and work climate play an important aspect of work and work organization, the effects of interpersonal conflict, which can be divided into intragroup conflict and intergroup conflict\(^{14}\), are sufficiently important that they need to be more thoroughly investigated than is currently the case\(^{10}\).

In this paper, intragroup conflict refers to disagreements or differences among the members of a work group with regard to group goals, functions, or activities\(^{15}\). Previous studies have reported that intragroup conflict has been associated with health-related outcomes, such as depressive symptoms\(^{16–18}\), burnout\(^{19}\), insomnia\(^{20}\), doctor-diagnosed psychiatric morbidity\(^{21}\), somatic symptoms\(^{10}\), heavy drinking\(^{22}\), self-reported health problems\(^{23}\), and organizational outcomes such as job dissatisfaction\(^{17, 18, 24}\), team performance ineffectiveness\(^{24}\), work disability\(^{7}\), and occupational injuries\(^{25}\). Although it was found in two studies that intragroup conflict was not associated with depressive symptoms\(^{26}\) or sickness absence\(^{27}\), these previous findings consistently suggest that intragroup conflict is a strong predictor of psychological distress, which was defined in these studies as elevated cognitive, behavioral, emotional, and psychophysiological symptoms in people suffering from a wide range of different mental disorders\(^{28}\) as well as of poor health status. However, the fact remains that only a handful of studies have compared males and females on the effect of intragroup conflict on psychological distress, while adjusting for the effects of social support at work\(^{16}\).

There have been only several studies on the effects of intergroup conflict, defined as disagreements or differences between the members of two or more groups or their representatives over authority, territory, and resources\(^{15}\). Two of these studies found intergroup conflict to be associated with depressive symptoms among male firefighters\(^{18, 26}\), but another found it was not associated with job satisfaction among nurses\(^{24}\). However, because of the restricted nature of the samples, these results cannot be generalized to a broader working population. Thus, they need to be replicated with males and females working in a wider range of workplaces.

Some recent studies have focused on the effect of both positive and negative emotions (e.g., psychological distress) on health in the workplace. Work engagement, defined as a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption\(^{30}\), has been associated with improved mental and physical health\(^{29, 31}\). Previous studies have reported that several types of work-related resources, such as job control (i.e., decision latitude, skill variety, and participation in decision making)\(^{29, 32, 33}\) and reward at work (i.e., a good salary, career development)\(^{34}\), were associated with greater work engagement. Worksite social support has also been recognized as an important factor related to work engagement\(^{33, 35–38}\), and it has been proposed as a mediator linking these job resources with lower turnover intention\(^{37}\). However, no previous research has investigated the influence of intragroup or intergroup conflict on work engagement.

The purpose of this cross-sectional study was to investigate whether there was a difference in psychological distress or work engagement based on intra- and intergroup conflict in male and female employees in Japan. We proposed two hypotheses: first, workers experiencing greater intragroup or intergroup conflict will have more psychological distress than other workers; second, workers experiencing greater intragroup or intergroup conflict will be less engaged in their work than other workers, for both male and females. Increasing our knowledge about the effects of intragroup or intergroup conflict on psychological distress and work engagement may aid in developing interventions that decrease turnover\(^{37}\).

### Methods

#### Participants

The study was conducted in August 2007 at a manufacturing factory in north-central Japan. All employees of the factory (\(N=302\)) were invited to participate by completing a self-administered questionnaire, and 255 of them (the response rate, 84%) did so. Eight questionnaires had to be eliminated due to at least missing values on relevant variables, leaving a final sample of 247 (187 males and 60 females). The study procedure was approved by the ethics committees of the Graduate School of Medicine of The University of Tokyo and Kanazawa Medical University.

#### Measures

**Intragroup and intergroup conflict at work**

Intragroup and intergroup conflict were measured by the shortened Japanese version of the Scales of Interpersonal Conflict at Work\(^{39}\), which was adapted from the National Institute for Occupational Safety and Health Generic Job Stress Questionnaire (NIOSH-GJSQ)\(^{39–41}\). The original NIOSH-GJSQ interpersonal conflict at work scale\(^{42}\) consists of eight items measuring opinions regarding conflict within a group and eight items measuring assistance between groups. Response options ranged from 1=disagree strongly to 5=strongly agree. Three of the intragroup items and three of the intergroup items were selected on the basis of an explana-
tory factor analysis to form a shortened scales of intra-group and intergroup conflict respectively. Both had possible scores ranging from 3 to 15, with higher scores indicating greater conflict (see Appendix). The internal consistency reliability and validity were reported to be acceptable. For the present sample, Cronbach alpha coefficients are 0.79 or greater for both intragroup and intergroup conflict for both males and females (Table 1). Participants were divided into tertiles in terms of their intragroup and intergroup conflict scores to investigate the dose-response relationship of these two types of conflict with psychological distress and work engagement. There was no cut-off point defining the high conflict group.

Psychological distress

Psychological distress was measured by the Japanese version of the K6 scale, which consists of six items asking how frequently respondents have experienced symptoms of psychological distress (e.g., “feeling so sad that nothing can cheer you up”) during the past 30 d. The response options range from 0=none of the time to 4=all of the time (possible range 0–24). The internal reliability and validity found in previous research are acceptable. In the present sample, the Cronbach alpha coefficients also met the acceptability criteria for both males and females (Table 1).

Work engagement

Work engagement was measured by a nine-item Japanese version of the Utrecht Work Engagement Scale (UWES-9), which asks how often the respondents currently experiences positive emotions at work (e.g., “At my job, I feel strong and vigorous”). It has response options ranging from 0=never to 6=always (everyday). A total score is obtained by averaging the individual item scores (possible range 0–6). The internal reliability and validity of the Japanese UWES-9 are acceptable. For the present sample, the Cronbach alphas coefficient met the acceptability criteria for both males and females (Table 1).

Table 1. Demographic and occupational characteristics, intragroup conflict, intergroup conflict, worksite social support, psychological distress, and work engagement among employees who participated in the study by sex

<table>
<thead>
<tr>
<th></th>
<th>Male (N=187)</th>
<th>Female (N=60)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>34.8 (9.1)</td>
<td>36.0 (8.9)</td>
<td>0.404</td>
</tr>
<tr>
<td>Education (yr)</td>
<td></td>
<td></td>
<td>0.763</td>
</tr>
<tr>
<td>More than 12 yr</td>
<td>73 (39.0)</td>
<td>22 (36.7)</td>
<td></td>
</tr>
<tr>
<td>12 yr or less</td>
<td>114 (61.0)</td>
<td>38 (63.3)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td>0.063</td>
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<tr>
<td>Currently married</td>
<td>117 (62.6)</td>
<td>37 (61.7)</td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>68 (36.4)</td>
<td>19 (31.7)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>2 (1.1)</td>
<td>4 (6.7)</td>
<td></td>
</tr>
<tr>
<td>Occupational status</td>
<td></td>
<td></td>
<td>0.021</td>
</tr>
<tr>
<td>Manager</td>
<td>18 (9.6)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>White-collar</td>
<td>40 (21.4)</td>
<td>13 (21.7)</td>
<td></td>
</tr>
<tr>
<td>Blue-collar</td>
<td>129 (69.0)</td>
<td>47 (78.3)</td>
<td></td>
</tr>
<tr>
<td>Overtime in the past month (h)</td>
<td>27.6 (32.4)</td>
<td>17.3 (21.0)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale scores†</th>
<th>Mean (SD)</th>
<th>Cronbach α</th>
<th>Mean (SD)</th>
<th>Cronbach α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intragroup conflict (NIOSH-GJSQ)</td>
<td>8.01 (2.64)</td>
<td>0.79</td>
<td>7.07 (2.65)</td>
<td>0.81</td>
</tr>
<tr>
<td>Intergroup conflict (NIOSH-GJSQ)</td>
<td>7.70 (2.58)</td>
<td>0.83</td>
<td>6.40 (2.53)</td>
<td>0.79</td>
</tr>
<tr>
<td>Worksite social support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor support (JCQ)</td>
<td>10.5 (2.28)</td>
<td>0.88</td>
<td>10.7 (1.92)</td>
<td>0.68</td>
</tr>
<tr>
<td>Co-workers support (JCQ)</td>
<td>10.9 (1.85)</td>
<td>0.81</td>
<td>11.4 (1.50)</td>
<td>0.84</td>
</tr>
<tr>
<td>Total worksite social support (JCQ)</td>
<td>21.3 (3.47)</td>
<td>0.84</td>
<td>22.1 (2.73)</td>
<td>0.85</td>
</tr>
<tr>
<td>Outcome variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological distress (K6)</td>
<td>5.10 (4.64)</td>
<td>0.88</td>
<td>5.60 (4.61)</td>
<td>0.88</td>
</tr>
<tr>
<td>Work engagement (UWES-9)</td>
<td>2.46 (1.22)</td>
<td>0.93</td>
<td>2.43 (0.98)</td>
<td>0.90</td>
</tr>
</tbody>
</table>

†NIOSH-GJSQ: National Institute for Occupational Safety and Health Generic Job Stress Questionnaire; JCQ: Job Content Questionnaire; UWES: Utrecht Work Engagement Scale.
Worksite social support

Worksite social support was measured by the Japanese version of the Job Content Questionnaire (JCQ) developed by Karasek, which asks about worksite support from supervisors (four items; possible range, 4–16) and coworkers (four items; possible range 4–16), with response options from 1=strongly disagree to 4=strongly agree. The internal consistency reliability and the factor and construct validity reported by others for this version of the JCQ are acceptable. In the present sample, the Cronbach alpha coefficients met the standard criteria of acceptability for supervisor support, coworker support, and total support, for both males and females (Table 1). The participants were divided into tertiles in terms of their scores for total support, supervisor support, and coworker support respectively.

Other covariates

Demographic and occupational variables were assessed by means of a questionnaire developed by the authors. The demographic variables included age, sex, education (more or less than 12 yr), and marital status (currently married, never married, or divorced). Occupational variables included occupational status (manager, white-collar worker, or blue-collar worker) and overtime in the past month (hours).

Statistical analysis

To determine the linear or nonlinear relationships between intragroup or intergroup conflict (based on the tertile classifications) and the outcome variables while avoiding possible multicollinearity, analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were employed with post-hoc Bonferroni corrections for multiple comparisons. To examine the unique association between the independent and dependent variables in more detail, we incorporated the covariates, adjusting first for the demographic variables (age, education, and marital status), second for the occupational variables (occupational status, and overtime), and third for worksite social support. Trend analysis was used to evaluate the relationships between particular variables within the overall ANCOVA. The analyses were conducted separately for males and females because of possible sex differences in job attitudes. The alpha level for significance was set at < 0.05 (two-tailed). SPSS 15.0J for Windows was used for the statistical analyses.

Results

Characteristics of participants

Table 1 shows the participants’ characteristics and mean scores on intragroup conflict, intergroup conflict, worksite social support, psychological distress, and work engagement, distinguished by sex. The means for intragroup conflict, intergroup conflict, occupational status, and overtime in the past month were significantly higher for males than females (p<0.05). On the other hand, the mean for coworker support was significantly higher for females than for males (p<0.05). The Pearson correlations between intragroup and intergroup conflict were 0.52 (p<0.001) for males and 0.61 (p<0.001) for females.

Intragroup conflict, intergroup conflict, and psychological distress

In male participants, psychological distress (hereafter referred to as K6 scores) was significantly greater for the high scores on both intragroup conflict (p=0.020) and intergroup conflict (p=0.012) than for the low scores (Table 2). Furthermore, the dose-response relationships of intragroup and intergroup conflict with psychological distress were significant and positive (p for trend=0.012 and 0.003, respectively). After adjusting for the demographic and occupational covariates, these associations remained significant (p<0.05). For female participants, psychological distress differed significantly only as a function of intergroup conflict (p=0.017). The dose-response relationship between intergroup conflict and psychological distress was also significant and positive (p for trend=0.007). After adjusting for the demographic and occupational covariates, the association remained significant (p<0.05).

After additionally adjusting for worksite social support, the analyses revealed that the dose-response relationship for males between intragroup conflict and psychological distress was still significant (p for trend=0.009), and the relationship between psychological distress and intergroup conflict was marginally significant (p for trend=0.050). For females, a marginally significant dose-response relationship was observed between intergroup conflict and psychological distress (p for trend=0.051). When adjustment was made for supervisor support rather than total support (along with the demographic and occupation covariates), both intragroup and intergroup conflict were found to be significantly associated with psychological distress for males (p for trend=0.021 and 0.029, respectively). However, for females, only intergroup conflict was significantly associated with psychological distress (p for trend=0.193 for intragroup conflict and 0.043 for intergroup conflict); when we adjusted for coworker support, significant associations between psychological distress and both intragroup and intergroup conflict were similar for males (p for trend=0.043 and 0.051, respectively) and females (p for trend=0.331 and 0.037, respectively).
Intragroup conflict, intergroup conflict, and work engagement

After adjustment for the demographic and occupational covariates, intergroup conflict was found to be significantly and negatively associated with work engagement in males (p for trend=0.007). In females, however, the association was positive, although only marginally significant (p for trend=0.050) (Table 3). After additionally adjusting for worksite social support, we found the dose-response relationship between intergroup conflict and work engagement to be positive and significant for females (p for trend=0.022) but not for males (p for trend=0.188). When we adjusted for supervisor support instead of total support (in addition to the demographic and occupational covariates), we found intragroup conflict not to be significantly associated with work engagement, either among males (p for trend=0.407) or females (p for trend=0.182); on the other hand, intergroup conflict was significantly associated with work engagement for females (p for trend=0.22) but not for males (p for trend=0.188). When we adjusted for coworker support, we found the relationship between work engagement and both intragroup and intergroup conflict to be similar for both males (p for trend=0.062 and 0.019, respectively) and females (p for trend=0.069 and 0.015, respectively).

Discussion

In males, both intragroup and intergroup conflict were associated with greater psychological distress, indepen-
dent of worksite social support. Intergroup conflict was associated with lower work engagement, but only before adjusting for worksite social support. In females, intergroup conflict was associated with both greater psychological distress and greater work engagement. There was no significant relationship between intragroup conflict and work engagement for either males or females.

The significant association between intragroup conflict and psychological distress among males was consistent with previous findings of an association of intragroup conflict with depressive symptoms16, 18) and insomnia20) among males. Although this association was not significant for females in the present study, the patterns were similar. This non-significance may be attributable to the small number of female participants, as well as the skewed distribution of intragroup conflict scores among females. Further research is needed to confirm this tendency for females.

On the other hand, intergroup conflict was found to be significantly related to psychological distress for both males and females. This finding is consistent with previous studies showing that intergroup conflict was correlated with depressive symptoms in male firefighters18, 26), which can be generalized to male employees of any company. The present study also provides evidence that intergroup conflict is associated with psychological distress in females. Intergroup conflict can include disagreement between groups, and sometimes criticisms and hostility toward one’s own group from the other group. Both of these could be expected to increase psychological distress.

### Table 3. Comparison of crude and adjusted average of the Utrecht Work Engagement Scale score by groups classified on the basis of the intragroup conflict and intergroup conflict among Japanese male (N=187) and female (N=60) employees

<table>
<thead>
<tr>
<th>Interpersonal conflict</th>
<th>n</th>
<th>Crude Mean (SD)</th>
<th>Demographic factors adjusted§</th>
<th>Demographic and occupational factors adjusted‡</th>
<th>Fully adjusted#</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean (SE)</td>
<td>Mean (SE)</td>
<td>Mean (SE)</td>
<td>Mean (SE)</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intragroup conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (10–15)</td>
<td>52</td>
<td>2.47 (1.13)</td>
<td>2.39 (0.17)</td>
<td>2.32 (0.16)</td>
<td>2.47 (0.13)</td>
</tr>
<tr>
<td>Moderate (8–9)</td>
<td>62</td>
<td>2.47 (1.24)</td>
<td>2.46 (0.16)</td>
<td>2.49 (0.15)</td>
<td>2.52 (0.14)</td>
</tr>
<tr>
<td>Low (3–7)</td>
<td>73</td>
<td>2.52 (1.29)</td>
<td>2.51 (0.14)</td>
<td>2.53 (0.14)</td>
<td>2.37 (0.15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=0.728</td>
<td>(p=0.860)</td>
<td>(p=0.602)</td>
<td>(p=0.780)</td>
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<tr>
<td></td>
<td></td>
<td>(p=0.349)</td>
<td>(p=0.585)</td>
<td>(p=0.347)</td>
<td>(p=0.572)</td>
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<tr>
<td>Intergroup conflict</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>High (10–15)</td>
<td>34</td>
<td>2.30 (1.33)</td>
<td>2.29 (0.21)</td>
<td>2.19 (0.20)</td>
<td>2.32 (0.13)</td>
</tr>
<tr>
<td>Moderate (8–9)</td>
<td>76</td>
<td>2.34 (1.13)</td>
<td>2.32 (0.14)</td>
<td>2.36 (0.13)</td>
<td>2.45 (0.13)</td>
</tr>
<tr>
<td>Low (3–7)</td>
<td>77</td>
<td>2.64 (1.26)</td>
<td>2.68 (0.14)</td>
<td>2.68 (0.13)</td>
<td>2.53 (0.19)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=0.205</td>
<td>(p=0.145)</td>
<td>(p=0.088)</td>
<td>(p=0.687)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p=0.063)</td>
<td>(p=0.055)</td>
<td>(p=0.007)</td>
<td>(p=0.230)</td>
</tr>
<tr>
<td>Female</td>
<td></td>
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<tr>
<td>Intragroup conflict</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (10–15)</td>
<td>9</td>
<td>2.34 (0.74)</td>
<td>2.36 (0.34)</td>
<td>2.50 (0.33)</td>
<td>2.60 (0.20)</td>
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<tr>
<td>Moderate (7–9)</td>
<td>26</td>
<td>2.61 (0.95)</td>
<td>2.60 (0.20)</td>
<td>2.64 (0.19)</td>
<td>2.65 (0.19)</td>
</tr>
<tr>
<td>Low (3–6)</td>
<td>25</td>
<td>2.27 (1.08)</td>
<td>2.28 (0.21)</td>
<td>2.17 (0.20)</td>
<td>2.60 (0.34)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=0.446</td>
<td>(p=0.536)</td>
<td>(p=0.264)</td>
<td>(p=0.203)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p=0.543)</td>
<td>(p=0.607)</td>
<td>(p=0.239)</td>
<td>(p=0.144)</td>
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<tr>
<td>Intergroup conflict</td>
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<td></td>
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<td></td>
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<tr>
<td>High (9–15)</td>
<td>18</td>
<td>2.72 (0.90)</td>
<td>2.69 (0.24)</td>
<td>2.79 (0.23)</td>
<td>2.86 (0.23)</td>
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<tr>
<td>Moderate (6–8)</td>
<td>18</td>
<td>2.37 (0.96)</td>
<td>2.32 (0.24)</td>
<td>2.42 (0.23)</td>
<td>2.41 (0.23)</td>
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<tr>
<td>Low (3–5)</td>
<td>24</td>
<td>2.26 (1.04)</td>
<td>2.31 (0.21)</td>
<td>2.16 (0.21)</td>
<td>2.12 (0.20)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p=0.295</td>
<td>(p=0.424)</td>
<td>(p=0.148)</td>
<td>(p=0.076)</td>
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<tr>
<td></td>
<td></td>
<td>(p=0.130)</td>
<td>(p=0.252)</td>
<td>(p=0.050)</td>
<td>(p=0.024)</td>
</tr>
</tbody>
</table>

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1One-way analysis of variance (ANOVA) was used for the comparison of crude average. Analysis of covariance (ANCOVA) was used for the comparison of adjusted average. p for trend in the parentheses. No significant difference in work engagement scores was observed between any two groups by Bonferroni method (p>0.05).

2Adjusted for age, education, and marital status.

3Additionally adjusted for occupational status and overtime in the past month.

4Additionally adjusted for worksite social support.
among workers. Intergroup conflict may burden a group with greater work demands and interruptions, as well as a loss of control over the job; these factors could likewise be associated with psychological distress\(^{51}\). The mechanisms linking intergroup conflict to other job stressors and psychological distress should be investigated further.

Intragroup conflict was not significantly related to work engagement in either males or females. Although no previous study has investigated the possible association between interpersonal conflict and work engagement, intragroup conflict has been found to be negatively associated with job satisfaction among female nurses\(^{24}\) and male firefighters\(^{18}\). However, intragroup conflict does not seem to be strongly associated with work engagement in company employees. Although work engagement, like job satisfaction, is a positive attitude, the two also differ: work engagement is characterized by vigor, dedication, and absorption, whereas job satisfaction is a broader construct that taps into job components that positively impact one’s feelings at work\(^{34}\). Thus, intragroup conflict may be less associated with work engagement than with job satisfaction. The non-significant association with work engagement may also be attributable to the fact that intragroup conflict mainly focuses on the negative and demanding interpersonal situations within a group rather than on positive resources, which have been shown to be associated with work engagement in previous studies\(^{35}\). Unlike the original interpersonal conflict scale\(^{42}\), our current modification does not include items on (lack of) interpersonal resources, such as harmony within a group\(^{39}\). Intragroup conflict may have been more strongly associated with work engagement in the present study had our scale included such items.

Intragroup conflict was significantly and negatively associated with work engagement among males. However, after worksite social support was additionally adjusted for, the significance disappeared. Previous studies have consistently shown that job resources, such as social support from supervisors and colleagues, are positively associated with work engagement\(^{15, 38}\). Our data suggested that, whereas intergroup conflict is associated with lowered work engagement, a large part of the effect is mediated by, and thus explained by, a lack of worksite social support, such as leadership from the supervisor; thus, lack of worksite social support affects both intergroup conflict and work engagement.

In contrast to intergroup conflict, intragroup conflict was not associated with lower work engagement in males. Intragroup conflict may have a greater effect on males than intragroup conflict, because males are generally group-oriented: even if there were intragroup conflict around them, it would not matter to them so long as the group performed well.

On the other hand, females with high intergroup conflict scores had higher scores on work engagement. It has been suggested that intergroup discrimination can enhance self-esteem, as people are likely to seek a positive differentiation of their own group from other groups\(^{52}\). When there is intergroup conflict, group identity and commitment to the group by its members may be enhanced, thereby increasing work engagement but at the same time increasing psychological distress. However, it is not clear why this pattern was observed only among females. Perhaps females are affected more by the kind of group dynamics triggered by intergroup conflict. However, this generalization must be made cautiously, because our sample of females was small and came from a single factory. Although males generally have obtained higher work engagement scores than females in previous studies\(^{53}\), it is not clear that there really are gender differences in the association between work engagement and the psychosocial work environment. Further research on this point is needed.

Finally, some possible limitations of this study should be reviewed. First, the sample was relatively small, which may have reduced the statistical significance of the results. Second, the sample came from a single company in Japan, which means that generalization of the findings should be done cautiously. Third, interpersonal conflict, psychological distress, and work engagement were measured by self-administered questionnaires, which may have resulted in bias due to a common response style. Finally, because of the cross-sectional study, the direction of causality cannot be determined. A prospective study is needed to investigate a causal link between interpersonal conflict and psychological distress or work engagement, as well as to determine the social and psychological mechanisms involved.

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Appendix

The shortened Japanese version of the Interpersonal Conflict Scale

Using the scale below, please answer the following questions about your work situation. (1=Disagree strongly; 2=Moderately disagree; 3=Neither agree nor disagree; 4=Moderately agree; 5=Strongly agree)

Intragroup conflict:
(1) In our group, we have lots of bickering over who should do what job.
(2) There is difference of opinion among the members of my group.
(3) There is dissension in my group.

Intergroup conflict:
(4) There is lack of mutual assistance between my group and other groups.
(5) There are personality clashes between my group and other groups.
(6) Other groups create problems for my group.