Understanding Workplace Diversity in Nursing Work Teams

An Empirical Test of the Modified Group Faultline Theory with Peer Distributive Justice and Group Processes in Japanese Hospital Settings

看護職のチームにおける職場の多様性の理解に向けて

日本の病院における仲間による分配的公正および集団過程を含む
修正版グループフォールトライン理論の実証的検証

A Dissertation Presented to
The Graduate School of Arts and Sciences
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December 6, 2021

OUCHI, Junko
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DEDICATION

To my beloved family.

To all of my dear friends who have accompanied me

on this journey in these difficult times.

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My academic journey began in 2005, when I entered ICU and first met Dr.

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the nurses who participated in this study for the invaluable time and effort they

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Abstract

The importance of workplace diversity in nursing work contexts eludes the

understanding of effective nursing practices in Japanese medical settings.

Unfortunately, a great deal of organizational research conducted have produced

mixed or no effects of diversity on workgroup functioning. The present

investigation focused on the effects of workplace diversity on work team processes

(e.g., conflict, trust, communication) in nursing work teams using the group

faultline theory (Lau & Murnighan, 1998). The theory posits that "faultlines" are

hypothetical dividing lines that split a group or unit into subgroups based on

demographic or available attributes, and that the groups that clearly divided into

subgroups according to given attributes are those that have distinctly strong

faultlines. The theory also argues that the strong faultlines have disruptive effects

on group processes and performance as predicted by social categorization theory

in social psychology: social identity theory (Tajfel, 1978) and self-categorization

theory (Tajfel & Turner, 1986). As such, the present investigation employed social

categorization theory and assumed that the faultlines based on certain attributes

that are subjectively meaningful to group members have negative effects on group

processes such as conflicts, trust, and communication among group members.

Accordingly, in terms of subjective meaningfulness of attributes for nurses, this

investigation hypothesized that strong faultlines based on age and gender,

duration with the team (team tenure), and educational backgrounds, and age and

duration with the team would lead to increased relationship conflict and lower trust,

and retarded communication within the teams (*Hypothesis 1*). In addition, this

investigation hypothesized that when teams have a high level of shared justice

perceptions on rewards that team members receive are appropriate based on their

contributions, or distributive peer justice climate, the disruptive effects of faultlines

on group processes would be weakened (*Hypothesis 2*). Data were collected with

paper-based self-administrated questionnaire from a non-probability convenience

sample of 992 nursing staff at different levels from 44 wards (or teams) from 11

hospitals in Japan. For the present investigation, 616 individuals from 36 teams

were included in further analyses after excluding invalid responses. Average

Silhouette Width (ASW), or a faultline strength measure based on cluster analysis,

was calculated for each team. The hypotheses were then tested by using

Bayesian multilevel structural equation modeling (MSEM) because of the

multilevel data structure and the relatively small size of team samples. Results

generally showed the negative effects of faultlines on group processes, supporting

Hypothesis 1. The interaction effect between faultline strength and distributive peer

justice climate was statistically significant, *p* <.05, 95%CI [-.673, -.006], when the

faultlines were formed based on team tenure and educational background.

Contrary to the prediction, however, when teams showed lower distributive peer

justice climate, the stronger the faultlines, the higher the team-level trust. Also, the

strong faultlines increased relationship conflicts. Therefore, *Hypothesis 2* was not

supported. These findings suggest that when members perceive unfairness on

balance between rewards other members received and contributions they made,

strong faultlines have the positive effects, such as increasing members' trust in

each other within homogeneous subgroups, but at the same time has a negative

effect, such as aggravated relationship conflict. Therefore, this investigation

demonstrated that the idea of faultlines points to the double-edged sword effects

on group processes in unfair situations.

和文抄録

　　日本の医療現場において，効果的な看護実践を理解するためには，日本の看護師のチームにおける多様性への理解が必要である。これまで，多くの組織研究が多様性の効果を検討してきたが，職場における多様性がチームの機能に与える影響に関して一貫した結果は得られていない。そこで本研究では，Lau と Murnighan（1998）によって提唱された group faultline theory を用いて，日本の看護職チームにおける集団過程（葛藤，信頼，コミュニケーションなど）に対する多様性の効果を検討した。彼らの理論によると，フォールトライン（faultline）とは，集団を人口統計学的あるいは利用可能な属性に基づいてサブグループに分割する仮想的な分割線であり，与えられた属性によって明確にサブグループに分割された集団は，強いフォールトラインを持つ集団であるとしている。また，社会心理学の社会的カテゴリー化理論である社会的アイデンティティ理論（Tajfel, 1978）と自己カテゴリー化理論（Tajfel & Turner, 1986）の仮説に基づき，強いフォールトラインは集団過程に悪影響を与えるとしている。本研究では，社会的カテゴリー化理論を用い，グループメンバーにとって主観的に意味のある属性に基づくフォールトラインが，グループメンバー間の葛藤，信頼，コミュニケーションなどの集団過程に悪影響を及ぼすと仮定した。そこで本研究では，看護師にとって主観的に意味のある属性という観点から，年齢と性別，年齢とチーム在籍期間，チーム在籍期間と教育的背景に基づくフォールトラインが強いほど，グループメンバー間の葛藤や信頼の低下，コミュニケーションの阻害につながるという仮説を立てた（仮説 1）。さらに，メンバーが受け取る報酬が貢献度に応じて適切なものであるという共有された公正知覚である，分配的仲間公正風土（distributive peer justice climate）が高

いチームでは，フォールトラインが集団過程に及ぼす悪影響が弱まるという仮説を立てた（仮説 2）。

データは，日本の 11 の病院の 44 の病棟（または，チーム）に勤務する，無作為ではない便宜的なサンプルである 992 人の看護師を対象に，自記式質問紙を用いて収集された。最終的に，無効な回答を除いた，36 チームの 616 人が分析対象となった。クラスター分析に基づくフォールトラインの強さの指標である平均シルエット幅（Average silhouette width; ASW）をチームごとに算出した。仮説の検証には，マルチレベルのデータ構造とチームサンプルのサイズの小ささを考慮し，ベイズ推定によるマルチレベル構造方程式モデリング（Multilevel structural equation modeling; MSEM）を用いた。その結果，概ね，集団過程に対してフォールトラインは負の効果を示していたことから，仮説1は支持された。さらに，チームの在職期間と教育的背景に基づいてフォールトラインが形成されている場合，フォールトラインの強さと分配的仲間公正風土との間の交互効果は有意であった（$p < .05$, 95%CI $[-.673,$ $-.006]$）。しかし，予測に反して，分配的仲間公正風土が低いチームでは，フォールトラインが強いほど，チームレベルの信頼が高くなった。また，フォールトラインが強いほど，対人葛藤が増加した。よって，仮説 2 は支持されなかった。これらの結果から，もし，メンバーが他のメンバーが受けた報酬と貢献度とのバランスに不公平感を感じている場合，強いフォールトラインは，同質的なサブグループ内でのメンバー間の相互信頼を高めるなどのプラスの効果がある一方で，人間関係の対立を悪化させるなどのマイナスの効果があることが示唆された。このように，強いフォールトラインは，不公平な状況下において，集団過程に対する諸刃の剣のような効果を持つことが本研究により示された。

CHAPTER 1. INTRODUCTION

1.1. Background of the Problem

1.1.1. Diversity Issues in Nursing

The quality of teamwork by nurses in medical settings is a key factor for

ensuring patient safety and delivery of quality care (e.g., Chang et al., 2009;

Makary et al., 2006). Of all possible factors that may impact teamwork, team

diversity has increasingly received attention, because the nursing workforce has

become more diverse in terms of demographic attributes (e.g., age, gender, and

ethnicity) as well as functional backgrounds (e.g., tenure and education) the world

over (e.g., Beheri, 2009; Gates & Mark, 2012). The term *diversity* is an umbrella

term and refers to differences or distinctions among individuals in terms of any

attributes that may lead to the perception that another person is different from

oneself (van Knippenberg et al., 2004; Williams & O'Reilly, 1998). Therefore, in the

present investigation, *diversity research*, encompasses any research on diversity.

In addition, the terms *group* and *team* are used interchangeably here. Teams are

units of multiple individuals who interact interdependently to achieve a common

objective (Baker & Salas, 1997). The definition aptly represents the nature of the

nursing team that provides care to save patients' lives and promote their quality of life. Therefore, this investigation uses the term *team* when it refers to a workgroup in nursing.

In Japan, the nursing workforce has also become variegated in terms of attributes such as age, gender, and educational background, although it is still highly homogeneous in terms of ethnicity (Ministry of Health, Labour and Welfare [MHLW], 2008, 2018). For example, the nurses over the age of 50 rose from 17.0 % to 26.3% from 2008 to 2018, whereas the other nurses in their 20's, 30's, and 40's were 21.2%, 24.4%, and 24.0%, respectively, in 2018 (MHLW, 2008, 2018). These figures suggest that nurses from different generations must work together side by side within a work team in current hospital settings, and perhaps so in other international contexts.

The workforce gender has also changed. The number of male nurses doubled in the past 10 years in Japan, and the percentage of male nurses increased from 5.8% in 2008 to 7.8% in 2018 (MHLW, 2018). However, as these figures suggest, male nurses are still in the minority even in current hospital settings. This is not the isolated case only in Japan. For example, the U.S. data also show a growing but still small percentage of male nurses, viz., 9.4% in 2020 compared with 6.6% in a 2013 study (Smiley et al., 2021).

Educational background among nurses varies more in Japan than many

other countries because of multiple educational pathways to join the nursing

profession in Japan. Nurses in Japan are either graduated from five-year high

school nursing programs, vocational schools, three-year nursing colleges, or

undergraduate programs. Some have finished graduate training. Particularly, in

recent years, as the number of nursing departments in universities has increased,

the number of nurses who finished undergraduate nursing programs has been on

the rise in Japan (Ministry of Education, Culture, Sports, Science and Technology

[MEXT], 2018).

With the growing diversification of the nursing workforce, nursing

administrators are faced with finding ways to maximize the benefits of diversity

while minimizing any problems that are likely to arise in diverse teams (Hendricks

& Cope, 2013; Matsuura, 2018). Some healthcare administrators and researchers

assume that working in a group of nurses with diverse backgrounds may provide

richer knowledge and a broader scope of practice and that thereby would augment

diversity of the nursing workforce will benefit the delivery of culturally sensitive

care (Gillis, 2010; Hendricks & Cope, 2013; Noone et al., 2020). However, there is

also a concern that team diversity may hinder team process and performance

(Beheri, 2009; Martin et al., 1994). Team process refers to the manner in which the

team performs the task and/or the team members relate to one another

(Cropanzano et al., 2011). It may include cohesion, communication, commitment,

trust, and support. Because nursing care is delivered through the collective efforts

of team members, it is highly important to have a deeper understanding of how

diversity influences team processes and performance. However, there has been a

dearth of empirical research on how diversity affects individual and group

outcomes in nursing work settings (Gates & Mark, 2012).

Expert knowledge on how diversity operates in nursing work teams is also

necessary for developing policies and interventions to address diversity issues in

nursing practice. In the U.S., efforts have been made to enhance diversity of the

nursing workforce to resolve health inequalities and contribute to social justice

(Noone et al., 2020). For example, several reports from some influential

organizations (e.g., *Future of Nursing: Leading Change, Advancing Health*

[Institute of Medicine, 2010]) have emphasized the importance of diversification of

the nursing workforce. Moreover, several projects aimed at improving nursing

workforce diversity have implemented and contributed to diversification of the

workforce by providing financial support and incentive for diverse students,

academic and student supports, and mentoring (Noone et al., 2020). While such

efforts are being made, only limited knowledge exists on impacts of diversity in

nursing work teams (Gillis, 2020).

Unlike the situation in the U.S., there is no policy and interventions to address diversity issues in nursing in Japan, although the nursing workforce is expected to diversify further in the near future due to demographic changes and labor shortages. To avoid confusion caused by the workforce diversity and to reap its fruits, discussions based on empirical research findings are necessary. However, very little research on diversity in nursing work teams has been done in Japan as well as overseas.

Despite the lack of diversity research in nursing, a volume of research in the fields of psychology and business has examined individual-level and group-level effects of workgroup diversity (Jackson et al., 2003; van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). Many studies have examined whether the effects of diversity vary depending upon types of diversity, such as *surface diversity* based on readily visible demographic attributes (e.g., age, gender, ethnicity) and *informational diversity* based on more task-related attributes (e.g., education, tenure, functional backgrounds) (Williams & O'Reilly, 1998). A number of studies have examined predictions that surface diversity has negative effects on group processes and performance, whereas informational diversity is more likely to have positive effects on group performance (e.g., Jehn et al., 1999; Pelled et al., 1999).

Yet, the results have been rather contradictory and inconclusive. For example,

Pelled et al. (1999) found that neither type of diversity was related to group

performance. Jehn et al. (1999) reported positive effects of informational diversity

on group performance as predicted, while they also found that surface diversity

was not related to group performance. In addition, there are more results

supporting positive effects of informational diversity on group performance (e.g.,

Carpenter & Fredrickson, 2001; Jehn et al., 1999). However, there are also results

suggesting negative effects of informational diversity (e.g., Bunderson & Sutcliffe,

2002; Simons et al., 1999). Regarding surface diversity, there are further

contradictory or mixed results reporting both negative (e.g., Tsui et al., 1992) and

positive effects (e.g., Tyran & Gibson, 2008).

Thus, the aim of the present investigation is to extend and test the existing

theories on workgroup diversity so that they better explain the effects of diversity

and add new insights to the diversity literature in the following three ways. First, it

examined the effects of different dimensions of diversity on team processes based

on the predictions developed by interpreting the subjective meaningfulness of

given attributes for nurses in Japan based on group faultline theory (Lau &

Murnighan, 1998) and social categorization theory (Tajfel, 1978; Tajfel & Turner,

1986), which is central to the theoretical foundations of diversity literature.

Second, to gain a better understanding of when and why diversity has

significant effects on team processes, this investigation examined whether shared

fairness perceptions among team members mitigate the negative effects of

diversity on team functioning in nursing work contexts in Japan.

Third, the current research investigation tested a proposed moderated model

of team diversity, shared fairness perceptions, and team processes with an

advancement in multilevel data analysis technique: multilevel structural equation

modeling, which should enable researchers to estimate parameters more precisely

compared with conventional multilevel modeling techniques.

In the present investigation, relationship conflict, trust, and communication

were included as team process variables. These variables were the focus of the

investigation because they have been widely recognized as important team

process components that may have significant impacts on teamwork (e.g.,

Chiocchio et al., 2011; Jehn et al., 1999; Jones & George, 1998; Leonard et al.,

2004; Thatcher et al., 2003).

The following subsections explain, in more detail, what issues the present

investigation addressed and how it sought to make theoretical and practical

contributions to diversity literature and practices in nursing.

1.1.2. Issues in Diversity and Approaches

The recent literature on diversity points out that such inconsistent results are partly due to inadequate theoretical viewpoints concerning diversity (Jackson et al., 2003; Webber & Donahue, 2001). The majority of diversity research has focused on group compositions based on a given attribute in isolation (e.g., age diversity) or additive manners (e.g., age diversity and gender diversity). In this line of research, the degree or amount of distribution among group members along relevant attributes is a factor in examining workgroup diversity (van Knippenberg & Schippers, 2007). Such a conceptualization of diversity has been recognized as the *dispersion approach* (Bezrukova et al., 2007; van Knippenberg & Schippers, 2007). However, this approach has been criticized because it assumes that those attributes are independent (Bezrukova et al., 2009). For example, when examining the effects of diversity based on gender in a workgroup, if the age of its members was ignored, it would be concluded that the experience of male nurses in their 20s on a team and that of male nurses in their 40s on the same team is similar even though they were otherwise significantly different.

In response to the criticism of the dispersion approach, recent research has employed a theory that offers a more comprehensive viewpoint on workgroup diversity, namely the *group faultline theory* proposed by Lau and Murnighan (1998). The theory proposes that each person in a group belongs to multiple

subgroups, such as those defined by gender, age, ethnicity, and education

(Thatcher & Patel, 2011). One of the significant contributions made by this theory

on diversity literature is the hypothetical effects of group member characteristics in

conjunction with other characteristics rather than separately (Bezrukova et al.,

2009). In contrast to the dispersion approach that looks at one characteristic of

group members at a time separately, the group faultline theory focuses on member

alignment across multiple characteristics. This theoretical viewpoint is recognized

as the *alignment approach* (Bezrukova et al., 2007).

Group faultlines are defined as "hypothetical dividing lines that may split a

group into subgroups based on one or more attributes (Lau & Murnighan, 1998, p.

328). The theory posits that the existence of this partition provides an impetus for

group members with different attributes to differentiate themselves and split into

competing subgroups within the group (Bezrukova et al., 2007; Lau & Murnighan,

1998). Therefore, clear-cut demographic alignment in a group (e.g., team

members align such that all the female nurses are middle-aged, and all the male

nurses are young) may enhance alliance among members who share similar

attributes and consequently result in *salient subgroup identity* (a subgroup of

young male nurses versus a subgroup of middle-aged female nurses) (Bezrukova

et al., 2007). Salient subgroup identity is assumed to lead to negative

consequences such as evoking negative affective responses and inhibiting

communication among the subgroups (Lau & Murnighan, 1998; Tajfel, 1981).

Hence, research on faultlines generally predicts that stronger faultlines lead to

greater negative effects on group processes and performance (Lau & Murnighan,

1998; Thatcher & Patel, 2011). Such assumptions on the disruptive effects of

faultlines were founded on social categorization theory, which is a synthesis of

social identity theory (Tajfel, 1978) and its extended theory—*self-categorization*

theory (Tajfel & Turner, 1986).

In fact, a recent meta-analysis on the effects of faultlines showed that

stronger demographic faultlines such as age, ethnicity, gender, and tenure (i.e.,

demographic faultlines), and education lead to negative consequences such as

relationship conflict and lower cohesion (Thatcher & Patel, 2011). Moreover, it

showed that strong demographic faultlines directly reduced team performance.

Another review also showed that faultline strength explained more variance than

diversity measures based on the dispersion approach alone for various group

outcomes such as relationship conflict, satisfaction, and performance (Thatcher &

Patel, 2012). These results support the effectiveness of the alignment approach in

capturing the effects of diversity. It also can contribute to understanding the

dynamics among subgroups based on given attributes in workgroups (Bezrukova

et al., 2007). Considering these advantages in the alignment approach, the

present research explored the roles of diversity in nursing work teams based on

the group faultline theory.

In addition to the inadequacy of theoretical viewpoints on diversity, this

investigation further addresses another important theoretical issue, which is that

diversity research has rarely examined the effects of diversity by taking into

account interactions between group members and the workplace context. Many

diversity studies, including those based on the alignment approach, developed

their hypotheses regardless of their research sites or settings (e.g., Bezrukova et

al., 2012; Choi & Sy, 2010; Kunze & Bruch, 2010; Meyer et al., 2015). As a result,

many diversity studies have assumed that particular dimensions of diversity, such

as age, gender, and ethnicity, determine how diversity affects group functioning, as

noted above, and have had contradictory results. This approach treats the effect of

diversity as if it were independent of the workgroup contexts. Such a static view of

diversity effects is devoid of the perspective of human existence as an active

agent of action, actively accessing, interpreting, and engaging with the

environment, which social psychology literature has long suggested (e.g.,

Bandura, 1989). Therefore, this investigation argues that the subjective

meaningfulness of given attributes for group members in the workgroup

determines how diversity operates in the group based on assumptions in self-

categorization theory regarding cognitive factors governing salience of groups

formed relevant attributes (Oakes et al., 1991, Turner et al., 1987; van

Knippenberg et al., 2004). Based on this claim, in the present investigation, it is

assumed that age, gender, educational background, and team tenure referring to

the number of years and months a member has worked on a team (Koopmann et

al., 2016) are attributes that could form salient subgroups in nursing work teams.

To examine this assumption should contribute to understanding how diversity

based on those attributes operates in nursing work teams in Japan.

The last issue that this investigation addressed is inadequate examinations

of the role of context in reinforcing or mitigating the effects of diversity (van

Knippenberg & Schippers, 2007). To respond to this criticism, past research has

investigated various contextual factors, including *superordinate identity*

(Bezrukova et al., 2009; Homan et al., 2008; Jehn & Bezrukova, 2010),

superordinate objective (Rico et al., 2012; van Knippenberg et al., 2010),

transformational leadership (Kunze & Bruch, 2010), *diversity belief* (Homan et al.,

2007; van Knippenberg et al., 2007), and *subgroup size* (Polzer et al., 2006). In

their quantitative aggregation analysis, Thatcher and Patel (2012) found that a

superordinate identity also transforms the negative relationship between faultline

strength, representing how much given attributes are aligned in the workgroup, and group performance or satisfaction into a positive relationship. Superordinate identity is assumed to mitigate disruptive effects of diversity by making the differences among subgroups less recognizable by emphasizing higher identity over identity based on attributes forming subgroups. Establishing superordinate identify may be an effective way to maximize benefits from diversity and mitigate disruptions from it. However, the strategy might be interpreted as not valuing diversity because it makes that diversity less visible rather than showing an obvious respect for diverse people.

This investigation, therefore, sought to identify a different approach to mitigate the negative effects of diversity, which would instead promote fairness in workgroups. Whether members are treated fairly regardless of their demographic attributes has been a central concern in diversity research and diversity initiatives (Ely & Thomas, 2001; Mor Barak et al., 1998). In addition, organizational literature has also long emphasized the importance of fairness in workplaces (Colquitt et al., 2002). A number of review articles have suggested that being treated fairly is related to better mental health (e.g., Cohen-Charash & Spector, 2001; Colquitt et al., 2001). They also suggested that it may benefit organizations and workgroups by enhancing employees' job performance, helpful behaviors, and positive work

attitudes. These findings indicate that disruptive effects may be reduced when members are fairly treated in workgroups. However, there is an absence of theories that explain the relationship between the effects of diversity and fairness in workgroups. Thus, in this investigation, a relationship between fairness and diversity will be explored by examining the moderating effects of shared fairness perceptions within teams on the relationship between faultline strength and group processes in nursing work settings. An association was tested among faultline strength, fairness perceptions, and group processes based on social categorization theory, taking into account characteristics of nursing work contexts, such as those that are highly demanding and stressful. A conceptual model of faultline strength, shared fairness perceptions, and team processes is depicted in Figure 1.

1.2. Purposes and Research Questions

To make theoretical and practical contributions to the diversity literature as well as the field of nursing per se, the purpose of the present investigation was twofold: 1) to examine the effects of team faultlines formed by combinations of age, gender, team tenure, and educational background on team processes such as relationship conflict, trust, and communication among team members in nursing work teams in Japan, and 2) to test a moderating effect of shared fairness

perceptions on the relationships between faultline strength and team processes in

a revised model of the group faultline theory.

The research questions (*RQs*) for the present investigation are as follows:

RQ1. How does team diversity influence team processes in nursing work

teams in Japanese hospital settings?

RQ2. What are the salient dimensions of diversity that affect team functioning

when considering nursing work contexts?

RQ3. What is the role of fairness in diverse workgroups, especially in nursing

work contexts, which can be characterized as demanding and stressful

environments?

Specific hypotheses tested in this investigation will be described and

discussed in Chapter 2.

1.3. Organization of the Dissertation

The rest of the dissertation is organized in the following way. Chapter 2

provides a review of the current literature on faultlines in terms of theoretical

foundations, empirical findings, and faultline composition. This chapter also

reviews literature on shared fairness perceptions and discusses a suggested

moderating role of shared fairness perceptions in diverse teams based on social

categorization theory. Hypotheses examined in this investigation will be detailed in

this chapter as well. Chapter 3 explains the research methodologies, including

sampling, data collection procedures, and data analyses. In Chapter 4, the results

of preliminary analyses, model testing, and hypothesis testing are presented.

Finally, Chapter 5 discusses theoretical and practical implications for existing

diversity research and the field of nursing. It also discusses the limitations of this

research and makes some suggestions for future investigations. Definitions of the

main terms and constructs mentioned in this dissertation are presented in Table 2.

CHAPTER 2: LITERATURE REVIEW

2.1. Group Faultline Theory

Faultlines are hypothetical dividing lines that split a team into relatively

homogeneous subgroups based on the group members' demographic alignment

along multiple attributes (Lau & Murnighan, 1998). The construct of faultlines

contributes to the diversity literature by acknowledging that multiple attributes exist

simultaneously and that there may be alignment across multiple attributes

(Bezrukova et al., 2012; Lau & Murnighan, 1998). An example of a team with

strong faultlines would be a team consisting of some younger male nurses and

some older female nurses. In this case, the team has a strong faultline, as there

are two relatively homogeneous subgroups based on age and gender (i.e.,

younger male nurses vs. older female nurses). In contrast, when some male and

female members are relatively young and some male and female ones are

relatively older in a team, the faultline of the team can be considered to be weaker

than the previous example because subgroups based on age and gender are less

homogeneous in the latter example. The group faultline theory presumes that the

stronger the faultline, the greater the negative effects of the faultlines on team

processes and performances (Lau & Murnighan, 1998). The theoretical

assumptions will be discussed in the next subsection.

2.1.1. Theoretical Foundations of the Group Faultline Theory

Social categorization theory, which is a synthesis of self-categorization theory (Turner, 1982) and social identity theory (Tajfel & Turner, 1986), provides the theoretical underpinnings for the formation of faultlines and the effects of faultlines on group processes and performance. The social identity theory suggests that individuals classify themselves and others into social categories based on salient demographic characteristics such as age, gender, and function. Group categorization is also used in defining an individual's social identity (Tajfel, 1978). Grouping (or subgrouping in the present investigation) provides group members with a positive social identity, and such positivity is fostered by establishing a valuable uniqueness for their group in comparison to other groups (Tajfel, 1978). Through such categorization processes, individuals distinguish the group that includes themselves (in-group) and a group that includes others (out-group), based on salient attributes, and they tend to show in-group favoritism and out-group hostility to maintain high self-value (Tajfel & Turner, 1986). As a result of these categorization processes, individuals in diverse groups may experience frustration, hostility, discomfort, and anxiety, resulting in adverse consequences such as relationship conflict, low trust, hindered communication, and low group

performance because of in-group and out-group biases evoked by salient

subgrouping (Thatcher & Patel, 2012).

2.1.2. Empirical Research Findings

Studies on faultlines in groups conducted in the field and the laboratory have

examined their effects on many group outcomes, such as conflict, trust,

communication, cohesion, psychological safety, satisfaction, decision-making, and

performance. The majority of these studies found that strong faultlines hindered

group functioning (Antino et al., 2019; Bezrukova et al., 2007; Bezrukova et al.,

2009; Choi & Sy, 2010; Gibson & Vermeulen, 2003; Homan et al., 2007; Kunze &

Bruch, 2010; Lau & Murnighan, 2005; Li & Hambrick, 2005; Molleman et al., 2005;

Pearsall et al., 2008; Polzer et al., 2006; Rico et al., 2007; Rico et al., 2012;

Sawyer et al., 2006; van Knippenberg et al., 2007; van Knippenberg et al., 2010).

Field studies also included workgroups from various settings, such as IT

companies (Bezrukova et al., 2009), international companies that produce

construction tools (Kunze & Bruch, 2010), pharmaceutical and medical products

companies (Gibson & Vermeulen, 2003), home rehabilitation service companies

(Antino et al., 2019), and unspecified firms (Choi & Sy, 2010) in Western countries,

but no study solely targeted medical settings. Those research sites were selected

in terms of expected diversity based on targeted dimensions of faultlines. Some

studies targeted top management teams to test their hypotheses on the effects of

diversity on team performance (van Knippenberg et al., 2010; Li & Hambrick,

2005) because of their importance in the performance of an organization as a

whole but not of qualitative distinctions from other teams.

Of various outcome variables, conflict has been one of the most examined

outcome variables in faultline research (e.g., Choi & Sy, 2010; Lau & Murnighan,

2005; Li & Hambrick, 2005; Molleman, 2005; Pearsall et al., 2008; Polzer et al.,

2006). For example, Bezrukova et al. (2007) found that faultlines based on

demographic attributes (age, race, tenure, education, function, and gender) within

groups from companies in an IT industry were positively related to relationship

conflict. A lab study done by Molleman (2005), which did not distinguish types of

conflict, also reported a positive relationship between team conflict and faultlines

based on gender, age, ability, and personality. Similarly, Jehn and Bezrukova

(2010) reported positive relationships between team conflict and faultlines based

on race in their analog study.

Trust and communication have also been suggested as having negative

relationships with faultline strength (Polzer et al., 2006; van Knippenberg et al.,

2010). Polzer et al. (2006) found that faultlines based on geographic locations in a

group of graduate students were negatively related to level of trust and positively

related to level of conflict. In addition, Sawyer et al. (2006) found that

communication was negatively affected by strong faultlines, showing results that

weakened faultlines based on ethnicity and function enhanced information sharing

in an experiment.

The above results support the assumption in group faultline theory that

strong group faultlines have disruptive effects on group processes across various

settings. However, the results have actually been mixed. Lau and Murnighan

(2005) examined the effects of group faultlines based on ethnicity and gender on

relationship conflicts within groups of student participants in a lab setting. Their

study found that stronger faultlines decreased relationship conflict contrary to their

prediction. Moreover, a field study (Choi & Sy, 2010) with workgroups representing

various industries, including healthcare firms, found that faultlines based on tenure

and race were negatively related to relationship conflict, whereas faultlines based

on tenure and age as well as age and race increased the presence of relationship

conflict. Thus, there seems to be no consistent relationship between the negative

or the positive effects of faultlines and particular types of attributes. Such

inconsistent results can be partly because prior research has often examined the

effects of faultlines *in isolation* from the context of the workplace (van Knippenberg

et al., 2007). This issue is associated with faultline compositions to which the next

subsection turns to its discussion in detail.

2.1.3. Compositional Effects on Team Processes

Which dimensions of diversity promote or hinder group processes and performance has been one of the major issues in diversity research, according to van Knippenberg et al. (2010) and Williams and O'Reilly (1998). They also pointed out that researchers have assumed that diversity based on readily visible attributes (e.g., age, gender, ethnicity) easily evokes social categorizations that lead to in-group and out-group biases because of their salience for group members, and in turn, deteriorate group functioning. In contrast, diversity based on work-related informational attributes (e.g., tenure and education) has been assumed to have positive effects on group performance because such diversity may be able to provide different perspectives and knowledge to the group (Jehn et al., 1999; Pelled et al., 1999). However, as explained above, results from research with dispersion and alignment approaches have been inconclusive.

The present investigation addressed this issue by employing cognitive factors that are assumed to determine salience of social categories in social categorization theory: *cognitive accessibility, comparative fit,* and *normative fit* (Oakes et al., 1991; Turner et al., 1987; van Knippenberg et al., 2004). Faultlines can be formed by any attributes that exist in a group. According to social

categorization theory, the salience of social categorization is a key to driving

subgrouping effects such as in-group favoritism and out-group hostilities. That is,

merely the existence of faultlines does not necessarily result in stronger

categorization processes, and the same faultline compositions may be more or

less problematic (Lau & Murnighan, 1998; Pearsall et al., 2008; van Knippenberg

et al., 2010). Social categorization theory posits how easily individuals can notice

given attributes and interpret their meanings to determine the salience of social

categorizations. Cognitive accessibility of the categorization refers to the ease with

which the social categorization implied by the differences is cognitively activated.

Categorization based on readily visible attributes such as gender is an example of

high cognitive accessibility. Comparative fit reflects the extent to which the

categorization yields subgroups with high intragroup similarity and high intergroup

differences. When a group has strong faultlines based on given attributes, the

level of categorization salience is thought to be high because subgroups are highly

homogeneous in terms of the attributes and, in turn, inter-subgroup differences

become clear. *Normative fit,* on the other hand, refers to the extent to which the

categorization makes the categorization subjectively meaningful. Among the three

factors, this research was specifically focused on normative fit, because the use of

this concept allows researchers to take into account work contexts and to assess

salience of social categorizations. If two groups in different contexts both have

strong faultlines based on given attributes (e.g., gender and ethnicity), the same

level of cognitive accessibilities and comparative fit of the attributes are assumed

within those groups (e.g., one in an international bank and one in an automobile

product line). Yet, what those attributes mean for members may vary between the

two groups. Inconsistent results on the effects of faultline strength could be

attributed to differences in the magnitude of subjective meaningfulness regarding

given attributes that vary from work setting to work setting.

In line with the arguments, it can be posited that faultlines based on the

following three combinations of attributes are particularly meaningful to nurses

working in hospital settings in Japan: age and gender, age and team tenure, and

team tenure and educational background. Nursing has long been recognized as a

highly demanding and stressful profession (Abuairub, 2004; Ohue et al., 2011).

Because a high level of job stress can lead to undesirable consequences such as

psychological distress at the individual level and impaired teamwork (e.g., high

conflict, low level of performance) and a higher turnover rate at the team level

(Najimi et al., 2012) in hospital settings, job stress is one of the major issues or

concerns that affects the quality of nurses' occupational lives. Hence, any

attributes that can be related to perceptions of stress are subjectively meaningful

for nurses. According to the findings from research on job stress among nurses

working at hospitals in Japan, age can be a highly meaningful attribute to them.

Research has often identified the senior–junior (*senpai–kohai* in Japanese)

relationship as a significant cause of job stress. For example, a study with a

sample of nurses working at hospitals in Japan (Otori et al., 2014) found that 38%

of the 478 respondents reported some form of bullying or mobbing by their

seniors; the respondents reported being overworked and/or verbally abused by

their seniors. A narrative review paper also suggested a relationship with senior

nurses as one of the major reasons for new nurses' turnover (Uchino & Shimada,

2015). Research also found that senior nurses feel stressed in their relationships

with junior nurses as well (Hirano & Koyama, 2018). Thus, social categorizations

based on age are assumed to be salient in nursing work teams in Japan.

Categorization based on gender can also be salient to nurses in terms of

cognitive accessibility and normative fit. Although the number of male nurses has

been increasing in recent years, male nurses are still in the minority in Japan

(MHLW, 2018). This makes male nurses more noticeable within teams, which

means that gender is a highly cognitively accessible attribute and easily evokes

strong categorization processes. In addition, gender is assumed to tend to evoke

salient categorization in terms of normative fit. Research reported that male nurses

had difficulties in building good relationships with female nurses and needed to

ask female nurses to take over for them to provide care that patients did not want

have provided by men (Kimoto et al., 2011; Uesugi et al., 2016). Research on job

stress found that perceived imbalance between their contributions and rewards

(e.g., salary and recognitions) tends to evoke high job stress (Bakker et al., 2000;

Inaba & Hioki, 2016; Siegrist, 1996). For example, if there were an imbalance of

workloads between males and females, that imbalance would cause tension

between female and male nurses, and in turn, both of them would perceive high

stress.

Thus, both age and gender are assumed to generate salient categorizations

that result in disruptive effects on group processes. In addition, it is assumed that

the experience of male or female nurses varies with their age. Hence, the following

hypotheses were generated:

H1a. Nursing work teams with stronger faultlines based on age and gender

experience higher levels of relationship conflict, low levels of trust, and

impaired communication among team members.

Additionally, the present investigation examined the effects of faultlines

based on age and team tenure because nurses may define senior–junior

relationships by distinguishing colleagues based on age when they have similar

team tenures. Hence, the following hypothesis was formulated:

> *H1b*. Nursing teams with stronger faultlines based on age and team tenure
>
> experience higher levels of relationship conflict, low levels of trust, and
>
> impaired communication among team members.

Unlike diversity based on readily visible attributes such as age and gender, diversity based on tenure and educational background has often been examined as work-related diversity with an assumption about its positive effects on group performance (van Knippenberg & Schippers, 2007). This investigation does not follow such a prediction but suggest that faultlines based on team tenure and educational background have disruptive effects on team processes in nursing work teams in Japan because of their expected subjective meaningfulness for nurses. These attributes are thought to lead to salient social categorizations in nursing work teams based on research findings indicating that nurses have different experiences depending on their educational backgrounds. Early turnover or premature termination among novice university-trained nurses has been a major issue for both scholars and nursing administrators (e.g., Arakawa et al., 2006; Taniguchi et al., 2014). This suggests that nurses distinguish their colleagues based on their educational backgrounds in conjunction with their team tenure. Thus, it is logically reasonable to consider faultlines based on team tenure and

education rather than age and education because nurses who have higher

educational backgrounds may be older than their senior nurses with different

educational backgrounds. In that case, senior–junior relationships may be

determined based on team members' tenure rather than age. Therefore, another

hypothesis was proposed:

> *H1c*. Nursing teams with stronger faultlines based on team tenure and
>
> educational background experience the higher levels of relationship conflict,
>
> low levels of trust, and impaired communication among team members.

2.2. Distributive Peer Justice Climate as a Moderator Variable

A recent meta-analysis (Joshi & Roh, 2009) found that the direct effects of

diversity were statistically significant but small; however, the effects loomed larger

when group contextual factors were accounted for as moderators, suggesting that

the effects of diversity largely depend on group contexts. It is crucial to identify

contextual factors that moderate the effects of faultlines on group outcomes to

contribute to both diversity theories and diversity management. Thus, building on

self-categorization theory, this investigation would argue that shared fairness

perceptions lessen the negative effects of faultlines on team processes.

Justice in organizations has been explored as individual perceptions on the

extent to which workers are treated fairly in organizations (Colquitt et al., 2001).

Research has identified justice perception as an important factor that affects work-related outcomes such as satisfaction, cooperation, and conflict (Chohen-Charash & Spector, 2001; Colquitt et al., 2001). Injustice perceptions are also found to be related to perceptions of stress (Judge & Colquitt, 2004) and psychological distress (Bezrukova et al., 2010). Diversity research has highlighted the significance of justice perception in terms of discrimination and inclusion (e.g., Ely & Thomas, 2001; Goldman, 2001; Mor Barak et al., 1998; Roberson & Steven, 2006). However, only a few empirical studies have explored the roles of justice perceptions in diverse workgroups with objective diversity measures, including faultline strength. Bezrukova et al. (2010) reported that faultline strength moderated the relationship between individual justice perceptions and psychological distress (Bezrukova et al., 2010). Similarly, Spell et al. (2011) showed a moderating effect of faultline strength on the relationships between justice perceptions and task conflict. In fact, both studies indicated that relatively homogeneous subgroups may provide mechanisms to protect subgroup members from disruptive effects of injustice perceptions. However, it remains unknown whether the effects of faultline strength may vary depending on the level of justice perceptions.

The mediating role of justice perception was also explored with a sample of

work-teams consisting of diverse members who were equipped with a variety of

skills and expertise by Antino et al. (2017). They found that strong faultlines

ameliorated status conflict via shared justice perceptions when teams had

ambiguous status situations. They noted that subgroup members have unfair

perceptions when their social identities are characterized by unwanted

stereotypes, although they are embedded in the social context. In their study, the

salience of faultlines based on given attributes was operationally checked in

advance by asking whether the group members perceived their subgroups by

those attributes. Accordingly, the possibility that the level of shared justice

perceptions affects salience of social categorizations based on relevant attributes

was excluded from their study. Yet, there is still a possibility that justice perceptions

make particular attributes more salient than others because justice perceptions

may be strongly associated with members' attributes. A qualitative study by

Thatcher and Bagger (2011) supports this assumption. Their qualitative research

conducted in telecommuting context found that both telecommuters and non-

telecommuters perceived injustice toward each other, suggesting that faultlines

formed based on relevant attributes to injustice perceptions may have extremely

negative consequences for the group. It is noteworthy that the source of members'

injustice perceptions in this case was the colleagues they worked with.

In fact, recent research on justice perceptions has found that not only authority figures in power but also colleagues are important sources of (in)justice (Lavelle et al., 2009; Li et al., 2013; Rupp & Cropanzano, 2002; Thatcher & Bagger, 2011). In addition, there have been criticisms that although team members often come to share common evaluations of fairness, research tends to focus on justice perceptions at the individual level of analysis (Li et al., 2013). In response to those criticisms, Li and Cropanzano (2009) defined *peer justice clima*te as "a shared perception regarding how individuals who work together within the same unit and who do not have formal authority over each other judge the fairness with which they treat one another."

There are three proposed types of peer justice climate: *distributive*, *procedural*, and *interpersonal* (Li & Cropanzano, 2009). Distributive peer justice climate refers to the extent to which rewards that team members receive are appropriate based on their contributions, whereas procedural peer justice climate refers to the extent to which team members use fair procedures to make decisions. Interpersonal peer justice climate refers to the extent to which members within the same unit treat each other in an interpersonally fair manner. Research has shown that peer justice climate is compellingly related to team processes

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(e.g., Cropanzano et al., 2011) and team performance (e.g., Molina et al., 2015).

Of these three, the present investigation posits that peer distributive justice climate particularly moderates the negative effects in nursing work teams, because unfair perceptions on balance between reward team member received and contributions they made can be highly associated with job stress in nursing work settings. Research on job stress has shown that a perceived imbalance between contributions and rewards can lead to high levels of job stress in various work settings including nursing (Li et al., 2011; Weyers et al., 2006). In addition, workloads have been identified as a strong predictor of job stress among nurses (Ohue et al., 2011). This may be a result of perceptions of imbalance between contributions and rewards because individuals rarely know precisely how many rewards others receive, and in turn, they are likely to judge the balance based on the level of assigned workloads.

Attributes including age, team tenure, gender, and educational background are often considered important in conjunction with the degree of contributions in nursing work settings. The workload may vary by gender in nursing (Yoshida et al., 2014). Less experienced nurses may handle less work per unit of time than more experienced nurses. In general, less experienced nurses are younger than more experienced nurses. Moreover, the educational background can also be

considered in conjunction with the amount of work that the nurse can handle. The

inexperience in terms of skills and maladjustment to the workplace among novice

university graduate nurses has been recognized as one of the serious issues in

nursing management (e.g., Arakawa et al., 2006). As such, nurses may evaluate

how much work they can handle and have actually handled in relation to their age,

team tenure, gender, and educational background. If so, when team members

perceive that they are being fairly treated in terms of balance between

contributions and rewards regardless of members' attributes, salience of social

categorizations based on the attributes can be low, and in turn, disruptive effects

of faultlines on team processes may decrease.

In sum, the present research investigation contends that there is a

moderating effect of distributive peer justice climate on the relationships between

faultline strength and team processes. It also leads to the assumption that

distributive peer justice climate also has positive effects on team processes.

Because distributive peer justice climate is conceptually at the team level, but the

present investigation measured it at the individual level, the effects of the variable

should be examined separately at the team- and the individual-levels. Hence, the

hypotheses considered at both individual and team levels, respectively.

Distributive peer justice climate at the individual level as individual

perceptions not shared perceptions; thus, the following hypotheses are proposed:

H2. Distributive peer justice climate moderates the relationship between

strength of faultlines and team processes; this relationship will be weaker

when distributive peer justice climate is higher.

H3a. Nurses who perceive higher distributive peer justice have lower levels

of relationship conflict, higher levels of trust, and better communication.

H3b. Teams with higher levels of distributive peer justice climate experience

lower levels of relationship conflicts, higher levels of trust, and better

communication.

Figure 2 presents a proposed moderated model of nursing work team

faultlines, distributive peer justice climate, and team process variables, specifying

levels of analysis. Through testing the model and the hypotheses, the present

investigation challenges to gain new insights into how faultlines can disrupt team

functioning in general as well as in nursing work contexts. Findings in this

investigation contribute to developing a new theory that explains the relationships

between justice perceptions and faultlines. They also offer information for

strategies to counter the disruptive effects of faultlines at workplaces in general as

well as in nursing work contexts in particular. Table 1 summarizes all the

hypotheses and their associations with the research questions presented in

Chapter 1.

CHAPTER 3: METHODOLOGY

3.1. Sample and Data Collecting Procedures

Data were collected from 992 staff nurses from 44 wards from 11 hospitals (10 private and one public) in February 2020. The hospitals were selected to which the present researcher, who had fifteen-year experience as a registered nurse working in hospital settings while teaching nursing in a school of nursing at a four-year university, had access with no conflict of interest. The staff nurses included both licensed practical nurses and registered nurses. Of the 11 hospitals, six were located in Hokkaido, two in Tokyo, and the other three in Gifu, Shiga, and Kyoto prefectures in Japan. The self-administrated paper-based questionnaires and collection boxes were sent to the hospitals' nursing departments, and distributed to each ward to which eligible staff nurses belonged. The completed questionnaires were retrieved through the collection box placed in each ward and sent back to the researcher two weeks after the onset of the data collection. Each ward was considered as a specific nursing work team.

3.2. Measures

The questionnaire consisted of measures presented below. Participants' demographic information, including age, gender, educational background, team

tenure, and qualification, was also collected with the questionnaire. All English

items were translated into Japanese and then back-translated.

3.2.1. Faultline Strength

It is critical to choose a faultline measure that appropriately quantifies the

extent to which a group is divided into homogeneous subgroups for valid research.

There are several existing faultline measures to quantify the extent to which a

given team is split into homogeneous subgroups, such as Thatcher's faultline

strength (Thatcher et al., 2003), subgroup strength (Gibson & Vermeulen, 2003),

Shaw's faultline strength (Shaw, 2004), faultline strength based on multiple linear

regressions (van Knippenberg et al., 2010), and average silhouette width (ASW;

Meyer & Glenz, 2013). From these, ASW was selected to measure faultline

strength in a given team. Meyer and Glenz (2013) applied cluster analysis for

detecting the subgroup split associated with a team's strongest faultline for groups

with more than two homogeneous subgroups. This measure is the average of all

team members' individual silhouette widths, which quantifies how well a team

member i fits into Cluster A in comparison with Cluster B (Meyer & Glenz, 2013).

When a_i denotes the average dissimilarity of i to all members of Cluster A, and b_i

denotes the average dissimilarity of i and all members of Cluster B, the individual

silhouette width is given by the formula below:

$$s(i) = \frac{bi - ai}{\max(ai, bi)}$$

The closer the value of s(i) is to 1, the stronger the association with the cluster, whereas values near 0 indicate a vague association (Rouseeuw, 1987). Meyer and Glenz (2013) employed an incremental improvement method to maximize the ASW value. Thus, a value of ASW obtained through their procedure represents the quality of a group's partitioning with reference to homogeneity within subgroups and separation between subgroups.

The use of ASW as a faultline strength measure has several advantages compared with the other measures. First, it works both with numeric and categorical data. Second, it is not restricted to two subgroups, while some of the existing measurements are. The number of subgroups is identified by calculating the ASW for each group. Third, it has exhibited robustness against missing data up to about 50% of missing values per team in a simulation study (Meyer & Glenz, 2013). This is extremely important because missing data are anticipated when data are collected from teams in real work settings as was done in the present research.

Values of ASW for two-dimensional faultlines formed by 1) age and gender, 2) age and team tenure, and 3) team tenure and educational background were calculated for each team by using the R function "asw.cluster" (Meyer & Glenz,

2018).

3.2.2. Team Process Variables

Relationship conflict, trust, and communication openness were measured

as team process variables. Relationship conflict was measured with Jehn's (1995)

intragroup relationship conflict scale. This included four items on team member's

perceptions of interpersonal incompatibilities within a team, such as "How much

tension is there among members in your work unit?". Participants rated each of the

items on a 5-point Likert scale from 1 = "None" to 5 = "A lot." Internal consistency

was good (α = .86).

Trust was measured with Simons and Peterson's (2000) 5-item intragroup

trust scale. The items assessed team member's perceptions of group-wide trust

and group-wide expectations of truthfulness, integrity, and living up to one's word,

and a sense of shared respect for team members' competence. An example of

the included items is: "We are all certain that we can fully trust each other." The

items were rated on a 7-point Likert scale from 1 = "Never" to 7 = "Always."

Reliability for the scale was strong (α = .91).

Communication openness, which refers to the ease of talking to each other

in a group and the extent of understanding gained when members talk to other

members (Ayoko, 2007), was measured to evaluate communication in teams.

Four modified items taken from Burchfield's group communication scale (1997)

were used to measure communication openness among members within a team.

Items on the scale included: "It is easy to talk openly to all members of my

workgroup." The items were rated on a 5-Likert scale from 1 = "Strongly disagree"

to 5 = "Strongly agree." Internal consistency was good (α = .89).

3.2.3. Distributive Peer Justice Climate

Distributive peer justice climate was measured with a 5-item subscale of intra

justice climate scale developed by Li et al. (2007). Items on the scale included:

"Some of my teammates have received a better grade for the team projects than

they would have deserved." The items were rated on a 5-Likert scale from 1 =

"Strongly disagree" to 5 = "Strongly agree." The above example item was required

reversed scoring so that lager scores indicated larger distributive peer justice

climate. Internal consistency was relatively low (α = .77).

3.2.4. Control Variables

Members' subjective evaluation of leadership of the nursing manager in the

team was controlled for because it would have significant impacts on members'

justice perceptions and team processes (Germain & Cummings, 2010; Li et al.,

2013). A five-item subscale of the Japanese version (Ogata et al., 2008) of the

Practice Environment Scale of the Nursing Work Index (PES-NWI; Lake, 2002),

Nurse Manager, Leadership, and Support of Nurses, was used to measure

members' subjective evaluation of leadership. The scale was rated on a four-point

Likert scale from 1 = "Strongly disagree" to 4 = "Strongly agree." Internal

consistency was acceptable (α = .84). Members' subjective evaluation of

resources available in the team was also controlled and measured with a 4-item

subscale of the Japanese version of PES-NWI on the same rating system as the

subscale for measuring leadership. Team size was further controlled for because it

may play an important role in linking faultline strength with team outcomes

(Thatcher & Patel, 2011). Data on the team size (the number of all nurses and

nursing assistants in the team) was collected from the nursing directors in the

participating hospitals.

3.3. Ethical Considerations

The research was approved by the Review Board of International Christian

University (#2019-47). Participants were given an Informed Consent Sheet, which

explained the research's purposes, methods, and anonymity/confidentiality. If they

agreed to participate in the study, they checked the "I agree to participate in the

study" box on the first page of the questionnaire.

3.4. Data Analytic Strategies

3.4.1. An Overview of Multilevel Structural Equation Modeling

Like many social science studies that focus on the impact of social contexts on individual behaviors, data collected in this type of research has a hierarchical data structure, such as data from individual nurses nested within nursing work teams. In addition, because objective faultline measures are measured at the team level, data in faultline research inherently has multilevel structures. This is the case for data collected in the present investigation as well. The data from individual nurses were nested within teams, and the teams were nested within hospitals. Data were also collected at different units of analysis: faultline strength was assessed at the team level (Level 2 or L2), while team processes and shared fairness perceptions were measured at the individual level (Level 1 or L1). To deal with such a hierarchical data structure, researchers commonly use multilevel modeling (MLM; e.g., Bezrukova et al., 2015; Chung et al., 2015; Spell et al., 2011), which enables them to analyze effects on different levels of analysis simultaneously (Raudenbush & Bryk, 2002). However, several drawbacks of this approach have been suggested, especially when multilevel moderation hypotheses are tested (Preacher et al., 2016).

Recent diversity research has more frequently tested hypotheses of moderation with a hierarchical data structure than before because the notion that the effects of diversity are contingent on contextual factors having become more

common (Thatcher & Patel, 2012). Moderation occurs when the effect of an independent variable depends on the level of another variable (i.e., a moderator), which refers to the interaction effect (Cohen et al., 2003). As shown in Figure 1, the proposed model includes the hypothesis of moderation: the effect of faultlines depends on the level of shared fairness perceptions.

Data collected in the present investigation had a three-level structure in nature, as mentioned above. The effects of hospital-level were not considered in the present investigation because the sample size of hospital was too small to estimate parameters. Therefore, the data were treated as hierarchical data nested at two levels of analysis: individual-level and team-level.

Although multiple procedures of MLM have been developed to test multilevel moderation hypotheses (e.g., Aguinis et al., 2013; Preacher et al., 2007; Raudenbush & Bryk, 2002), Preacher et al. (2016) pointed out several shortcomings in most MLM procedures. One of the most critical shortcomings is that MLM approaches do not separate lower- and higher-level effects into their orthogonal components; instead, they conflate these effects by uniting them into single coefficients. Consequently, the researcher's hypotheses are often tested based on conflated and potentially biased parameter estimates, and in turn, results may be misinterpreted theoretically and statistically (Preacher et al., 2016). In

addition, another shortcoming is that MLM uses observed cluster averages to represent higher-level constructs (Marsh et al., 2009; Preacher et al., 2016). This may lead to bias in estimating parameters by not taking sampling errors into account (Marsh et al., 2009). Thus, it is necessary to adopt more appropriate statistical approaches to test multilevel moderation hypotheses to reach a deeper understanding of the effects of workgroup diversity.

Following the recommendations of Preacher et al. (2016), the present investigation adopted a relatively new statistical advancement: multilevel structural equation modeling (MSEM). L1 variables are measured at the lowest level of analysis (e.g., nurses); L2 variables are measured at a second higher level of analysis (e.g., teams). The L1 variable is divided into two parts, one that varies only L2 units (termed the between-cluster, or B) and the other that varies only within L2 units (termed the within-cluster, or W) (Raudenbush & Bryk, 2002). A key idea of MSEM is to decompose variance B and W parts and specifying and testing a model for each level of the hierarchical data structure (Heck & Thomas, 2020). L1 variables were, therefore, assumed to have B and W effects, as they had B and W parts (Asparaouhov & Muthén, 2016; Lüdtke et al., 2008). On the other hand, L2 variables had no W parts and so were regarded as B variables.

Although both MLM and MSEM decompose B and W effects, one notable

distinction between them is that MSEM uses latent variables, whereas MLM uses observed cluster means to present higher-level constructs. The observed cluster mean of peer justice climate might have been a highly unreliable measure of the unobserved team average because only small numbers of L1 nurses were sampled from some of L2 teams (O'Brien, 1990). MSEM would fully compensate for this bias by introducing latent B parts in lieu of observed cluster means (Lüdtke et al., 2008; Preacher et al., 2010).

Thus, MSEM seemed to be a promising approach for testing multilevel moderation hypotheses. Following recommendations in Preacher et al. (2016), the present investigation also utilized MSEM to test a proposed moderated model of nursing work team faultlines, shared fairness perceptions, and team processes, thus considering various levels of analysis. The use of MSEM therefore has enabled researchers to discuss the theoretical and practical implications of findings based on more reliable results.

3.4.2. Preliminary Analyses: Measurement Models and Handling Missing Data

Before model and hypothesis testing, multilevel confirmatory factor analyses (CFAs) were performed to assess the latent structure of the constructs of the team process variables and distributive peer justice climate with MPlus8.6 (Muthén &

Muthén, 1998–2017). Each of the constructs was indicted by one dimension. The fit of the measurement model was evaluated based on the following recommended criteria: a root mean square error of approximation (RMSEA) $\leqq$ 0.06 and a comparative fit index (CFI) $\geqq$ 0.95 (Chen et al., 2008; Hu & Bentler, 1999). The standardized square root mean residual (SRMR) was also examined to determine the within- and between-level model fit, with the criteria of SRMR $\leqq$ 0.06 for adequate fit. A robust maximum likelihood (RML) estimator was used to obtain robust estimations of standard errors (*SE*s) and to account for violations of the normality of observations (Yuan et al., 2012).

The proportions of missing data for the scale of relationship conflict, trust, communication openness, and distributive peer justice climate were 6.06%, 3.03%, 0.16%, 1.14%, and 0.49%, respectively. The full information maximum likelihood (FIML) method was used to handle missing data because they would then yield less biased estimates while maintaining statistical power, when compared with traditional methods such as listwise and pairwise deletion (Enders, 2001).

3.4.3. Model and Hypothesis Testing

To test a model in Figure 2 based on Hypothesis 1 to 3, a series of MSEM was implemented using MPlus8.6 (Muthén & Muthén, 1998–2017). The present

investigation utilized Bayesian estimation to obtain reliable estimates. As noted

previously, MSEM deals with latent variables instead of observed ones. Thus, the

interaction between faultline strength and distributive peer justice climate was

examined as a latent variable interaction in MSEM. Asparouhov and Muthén

(2020) showed that the Bayesian estimation of latent variable interaction models

outperformed the maximum likelihood (ML) estimation in their simulations.

More importantly, Bayesian estimation was required to overcome issues

related to the small size of the team-level sample in this research. A simulation

study by Meuleman and Billiet (2009) has shown that ML estimation of a relatively

simple MSEM (with 1 latent factor at both levels and 1 contextual predictor)

requires 40 groups. This research was expected to have a team-level sample size

of over 40, but unfortunately, it did not reach that criterion. When the number of

groups is too small, between-parameters are likely to be overestimated and SEs

underestimated, resulting in pseudo-significant effects (Meuleman, 2019). One

possible strategy to address problems associated with the small size of the team

level is to reduce the complexity of model at the between-level (Meuleman, 2019).

A more promising one is to actually use Bayesian estimation (Meuleman, 2019;

Meuleman & Billiet, 2009). Simulation studies have already shown that even the

highest-level sample sizes as small as 20 could yield accurate statistical inference

with Bayesian estimation (Hox et al., 2012; Meuleman & Billiet 2009).

Bayesian estimation does not rely on *large-sample theory* (Kaplan & Depaoli, 2012). The estimation combines the prior distribution with observed evidence, which is the likelihood of data given a set of parameters, to produce a so-called posterior distribution of parameter estimates (Meuleman, 2019). This posterior distribution represents the amount of uncertainty about the parameters that continues to exist after observation of the data, and it is simulated using Monte Carlo Markov chains (MCMCs). The present research implemented Bayesian estimation with two chains and up to 50,000 iterations for each chain in an MCMC. Convergence was achieved with potential scale reduction of <1.1 (Gelman & Shalizi, 2013). Unlike MSEM using ML, traditional SEM fit indices are not available for MSEM with Bayesian estimation (Bayesian MSEM). Instead, it generally yields a posterior predictive *p*-value that represents model fit. However, this index was not available when the latent interaction model was assessed. This drawback actually had little impact on this focus of this research investigation because it primarily aimed to examine the moderating effects of peer justice perceptions on the effects of faultlines rather than evaluating model fit.

CHAPTER 4: RESULTS

4.1. Characteristics of Participants and Teams

Of the 992 questionnaires distributed, 757 were returned (response rate = 76.3%). However, after invalid responses (no answers for important variables or answers with all the same values) were excluded, the number of valid responses was 686, and the valid response rate to the total number of questionnaires distributed was down to 69.2%. The valid response rate varied from 27.6% to 100% across the teams; there were 8 teams with a response rate of less than 50% within a team. These teams were judged as being too difficult to obtain reliable values of ASW, and were thus excluded from further analysis. Therefore, 36 teams with 616 nurses from 11 hospitals were included in the final analysis. The involved teams consisted of 18 acute care wards and 18 chronic care wards. The average of team size was 28.64 (*SD* = 6.60). The participants included in the further analyses included 54 males (8.8%) (cf., the percentage of male nurses is 7.8% for the national data [MHLW, 2018]) and 562 females (91.2%). Furthermore, 34.4% were in their 20s, 24.6% were in their 30s, 24.8% were in their 40s, 12.6% were in their 50's, and 3.6% were 60 years or above (cf., For the national data, 21.2% was in their 20s; 24.4% was in their 30s; 28.2% was in their 40s; 18.9% was in their

50s; and 7.4% was 60 years and above [MHLW, 2018]). The mean age of 36.96

years (SD = 11.44 years) was observed across all age groups. Their educational

backgrounds were as follows: 44 graduated from high schools, 437 from

vocational schools, 45 from junior colleges, 81 from universities, 3 from graduate

schools, and 3 from other training venues. The mean of team tenure was 3.69

years (SD = 11.44 years).

4.2. Preliminary Results

Multilevel CFAs yielded satisfactory model fit for team process variables:

relationship conflict, χ^2 = 31.29, p < .001, CFI = .972, RMSEA = .092, SRMR$_{Within}$

= .022, and SRMR$_{Between}$ = .016; trust, χ^2 = 21.83, p = .026, CFI = .994, RMSEA

= .040, SRMR$_{Within}$ = .014, and SRMR$_{Within}$ = .016; and communication openness,

χ^2 = 45.25, p < .001, CFI = .971, RMSEA = .087, SRMR$_{Within}$ = .023, SRMR$_{Between}$

= .060. In addition, the overall model fit was satisfactory for leadership, χ^2 = 44.03,

p < .001, CFI = .980, RMSEA = .070, SRMR$_{Within}$ = .019, and SRMR$_{Between}$ = .029.

Some fit indices that did not meet the criteria for resources, χ^2 = 69.02, p < .001,

CFI = .934, RMSEA = .111, SRMR$_{Within}$ = .033, and SRMR$_{Between}$ = .096. The factor

loadings of the 4 items in the scale ranged from .510 to .826 (SEs ranged

from .024 to .037) for the within-level and from .935 to 999 (SEs ranged from .015

to .044) for the between-level. As shown here, all of the items appeared to help

explain data variance at each level. Therefore, no revision was added to the scale.

Regarding distributive peer justice climate, however, no model fit indices did not reach statistical significance, χ^2 = 536.06, p < .001, CFI = .555, RMSEA = .278, $SRMR_{Within}$ = .032, and $SRMR_{Between}$ = .294. In fact, there was an item that showed low factor loading at the within-level (.106). Therefore, it was decided to exclude that item from the scale. After excluding the item, although the value of $SRMR_{Between}$ did not meet the criteria, others showed a better fit of the model, χ^2 = 11.81, p = .038, CFI = .990, RMSEA = .047, $SRMR_{Within}$ = .028, and $SRMR_{Between}$ = .327. Accordingly, the revised 4-item scale was then used as a measure of distributive peer justice climate. An internal consistency of the revised scale was satisfactory (α = .85). Means, SDs, intraclass correlations, and zero-order correlations of the L1 study variables are shown in Table 3. ICC(1) of all the L1 study variables was relatively low; specifically, distributive peer justice climate showed only 6% of total variances for the between-part. However, a series of multilevel MSEM was carried out to test the proposed model because faultline strength was measured at L2, which did not have within-part effects. Table 4 presents the means, SDs, and zero-order correlations of the L2 study variables, including faultline strength and the number of obtained subgroups. The maximum number of the obtained subgroups was six, and the minimum was two.

4.3. Model and Hypothesis Testing

Bayesian MSEM was implemented to evaluate the main effects of the
faultlines formed by each combination of attributes (i.e., age and gender, age and
team tenure, and team tenure and educational background) on each of the team
process variables (i.e., relationship conflict, trust, and communication openness)
as well as a moderating effect of distributive peer justice climate on the effects of
faultlines for those dimensions at the team level (i.e., between level). Results are
shown in Tables 5, 6, and 7, respectively. Estimated coefficients and their
significance based on p-values were also presented in Figures 3, 4, and 5 to
recognize the relationships between studied variables at a glance. As Tables 5, 6,
and 7 show, high values of R^2 at the between-level across all the models indicate
that the variances of the latent team process variables were almost completely
explained by the other variables at the team-level.

As predicted by *H1a* (Table 5), faultline strength based on age and gender
was negatively related to team-level trust (Figure 3-2) and communication
openness (Figure 3-3), whereas there was no statistically significant relationship
between faultline strength and team-level relationship conflict (Figure 3-1).
Similarly, regarding *H1b* (Table 6), faultline strength based on age and team tenure
was positively related to team-level relationship conflict (Figure 4-1) and negatively

related to team-level communication openness (Figure 4-3). A main effect of the

faultline strength on team-level trust was suggested as being significant based on

p-value (Figure 4-2) while its 95% credible intervals[1] did not reach significance.

Moreover, regarding *H1c* (Table 7), the main effect of the faultline strength based

on team tenure and educational background was statistically significant on team-

level relationship conflict (Figure 5-1), while it was not significant both on team-

level trust (Figure 5-2) and communication openness (Figure 5-3).

Regarding *H2*, the statistically significant moderating effect of distributive

peer justice climate was found only on the relationship between the strength of

faultlines based on team tenure and educational background and team-level trust

(Table 7, Figure 5-2). To determine how the moderator changed the effects of the

strength of faultlines based on team tenure and educational background on team-

level trust, the interaction was plotted, as shown in Figure 6. As the figure

illustrates, how distributive peer justice climate moderates the relationship

between the faultline strength and team-level trust was opposite as *H2* predicted.

In the case of one *SD* below the mean of the team-level distributive peer justice

climate, the stronger the faultline strength, the more team-level trust increased.

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[1] The Bayesian approach treats the parameters of interest as random variables. Credible
interval is a range of values within which it is fairly certain that the true value of the parameter
is contained.

Conversely, when the team-level distributive peer justice climate was at the mean or one *SD* above the mean, the stronger the faultline, the lower the team-level trust.

H3a and *H3b* predicted statistically significant effects of distributive peer justice climate on team process variables at both individual and team levels. Consistent with *H3a*, distributive peer justice perception was significantly related to all the team process variables at the individual level, as predicted (Tables 5, 6, and 7). However, at the team level, contrary to *H3b*, distributive peer justice climate was related only to team-level trust in the model including the strength of faultlines based on age and team tenure as well as to team-level relationship conflict and trust in the model including the strength of faultlines based on team tenure and educational background.

4.4. Supplementary Analyses

As explained above, the direction of the interaction effect between the faultline strength based on team tenure and educational background was opposite, as predicted. There can be two possible explanations for the observed interaction effect. One is that relatively homogeneous subgroups around team tenure and educational background may have referred their in-groups rather than out-groups to maintain their positive social identities. Another possibility is that there might

have been a large subgroup accounted for the majority of team members, and

fairness perceptions shared by members of the large subgroup represented the

peer justice climate of the entire team. To examine which of these two possibilities

better explained the data, for each team, the number of members in the largest

subgroup divided by the team size was obtained as a "dominancy index," and

MSEM was implemented to see if the moderating effect of distributive peer justice

climate varied with the value of the dominancy index.

The mean value of the dominancy index was .40 (SD = .17). The value

ranged from .10 to .76. A model that included the three-way interaction among

faultline strength based on team tenure and educational background; team-level

peer distributive justice climate; and the dominancy index (Figure 7) was tested

using Bayesian MSEM fixing the error variance in the interaction terms as .01, as

recommended in Asparouhov and Muthén (2020). Results yielded no statistically

significant effect in the model (Table 8). By adding the interaction between team-

level distributive peer justice climate and the dominancy index, the interaction

between team-level distributive peer justice climate and faultline strength also

became statistically non-significant. Even so, its p-value and the values of 95%

credible intervals were still close to the significant level. In addition, the direction of

the interaction effect was the same as the one in the previous model. In contrast,

the estimate of the interaction between team-level distributive peer justice climate

and the dominancy index was far from the significant level. More importantly, the

value of $R^2_{Between}$ decreased after adding the new interaction term to the previous

model, suggesting that the previous model better explained the data.

Moreover, the moderated model including both trust and relationship conflict

as dependent variables was also tested with Bayesian MSEM to examine whether

faultlines based on team tenure and educational background presented the

negative and the positive effects on team processes simultaneously. As Table 9

shows, faultline strength was positively related to relationship conflict but not to

trust. In addition, an interaction effect of faultline strength and distributive peer

justice climate on team-level trust was statistically significant according to its *p*-

value, although 95% credible intervals did not reach significance. The estimated

coefficients showing relationships among the studied variables are also presented

in Figure 8.

CHAPTER 5: DISCUSSION

For some time now, organizational researchers have been struggling to understand the impact of diverse people working together on group processes and performance in various work settings. However, the results remain inconsistent and inconclusive. This may be due to the considerable dependence of diversity effects on context (Joshi & Roh, 2009), and yet key contextual factors that govern diversity effects are still not fully understood (Thatcher & Patel, 2011). Moreover, such important contextual factors may vary across work contexts. Prior diversity research has been largely concerned with identifying effects specific to particular dimensions of diversity (van Knippenberg & Schippers, 2007). However, to understand the effects of diversity more deeply and with an eye toward interventions, researchers should pay more attention in the future to the context in which they are studying diversity. Nursing has been recognized as a highly demanding and stressful profession (Abuairub, 2004; Ohue et al., 2011). Based on these characteristics, the present investigation examined the effects of faultlines, or the divisions of teams into relatively homogeneous subgroups, on team processes by predicting the salient composition of faultlines in relation to job stress in Japanese nursing work contexts. The results mostly supported the predictions

regarding the disruptive effects of strong faultlines on team processes.

Additionally, this study has laid the groundwork for the development of a theory that explains the relationship between shared peer justice perceptions and faultlines by testing the moderating effect of distributive peer justice climate on the relationship between faultlines and team processes. Also, the current investigation sought to reveal the roles of shared perceptions on the extent to which members treat each other fairly in diverse workgroups. However, contrary to the prediction, it was found that the stronger the faultlines based on team tenure and educational background, the higher the level of trust when the level of distributive peer justice climate was low. The results indicate that strong faultlines have positive effects on team processes, which is inconsistent with the assumptions based on group faultline theory and social identity theory in their original formulations. Theoretical and practical implications of those findings are now discussed in the following subsections.

5.1. Effects of Faultlines on Team Processes

Results of MSEM partly supported *H1a*, *H1b*, and *H1c*, which predicted disruptive effects of faultlines on team processes. *H1a* proposed that strong faultlines formed based on age and gender have negative effects on team processes. As predicted, the strength of the faultlines was negatively related to

trust and communication openness, suggesting that the more clearly teams are

divided into relatively homogeneous subgroups around age and gender, the lower

the trust and the more impaired communication the teams experience. Consistent

with social categorization theory, age and gender are thought to be adequately

meaningful for nurses to form salient subgroups that lead to low levels of trust and

hindered communication in the teams. However, contrary to *H1a*, the faultline

strength was not related to team-level relationship conflict.

On the other hand, results supported *H1b*. The strength of faultlines based

on age and team tenure was positively related to relationship conflict. It was also

negatively related to communication openness. Its relationship with trust was not

statistically significant according to 95% credible intervals, but the *p*-value satisfied

the required significance level. Consisting with social identity theory, these results

suggest that subgroups based on age and team tenure appear salient enough to

result in high relationship conflict, low trust, and hindered communication in

nursing work teams with strong faultlines based on age and team tenure.

On the other hand, the results did not fully support *H1c*. The faultline was

also positively related to relationship conflict, but not related to team-level

communication openness. Moreover, there was also no main effect of the faultline

strength on trust. However, the effects of faultlines on trust was actually moderated

by the level of distributive peer justice climate, suggesting that the effects of the faultlines based on team tenure and educational background on trust are contingent on the level of distributive peer justice climate. The moderating effect of distributive peer justice climate will be discussed later in the following subsection.

Thus, although the results generally supported disruptive effects of faultlines on team processes, they were inconsistent. Such inconsistency may be partly because of absence of out-group hostility. Brewer (1999) argued that in-group favoritism does not necessarily require out-group hostilities at the same time. According to Brewer (1999), individuals are highly independent and can survive and cooperate with each other without the risk of excessive cost from conflicts. In this investigation, teams with strong faultlines based on age and gender experienced lower trust and hindered communication but not higher relationship conflict. In fact, male and female nurses can complement each other. For example, female nurses can provide care that male nurses cannot, and male nurses can play an active role in situations that require physical strength (Uesugi et al., 2016). Moreover, female nurses tend to feel that the presence of male nurses in the team eases interpersonal tensions among nurses (Kainuma et al., 2008; Uesugi et al., 2016). Thus, faultlines based on age and gender may hinder communication and lessen trust within teams but not enhance relationship conflicts.

On the other hand, when teams are divided into subgroups based on age and team tenure, they are considered to form a hierarchy based on the senior-junior relationship rather than a complementary relationship with each other. Since the senior-junior relationship is strongly related to job stress, subgroupings about age and team tenure may be more likely to evoke both in-group and out-group biases than those around age and gender. This may be one reason that the faultlines based on age and team tenure showed disruptive effects on all the team process variables.

Another possible explanation for the inconsistent results would be that unknown contextual factors may alter how faultlines impact team processes. In this investigation, the relationship between faultlines based on team tenure and educational background and team-level trust was moderated by the level of shared peer justice perception. There are more unknown moderators that may have altered the effects of the faultlines, resulting some faultlines showing effects and others showing no effect on team processes.

5.2. Moderating Effects of Distributive Peer Justice Climate

Despite the small proportion of between-part variance, distributive peer justice climate moderated team-level trust. However, as Figure 3 illustrates, when

teams had a high level of distributive peer justice climate, the stronger the

faultlines, the lower the trust the teams experience. On the contrary, when the level

of distributive peer justice climate was below the average, the higher the trust the

teams experience. It may be more natural to interpret this result as indicating that

the negative effect of faultlines was observed when the distributive peer justice

climate was not below the mean level, rather than that the negative effects of

faultlines were amplified as a result of the increased salience of the subgroups due

to the high distributive peer justice climate. Most probably, the salience of

subgroups based on team tenure and educational background were independent

from the effect of distributive peer justice climate and were enhanced by other

factors. As in the other two types of faultlines, more investigations are needed to

identify factors that enhance the salience of subgroups in nursing work contexts.

However, when the distributive peer justice climate was low, the stronger the

faultlines, the higher the level of team-level trust, suggesting positive effects of the

faultlines. One possible explanation for the results was that due to the imbalance

in subgroup size, the peer justice climate of the entire team may have been

represented by one subgroup with the largest number of members. For example, if

a team were divided into Y and Z subgroups, which have 18 members and 2

members respectively, data from Y subgroups may contribute more to the

between-part variance of trust than the Z subgroup. However, results from the additional analysis did not support this explanation.

The other possible explanation for the interaction effect is that within a team with a low distributive peer justice climate, homogeneous subgroups around team tenure and educational background provided some mechanisms by which its members could cope with such unfair work environments. This explanation is consistent with the findings from Bezrukova et al. (2010) and Spell et al. (2011). Bezrukova et al. (2010) showed that the faultlines weakened the positive relationship between perceived interpersonal justice and psychological distress. Similarly, Spell et al. (2011) found that the relationship between distributive injustice and task conflict was weaker when the faultlines were stronger. Both studies examined the faultlines as a moderator and suggested that faultlines would weaken the negative effects of injustice perceptions on individual outcomes. Based on their findings on such positive effects of faultlines, Bezrukova et al. (2010, p. 743) called faultlines the "healthy divides."

Despite the suggested positive effects of the faultlines, the findings of the present research did not fully support the faultlines as "healthy divides". Rather, the faultlines may be *protective divides* but also *disruptive divides* at the same time. This claim is supported by the result showing that the positive relationships

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between the faultlines and team-level relationship conflicts exist regardless of the

level of distributive peer justice climate. Moreover, results of the MSEM, which

included both relationship conflict and trust as dependent variables in a model

simultaneously provided further support for this claim. Those results show that

when a team is perceived unfair in terms of the balance between rewards and

contributions among team members, the more the team is divided into

homogeneous subgroups, the greater the trust within the team, but also the

greater the relationship conflict at the same time.

These contradictory findings can be understood if we apply social

categorization theory. Members categorized themselves into subgroups (i.e., in-

group) around the salient attributes (i.e., team tenure and educational background

in this research) and have a social identity based on the memberships in their own

subgroups. The subgroup members strive to keep their own social identity positive

to enhance self-esteem through evaluating their own subgroups positively but the

other subgroups (i.e., out-group) negatively. Consequently, relationship conflict

tends to increase between the subgroups, and in turn, team-level relationship

conflict increases. On the other hand, within a homogeneous subgroup, members

are more connected and interdependent, and tend to trust and cooperate with

each other more than with those outside the group (Bezrukova et al., 2009; Lau &

Murnighan, 2005). Moreover, such characteristics of an in-group may be more important for its members under stressful environments such as injustice workplaces.

According to Lazarus's (1984) cognitive appraisal theory of stress, under stressful circumstances, members in a subgroup may provide information that can be helpful in evaluating the magnitude of detrimental stimuli. Stress can be reduced if individuals are confident that they can control, avoid, escape, or relieve harmful stimuli. Subgroups divided by faultlines may provide such a support mechanism to their members. Studies on the relationship between social identity and social support also suggest that information and support from in-group members causes members in the same group less stress and promotes higher self-esteem than that from out-group members (Haslam et al., 2004; Haslam et al., 2005). Thus, through the exchange of social support within subgroups, subgroup members maintain or enhance their own social identity and self-esteem even in the face of distributive injustice situations experienced by the entire team. Through the process of subgroups providing a mechanism to help members, interdependence and proximity between members may increase. As a result, even though members are asked about team-level trust, they may assess it by referring to their in-groups. Conversely, when they are asked about relationship conflict, it

may be assessed by referring to the out-group. This may be why the faultlines

showed both positive and negative effects on team processes at the same time

under injustice work environments.

Among the three types of faultline compositions, why were such positive

effects of faultlines observed only when the faultlines were formed by team tenure

and educational background? One possible answer would be that faultlines based

on those attributes may be evident as real dividing lines rather than hypothetical

dividing lines. Nurses are usually assigned to career development programs

according to their years of experience (Ono et al., 2015). New nurses, in particular,

have more opportunities to receive group training than other nurses (Arakawa et

al., 2006) and are considered to be the most noticeable subgroup by team tenure

in nursing work teams. In addition, it has been pointed out that new nurses are

more likely to be under a great deal of psychosocial stress, and in particular, the

decline in self-esteem caused by inadequate practical skills is likely to lead to early

retirement (Arakawa et al., 2006; Kashiwada, 2018). Moreover, it has been

indicated that the practical skills of new nurses who graduated from universities

are lower than those of nurses who graduated from vocational schools, suggesting

educational background is significantly meaningful for nurses and likely to form

salient subgroups. Under stressful circumstances, subgroup members are

assumed to exchange support to cope with stressful situations and enhance their self-esteem. Even after their members have passed the novice stage, subgroups based on team tenure and educational background are likely to remain and harness themselves from stressful work environments such as hospital settings.

In addition to the moderating effect of peer justice perception, the present investigation also examined its main effects on team processes at both individual and team levels. As predicted in *H3a*, individual distributive peer justice perceptions showed consistently significant positive effects on team processes. This is consistent with research findings on individual justice perception and group processes in organizations (Colquitt et al., 2001). On the other hand, consistent with *H3b*, such positive relationships between distributive peer justice climate and team process variables were not constantly observed at the team level. In addition, although peer justice climate was proposed as a team-level construct (Cropanzano et al., 2011), only 6% of its total variances were in the in-between part in this research. Whether justice perceptions can be treated as a team-level construct or not is still a controversial topic in organizational justice literature (Li & Cropanzano, 2009). Thus, further examinations, including those related to refining the peer justice climate, are sorely needed.

The overall conclusions on model and hypothesis testing are that faultlines

showed the negative effects on team processes and that the interaction effect was

observed only when faultlines were formed based on team tenure and educational

background. Moreover, individual peer justice climate perception was positively

related to team processes, while distributive peer justice climate was not

significantly related to team processes. Based on the findings, the relationships

among faultline strength, distributive peer justice climate, and team processes

were depicted in Figure 9-1. Also, Figure 9-2 presented the relationship among

those factors as well as the interaction effect of faultline strength based on team

tenure and educational background and distributive peer justice climate.

5.3. Theoretical Implications

The present investigation is believed to be the first to examine the effects

of faultlines in nursing work teams using an objective faultline measure. Consistent

with the predictions from both group faultline theory and social categorization

theory, strong faultlines showed disruptive effects on team processes in nursing

work teams in Japan. Past faultline research was mostly conducted in lab settings

or workgroups from various industries, mostly in non-Asian contexts. This

investigation demonstrated that the group faultline theory can also be applied to

workgroup diversity in Japan. In addition, this study indirectly showed the

importance of assuming the composition of salient faultlines from the perspective

of normative fit for team members in each work context.

Although the expected moderating effect of distributive peer justice climate was not observed this time, the present investigation has extended the group faultline theory by suggesting that faultlines have both protective and disruptive effects on group functioning within injustice groups. Some past studies on the effects of faultlines have also reported the positive effects on group outcomes (e.g., Lau & Murnighan, 2005). However, it remains unknown whether the faultlines that show positive effects present only beneficial effects on group outcomes. The present investigation addressed this issue and showed that the faultlines display both negative and positive effects on group outcomes simultaneously within injustice groups. This dual existence of positive and negative effects may be due to the reinforcement of the in-group and out-group bias as members exchange information and support to cope with adversity in a homogeneous subgroup. Thus, the faultlines under adverse environments (e.g., unfairness on balance between rewards and contributions among team members) have a double-edged sword effect, and one cannot rejoice in the positive effects with all hands (Figure 10).

Such a double-edged sword nature of faultline effects under adversity can be applied to other intergroup conflicts under adverse situations, such as social

divisions in the COVID-19 era. For example, in the case of the COVID-19

outbreaks in Japan, the government and experts have been calling on young

people to take preventive action and have emphasized the importance of

protecting vulnerable populations such as older people. As a result, age subgroups

may have become salient, and the younger generation may have felt "offended" by

such messages from the authorities. Therefore, group cohesion may have

increased within the same age subgroups through exchanging (or only receiving)

information that has helped members to cope with stressful circumstances related

to COVID-19 and also to maintain their own positive social identity as well as to

evaluate other age groups as being negative. Hence, intergeneration conflicts

would increase. Further examinations are needed to apply the model in different

work contexts as well as broader settings.

5.4. Implications for Management and Policies

There are three implications for nursing work team management from the

findings. First, nursing managers and administrators need to know how members'

attributes including age, gender, team tenure, and educational background align

within a nursing work team affect its team processes. Conflict among nursing

professionals has been recognized as a significant management issue in nursing

(Labrague et al., 2018). To address the issue, research in nursing mainly focused

on effective conflict management approaches (e.g., Al-Hamdan et al., 2016) but

not on factors that lead to conflicts in nursing work settings. This investigation,

however, suggest that clear-cut alignment of nurses' attributes including age,

gender, team tenure, and educational background impact team processes, which,

in turn, may impair teamwork. The findings may shift conflict management from an

individual-based approaches for managing existing conflicts to team- or

organization-based ones for preventing their occurrence.

Second, the assignment or allocation of nurses must be considered so that

their attributes are not clearly aligned within a team after being aware of possible

effects of faultlines. Out of the three variations of the faultlines examined in this

research, only those based on age and team tenure showed negative effects on all

the team processes' variables. According to the results, when re-configuring

nursing work teams, nursing directors or managers should avoid assignments that

clearly divide subgroups, such as younger nurses with shorter team tenure and

older nurses with longer team tenure, to reduce the disruptive effects of faultlines

on team processes. Faultlines based on age and team tenure can be easier to

control compared with the other two.

Another practical implication is to promote peer justice within teams.

Organizational justice research has shown that individual justice perceptions,

where the sources of justice are figures in power, have significant impacts on

work-related outcomes such as satisfaction, cooperation, and conflict (Colquitt et

al., 2001). Additionally, findings in this research show that individual peer justice

perceptions, where the source of power is colleagues, have positive effects, such

as promoting trust and communication, and lessening relationship conflict among

members, which are all important to quality teamwork (Chiocchio et al., 2011; Jehn

et al., 1999). Therefore, nursing managers may need to pay attention to whether

the amount of work informally allocated among members, in addition to the work

allocation formally determined by the organization, is distributed unevenly to

nurses with certain attributes.

However, biased allocations of work may not be easily handled with

immediate effects. In that case, faultlines in team tenure and educational

background may show protective effects for team members, even manifesting

disruptive effects on team processes at the same time. Managers and

administrators, therefore, may need to identify the configuration of subgroups

based on team tenure and educational background, and ultimately monitor the

effects of the faultlines while promoting fairness among the members.

There are also implications for policies on diversity in Japanese hospital

settings based on the findings from the present investigation. In Japan, further

diversification of the nursing workforce is expected due to the rapid changes of

demographics and the accelerating labor shortage. For one thing, the Japanese

society has been rapidly aging. MHLW (2020) estimates that 10.7 million people

will need to work in the health and welfare sector in 2040, even though the total

number of workers will be only 52 million. Such a workforce shortage may need to

recruit more nurses from overseas to work in Japan. More male nurses working in

hospital settings are also expected as gender bias in occupational choice is

eliminated. The aging of the nursing workforce will also continue due to the aging

population. As a result, it is inevitable that nurses and other healthcare

professionals whose attributes are more varied than at the present need to work

together within the same team in the future.

Despite expected further diversification, no major nursing organization in

Japan has policies on diversity of the nursing workforce. Based on the results of

this investigation, there are two things that should be included in policies on

diversity of nurses. First, even though diversification of the nursing workforce may

contribute to providing quality care respecting diverse people (Gillis, 2010), nurses

must be aware that diversity generally is likely to show negative impacts on team

functioning. Age, gender, team tenure, and educational background are common

demographic attributes and diversity based on those attributes has already

existed. Therefore, it is important to be aware of the effects of diversity at this point

in time to facilitate teamwork that is necessary for provisions of quality nursing

care.

Second, policies also should elucidate that the effects of diversity can be

largely influenced by the workplace context, rather than the diversity itself being

the problem. The issue of what combinations of attributes form salient subgroups

needs to be explored further. However, all the faultlines based on attribute

combinations determined based on their subjective meaningfulness to the nurses

generally manifested the expected negative effects on team processes.

Additionally, this research found that the effects of faultlines varied with the level of

shared peer justice perceptions. Thus, understanding that the effects of diversity

vary by work contexts may lead to a reduction in nurses' own negative attitudes

toward diverse nurses working together.

5.5. Limitations and Future Directions

There are several limitations that interpretation and generalization of the

findings might have been hampered, as in any empirical research. First, the

generalizability of the findings might be limited because the present investigation

used a convenience sample of teams and nurses. Although the data was collected

from hospitals placed in various areas of Japan, it is difficult to deny systematic

tendency in participants' responses. In addition, the sample used in the present

research was slightly younger and included more male nurses compared with the

entire nurses in Japan. Future research might enhance the validity of the findings

by using a more representative sample. To access hospitals that randomly

selected from the list of hospitals in Japan may be an effective way to acquire a

more representative sample, although there are still issues in low response rate

and biased tendencies of participating hospitals (van Knippenberg et al., 2010).

Second, non-response of team members might have distorted the team's

ASW values, thereby biasing the findings. The number of teams with their

response rate of ≥70% was 24 and of ≥50% was 12. Those figures showed better

team response rates compared with other extant research findings (e.g., Kunze &

Bruch, 2010). Considering ASW's robustness against missing response, it is

convincingly argued that non-response of demographic characteristics did not

substantially bias the results in this investigation.

Third, the results in this research based on self-report responses might be

biased by common method variance (Podsakoff et al., 2003). However, a bias is

relatively unlikely for the hypotheses regarding the main effects of faultline

strength on team processes as well as the interaction effect of faultline strength

and distributive peer justice climate. For the hypothesis on the main effects,

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faultline strength was calculated based on objective data on compositions of members' attributes and thus not based on subjective evaluation as the team process variables. Regarding the hypothesis on the interaction effect, common method problems are even more unlikely to occur. A Monte Carlo simulation study (Evans, 1985) demonstrated that artifactual interaction caused by common method inference was not created. Therefore, common method variance should not be major concern for the results in this investigation.

Forth, the present investigation did not show evidence on the degree of subjective meaningfulness or salience of each set of demographic attributes for nurses. Therefore, this investigation cannot conclude that the faultlines examined in this study had a significant effect because the attributes that formed the faultlines were indeed subjectively meaningful and salient to the members. Additionally, it is difficult to give a definitive answer as to why the faultlines were related to the team process variables differently based on the results. This issue is highly associated with dormant vs. active faultlines in faultline literature (Thatcher & Patel, 2011). Future research should directly address how targeted faultlines are subjectively meaningful for the members and are actually perceived by them, being careful not to focus on those attributes by having them asked. Through such investigations, it may become clear what faultlines have protective effects for the

team members in that work context.

Fifth, the whole picture of effects of faultlines in nursing work teams has not been revealed in the present investigation. Team faultlines were obtained only based on demographics attributes of nurses this time, although there may be nursing assistants and other healthcare professionals within the same ward. In addition, the present investigation did not take into account team characteristics (e.g., acute care ward vs. chronic care ward) and also hospital characteristics (e.g., hospital size, acute care hospital or long-term care hospital) that may impact on how faultlines work in diverse nursing work teams. Bayesian MSEM cannot deal with complicated models with a small team-level sample size. Therefore, future study with a larger sample of team may examine effects of faultlines based on attributes of whole members in the team on team outcomes, taking into accounts more team-level and hospital-level factors.

Finally, this investigation primarily aimed to identify contextual factors that mitigate disruptive effects of faultlines on group process and performance. Although, its attempt failed this time, it is still important to find such factors for both understanding workgroup diversity itself and managing diverse groups to limit disruptions and benefit from diverse members. In examinations of interaction effects with multilevel data, a small size of higher-level sample has been a

bottleneck (Meuleman, 2019). Fortunately, recent advancements in multilevel analysis and Bayesian estimations such as Bayesian MSEM should enable researchers to examine it with relatively small sizes of higher-level sample; however, even these newer approaches have still some limitations such as no availability of fit indices and inability to complicated models (Asparouhov & Muthén, 2020). By using such advanced approaches, nonetheless future research must continue to challenge to reveal how diversity operates in nursing work teams and related contexts.

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Figure 1

A Conceptual Model of Faultline Strength, Shared Fairness Perceptions, and

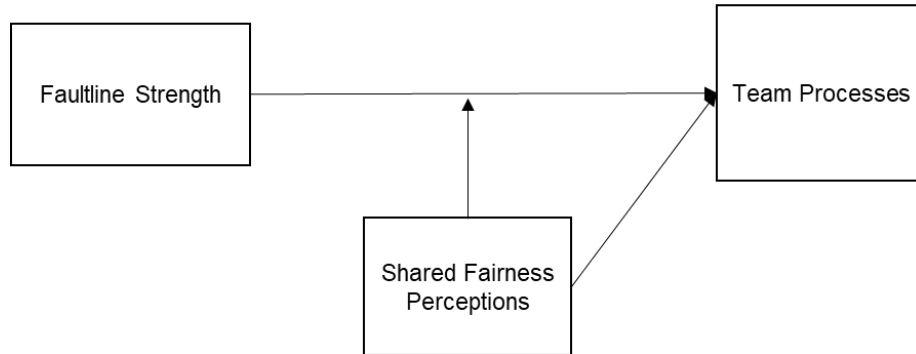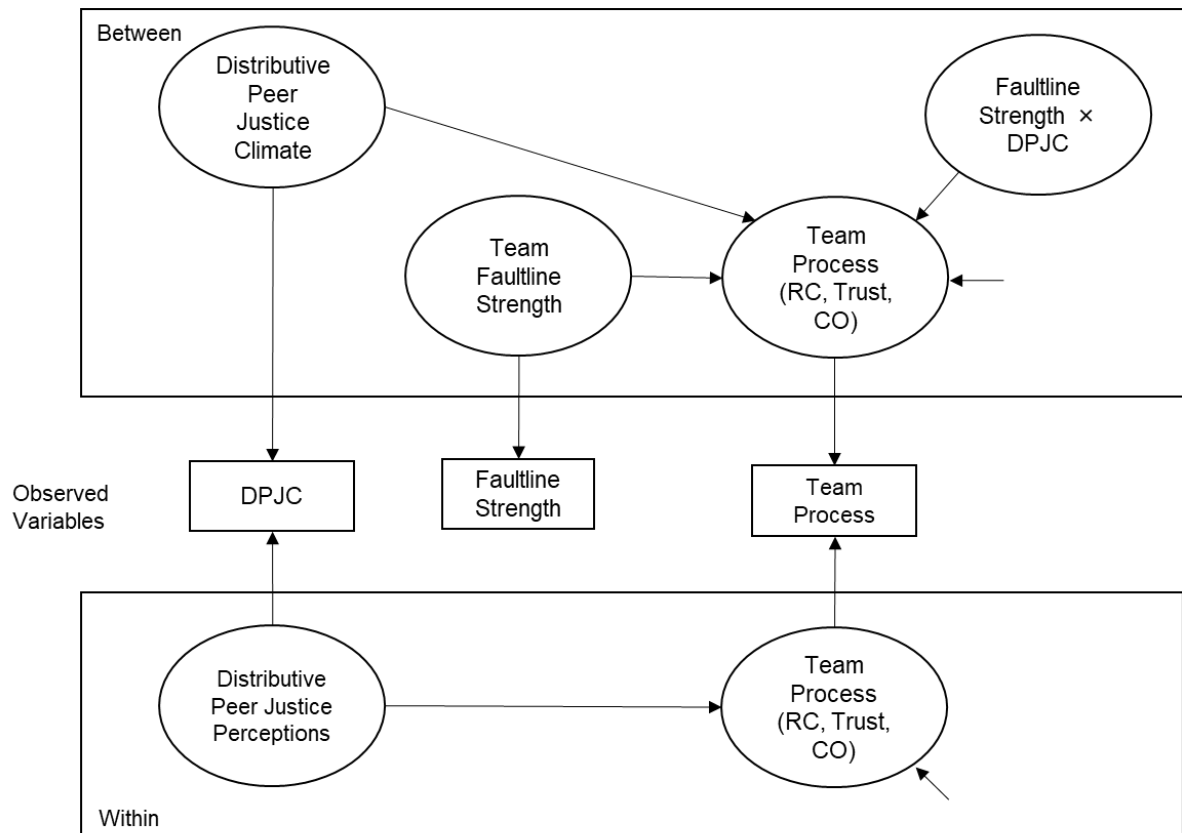*Team Process Variables in Japanese Nursing Work Teams*

Figure 2

A Proposed Model of Team Faultline Strength, Distributive Peer Justice Climate, and

Team Process Variables

Note. Circles are latent variables. Single headed arrows are path coefficients and loadings. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate; RC = relationship conflict; CO = communication openness.
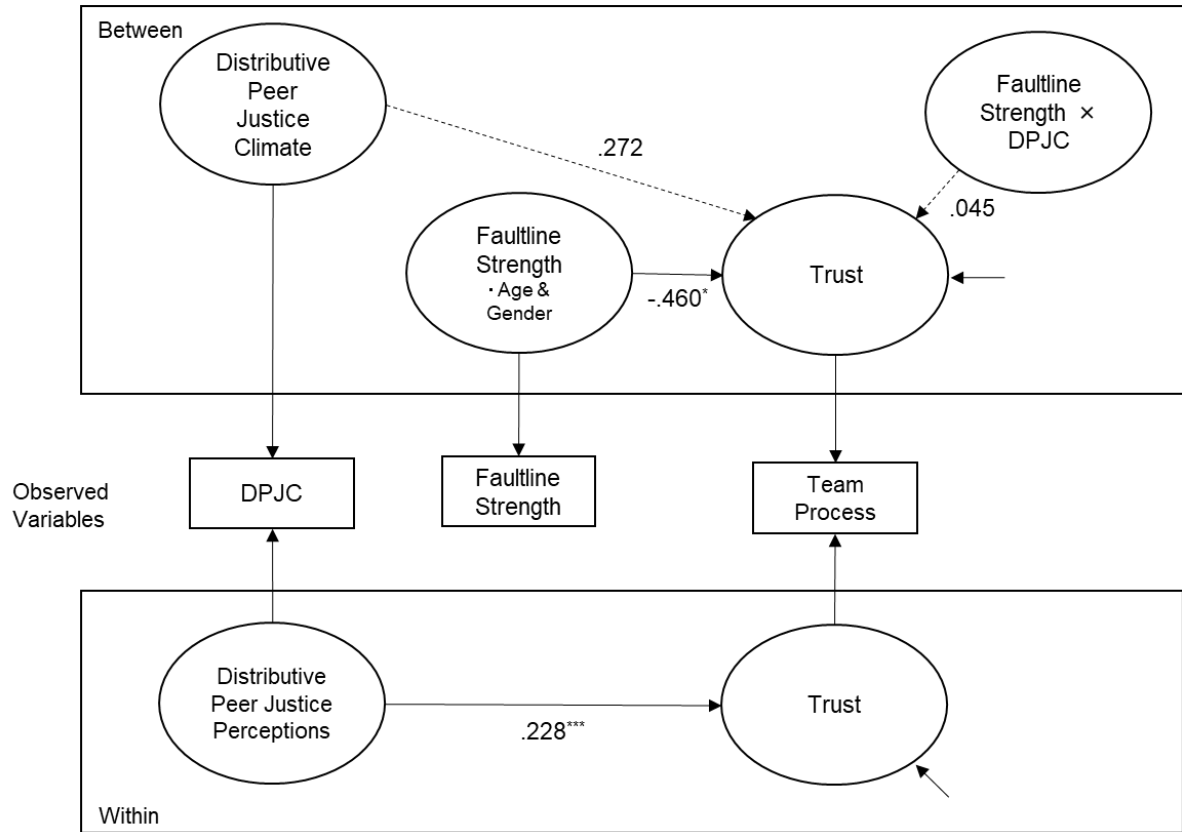
Figure 3-1

Multilevel Structural Equation Model of Faultline Strength based on Age and Gender,
Distributive Peer Justice Climate, and Relationship Conflict with Interaction between Faultline
Strength and Distributive Peer Justice Climate
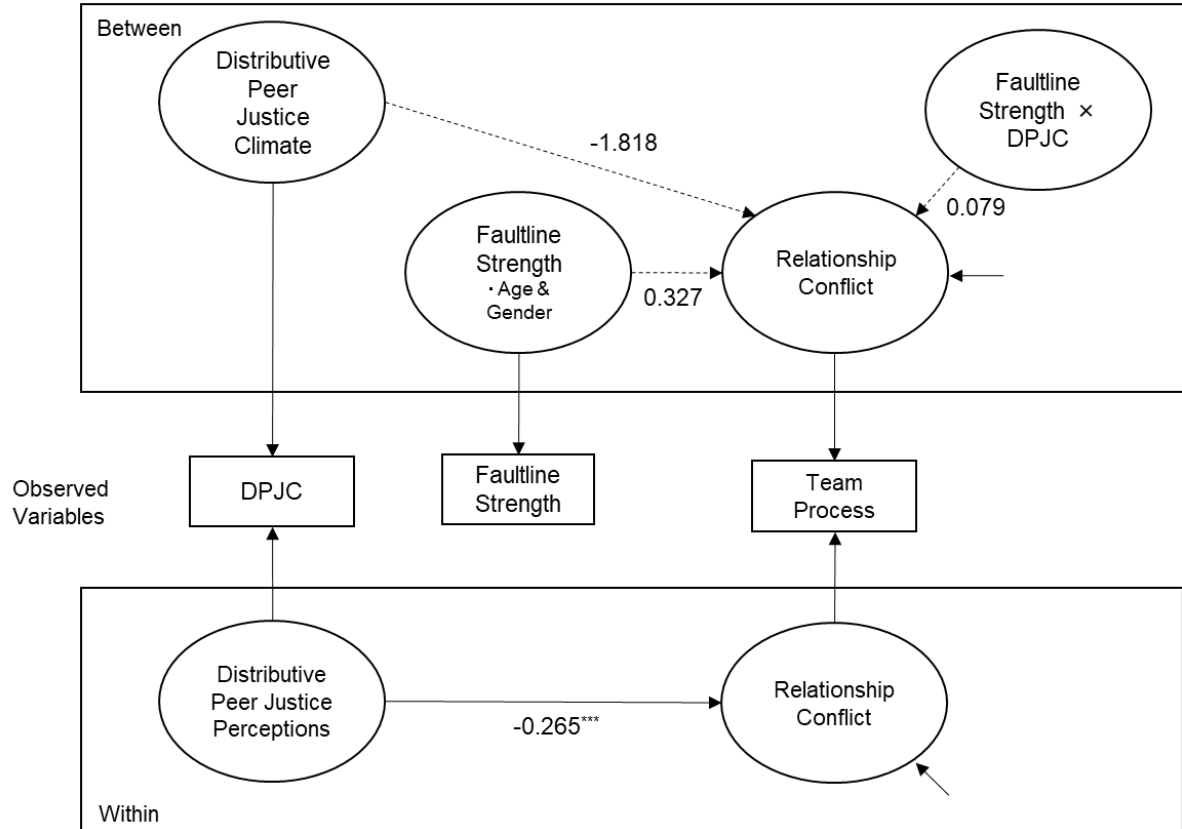
Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
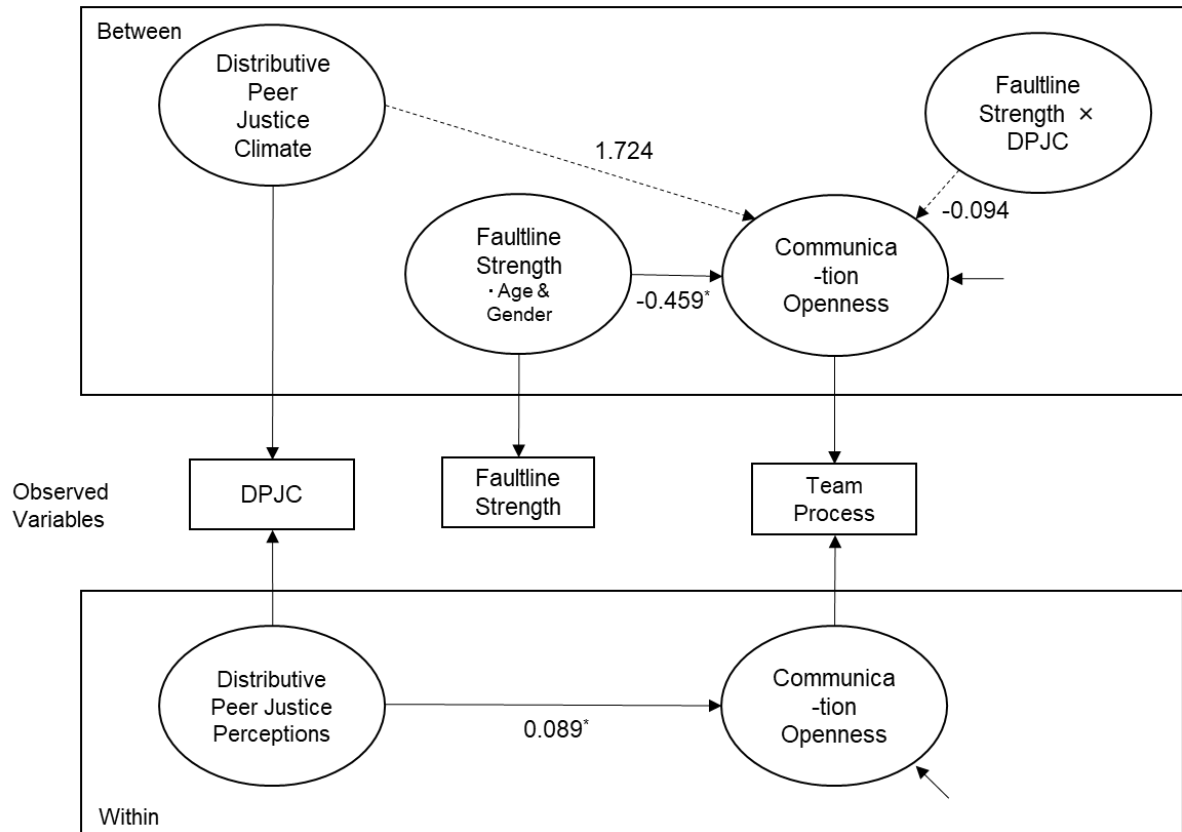*** $p < .001$.

Figure 3-2

Multilevel Structural Equation Model of Faultline Strength based on Age and Gender,

Distributive Peer Justice Climate, and Trust with Interaction between Faultline Strength and

Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
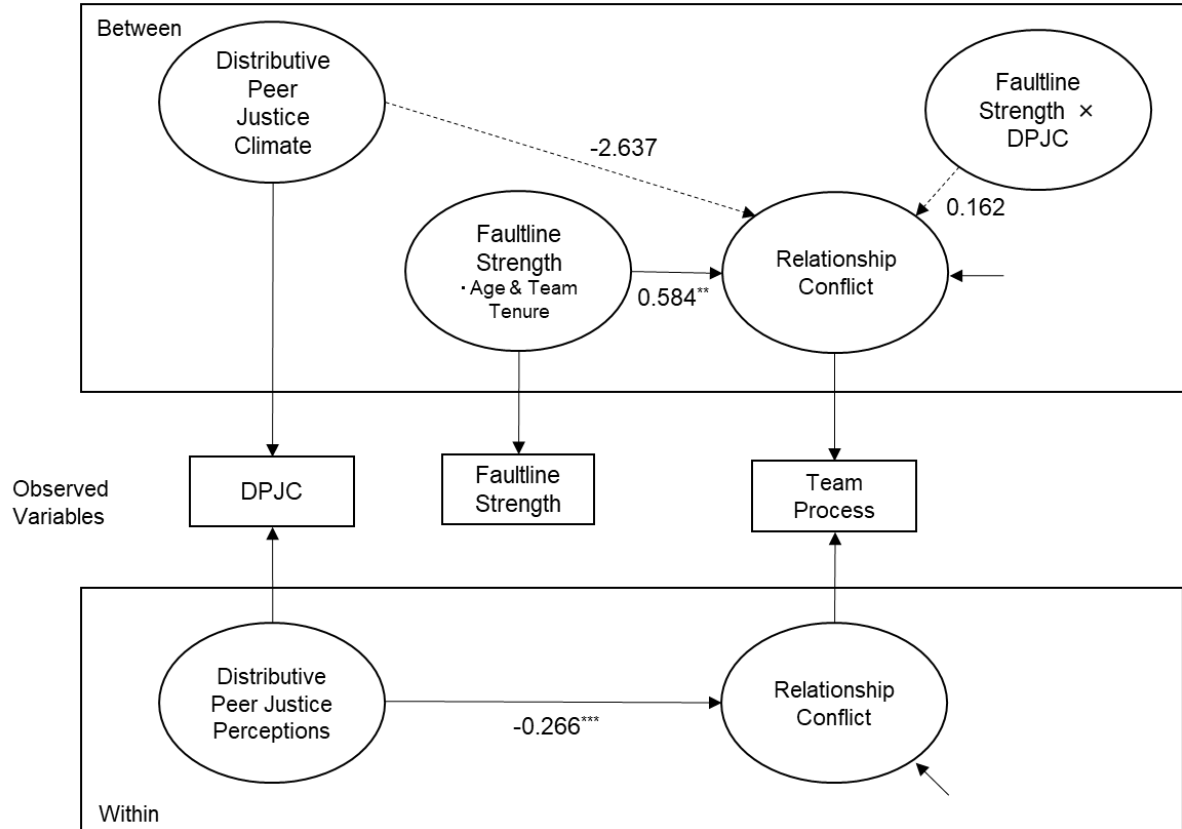*p < .05. ***p < .001.

Figure 3-3

Multilevel Structural Equation Model of Faultline Strength based on Age and Gender,

Distributive Peer Justice Climate, and Communication Openness with Interaction between

Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
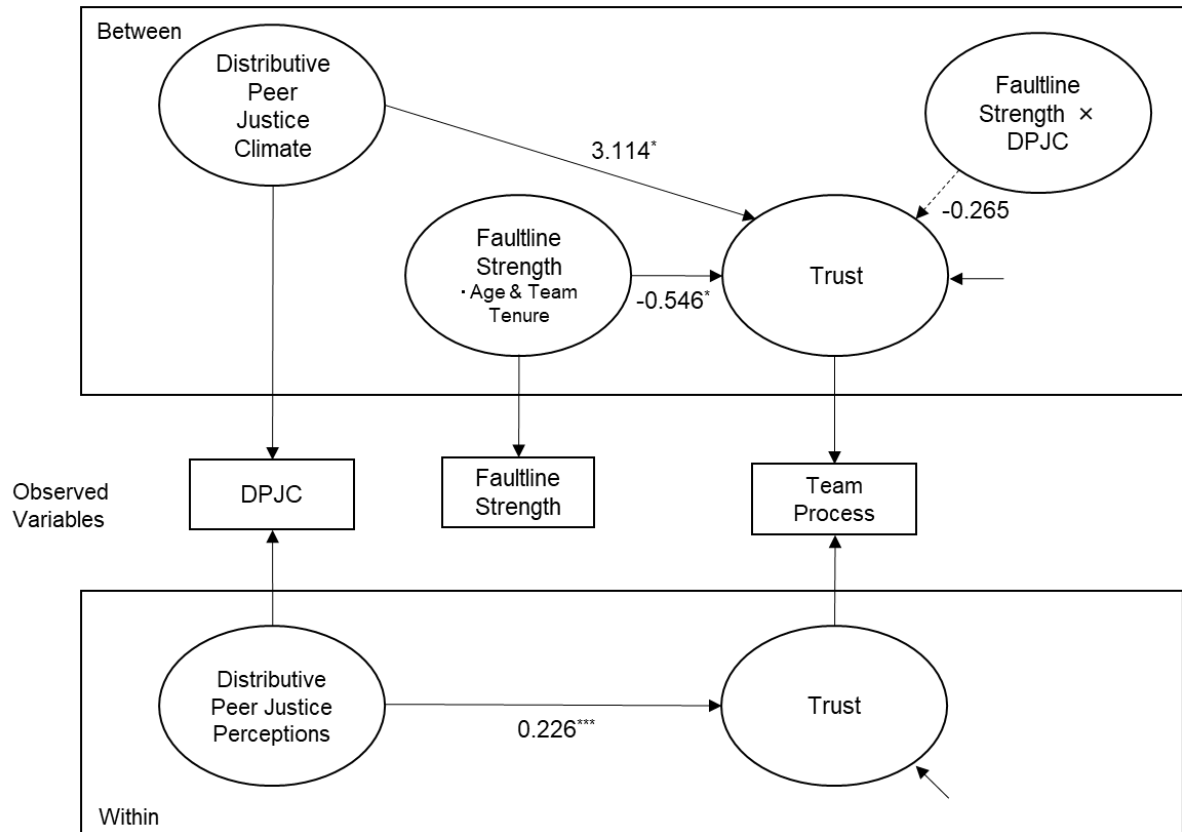
*p < .05.

Figure 4-1

Multilevel Structural Equation Model of Faultline Strength based on Age and Team Tenure, Distributive Peer Justice Climate, and Relationship Conflict with Interaction between Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
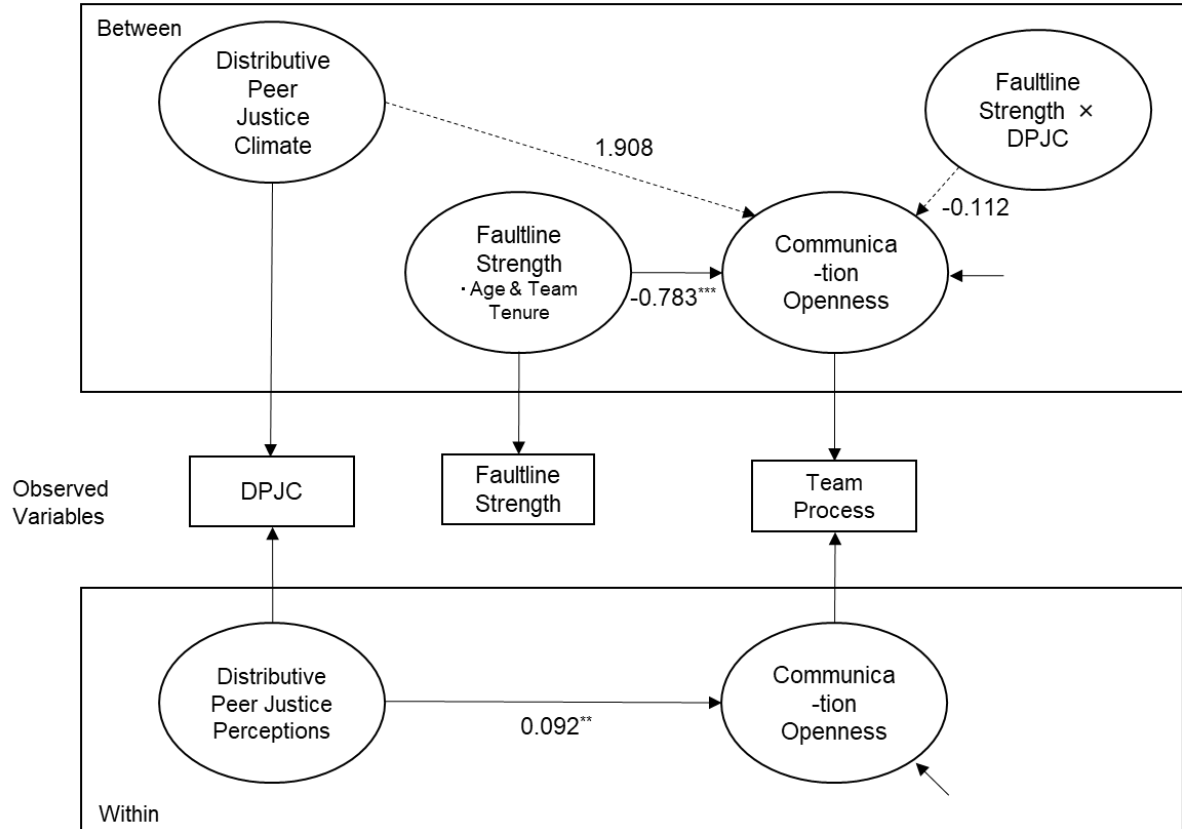$^{**}p < .01.$ $^{***}p < .001.$

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Figure 4-2

Multilevel Structural Equation Model of Faultline Strength based on Age and Team Tenure, Distributive Peer Justice Climate, and Trust with Interaction between Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
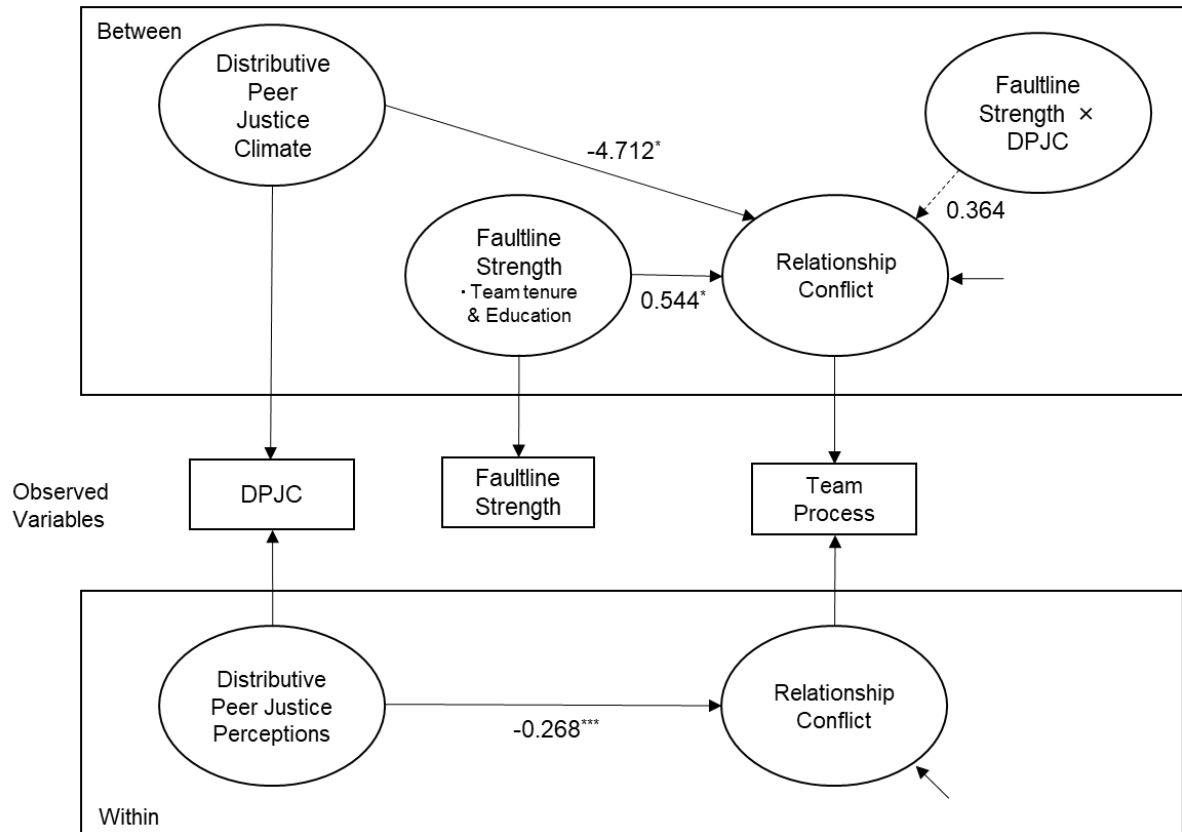$^*p < .05.$ $^{***}p < .001.$

Figure 4-3

Multilevel Structural Equation Model of Faultline Strength based on Age and Team Tenure,

Distributive Peer Justice Climate, and Communication Openness with Interaction between

Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.

$^{**}p < .01.$ $^{***}p < .001.$

Figure 5-1

Multilevel Structural Equation Model of Faultline Strength based on Team Tenure and
Educational Background, Distributive Peer Justice Climate, and Relationship Conflict with
Interaction between Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
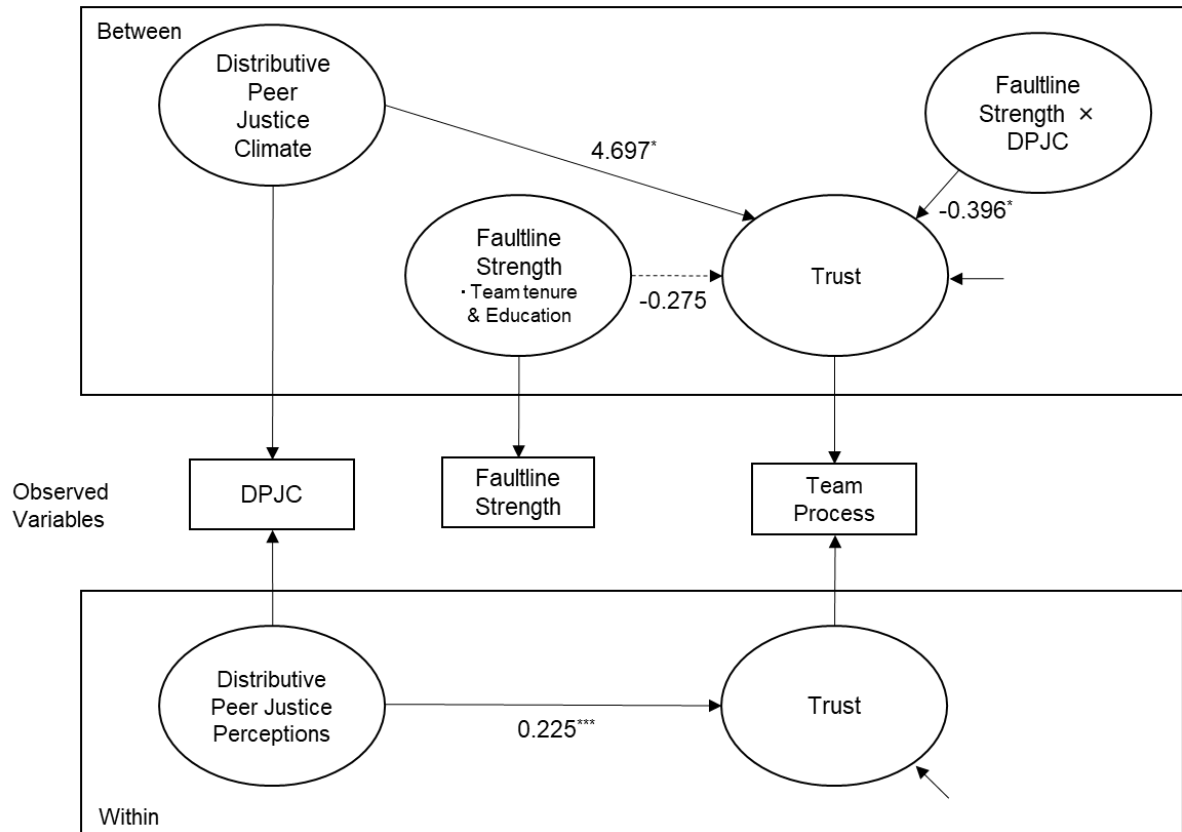$^*p < .05.$ $^{***}p < .001.$

Figure 5-2

Multilevel Structural Equation Model of Faultline Strength based on Team Tenure and
Educational Background, Distributive Peer Justice Climate, and Trust with Interaction between
Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
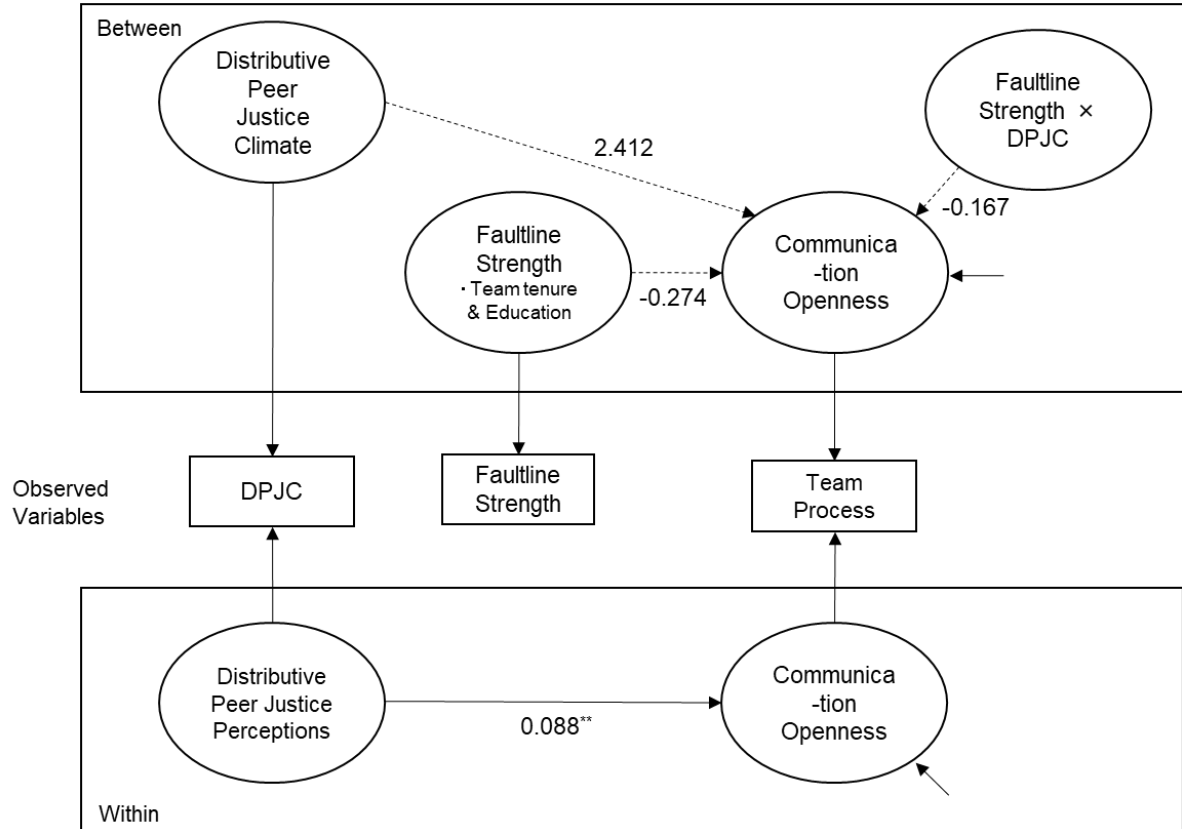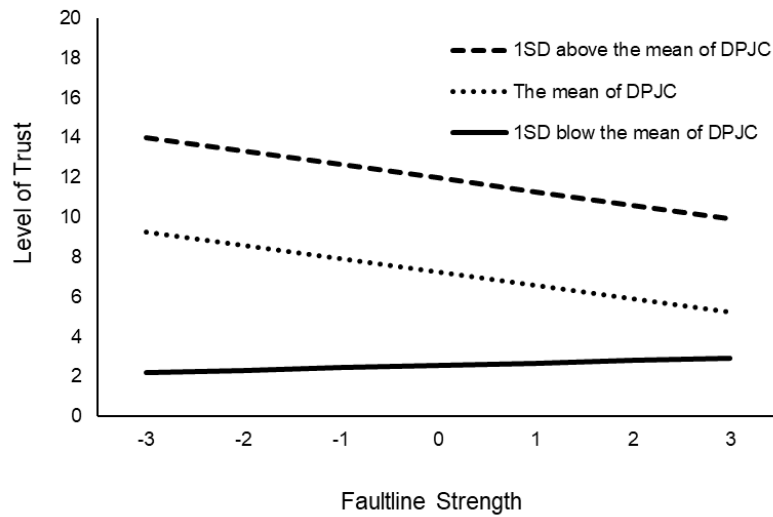$^*p < .05.$ $^{***}p < .001.$

Figure 5-3

Multilevel Structural Equation Model of Faultline Strength based on Team Tenure and
Educational Background, Distributive Peer Justice Climate, and Communication Openness with
Interaction between Faultline Strength and Distributive Peer Justice Climate

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.
$^{**}p < .01$.

Figure 6

An Interaction Effect between Distributive Peer Justice Climate and Faultline Strength on the Relationship between Strength of Faultlines Based on Team Tenure and Educational Background and Level of Trust

*Note. SD = s*tandard deviation; DPJC = distributive peer justice climate.

Figure 7

Multilevel Structural Equation Model Including Three-Way Interaction among Faultline Based on Team Tenure and Educational Background, Distributive Peer Justice Climate, and the Dominancy Index
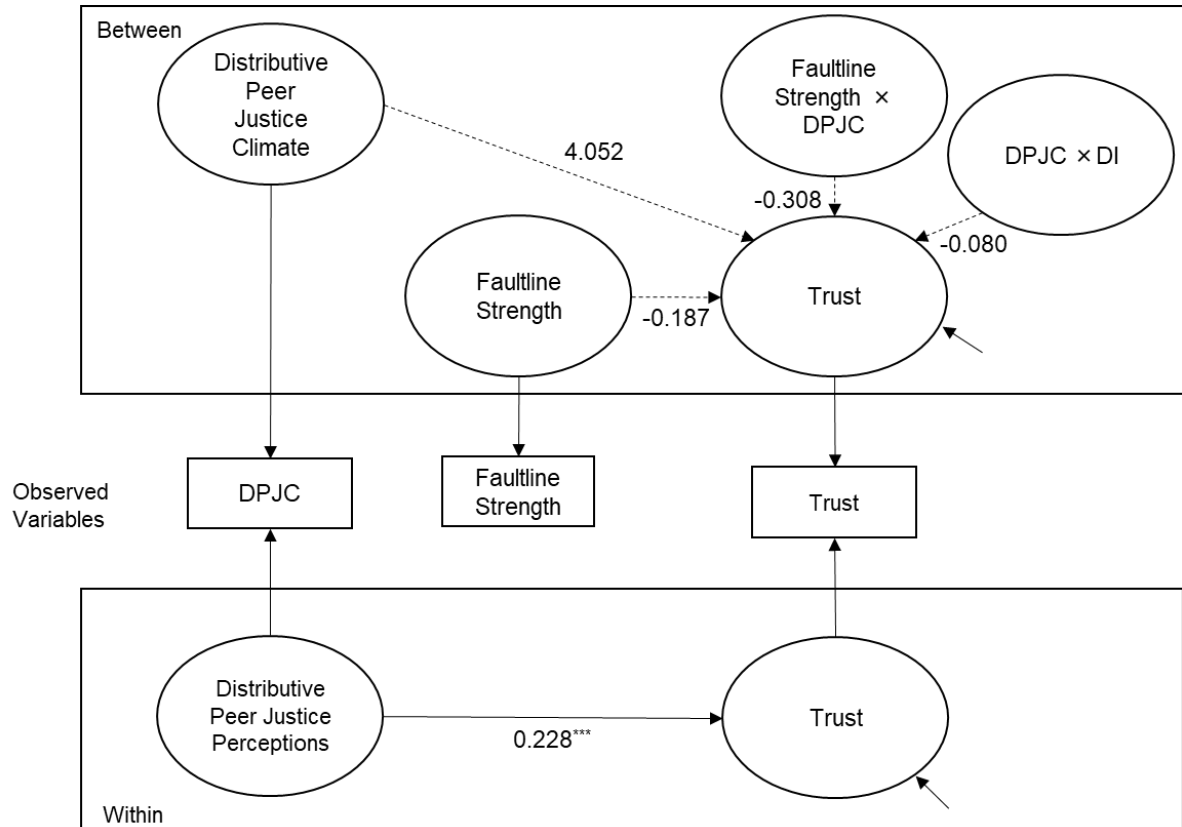
Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate; DI = dominancy index.
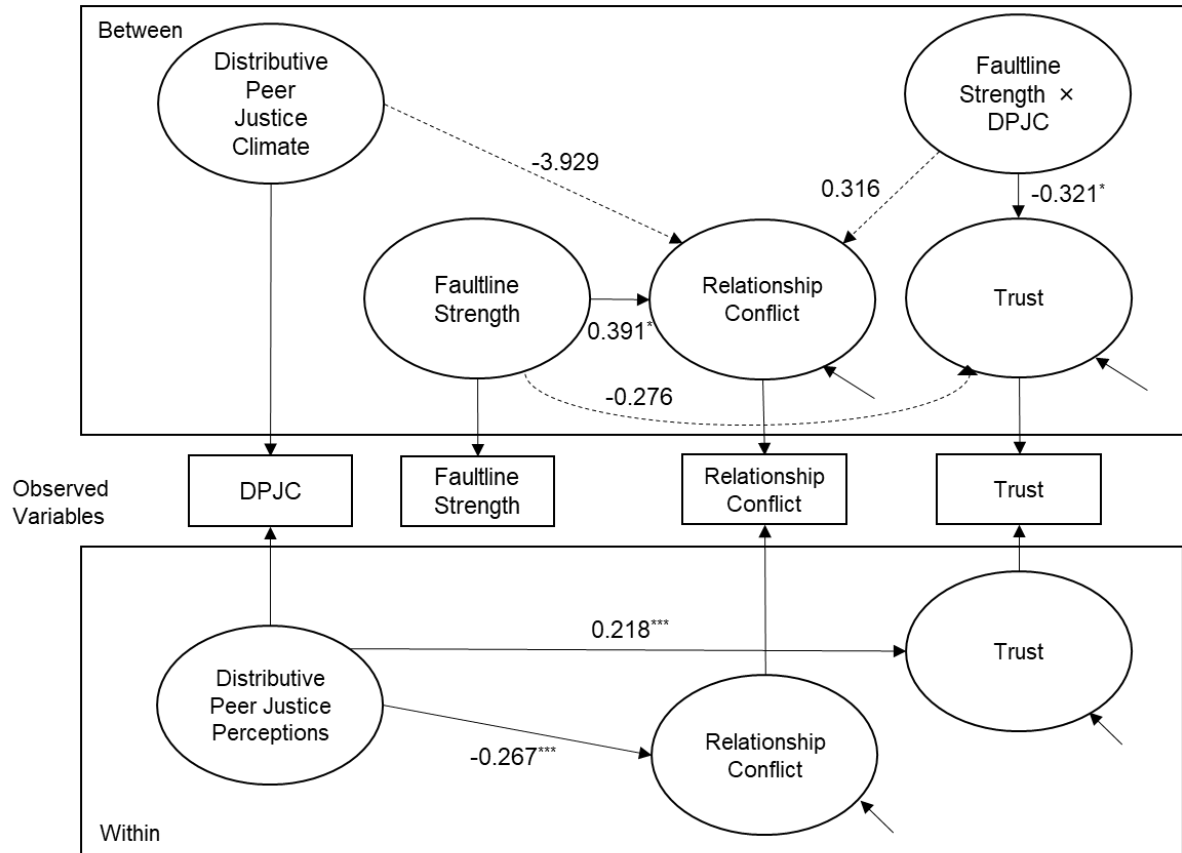***$p < .001$.

Figure 8

Multilevel Structural Equation Model of Faultlines based on Team Tenure and Educational

Background, Distributive Peer Justice Climate, Relationship Conflict, and Trust

Note. Circles are latent variables. Headed arrows are path coefficients and loadings; only values of path coefficients are shown. Dotted lines represent nonsignificant relations; bold lines represent significant paths. Attached arrows indicate residuals. Control variables were omitted for simplicity. DPJC = distributive peer justice climate.

*p < .05. ***p < .001.

Figure 9-1

A Multilevel Model of Team Faultline Strength based on Age, Gender, Team Tenure, Distributive Peer Justice Perception, and Team Processes in Japanese Nursing Work Team Contexts
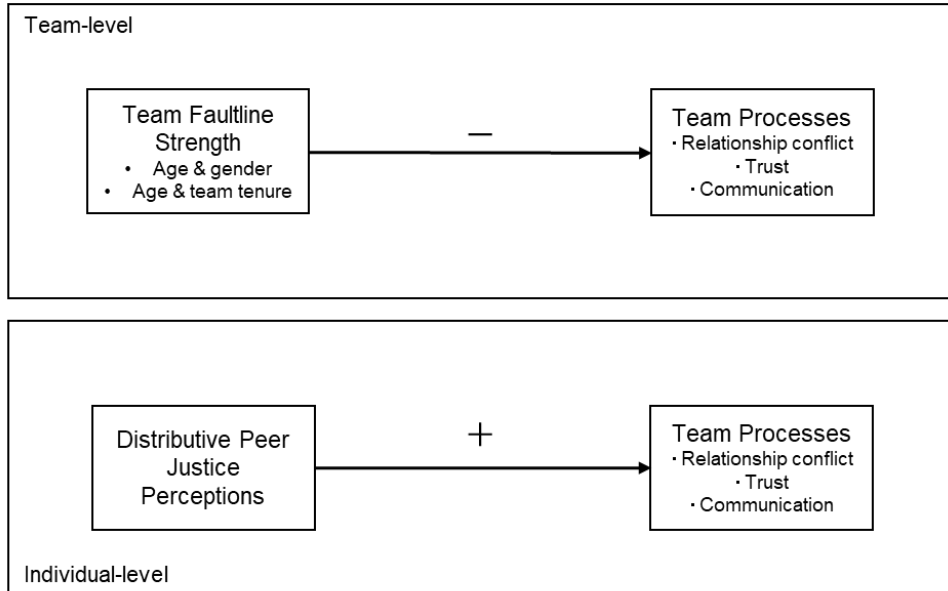
Note. Single headed arrow with a minus sing represents the negative effects of faultlines on team processes; one with a plus sing does the positive effects of distributive peer justice perceptions.

Figure 9-2

A Multilevel Model of Team Faultline Strength based on Team Tenure and
Educational Background, Distributive Peer Justice Climate, and Trust in Japanese
Nursing Work Team Contexts
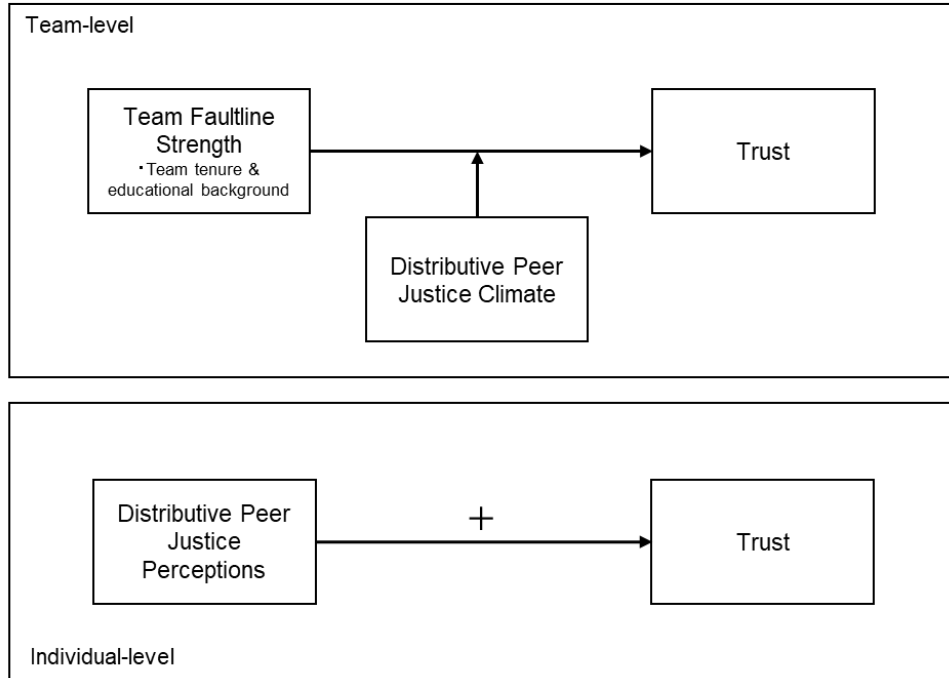
Note. This model depicts the effects of team faultline strength on team-level trust are moderated by the level of distributive peer justice climate. Single headed arrow with a plus sing represents the positive effect of distributive peer justice perceptions on individual-level trust.

Figure 10

A Conceptual Model of Double-Edged Sword Effects of Faultlines on Team-Level

Relationship Conflict and Trust
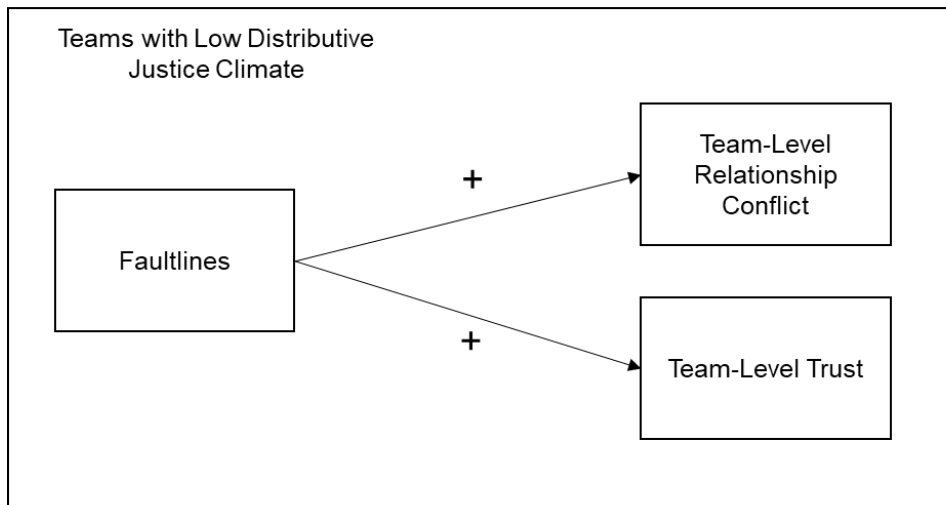
Note. Single headed arrows with plus sings represent positive relationships between the constructs.

Table 1

Research Questions and Corresponding Hypotheses in the Present Investigation

	Research Question		Corresponding Hypothesis
RQ1	How does team diversity influence team processes in nursing work teams in Japanese hospital settings?	*H1a*	Nursing work teams with stronger faultlines based on age and gender experience higher levels of relationship conflict, low levels of trust, and impaired communication among team members.
RQ2	What are the salient dimensions of diversity that affect team functioning when considering nursing work contexts?	*H1b*	Nursing teams with stronger faultlines based on age and team tenure experience higher levels of relationship conflict, low levels of trust, and impaired communication among team members.
		H1c	Nursing teams with stronger faultlines based on team tenure and educational background experience the higher levels of relationship conflict, low levels of trust, and impaired communication among team members.
RQ3	What is the role of fairness in diverse workgroups, especially in nursing work contexts, which can be characterized as demanding and stressful environments?	*H2*	Distributive peer justice climate moderates the relationship between strength of faultlines and team processes; this relationship will be weaker when distributive peer justice climate is higher.
		H3a	Nurses who perceive higher distributive peer justice have lower levels of relationship conflict, higher levels of trust, and better communication.
		H3b	Teams with higher levels of distributive peer justice climate experience lower levels of relationship conflicts, higher levels of trust, and better communication.

Table 2

Definitions of Main Terms and Constructs in the Dissertation

Term or Construct	Definition	Reference
Diversity	Differences between individuals on any attributes that may lead to the perception that another person is different from oneself	van Knippenberg et al. (2004)
Faultlines	Hypothetical dividing lines that split a team into relatively homogeneous subgroups based on the group members' demographic alignment along multiple attributes	Lau & Murninghan (1998)
Group	A social unit which consists of a number of individuals who, at a given time, stand in more or less definite interdependent status and role relationships with one another, and which explicitly or implicitly possesses a set of norms or values regulating the behavior of the individual members	Sherif (1988, p. 26)
Team	Units of multiple individuals who interact interdependently to achieve a common objective. In this investigation	Baker & Salas (1997)
Group/Team Process	The manner in which the group/team performs the task and/or the group members relate to one another. Group/team process variables can be communication, commitment, cohesion, trust, and support	Cropanzano et al. (2011)
Team tenure	The number of years and months a member has worked on a team	Koopmann et al. (2016)
Peer justice climate	A shared perception regarding how individuals who work together within the same unit and who do not have formal authority over each other judge the fairness with which they treat one another	Li & Cropanzano (2009)
Distributive peer justice climate	Shared perception regarding the extent to which rewards that team members receive are appropriate based on their contributions	Li & Cropanzano (2009)

Table 3

Means, Standard Deviations, Intraclass Correlations, and Zero-Order Correlations of Level-1 Study Variables

Variable	*n*	*M*	*SD*	ICC(1)	1	2	3	4	5	6
1. R-Conflict	611	10.89	3.07	.17	-					
2. Trust	615	19.57	5.60	.11	-.45**	-				
3. Communication	614	11.96	3.26	.10	-.47**	.58**	-			
4. DPJC	613	11.07	3.40	.06	-.37**	.42**	.29**	-		
5. Leadership	609	2.91	0.66	.24	-.32**	.48**	.45**	.35**	-	
6. Resource	614	2.04	0.65	.22	-.19**	.32**	.32**	.27**	.41**	-

Note. R-Conflict = relationship conflict; Communication = communication openness; DPJC = distributive peer justice climate.

**p < .01

Table 4

Means, Standard Deviations, and Zero-Order Correlations of Level-2 Study Variables and Number of Obtained Subgroups (*N* = 36)

Variable	*M*	*SD*	1	2	3	4	5
1. Faultline (Age & gender)	0.67	0.06	-				
2. Faultline (Team tenure & education)	0.77	0.07	.23	-			
3. Faultline (Age & team tenure)	0.63	0.07	.54**	.47**	-		
4. Team size	28.64	6.60	-.10	.22	-.10	-	
5. Number of obtained subgroups	3.00	1.17	.17	.07	.14	-.16	

Note. Education = educational background

**p < .01

Table 5

Results of Bayesian Multilevel Structural Equation Modeling for the Proposed Moderated Model of Faultline Based on Age and Gender, Distributive Peer Justice Climate, and Team Process Variables

	Relationship conflict				Trust				Communication openness			
	Estimate	SD	95%CI		Estimate	SD	95%CI		Estimate	SD	95%CI	
			LL	UL			LL	UL			LL	UL
Between level												
Intercept	4.242	3.224	-1.80	11.408	10.621**	3.563	4.636	18.869	11.599***	3.794	5.033	20.689
Faultline strength	0.327	0.238	-0.099	0.847	-0.460*	0.238	-1.002	-0.047	-0.459*	0.246	-1.165	-0.052
DPJC	-1.818	2.490	-5.816	4.788	0.272	3.196	-6.468	4.844	1.724	2.377	-2.259	6.139
Faultline × DPJC	0.079	0.227	-0.485	0.479	0.045	0.287	-0.390	0.636	-0.094	0.222	-0.530	0.272
Team Size	-0.132	0.095	-0.298	-0.083	-0.013	0.097	-0.197	0.183	0.064	0.106	-0.140	0.268
Leadership	-0.090	0.179	-0.425	0.282	0.110	0.163	-0.172	0.476	0.185	0.174	-0.226	0.515
Resource	0.089	0.172	-0.298	0.398	0.341***	0.155	0.026	0.631	0.066	0.152	-0.236	0.379
Residual variance	0.116***	0.135	0.011	0.505	0.082***	0.118	0.001	0.433	0.250***	0.174	0.023	0.651
Within level												
DPJP	-0.265***	0.042	-0.346	-0.179	0.228***	0.040	0.150	0.306	0.089*	0.040	0.016	0.170
Leadership	-0.204***	0.046	-0.291	-0.112	0.360***	0.041	0.277	0.439	0.366***	0.044	0.270	0.446
Resource	-0.021	0.044	0.341	0.065	0.171***	0.044	0.085	0.258	0.169***	0.044	0.080	0.253
Residual variance	0.884***	0.023	0.834	0.924	0.758***	0.025	0.150	0.306	0.825***	0.026	0.765	0.873
$R^2_{Between}$	.884***	.135	.495	.989	.918	.118	.567	.999	.750***	.174	.344	.977
R^2_{within}	.116***	.023	.076	.166	.215	.025	.168	.265	.175***	.026	.126	.228

Note. Standardized estimates are shown in the Table. *N* of individuals = 616; *N* of teams = 36; *SD* = standard deviation; CI = credible intervals; *LL* = lower limit; *UL* = upper limit; DPJC = distributive peer justice climate; Faultline × DPJC = an interaction term of faultline strength and distributive peer justice climate; DPJP = distributive peer justice perceptions.

*p < .05. **p < .01. ***p < .001.

Table 6

Results of Bayesian Multilevel Structural Equation Modeling for the Proposed Moderated Model of Faultline Based on Age and Team Tenure, Distributive Peer Justice Climate, and Team Process Variables

	Relationship conflict				Trust				Communication Openness			
	Estimate	SD	95%CI		Estimate	SD	95%CI		Estimate	SD	95%CI	
			LL	UL			LL	UL			LL	UL
Between level												
Intercept	3.392	4.918	-10.245	9.708	8.854	3.764	1.652	16.288	13.153***	3.692	6.533	21.286
Faultline strength	0.584**	0.566	0.106	2.379	-0.546*	0.307	-1.055	0.051	-0.783***	0.315	-1.442	-0.216
DPJC	-2.637	1.518	-5.323	0.398	3.144*	1.186	0.367	5.042	1.908	1.449	-1.032	4.412
Faultline × DPJC	0.162	0.169	-0.161	0.493	-0.265	0.149	-0.566	0.023	-0.112	0.168	-0.432	0.198
Team Size	-0.141	0.102	-0.335	0.071	0.052	0.094	-0.113	0.233	0.057	0.107	-0.150	0.246
Leadership	-0.105	0.164	-0.438	0.209	0.187	0.154	-0.114	0.484	0.231	0.168	-0.142	0.515
Resource	0.032	0.171	-0.315	0.374	0.433***	0.139	0.166	0.708	0.106	0.158	-0.203	0.451
Residual variance	0.120***	0.142	0.013	0.538	0.203***	0.148	0.016	0.562	0.245***	0.167	0.021	0.631
Within level												
DPJP	-0.266***	0.042	-0.346	-0.180	0.226***	0.039	0.152	0.301	0.092**	0.040	0.015	0.171
Leadership	-0.203***	0.046	-0.292	-0.111	0.363***	0.043	0.276	0.441	0.365***	0.044	0.270	0.446
Resource	-0.022	0.045	-0.104	0.064	0.168***	0.043	0.083	0.254	0.169***	0.044	0.082	0.254
Residual variance	0.884	0.023	0.832	0.925***	0.783***	0.025	0.731	0.830	0.825***	0.026	0.769	0.875
$R^2_{Between}$	.880***	.142	.461	.987	.797***	.148	.403	.984	.917***	.130	.477	.989
R^2_{within}	.116***	.023	.074	.167	.217***	.025	.167	.269	.175***	.026	.123	.230

Note. Standardized estimates are shown in the Table. N of individuals = 616; N of teams = 36; SD = standard deviation; CI = credible intervals; LL = lower limit; UL = upper limit; DPJC = distributive peer justice climate; Faultline × DPJC = an interaction term of faultline strength and distributive peer justice climate; DPJP = distributive peer justice perceptions.

$^*p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

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Table 7

Results of Bayesian Multilevel Structural Equation Modeling for the Proposed Moderated Model of Faultline Based on Team Tenure and Educational Background, Distributive Peer Justice Climate, and Team Process Variables

	Relationship conflict				Trust				Communication openness			
			95%CI				95%CI				95%CI	
	Estimate	SD	LL	UL	Estimate	SD	LL	UL	Estimate	SD	LL	UL
Between level												
Intercept	2.637	4.877	-11.527	9.694	7.263*	3.347	0.087	13.877	8.827***	3.741	0.848	16.229
Faultline strength	0.544*	0.450	0.081	2.075	-0.275	0.236	-0.667	0.216	-0.274	0.275	-0.756	0.273
DPJC	-4.712*	1.987	-7.443	-0.195	4.697*	1.577	0.621	7.060	2.412	2.416	-3.124	6.636
Faultline × DPJC	0.364	0.200	-0.068	0.648	-0.396*	0.166	-0.673	-0.006	-0.167	0.241	-0.653	0.312
Team Size	-0.189*	0.085	-0.348	-0.002	0.116	0.093	-0.096	0.285	0.114	0.113	-0.111	0.317
Leadership	-0.036	0.151	-0.372	0.240	0.115	0.162	-0.190	0.448	0.217	0.175	-0.139	0.563
Resource	-0.045	0.163	-0.332	0.310	0.431*	0.140	0.125	0.681	0.067	0.168	-0.259	0.389
Residual variance	0.079***	0.114	0.007	0.432	0.163***	0.141	0.011	0.521	0.387***	0.195	0.042	0.749
Within level												
DPJP	-0.268***	0.042	-0.348	-0.181	0.225***	0.039	0.153	0.302	0.088**	0.040	0.014	0.169
Leadership	-0.203***	0.046	-0.291	-0.112	0.365***	0.043	0.271	0.446	0.367***	0.045	0.263	0.449
Resource	-0.021	0.044	-0.106	0.065	0.167***	0.043	0.083	0.257	0.169***	0.045	0.077	0.259
Residual variance	0.883***	0.042	-0.348	-0.181	0.785***	0.025	0.729	0.830	0.825***	0.026	0.766	0.837
$R^2_{Between}$	.921***	.114	.566	.993	.837***	.141	.465	.988	.613***	.195	.236	.957
R^2_{within}	.117***	.023	.074	.169	.215***	.025	.170	.269	.175***	.026	.126	.231

Note. Standardized estimates are shown in the Table. *N* of individuals = 616; *N* of teams = 36; *SD* = standard deviation; CI = credible intervals; *LL* = lower limit; *UL* = upper limit; DPJC = distributive peer justice climate; Faultline × DPJC = an interaction term of faultline strength and distributive peer justice climate; DPJP = distributive peer justice perceptions.

*p < .05. **p < .01. ***p < .001.

Table 8

Results of Bayesian Multilevel Structural Equation Modeling for the Three-Way Interaction among Faultlines Based on Team Tenure and Educational Background, Distributive Peer Justice Climate, and the Dominancy Index

	Trust			95%CI	
	Estimate	*SD*	*p*	*LL*	*UL*
Between level					
Intercept	6.326	6.892	.038	-13.763	14.727
Faultline strength	-0.187	0.650	.650	-1.038	1.779
DPJC	4.052	2.026	.050	-1.273	6.681
Faultline × DPJC	-0.308	0.182	.058	-0.620	0.083
DPJC × Dominancy index	-0.080	0.195	.345	-0.409	0.361
Team size	0.104	0.098	.134	-0.010	0.290
Leadership	0.164	0.181	.182	-0.216	0.513
Resource	0.325	0.168	.037	-0.039	0.621
Residual variance	0.219	0.154	<.001	0.027	0.589
Within level					
PDJP	0.228	0.040	<.001	0.150	0.309
Leadership	0.326	0.042	<.001	0.278	0.440
Resource	0.169	0.044	<.001	0.083	0.251
Residual variance	0.783	0.025	<.001	0.732	0.831
$R^2_{Between}$	.781	.154	<.001	.411	.973
R^2_{within}	.217	.025	<.001	.169	.268

Note. Standardized estimates are shown in the Table. *N* of individuals = 616; *N* of teams = 36; *SD* = standard Deviation; CI = credible Intervals; *LL* = lower limit; UL = upper limit; DPJC = distributive peer justice climate.

Table 9

Results of Bayesian Multilevel Structural Equation Modeling Including Trust and Relationship Conflict as Dependent Variables

	Relationship conflict				Trust			
	Estimate	*SD*	95% CI		Estimate	*SD*	95% CI	
			LL	*UL*			*LL*	*UL*
Between level								
Intercept	3.726	3.348	-0.213	10.477	7.027[*]	3.560	0.407	14.121
Faultline strength	0.391[*]	0.228	-0.067	0.835	-0.276	0.223	-0.706	0.174
DPJC	-3.929	1.920	-6.851	0.518	3.878	1.745	-0.080	6.667
Faultline × DPJC	0.316	0.200	-0.124	0.630	-0.321[*]	0.176	-0.643	0.061
Team size	-0.269	0.132	-0.498	0.020	0.096	0.137	-0.200	0.364
Leadership	-0.031	0.175	-0.395	0.270	0.153	0.171	-0.194	0.489
Resource	-0.021	0.161	-0.354	0.299	0.412[*]	0.163	0.007	0.690
Residual variance	0.243[**]	0.181	0.009	0.689	0.245[**]	0.152	0.053	0.599
Within level								
DPJP	-0.267[**]	0.039	-0.337	-0.186	0.218[**]	0.036	0.144	0.285
Leadership	-0.207[**]	0.045	-0.294	-0.107	0.366[**]	0.043	0.280	0.447
Resource	-0.017	0.045	-0.107	0.068	0.168[**]	0.046	0.081	0.251
Residual variance	0.885[**]	0.023	0.829	0.921	0.785[**]	0.026	0.730	0.834
$R^2_{Between}$	.757[**]	.181	.298	.990	.755[**]	.152	.400	.943
R^2_{within}	.115[*]	.023	.078	.171	.215[*]	.026	.165	.269

Note. Standardized estimates are shown in the Table. *N* of individuals = 616; *N* of teams = 36; *SD* = standard Deviation; CI = credible Intervals; *LL* = lower limit; UL = upper limit; DPJC = distributive peer justice climate.

[*]*p* < .05. [**]*p* < .01.

Appendix

Appendix A: A Sample Survey Form

Appendix A

同意説明書

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教授　笹尾　敏明
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1. 研究の名称
　　この研究の名称は，「病棟における看護職員の多様性と公平性が新しい実践の採用に与える影響」です。

2. 研究機関の名称及び研究責任者・研究実施者の氏名
　研究責任者　　国際基督教大学アーツ・サイエンス研究科　教授　笹尾敏明
　研究実施者　　国際基督教大学アーツ・サイエンス研究科　博士後期課程3年　大内潤子

3. 研究の目的及び意義
　　本研究の目的は，日本の病院における多様性，特に，病棟での経験年数，職種，雇用形態の違う人たちが一緒に働いているということが，新しい実践の採用に与える影響と，そのような多様性の影響に職場における職員間の公平性（仕事量，関係性，意思決定への参加）がどのような影響を与えるのかを明らかにすることです。このことが明らかになることにより，新しいケアを臨床現場に円滑に導入することに役立つと考えられます。

4. 研究の方法及び期間
　　全体の研究期間は 2020 年3月から 1 年間です。研究の方法は，アンケート調査です。質問内容は，あなた自身と仕事に関する考えや勤務されている病院（または病棟）の環境や病棟内の対人関係についてです。所要時間は 15 分程度です。

5. 研究対象者として選定された理由
　　今回，研究協力をお願いしているのは病院の病棟（外来を除く）に勤務する患者への看護ケア提供に直接関わる全ての看護職（看護師，准看護師，看護助手）のみなさんです。

6. 研究対象者に生じる負担並びに予測されるリスク及び利益
　　研究対象者に生じる主な負担は，時間的拘束以外に予見されるリスクはありません。予測される利益としては，参加者には少額のお菓子が配布されます。また，本研究の結果は，新しい実践を病棟で取り入れることに役立つことが期待されます。

7. 研究が実施又は継続されることに同意した場合であっても随時これを撤回できる旨
　　研究対象者は，研究の実施または継続へ同意した後でも，随時これを撤回できます。アンケートの表紙にある ID 番号を研究責任者または研究実施者の連絡先にご連絡ください。ID がわからない場合は，無記名調査のためアンケート用紙が特定できないため，同意への撤回はできませんのでご注意ください。

8. 研究が実施又は継続されることに同意しないこと又は同意を撤回することによって研究対象者等が不利益な取扱いを受けない旨

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研究対象者は，研究の実施または継続に同意しない，あるいは，撤回したとしても何ら不利益は生じません。

9. 研究に関する情報公開の方法
　　本研究の成果は，学会や雑誌への発表を通じて行います。

10. 研究対象者等の求めに応じて、他の研究対象者等の個人情報等の保護及び当該研究の独創性の確保に支障がない範囲内で研究計画書及び研究の方法に関する資料を入手又は閲覧できる旨並びにその入手又は閲覧の方法
　　研究対象者等の求めに応じて、他の研究対象者等の個人情報等の保護及びこの研究の独自性や結果に影響を与えるようなことがない範囲内で研究計画書及び研究の方法に関する資料を入手又は閲覧できます。研究責任者または実施者の連絡先までご連絡ください。

11. 個人情報等の取扱い（匿名化する場合にはその方法を含む。）
　　アンケートは無記名式です。データは統計的に処理され，個人名が出ることはありません。また，職場が特定されないように，施設名は公開せず，所在地は都道府県名までとします。

12. 情報の保管及び廃棄の方法（保管期間と廃棄方法に注意）
　　データが保存されている PC およびアンケートは，鍵のかかる場所に保管します。また，アンケートの原本は5年間保管後，シュレッダーにて廃棄します。また，アンケートの結果の電子ファイルは CD および USB に保管し5年間保管後，廃棄します。

13. 研究の資金源等、研究機関の研究に係る利益相反及び個人の収益等、研究者等の研究に係る利益相反に関する状況
　　本研究の資金源は研究実施者の所属施設内部の研究費であり，利益相反および個人の収益等，研究者等の研究に係る利益相反に関する状況は生じません。

14. 研究対象者等及びその関係者からの相談等への対応（連絡先等を含む）
　　質問・苦情等は下記の連絡先までお願いいたします。

15. 研究対象者等に経済的負担又は謝礼がある場合には、その旨及びその内容
　　今回の研究にご協力頂いた謝礼はありません。

　　　連絡先：研究責任者　笹尾　敏明　TEL：0422-33-3135　　　e-mail: sasao@icu.ac.jp
　　　　　　　研究実施者　大内　潤子　TEL：011-688-2325　　　e-mail: g199007x@icu.ac.jp
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　yanaginoha@gmail.com

　　本同意説明書をお読みになって，**研究協力にご同意いただけましたら，アンケート冒頭の「研究協力に同意する」に✓を入れていただき**，その後から始まるアンケートにご回答ください。**終わりましたら，この「説明同意書」はお手元に保管いただき，アンケートの部分だけ添付の封筒に入れて指定の回収箱へ投函ください。**もし，ご同意いただけなかった場合でも，未記入のアンケートを投函していただいて構いません。

「病棟における看護職員の多様性と公平性が新しい実践の採用に与える影響」
アンケート

□　わたしは，研究協力に同意します（同意の場合は左の□に✓を入れてください）

まず，あなた自身についてお聞きします。

1.　性別　□女性　　□男性　　□その他

2.　年齢　（　　　）歳

3.　資格　□看護師　　□准看護師　　□介護福祉士　　□その他（　　　　　　）

4.　現在使用している資格での経験年数　（　　年　　ヶ月）　□該当なし

5.　この<u>病棟</u>での経験年数　（　　年　　ヶ月）

6.　この<u>病院</u>での経験年数　（　　年　　ヶ月）

7.　現在の雇用形態
　　□病院に雇用されている
　　□派遣会社から派遣されている
　　□その他　（　　　　　　　　　　　　　）

8.　勤務時間
　　□日勤夜勤両方　　　□日勤専従　　　□夜勤専従　　　□時短
　　□その他　（　　　　　　　　　　　）

9.　最終教育歴　□高校　　□専門学校　　□短大　　□4年制大学　　□大学院
　　□その他　（　　　　　　　　　　　　　　　）

つぎに，あなたが勤務する病棟についてお聞きします（次のページへ続く）

1. **各項目について，その項目が，あなたの病棟に有ると，あなたが同意する程度を示してください。適切な番号を○で囲んで，同意する程度を示してください。**

		全くそう思わない			非常にそう思う
1	看護師長は，看護スタッフに対して支援的である	1	2	3	4
2	看護師長は，過ちを非難するのではなく，学びの機会として用いる	1	2	3	4
3	他の看護師等と，患者ケアの問題を話し合うのに十分な時間と機会がある	1	2	3	4
4	質の高い患者ケアを提供するのに十分な人数の看護職員がいる	1	2	3	4
5	他の職種による支援が十分にあるので，私は，担当患者に時間を費やせる	1	2	3	4
6	ある仕事をやり終えるのに十分な人数のスタッフがいる	1	2	3	4
7	上手くできた仕事は，称賛され認められる	1	2	3	4
8	看護師長は，良い管理者でありリーダーである	1	2	3	4
9	たとえ他職種との衝突がある場合でも，看護師長は，意思決定において看護スタッフをバックアップする	1	2	3	4

2. **下の各項目について記述されている内容が，あなたの病棟においてどのくらい当てはまるか，該当する数字を○で囲んでください。**

		全くそう思わない				強くそう思う
1	病棟のすべてのメンバーに率直に話すことは簡単である	1	2	3	4	5
2	病棟内のメンバーが互いに話すと，かなり理解し合える	1	2	3	4	5
3	病棟のコミュニケーションは，とても開放的である	1	2	3	4	5
4	病棟のメンバーにアドバイスをもらうことは簡単である	1	2	3	4	5

以下，「メンバー」とは，他の職種も含めて病棟で患者のケアに携わる人すべてを指します。

3．下の各項目について記述されている内容が，あなたの病棟でどのくらいあるか，当てはまる数字を○
　で囲んでください。

		全くない				たくさんある
1	メンバー間の軋轢（あつれき）はどのくらいありますか？	1	2	3	4	5
2	メンバー間の性格の衝突がどのくらいありますか？	1	2	3	4	5
3	メンバー間にどの程度の緊張がありますか？	1	2	3	4	5
4	メンバー間に感情的な衝突がどのくらいありますか？	1	2	3	4	5

4．下の各項目について記述されている内容が，あなたの病棟でどのくらい当てはまるか，該当する数字
を○で囲んでください。

		全くそう思わない						強くそう思う
1	私たちは，互いの能力を無条件に尊敬している	1	2	3	4	5	6	7
2	どの管理職者も無条件な誠実さを示している	1	2	3	4	5	6	7
3	私たちは，完全に誠実であることを互いに期待している	1	2	3	4	5	6	7
4	私たちは，全員，疑いなく互いに信頼している	1	2	3	4	5	6	7
5	私たちは自分たちの目標にむかって互いに協力する	1	2	3	4	5	6	7

5. 下記のそれぞれの文章は，あなたの病棟で一緒に働くメンバーに，どのくらい当てはまりますか。当てはまる数字に〇をつけてください。

		全くそう思わない				強くそう思う
1	メンバーのなかには，病棟内の仕事について，妥当な評価よりも高く評価されている人たちがいる。	1	2	3	4	5
2	メンバーが病棟内の仕事について受け取る評価は，彼らがした仕事の質を考えれば適正である。	1	2	3	4	5
3	メンバー全員が同じ評価を受けとっても，なかには，分担分を働かない人たちがいる。	1	2	3	4	5
4	メンバー全員が同じ評価を受け取っても，なかには，自分の責任を果たさない人たちがいる。	1	2	3	4	5
5	メンバー全員が同じ評価を受け取っても，なかには，他のメンバーよりもはるかに働いていない人たちがいる。	1	2	3	4	5
6	メンバーは，病棟内の意思決定の方法について，自分たちの考えや気持ちを表明することができる。	1	2	3	4	5
7	メンバーは，個人的な先入観にとらわれず，意思決定している。	1	2	3	4	5
8	メンバーは，病棟内のある仕事に対する互いの意見や情報を無視している。	1	2	3	4	5
9	メンバーは，正しい情報を使って病棟内の仕事に取り組んでいる。	1	2	3	4	5
10	メンバーの意思決定の方法は，一貫している。	1	2	3	4	5
11	メンバーは，お互いに助け合っている。	1	2	3	4	5
12	メンバーは，お互いに言い合っている。	1	2	3	4	5
13	メンバーは，お互いにけなし合っている。	1	2	3	4	5
14	メンバーは，お互いに尊敬の念をもって接している。	1	2	3	4	5

6. 下記のそれぞれの文章は，あなたの病棟で一緒に働くメンバーについて，どのくらい当てはまりますか。当てはまる数字に〇をつけてください。

<table>
<tr><td></td><td></td><td>全くそう思わない</td><td></td><td></td><td></td><td>強くそう思う</td></tr>
<tr><td>1</td><td>メンバーのなかには，職種によって，より高く評価されている人たちがいる。</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>2</td><td>メンバーのなかには，職種によって，仕事を分担しない人たちがいる。</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
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<tr><td>10</td><td>メンバーは，職種の違いで，お互いに言い合っている。</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
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</table>

7. 下記のそれぞれの文章は、あなたの病棟で一緒に働くメンバーについて、どのくらい当てはまりますか。当てはまる数字に○をつけてください。

		全くそう思わない				強くそう思う
1	メンバーのなかには、病棟の経験年数によって、より高く評価されている人たちがいる。	1	2	3	4	5
2	メンバーのなかには、病棟の経験年数によって、仕事を分担しない人たちがいる。	1	2	3	4	5
3	メンバーのなかには、病棟の経験年数によって、与えられた責任を果たさない人たちがいる。	1	2	3	4	5
4	メンバーのなかには、病棟の経験年数によって、他の病棟の経験年数に比べてはるかに働かない人たちがいる。	1	2	3	4	5
5	メンバーは、病棟の経験年数に関わらず、病棟内の意思決定の方法について、自分たちの考えや気持ちを表明することができる。	1	2	3	4	5
6	メンバーは、病棟の経験年数に対する先入観にとらわれず、意思決定している。	1	2	3	4	5
7	メンバーは、病棟の経験年数によって、病棟内のある仕事に対する意見や情報を無視している。	1	2	3	4	5
8	メンバーの意思決定の方法は、病棟の経験年数に関わらず一貫して適用されている。	1	2	3	4	5
9	メンバーは、病棟の経験年数に関わらずお互いに助け合っている。	1	2	3	4	5
10	メンバーは、病棟の経験年数の違いで、お互いに言い合っている。	1	2	3	4	5
11	メンバーは、病棟の経験年数の違いで、お互いにけなし合っている。	1	2	3	4	5
12	メンバーは、病棟の経験年数に関わらずお互いに尊敬の念をもって接している。	1	2	3	4	5

8. 下記のそれぞれの文章は，あなたの病棟で一緒に働くメンバーについて，どのくらい当てはまりますか。 1（全くそう思わない）から5（強くそう思う）の5段階で当てはまる数字に〇をつけてください。なお，ここでいう「勤務形態」には，正規・非正規雇用，日勤専従・夜勤専従・時短などが含まれます。

		全くそう思わない				強くそう思う
1	メンバーのなかには，勤務形態によって，より高く評価されている人たちがいる。	1	2	3	4	5
2	メンバーのなかには，勤務形態によって，仕事を分担しない人たちがいる。	1	2	3	4	5
3	メンバーのなかには，勤務形態によって，与えられた責任を果たさない人たちがいる。	1	2	3	4	5
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質問は以上です！

お忙しいなか，ご協力ありがとうございました。

アンケートは封筒に入れて，回収箱へお願いいたします。