



Research Article

Sleep Quality and Wellbeing for Dual-Earner Couples during Covid-19

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Abstract

Focusing on dual-earner couples, this paper investigates whether and when husband and wife sleep quality can influence their own wellbeing during Covid-19 period. More specifically, based on the analysis of two-wave data from 120 matched dual-career couples, this study found that (1) both husband and wife sleep quality had positive influences on their own wellbeing in the form of family-work-facilitation and wellbeing at work; (2) both husband and wife sleep quality can cross-over to the partner's wellbeing in the form of family-work-facilitation and wellbeing at work; and (3) wife social support strengthened the cross-over effect of wife sleep quality on husband wellbeing in the form of family-work-facilitation and wellbeing at work.

Keywords: Dual-earner couple; Sleep quality; Wellbeing; Work-life facilitation; Covid-19

Introduction

Dual-earner family has been an important family type in modern societies. Dual-earner family is usually composed of a couple who are expected to take care of family and work responsibilities at the same time. While past research has focused on the influences from work domain to family domain [1-3], recent studies have started to explore the influences from the family domain to the work domain. In particular, during the Covid-19 period, both research and practitioners have found that it is critical to understand how characteristics at home may be conducive to individuals both life and work wellbeing [4,5].

Recent research has underscored the importance of sleep quality for individuals. Sleep quality refers to a subjective evaluation of how well an individual slept [6]. Based on 152 studies, Litwiller and colleagues [7] have found sleep quality is positively related to personal health and, attitudes, safety and performance at work. More recently, according to 75 independent samples, Henderson and Horan [8] have found sleep quality influences individual work performance through individual affect, cognitive resources

and attitudes. While these meta-analyses have demonstrated the importance of sleep quality for individual's health and work, we know little about how sleep quality may influence the family-work boundaries and overall wellbeing for dual-earner families.

In view of this, focusing on dual-earner families, this paper attempts to examine whether sleep quality of the focal person (husband or wife) may lead to family-work-enrichment and wellbeing when working at home (1) for the self and (2) for the partner. This study is based on the Conservation of Resources (COR) theory. It is argued that high sleep quality will provide key resources (e.g. energies, self-regulation resources etc.) for individuals to cope with the challenges from both life and work during Covid-19. It will not only be facilitative for their own family-work enrichment and wellbeing at work, but also will crossover to their partners in a family setting. Moreover, it is also investigated how personal social support from other relatives may strengthen the influences of sleep quality. It is expected that with higher social support with more emotional and informational resources, individuals are likely to accumulate resources and have more resources within their reach to cope with family and work demands, which ultimately enhance their wellbeing at work. The research framework is summarized in Figure 1.

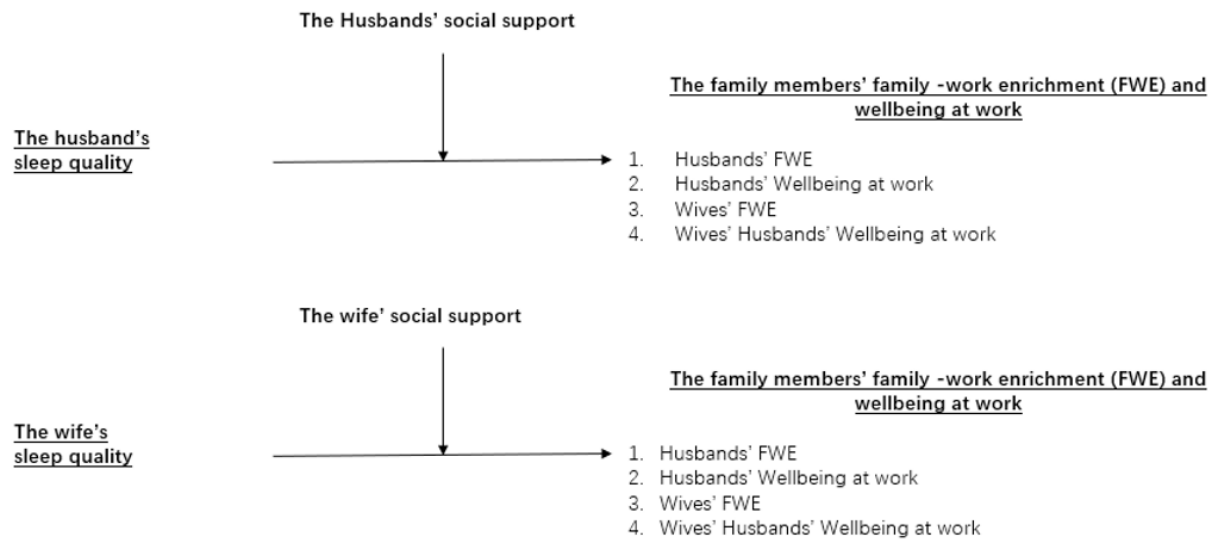


Figure 1: The research framework.

Our study makes three contributions to extant literature. First, this study is among the first to investigate sleep quality in the dual earner family literature. Our study contributes to the family care, and work-family balance literature in general in that, we identified sleep quality as a resource-providing characteristic that can be utilized in the family-work boundary setting. This adds to previous studies, which have identified personal resources such as health, mood, energy, time, perspective, fulfillment, and knowledge [9] as key personal resources. Our empirical background is Covid-19. Our study also highlights the sleep quality is a crucial resource when the couples are working at home together.

Second, focusing on dual-earner couples, we demonstrated a model that examines the crossover influences of sleep quality between the husband and the wife in terms of family-work-enrichment and wellbeing at work. Extant crossover influences (i.e. influences across persons) related to dual-earner couples, have predominantly studied influences in the work-to-family direction, including energies such as burnout and engagement of both partners [1], work demands such as long work hours [3], and work resources such as organizational family support policies [2], this research demonstrates that the crossover influences can also be in the family to work direction. In line with the extant research, this research provides a model of how sleep quality of the focal person in dual-earner families can influence family and work wellbeing for both parties in a family when working at home.

Third, we showed that individual social support strengthened the influences of sleep quality. Past research has demonstrated that personal characteristics and work characteristics as boundary conditions [10,11], this research shows the social support can also serve as the boundary conditions.

Theoretical Background and Hypotheses Development

COR Theory

Conservation of Resources (COR) theory have two key assumptions. First, it assumes that people are motivated to obtain, retain, and protect personal resources and “that stress occurs when people risk losing or actually lose such resources” [9,12]. In other words, people tend to gain and reserve resources gradually in order to generate positive experiences such as better coping. Second, those with greater resources are less vulnerable to resource loss and more capable of orchestrating resource gain [13]. Hobfoll [12] describe resources can come in bundles that generate gain spirals where resources accumulate. In the following, it is argued that sleep is a key resource that facilitates dual-earner couples to obtain positive experience from family to work wellbeing.

Sleep quality, family-work-enrichment, and wellbeing at work

Sleep reflects a period of heavy physiological activity entailing many restorative processes necessary for brain functioning. High quality sleep is associated physical and mental consequences, including lower body mass index and protection from illness [7,14]. More important, sleep is necessary for individuals to function well by allowing for replenishment of energetic and self-control resources [15,16]. It replenishes glucose for individual daily energy consumption [17], and guarantee activities in the prefrontal cortex that influence individuals’ self-regulation of thoughts, emotions and the subsequent actions [16]. It is one key resource that facilitate an individual’s “the selection, alteration, and implementation of other resources” [9].

Family-work enrichment can be viewed as the process whereby the resources from the family domain lead to the development of personal resources, which subsequently influence wellbeing in the work domain [9]. When husband or wife sleeps well at home, it can be expected that they are better resourced in terms of energy and self-control resource replenishment to conduct the housework (such as household routine and children care). They are more likely to meet up family demands effectively and efficiently, and to facilitate the selection of other resources such as emotional support from family. A natural consequence is that they can conserve personal resources such as time and energies to facilitate their experience in the work domain [18-20]. Moreover, because personal resources can generate gain spirals, husbands or wives are more likely to be capable of cultivating more resources in the work domain, such as support from leaders and more developmental opportunities from the organization [21]. Through the ongoing accumulation of resources, they tend to have sufficient resources at work and in turn maintain high wellbeing at work. It can be hypothesized that:

H1. The husband's sleep quality will be positively related to husband family-work-enrichment (H1a) and husband wellbeing at work (H1b).

H2. The wife's sleep quality will be positively related to wife family-work-enrichment (H2a) and wife wellbeing at work (H2b).

The crossover effect of sleep quality between the couple

It can be further expected that the high sleep quality as the key resource for individuals can cross over between husband and wife. According to COR theory, individuals are motivated to self-expand resources in order to incorporate others' resources to facilitate goal achievement [22], a resource accumulation process based upon inter-individual resource transmission of psychological states and experiences [12]. When one party sleeps well, s/he is likely to be more effective to shoulder the housework, and offers more time and energies for the other party. Moreover, the well-functioning self-regulations derived from high-quality sleep may increase the likelihood for one party to offer emotional support (e.g. empathy, caring, love, encouragement) to the other party. Even when there are conflicts, the couples are unlikely to use conflictual interaction style [23]. It follows that the regulations of emotions are likely to crossover between the couple. In short, the high sleep quality of one party is likely to lead to the development of personal resources such as energy, time, and positive moods to the other party, which ultimately facilitate family-work enrichment and work wellbeing. It can be hypothesized that:

H3. The husband's sleep quality will be positively related to wife family-work-enrichment (H3a) and wife wellbeing at work (H3b).

H4. The wife's sleep quality will be positively related to husband family-work-enrichment (H4a) and husband wellbeing at work (H4b).

The moderating role of social support

In this paper, social support is defined as the extent to which an individual can obtain informational, emotional support etc. from other family members except the partner [9]. Social support indicates individuals can turn to a variety of resources such as time, energies, emotional and financial support from close relatives when needed. For example, if there is any family conflicts or troubles, family members can find relatives for advice and emotional support, and are therefore more likely to find a solution. With more resources the individual can reach, they are likely to be more capable of achieving resource gains.

It can be expected that in the condition where one party of the couple have high social support, the high sleep quality of the focal person is more likely to facilitate the individual's own selection and integration of the social support. Consequently, the husband or the wife will have more resources both for their own family-to-work experience and for the crossover experience of the other party. It can be hypothesized that:

H5. The interaction of the husband's sleep quality and social support will be positively related to husband family-work-enrichment (H5a) and husband wellbeing at work (H5b).

H6. The interaction of the wife's sleep quality and social support will be positively related to wife family-work-enrichment (H6a) and wife wellbeing at work (H6b).

H7. The interaction of the husband's sleep quality and social support will be positively related to wife family-work-enrichment (H7a) and wife wellbeing at work (H7b).

H8. The interaction of the wife's sleep quality and social support will be positively related to husband family-work-enrichment (H8a) and husband wellbeing at work (H8b).

Methods

Sample and procedures

Data was collected during Covid-19; participants were recruited on a voluntary basis from a university in China in 2021. Specifically, undergraduate students are informed of this research aims and procedures, and their parents were invited through them. The questionnaire package includes the statement of the research scope and procedures. Two waves of questionnaires for wives and husbands were sent to participants via email with 2 month in-between, and then consolidated according to the student number. Sleep quality and social support and family basic information were collected at Time 1. Family-to-work enrichment and wellbeing at work (job satisfaction) were collected at Time 2.

After matching the data, the final dataset includes 240 (120 pairs) valid responses (response rate=75.9%). The means of the age of the wives and husbands were 46.23 year (S.D=5.78) and 48.27 (S.D=6.27) respectively.

Measures

For the items of all scales, 6-point rather than 5-point Likert scale format was used in order to address people's tendency to select midpoints of a range. Most response items ranged from 1=strongly disagree to 6=strongly agree.

Sleep quality is measured by a four-item scale from Gao, et al. [24]. Respondents were asked to rate their sleep quality in the past month. One sample item is "It's difficult for me to fall asleep". For this scale, "1" stands for "very much" and "6" for "very little" respectively. The Cronbach alpha is 0.87.

To measure social support, we adopted the social support measure from Xiao [25]. The scale asked individuals: How much support and/or care do you receive from (1) parents (2) sisters or brothers and (3) other family members except your partner? The responses vary from "1 = none" to "4 = full". The Cronbach alpha is 0.77.

Family-work enrichment is measured by a three-item scale from Grzywacz and Marks [26]. Two sample items are "the love and respect you get at home makes you feel confident about yourself at work" and "Your home life helps you relax and feel ready for the next day's work." The Cronbach alpha is 0.70.

Wellbeing at work is measured by job satisfaction with a 3-item scale from Cammann, et al. [27]. One sample item is "In general, I am satisfied with my work". The Cronbach alpha is 0.85. For data analysis, we follow most of the paired data analysis in the work family studies [4,28], and used regression analysis to test our hypotheses.

Results

Descriptive analysis

Table 1 reports the means, SDs, and correlations of studied variables. Husband sleep quality is positively related to husband family work enrichment ($r=0.365$, $p<0.01$), husband wellbeing at work ($r=0.349$, $p<0.01$), wife family work enrichment ($r=0.332$, $p<0.01$), and wife wellbeing at work ($r=.341$, $p<0.01$). Wife sleep quality is positively related to husband family work enrichment ($r=0.372$, $p<0.01$), husband wellbeing at work ($r=0.247$, $p<0.01$), wife family work enrichment ($r=0.247$, $p<0.01$), and wife wellbeing at work ($r=0.315$, $p<0.01$). Among the control variables, wife age ($r=0.225$, $p<0.05$) is positively associated with husband family-work enrichment. Therefore, the age variables were included in the following analysis.

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Husband age	48.27	6.47									
2. Wife age	46.23	5.79	.887**								
3. Husband sleep quality	4.71	0.94	-.012	.004							
4. Wife sleep quality	4.56	1.01	.145	.146	.515**						
5. Husband social support	3.46	0.60	.030	.063	.280**	.314**					
6. Wife social support	3.53	0.53	.106	.119	.244**	.224*	.708**				
7. Husband family-work-enrichment	4.84	0.61	.150	.225*	.365**	.372**	.267**	.286**			
8. Wife family-work-enrichment	4.80	0.74	.162	.170	.332**	.247**	.167	.334**	.607**		
9. Husband wellbeing at work	4.76	0.80	.003	.031	.349**	.253**	.140	.041	.426**	.291**	
10. Wife wellbeing at work	4.48	0.95	.153	.164	.341**	.315**	.175	.131	.283**	.304**	.509**

Notes: * $p<.05$; ** $p<.01$; N=120 pairs.

Table 1: Means, standard deviations, and correlations for studied variables

Hypotheses testing

To test hypotheses, linear regression analysis was used. The results are shown in Table 2. As shown, the husband sleep quality is positively related to family-work-enrichment (beta=.33, p<.01) and husband wellbeing at work (beta=.35, p<.01). Similarly, the wife sleep quality is also positively related to family-work-enrichment (beta=.19, p<.05) and husband wellbeing at work (beta=.33, p<.01). These results suggest the support for H1a, H1b, H2a, and H2b.

Table 2 also reports the results of testing the crossover effects of sleep quality of the couple. Specifically, the regression results show that husband sleep quality has positive effects on wife family-work-enrichment (beta=.28, p<.01) and wellbeing at work (beta=.34, p<.01). Wife sleep quality has positive effects on husband family-work-enrichment (beta=.35, p<.01) and wellbeing at work (beta=.33, p<.01). These results suggest the support for H3a, H3b, H4a, and H4b.

Predictors	Husband family-work-enrichment				Wife family-work-enrichment				Husband wellbeing at work				Wife wellbeing at work			
	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4
Husband age	-0.21	-0.17	-0.25	-0.30	0.07	0.10	0.04	0.05	-0.09	-0.06	-0.13	-0.20	0.07	0.09	0.02	0.00
Wife age	0.41*	0.37	0.40*	0.42*	0.10	0.07	0.10	0.07	0.11	0.09	0.10	0.16	0.10	0.09	0.10	0.11
Husband sleep quality	0.33**	0.27**			0.28**	0.24*			0.35**	0.33**			0.34**	0.32**		
Wife sleep quality			0.35**	0.38**			0.19*	0.13			0.31**	0.40**			0.33**	0.35**
Husband social support		0.22*				0.17				0.11				0.10		
Husband sleep quality * Husband social support		0.14				0.12				0.16				0.18		
Wife social support				0.20*				0.33**				0.01				0.03
Wife sleep quality * Wife social support				0.26**				0.01				0.35**				0.12
R square	0.17	0.23	0.18	0.29	0.11	0.14	0.06	0.17	0.13	0.16	0.10	0.21	0.13	0.16	0.13	0.15
R square change	0.17	0.06	0.18	0.11	0.11	0.03	0.06	0.11	0.13	0.03	0.10	0.11	0.13	0.03	0.13	0.02
F statistics	7.14**	5.78**	7.55**	7.03**	4.22**	1.76ns	2.42	6.11**	5.06**	1.54ns	3.67*	7.30**	5.71**	2.03ns	5.22**	0.74ns
Notes: *p<.05; **p<.01; N=120 pairs.																

Table 2: Regression analysis for hypotheses testing.

H5-8 relates to the moderating influences of individual social support. As shown, the interaction of the husband’s sleep quality and social support are not significantly related to husband family-work-enrichment (beta=.14, n.s.) and husband wellbeing at work (beta=.16, n.s.). Thus, H5 is not supported. In addition, the interaction of the wife’s sleep quality and social support are not significantly related to wife family-work-enrichment (beta=.01, n.s.) and wife wellbeing at work (beta=.12, n.s.). Thus, H6 is not supported. The interaction of the husband’s sleep quality and social support is not significantly related to wife family-work-enrichment (beta=.12, n.s.) and wife wellbeing at work (beta=.18, n.s.). Thus, H7 is not supported. Lastly, the interaction of the wife’s sleep quality and social support is significantly and positively related to husband family-work-enrichment (beta=.26, p<.01) and husband wellbeing at work (beta=.35, p<.01). In order to demonstrate the strengthening effects of wife social support, the interactions effects were depicted in Figures 2 and 3. As shown in these two figures, when wife social support is high, the relationships between wife sleep quality and the two dependent variables (husband family-work facilitation and wellbeing at work) are more positive. These results suggest support for H8.

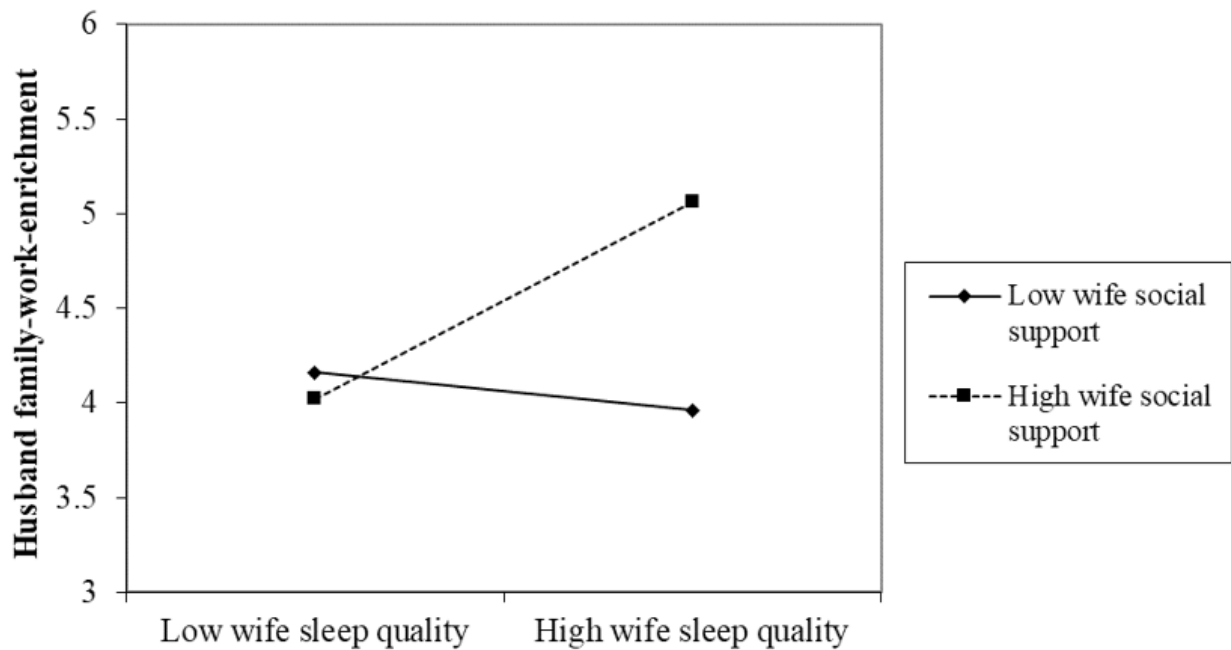


Figure 2: Interaction effects of wife sleep quality and social support on husband family-work-enrichment.

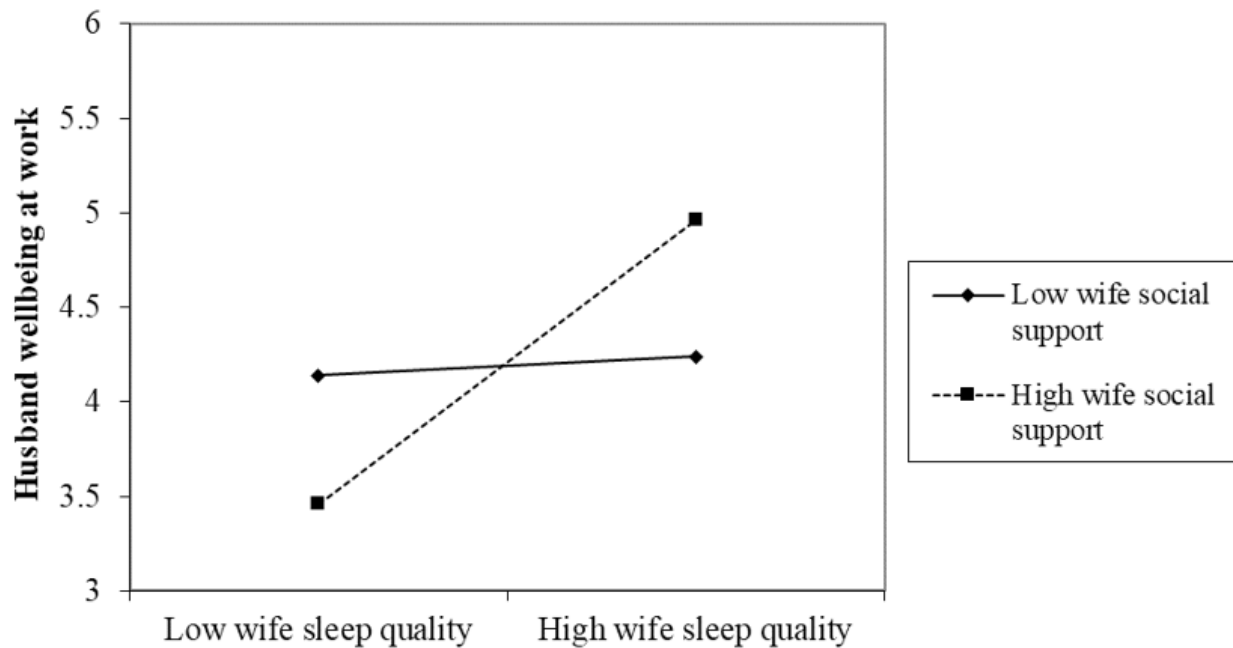


Figure 3: Interaction effects of wife sleep quality and social support on husband wellbeing at work.

In short, the regression analysis shows sleep quality of one focal person in a couple has positive influences on the family-work-facilitation and wellbeing at work for both the self (H1 and 2), and the partner as the cross-over effects (H3 and H4). In terms of the interactions of sleep quality and social support, the analysis only support that the relationships between wife sleep quality and husband outcomes are strengthened by wife social support (H8), demonstrating the cross-over effect is effective from the wife to the husband. In the following, the implications are discussed.

Discussion and Conclusion

Focusing on dual-earner families, this research investigates how during the Covid-19 period the sleep quality of husband and wife influence the life-work-enrichment, and wellbeing at work for the couple. More specifically, the analysis showed that (1) both the sleep quality of husband and wife can influence their own life-work-enrichment, and wellbeing at work; (2) both the sleep quality of husband and wife have the cross-over effects for the partners' life-work-enrichment, and wellbeing at work; and (3) wife social support strengthens the cross-over effect of wife sleep quality on husband life-work-enrichment and wellbeing at work.

This research indicates that sleep quality is an important resource for the dual earner couples. Although previous studies have recognized energy and time are critical personal resources, sleep is different in that it involves fundamental and complicated physiological processes, which provide self-regulation resources. It further improves the wellbeing for the individuals themselves and their partners. Future research may investigate in more detail on how sleep enhances their partner's family-work-enrichment, such as emotional contagion and high concentration on family care [1,29].

Second, this research also shows the strong crossover effects of sleep quality between the partners. These results imply that sleep quality from one focal person in the dual-couple family may influence the partners in a couple of ways including shouldering family responsibilities and offering care and support in daily interactions. Future research may also investigate how the sleep quality of the couple may interact with each other, which may further influence the wellbeing of the family members.

Lastly, this research suggests asymmetric influences of the moderating effects of social support. The current results suggest that wife social support is likely to contribute to husband wellbeing at family and work. One possible explanation relates to the social role theory. It indicates that husbands are more likely to be expected as the economic providers for families and wives to be responsible for family work [28,30]. Following these expectations, the social support of wife for example information support and emotional support may offer the husband more energy, time and self-regulation resources, which will be helpful for their wellbeing in family and work. Future research may investigate the current findings in other contexts.

The study has two practical implications. First, dual-earner couples need to pay more attention to sleep as it has been an important source of resources for individuals and will have crossover influences on partners. Second, particularly for wives, it is important to foster family contacts and support from other family members since these efforts will facilitate husband wellbeing.

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