

The Relationship between Conjugal Relationships and Non-kin Networks

—Based on the analysis of NFRJ18—

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This study examined the characteristics of Japanese married men and women's non-kin networks and the relationships between their non-kin networks and conjugal relationships across different life stages by using the dataset from the National Family Research (NFRJ18) survey. For women, results revealed that the non-kin network members who were most frequently contacted were friends from school years, acquaintances from work, and neighbors. The frequency of contact with non-kin network members differed based on the females' life stage group. In particular, Japanese married women in the 0–6-years group most frequently communicated with friends from school years, while other groups most frequently communicated with acquaintances from work. Moreover, for women in the 0–6-years group, contact with friends from school years was positively associated with emotional support from their husbands, as well as women's marital life satisfaction. Contact with acquaintances from the Internet was also positively associated with emotional support from their husbands. In addition, the frequency of contact with acquaintances based on common hobbies was found to be positively associated with women's marital life satisfaction in the 13–17-years group.

Conversely, the characteristics of men's frequency of contact with non-kin networks differed from those of women. For men, acquaintances from work were the most frequent points of communication across all life stages groups. The results also indicated that the more the husbands who belonged to 18-years-and-above group, communicated with acquaintances from work and the Internet, the more satisfied they were with their marital life. The more they communicated with their neighbors, the more emotional support they obtained from their wives. Contacts with acquaintances from the Internet were also found to be positively associated with husbands' marital life satisfaction in the 13–17-years group.

Key words: conjugal relationships, non-kin networks, life stages, gender, Japan

1. Introduction

Over half a century ago, Elizabeth Bott observed twenty families living in post-war London and developed several hypotheses on how social networks affected people's family lives. Of which, one of the most well-known hypotheses is “the degree of segregation in the role-relationship of husband and wife varies directly with the connectedness of the family's social network” (Bott, 1955, 349). In other words, Bott suggested that a close-knit, dense network could lead to segregated conjugal roles and a clear division of labor between husband and wife (Rozer, Mollenhorst, & Volker, 2018).

Based on Bott's (1955) pioneering research, studies on the relationships between people's social

networks and their family lives have been conducted in different countries and cultures over the last few decades. Although some of these studies supported Bott's hypothesis (e.g., Blood, 1969; Hill, 1988; Ishii-Kuntz & Maryanski, 2003; Nelson, 1966; Treas, 2010; Turner, 1967), others did not (e.g., Aldous & Straus, 1966; Gordon & Downing, 1978; Urdy & Hall, 1965; Wellman & Wellman, 1992; Wimberly, 1973). Based on the theoretical and methodological problems in Bott's research, as well as those in studies that emerged after hers, Wellman and Wellman (1992) argued that substantial social changes should be taken into consideration because it could lead to that the personal networks of men and women have largely lost the marriage-dividing forces. Furthermore, Wellman and Wellman implied that men and women's domestic needs, which vary based the different stages of their family life, could affect how husbands and wives contact members in their social network, as well as how they exchange information and support with those members.

In the context of the Japanese society, various studies have been conducted to investigate the relationships between Japanese married couples' conjugal relations and their social networks. Ishii-Kuntz and Maryanski (2003) supported Bott's hypothesis based on a sample of 20 Japanese couples. In their study, a positive relationship between network density and social support was found, which, in turn, increased the segregation of marital roles in their studies. Using data from the National Family Research (NFR98), Ishii-Kuntz (2001) also revealed that Japanese men would participate in housework more frequently if they were living farther away from members in their kin network, namely their mothers and mothers-in-law. Japanese men's participation in housework was similarly influenced by their employment hours, egalitarian gender ideology, their wives' income and commuting hours, and the husband-wife age gap. By analyzing the same data set, Tateyama (2001) also found that the size of kin networks and the frequency of contact with members were associated with Japanese couples' conjugal relationships in terms of accompaniment, intimacy, and satisfaction. In addition, the association between their kin networks and conjugal relationships differed by gender. Participants' age, occupation, educational level, and the size of the city they lived in could also affect their conjugal relationships.

Nozawa (1995a, 1995b, 2009, 2014) conducted a series of studies on the relationships between Japanese couples' conjugal relations and social networks, including kin and non-kin members, and implied more complicated situations. Based on the data collected in Asaka, a suburban city, Nozawa (2014) found that the number of couples' distant kin, the degree of overlap of the couples' close friends, and the support from parents or adult children outside the household had a positive effect on their emotional interdependence. Regarding husbands' household chores, the number of couples' distant kin and the support they received from parents or adult children outside the household also had a positive effect. In contrast, husbands' co-workers had a negative effect. Conversely, based on the data in Yamagata, a prefectural and regional city, the number of couples' distant kin, support from parents or adult children outside the household, and the degree of overlap of the couples' close friends were also

found to be positively associated with married couples' emotional interdependence, while support from members in the kin networks was found to be negatively associated with husbands' participation in housework. Not only the effect of the married couples' social networks, but also the influence of their domestic and personal traits on their conjugal relationships, was reported in these two cities. These domestic and personal traits included the wife's educational level and occupation, the husband's occupation, extended family household, the couples' average age, and the annual household income. These results suggest that kin networks could enhance marital interdependence, while non-kin networks in urban Japanese workplaces and neighborhoods adversely affect domestic task sharing. Furthermore, when considering their domestic needs, Nozawa implied that Japanese married couples were more liberated, compared to older generations, from the influence of their social networks. In particular, wives would adjust how they contact their kin and non-kin networks based on their domestic needs.

The studies discussed above imply that Japanese couples' conjugal relationships and their social networks, including kin and non-kin members, could be intertwined. However, most existing studies do not pay enough attention to the influence of non-kin networks on conjugal relationships, despite the likelihood of this association increasing as a result of urbanization (Fischer, 1982). Moreover, we know that conjugal relationships and contacts with social networks could differ based on a person's gender and life stages (Dainichi, 2011; Ishii-Kuntz, 2001; Nozawa, 2014; Tateyama, 2001). However, studies on relationships between marital life and social networks have not examined the different life stages of men and women. Therefore, the research questions of this study are as follows:

- (a) What are the differences in the characteristics of female participants' non-kin networks during the different life stages?
- (b) What are the differences in the relationships between female participants' non-kin networks and the conjugal relationships among the groups from different life stages?
- (c) What are the differences in the characteristics of male participants' non-kin networks during the different life stages?
- (d) What are the differences in the relationships between male participants' non-kin networks and conjugal relationships among the groups from different life stages?

2. Methods

2.1 Sample

Data for this study were obtained from the National Family Research (NFRJ18) survey, which was carried out by the National Family Research Committee of the Japan Society of Family Sociology in 2018. The NFRJ18 is the latest wave of national representative surveys in Japanese society, it included questions about conjugal role relationships and social network questionnaires. Respondents

aged between 28 and 72 years were selected using multistage stratified random sampling and asked to complete a self-administered questionnaire. A total of 3,033 (1431 males and 1602 females) responses were obtained.

Based on our research aim, all married participants aged 28–62 years who had at least one child were included in the analysis ($N = 1418$). Of these, 631 (44.5%) were men and 787 (55.5%) were women. In terms of educational level, 62 (4.4%) participants were postgraduates, 355 (25.1%) were graduates, 219 (15.4%) graduated from junior college, 252 (17.8%) held a vocational school degree, 494 (34.8%) graduated from high school, 29 (2.0%) graduated from middle school, and 7 (0.5%) gave no specific answer. Furthermore, 305 (21.5%) participants had one child, 756 (53.3%) had two children, 304 (21.5%) had three children, and 53 (3.7%) had four or more children. Each child's age was also considered in the assessment. Based on their youngest child's age, the results further revealed that participants could be divided into different life stage groups—27.2%, 17.3%, 17.0, and 38.5% of the participants were categorized into the 0–6-, 7–12-, 13–17-, and 18 and above-years groups, respectively.

Additionally, 1,210 (85.3%) participants were employed, 207 (14.6%) were unemployed, and one (0.1%) provided no answer. Furthermore, 53.1% of the employed participants were professionals and white-collar workers, such as doctors, lawyers, salespeople, and manual workers. Whereas 46.6% were blue-collar workers, and 0.3% did not fall under either category. The average working hours of the participants were 8.30 ($SD = 2.60$, $N = 1,199$).

2.2 Measurement

Conjugal relationships Two aspects of conjugal relationships were used in this analysis: marital life satisfaction (Question 11 in the NFRJ18 survey) and emotional support from their spouse (Question 10 in the NFRJ18 survey). First, four items were utilized to measure participants' satisfaction in their marital life by employing a 4-point scale ranging from 1 (very satisfied) to 4 (very dissatisfied)¹. These four items included satisfaction with their spouse's contribution to raising children, spouse's contribution to housework, spouse's work, and sexual life. Cronbach's α for the scale in this study was 0.77. Second, emotional support from the spouse was examined by employing three items on a 4-point scale, ranging from 1 (agree) to 4 (disagree)². These three items are "my spouse listens to my worries and distress," "my spouse evaluates my competency and effort highly," and "my spouse gives me advice." For these items, the Cronbach's α was 0.89.

Non-kin networks The NFRJ18 addresses five types of non-kin networks (Question 53): neighbors, acquaintances based on common hobbies, acquaintances from work, acquaintances from the Internet, and friends from school years. Participants reported the frequency of communication with

¹ In the analysis, the scale of 1 to 4 is converted to 4 to 1.

² This scale of 1 to 4 is also converted to 4 to 1.

those in each type of non-kin network on a scale ranging from “1=I frequently communicate with them” to “4 = I rarely communicate with them”.

Control variables In accordance with existing research on social networks and conjugal relationships (Issii-Kuntz, 2001; Tateyama, 2001), the employment and commuting hours of participants and their spouse, type of occupation (1 = white collar, 0 = not white collar), educational level (1 = secondary education, 2 = vocational school, 3 = junior college, 4 = bachelor’s degree or higher), and whether they were living in a densely inhabited district or not (1 = they were living in a densely inhabited district, 2 = they were not living in a densely inhabited district) were included in this study as control variables.

3. Results

Figure 1 represents the frequency of contact with members from the five non-kin networks among female participants at different life stages. Females in the 0–6-years group contacted their friends from school years ($M = 2.81$, $SD = 0.81$) most frequently. Acquaintances from work and neighbors were the secondary and tertiary members that female participants contacted (acquaintances based on work: $M = 2.61$, $SD = 0.97$; neighbors: $M = 2.42$, $SD = 0.95$). For participants in other life stages groups, acquaintances from work were the ones they contacted most frequently (7–12-years group: $M = 2.62$, $SD = 0.93$; 13–17-years group: $M = 2.68$, $SD = 0.88$; 18-years-and-above group: $M = 2.70$, $SD = 0.89$). Moreover, neighbors and friends from school years were the secondary and tertiary communicators for the 7–12-years group and 18-years-and-above group, while for participants in the 13–17-years group, they were the tertiary and secondary ones, respectively.

Furthermore, one-way analysis of variance (ANOVA) models for female participants’ contact frequency of the five types of non-kin network members were conducted with four life stage groups as predictors using SPSS ver. 26. As shown in Table 1, the ANOVA results revealed that different life stage groups had a significant effect on the frequency of their contact with acquaintances based on common hobbies and friends from school years. In particular, participants in the 0–6-years group contacted their acquaintances with common hobbies less frequently than those in the 18-years-and-above group. Moreover, participants in the 0–6-years group contacted their friends from school years more frequently than the other groups.

Finally, hierarchical regression analyses were performed for female participants’ conjugal relationships, in terms of emotional support from their spouse and their marital life satisfaction for different life stages groups. As shown in Tables 2 and 3, the control variables were entered in step 1, and the frequency of contact with the five types of non-kin network members was entered in step 2. For participants included in the 0–6-years group, the analysis of emotional support from their spouse demonstrated that spouses’ employment and commuting hours were negatively associated with

emotional support in model 1 ($\beta = -0.20, p < 0.05$). Model 2 exhibited a significant ΔR^2 ($\Delta R^2 = 0.21, p < .001$) when non-kin network members factors were entered. Model 2 revealed that the frequency of contact with acquaintances from the Internet ($\beta = 0.22, p < 0.05$) and with friends from school years ($\beta = 0.36, p < 0.001$) was positively associated with emotional support from participants' spouses, while spouses' employment and commuting hours were negatively associated with the same ($\beta = -0.20, p < 0.05$). Conversely, for participants' marital life satisfaction, spouses' employment and commuting hours were found to be negatively related to it in both models (Model 1: $\beta = -0.20, p < 0.05$, Model 2: $\beta = -0.18, p < 0.05$). In contrast, the frequency of contact with friends from school years was positively related to participants' marital life satisfaction in model 2 ($\beta = 0.23, p < 0.05$). Model 2 exhibited a significant ΔR^2 ($\Delta R^2 = 0.09, p < 0.05$).

The results of the 7–12-years group found that living in a densely inhabited district had a positive effect on the emotional support from the spouse (Model 1: $\beta = 0.25, p < 0.05$; Model 2: $\beta = 0.25, p < 0.05$), while participants' employment and commuting hours had a negative influence on it in both models (Model 1: $\beta = -0.23, p < 0.05$; Model 2: $\beta = -0.27, p < 0.05$). However, Model 2 did not exhibit a significant ΔR^2 . No factors were found to have an effect on the participants' marital life satisfaction in the 7–12-years group.

For female participants in the 13–17-years group, no factors were found to be associated with the emotional support from spouses. Conversely, participants' educational level and employment and commuting hours were found to be negatively associated with their marital life satisfaction in both models (educational level: model 1: $\beta = -0.19, p < 0.1$; model 2: $\beta = -0.19, p < 0.1$; employed and commuting hours: model 1: $\beta = -0.19, p < 0.1$; model 2: $\beta = -0.17, p < 0.1$) in this group. Moreover, Model 2 demonstrated that spouses' employment and commuting hours ($\beta = 0.22, p < 0.05$), and the frequency of their contact with acquaintances based on common hobbies ($\beta = 0.40, p < 0.001$), were positively associated with marital life satisfaction. Model 2 exhibited a significant ΔR^2 ($\Delta R^2 = 0.20, p < 0.01$). Finally, no factors related to the two aspects of conjugal relationships were found in female participants from the 18-years-and-above group.

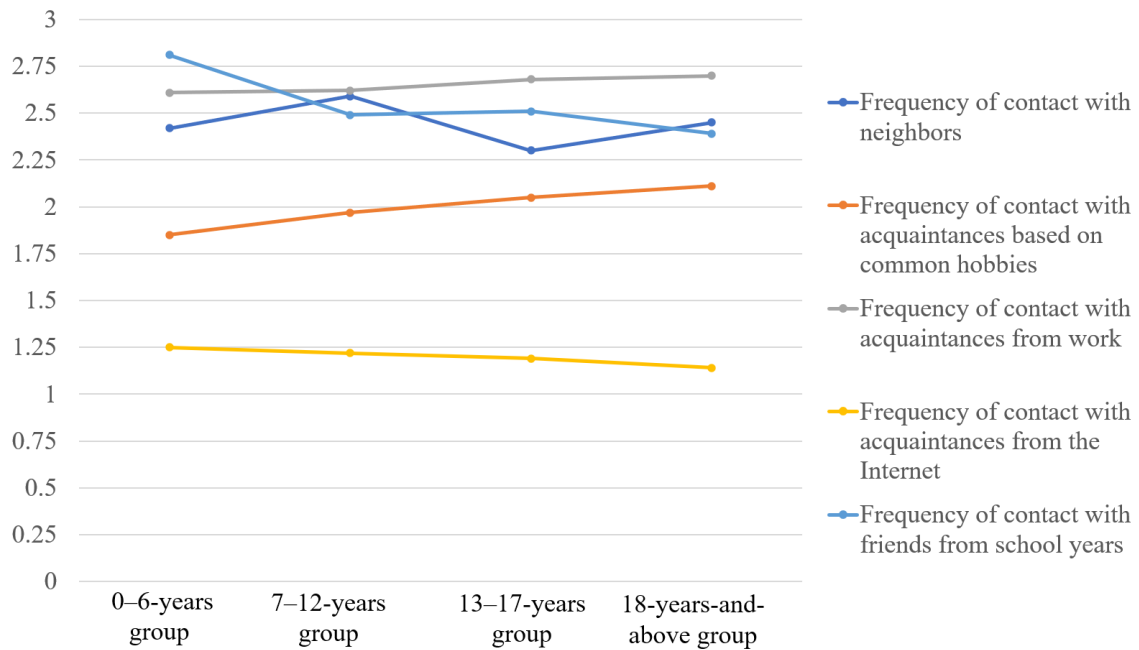


Figure 1 Frequency of contact with non-kin network members among female participants included in the groups of different life stages

Table 1 Relationships between life stages groups and female participants' contact frequency with member in the five types of non-kin networks

	Life stages groups				N	F value	Comparison among groups
	G1	G2	G3	G4			
Frequency of contact with neighbors	2.42 (0.95)	2.59 (0.88)	2.30 (0.88)	2.45 (0.82)	778	2.20	
Frequency of contact with acquaintances based on common hobbies	1.85 (1.02)	1.97 (1.04)	2.05 (1.06)	2.11 (1.05)	772	2.84*	G1<G4
Frequency of contact with acquaintances from work	2.61 (0.97)	2.62 (0.93)	2.68 (0.88)	2.70 (0.89)	778	0.49	
Frequency of contact with acquaintances from the Internet	1.25 (0.61)	1.22 (0.63)	1.19 (0.49)	1.14 (0.53)	765	1.76	
Frequency of contact with friends from school years	2.81 (0.81)	2.49 (0.85)	2.51 (0.86)	2.39 (0.96)	781	10.25***	G1>G2, G3, G4

Note. Pairwise comparisons were conducted using Scheffe's post-hoc test. G1 = 0-6-years group; G2 = 7-12-years group; G3 = 13-17-years group; and G4 = 18-years-and-above group.

* $p < 0.05$, *** $p < 0.001$.

Table 2 Results of regression analyses for female participants included in the 0–6-years group and 7–12-years group (standardized regression coefficients)

	0–6-years group				7–12-years group			
	Emotional support from their spouse		Marital life satisfaction		Emotional support from their spouse		Marital life satisfaction	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Step 1: Control variables								
DID	-0.12	-0.11	-0.03	-0.01	0.25*	0.25*	0.21	0.20
Educational level	-0.04	-0.02	-0.01	0.00	-0.04	-0.02	-0.12	-0.17
Employed and commuting hours	-0.06	-0.07	0.07	0.09	-0.23*	-0.27*	-0.21	-0.15
Spouse's employment and commuting hours	-0.20*	-0.21*	-0.20*	-0.18*	0.09	0.10	0.04	-0.01
Occupation	0.06	0.09	0.13	0.13	0.11	0.09	0.03	0.02
Step 2: Frequency of contact with non-kin network members								
Neighbors		-0.07		0.09		-0.09		0.23
Acquaintances based on common hobbies		0.00		-0.04		-0.01		-0.01
Acquaintances from work		0.14		0.10		0.00		-0.04
Acquaintances from the Internet		0.22*		0.12		-0.01		-0.13
Friends from school years		0.36***		0.23*		-0.08		-0.04
<i>F</i> value	1.37	4.22***	1.67	2.24*	2.01†	1.13	1.52	1.30
ΔR^2	0.02	0.21***	0.03	0.09*	0.05†	0.01	0.03	0.03
<i>N</i>	123	123	123	123	98	98	98	98

Note. DID = densely inhabited district. † $p < 0.1$, * $p < 0.05$, *** $p < 0.001$.

Table 3 Results of regression analyses for female participants included in the 13–17-years group and 18-years-and-above group (standardized regression coefficients)

	13–17-years group				18-years-and-above group			
	Emotional support from their spouse		Marital life satisfaction		Emotional support from their spouse		Marital life satisfaction	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Step 1: Control variables								
DID	0.06	0.05	0.04	-0.02	-0.07	-0.09	-0.07	-0.09
Educational level	-0.17	-0.14	-0.19†	-0.19†	0.06	0.05	0.15	0.14
Employed and commuting hours	-0.08	-0.08	-0.19†	-0.17†	-0.08	-0.06	-0.10	-0.09
Spouse's employment and commuting hours	0.20	0.21	0.16	0.22*	-0.04	-0.01	0.04	0.06
Occupation	0.06	0.04	0.18	0.17	0.04	0.04	-0.02	-0.02
Step 2: Frequency of contact with non-kin network members								
Neighbors		-0.01		0.06		0.12		0.09
Acquaintances based on common hobbies		0.26		0.40***		0.09		0.04
Acquaintances from work		-0.04		0.13		0.03		-0.03
Acquaintances from the Internet		0.01		-0.01		-0.10		-0.09
Friends from school years		-0.06		-0.07		-0.08		-0.01
<i>F</i> value	1.05	1.07	1.80	3.15**	0.49	0.31	1.63	1.12
ΔR^2	0.00	0.01	0.04	0.20**	-0.00	0.01	0.02	0.01
<i>N</i>	87	87	88	88	212	212	210	210

Note. DID = densely inhabited district. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Figure 2 shows the frequency of male participants' contact with non-kin network members for the different life stage groups. For male participants, there was a similar pattern in contact frequency among the five types of non-kin network members, even if they belonged to different life stages. In other words, the acquaintances from work were the non-kin network members who were contacted most frequently across all life stage groups. Friends from school years, neighbors, acquaintances based on common hobbies, and acquaintances from the Internet were considered secondary, tertiary, quaternary, and quinary. Furthermore, a one-way analysis of variance (ANOVA) was also performed for male participants' contact frequency among the five types of non-kin network members across the four life stage groups. As shown in Table 4, there was no significant difference among life stage groups in terms of the frequency of contact with all types of non-kin network members.

Finally, hierarchical regression analyses were conducted for conjugal relationships of male participants in all life stage groups. As shown in Tables 5 and 6, the control variables were entered in step 1, and the frequency of contact with the five types of non-kin network members was entered in step 2. As a result, living in a densely inhabited district was found to have a negative effect on the emotional support from spouses (Model 1: $\beta = -0.21, p < 0.05$; Model 2: $\beta = -0.17, p < 0.1$), whereas the educational level had a positive effect for the 0–6-years group in both models (Model 1: $\beta = 0.25, p < 0.05$; Model 2: $\beta = 0.20, p < 0.1$). However, model 2 did not exhibit a significant ΔR^2 when non-kin network members factors were entered. Regarding marital life satisfaction, participants' educational level had a positive effect in both models (Model 1: $\beta = 0.27, p < 0.01$; Model 2: $\beta = 0.21, p < 0.05$). Model 2 did not exhibit a significant ΔR^2 .

The results of the 7–12-years group revealed that no factors were associated with their conjugal relationships. Furthermore, the results of the 13–17-years group demonstrated that living in a densely inhabited district (Model 1: $\beta = -0.17, p < 0.1$; Model 2: $\beta = -0.18, p < 0.1$), participants' occupation (Model 1: $\beta = -0.23, p < 0.05$; Model 2: $\beta = -0.24, p < 0.05$), and spouses' employment and commuting hours (Model 1: $\beta = -0.19, p < 0.1$; Model 2: $\beta = -0.19, p < 0.1$), had a negative effect on the emotional support from their spouses in both models. Model 2 did not exhibit a significant ΔR^2 when non-kin network members factors were entered. Conversely, Model 1 on marital life satisfaction revealed that the spouse's employment and commuting hours ($\beta = -0.25, p < 0.05$) and participants' occupation ($\beta = -0.31, p < 0.01$) had a negative effect. Although Model 2 did not show a significant ΔR^2 , the frequency of contact with acquaintances from the Internet was found to have a positive effect on marital life satisfaction ($\beta = 0.21, p < 0.05$). Participants' occupation and spouse's employment and commuting hours were also found to negatively associate with their marital life satisfaction in the same model. Finally, for the 18-years-and-above group, Model 2 on the emotional support from their spouse revealed that living in a densely inhabited district had a negative effect ($\beta = -0.22, p < 0.05$), while the frequency of contact with neighbors had a positive effect ($\beta = 0.22, p < 0.05$). Model 2 exhibited a significant ΔR^2 ($\Delta R^2 = 0.06, p < 0.05$). Model 2 on marital life satisfaction showed that the frequency

of contact with acquaintances from work ($\beta = 0.19, p < 0.1$) and the frequency of contact with acquaintances from the Internet had a positive effect on participants' marital life satisfaction ($\beta = 0.18, p < 0.05$). Model 2 exhibited a significant $\Delta R^2 (\Delta R^2 = 0.10, p < 0.01)$.

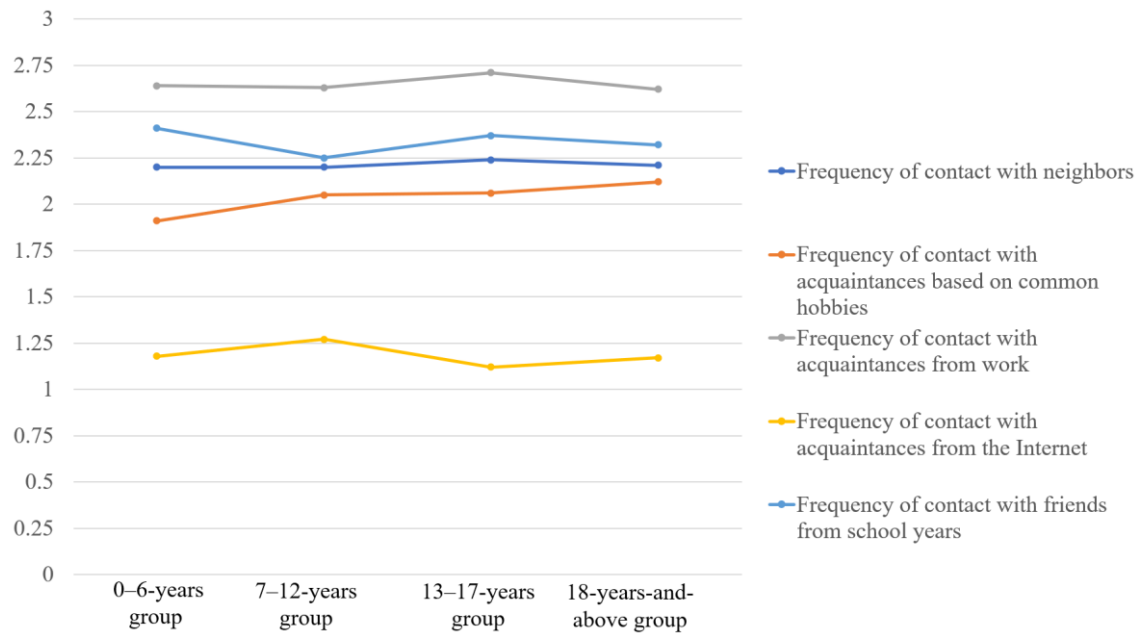


Figure 2 Frequency of contact with non-kin network members among male participants included in different life stages groups

Table 4 Relationships between life stages groups and male participants' contact frequency of the five types of non-kin network members

	Life stages groups				N	F value
	G1	G2	G3	G4		
Frequency of contact with neighbors	2.20 (0.88)	2.20 (0.86)	2.24 (0.85)	2.21 (0.89)	628	0.06
Frequency of contact with acquaintances based on common hobbies	1.91 (0.87)	2.05 (0.97)	2.06 (1.01)	2.12 (1.00)	626	1.53
Frequency of contact with acquaintances from work	2.64 (0.81)	2.63 (0.83)	2.71 (0.82)	2.62 (0.96)	627	0.25
Frequency of contact with acquaintances from the Internet	1.18 (0.47)	1.27 (0.60)	1.12 (0.42)	1.17 (0.53)	623	1.45
Frequency of contact with friends from school years	2.41 (0.88)	2.25 (0.91)	2.37 (0.85)	2.32 (0.97)	628	0.77

Note. G1 = 0-6-years- group; G2 = 7-12-years group; G3 = 13-17-years group; and G4 = 18-years-and-above group.

Table 5 Results of regression analyses for male participants included in the 0–6-years group and 7–12-years group (standardized regression coefficients)

	0–6-years group				7–12-years group			
	Emotional support from their spouse		Marital life satisfaction		Emotional support from their spouse		Marital life satisfaction	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Step 1: Control variables								
DID	-0.21*	-0.17†	-0.11	-0.08	0.10	0.08	0.04	0.03
Educational level	0.25*	0.20†	0.27**	0.21*	-0.03	-0.03	-0.13	-0.12
Employed and commuting hours	0.07	0.12	0.11	0.16	0.05	0.04	0.05	0.04
Spouse's employment and commuting hours	-0.04	0.01	0.06	0.11	-0.04	-0.09	-0.04	-0.06
Occupation	0.01	0.03	-0.04	-0.02	0.05	0.03	0.08	0.06
Step 2: Frequency of contact with non-kin network members								
Neighbors		0.10		0.12		-0.07		-0.02
Acquaintances based on common hobbies		0.13		0.13		0.32		0.17
Acquaintances from work		0.03		0.02		-0.05		-0.03
Acquaintances from the Internet		0.11		0.03		-0.13		-0.14
Friends from school years		0.00		0.09		0.02		-0.04
<i>F</i> value	3.06*	2.32*	2.58*	2.18*	0.28	0.86	0.31	0.43
ΔR^2	0.09*	0.11	0.07*	0.10	-0.04	-0.02	0.02	0.04
<i>N</i>	111	111	110	110	86	86	86	86

Note. DID = densely inhabited district. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$.

Table 6 Results of regression analyses for female participants included in the 13–17-years group and 18-years-and above group (standardized regression coefficients)

	13–17-years group				18-years-and-above group			
	Emotional support from their spouse		Marital life satisfaction		Emotional support from their spouse		Marital life satisfaction	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Step 1: Control variables								
DID	-0.17†	-0.18†	-0.14	-0.19	-0.12	-0.22*	0.00	0.01
Educational level	-0.07	-0.06	0.11	0.14	0.00	0.03	0.10	0.02
Employed and commuting hours	-0.09	-0.10	-0.03	-0.01	0.14	0.11	0.19	0.16
Spouse's employment and commuting hours	-0.19†	-0.19†	-0.25*	-0.25*	0.01	0.01	0.01	0.04
Occupation	-0.23*	-0.24*	-0.31**	-0.34**	0.08	0.03	0.09	0.10
Step 2: Frequency of contact with non-kin network members								
Neighbors		-0.02		0.04		0.22*		0.09
Acquaintances based on common hobbies		0.01		-0.03		0.11		0.01
Acquaintances from work		0.02		0.11		0.09		0.19†
Acquaintances from the Internet		0.07		0.21*		-0.15		0.18*
Friends from school years		-0.06		-0.07		-0.13		0.00
<i>F</i> value	2.41*	1.24	3.51**	2.40*	1.08	1.87†	1.49	2.58**
ΔR^2	0.06*	0.02	0.15**	0.05	0.00	0.06*	0.02	0.10**
<i>N</i>	107	107	107	107	114	114	145	145

Note. DID = densely inhabited district. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$.

4. Discussion

In this study, the characteristics of Japanese men and women's non-kin networks and the relationships between their non-kin networks and conjugal relationships were examined across different life stages. The results revealed that the non-kin network members who were most frequently contacted by Japanese women in all groups were friends from school years, acquaintances from work, and neighbors. Nozawa (2014) suggested that neighbors played an important role in Japanese wives' conjugal relationships, while this study found that friends from school years and acquaintances from work also play an essential role.

Further, the results found that the frequency of contact with non-kin network members differed based on the females' life stage group. In particular, Japanese married women in the 0–6-years group most frequently communicated with friends from school years, while other groups most frequently communicated with acquaintances from work. Consistent with existing research on social networks during childcare (Hoshi, 2012; Yamane, 2017), friends from school years are important points of communication for women to obtain emotional and informational support. Moreover, this study indicated that contact with friends from school years was positively associated with emotional support from their husbands, as well as wives' marital life satisfaction. Contact with acquaintances from the Internet was also positively associated with emotional support from their husbands. These results indicated that when women need to gain more emotional support during childcare, they obtain it from various sources. This might effectively reduce problems in their marital life and childcare, and thereby, enhance the satisfaction of their conjugal relationships. In addition, the frequency of contact with acquaintances based on common hobbies was found to be positively associated with wives' marital life satisfaction in the 13–17-years group.

Conversely, the characteristics of husbands' frequency of contact with non-kin networks differed from those of wives. For men, acquaintances from work were the most frequent points of communication across all life stages groups. Consistent with Nozawa (2014), this result indicates that acquaintances from work are essential non-kin network members. However, the frequency of contact with acquaintances from work was only found to have a positive effect on marital life satisfaction for husbands, including those in the 18-years-and-above group. The results also indicated that the more the husbands communicated with acquaintances from the Internet, the more satisfied they were with their marital life. Simultaneously, the more they communicated with their neighbors, the more emotional support they obtained from their wives. However, contacts with acquaintances from the Internet were found to be positively associated with husbands' marital life satisfaction in the 13–17-years group. These results revealed that the influence of non-kin network members on women's conjugal relationships occurred when they needed various kinds of support during childcare, while the influence of non-kin network members on men's conjugal relationships was found when the burden

of childcare was not heavy. This implies that husbands and wives search for different kinds of support from non-kin network members.

Finally, this study indicates that personal and domestic characteristics, as well as the area they live in, had an effect on Japanese people's conjugal relationships across different life stages. For example, spousal employment and commuting hours were found to be negatively associated with the wives' conjugal relationships in the 0–6-years group. This result was also found in husbands in the 13–17-years group. This suggests that, consistent with previous research (Fischer, 1982; Nozawa, 2014; Wellman & Wellman, 1992), urbanization and people's personal and domestic characteristics also play a role in conjugal relationships.

Notes

For more details on the outline of the NFRJ18 survey, please refer to the first report.

(<https://nfrj.org/nfrj18publishing.htm>)

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