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Patterns of satisfaction with personal lives and online teaching among primary and middle school teachers during the COVID-19 pandemic

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ABSTRACT

This study aims to examine the co-existing patterns of teachers' satisfaction with personal lives and online teaching, and the factors of these patterns during the pandemic. Self-report questionnaire was administered to 751 primary and secondary school teachers in China during the pandemic. Latent profile analysis and multiple logistic regression were used. We found four patterns: Low satisfaction, High life–Low teaching satisfaction, Low life–Medium teaching satisfaction, and High satisfaction group. Sense of control was more associated with High life–Low teaching satisfaction group. Teaching efficacy and family interference with work were more associated with High satisfaction group. Job burnout and work interference with family were more associated with Low satisfaction and Low life–Medium teaching satisfaction group. The findings indicate the heterogeneity of teachers' satisfaction with personal lives and online teaching during the pandemic. Grade, sense of control, teaching efficacy, job burnout, and work–family conflict are important factors.

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COVID-19; primary and secondary school teachers; satisfaction with online teaching; satisfaction with personal lives; latent profile analysis

Introduction

The COVID-19 pandemic has conducted a considerable impact on the way people live and work, affecting their satisfaction with both. Especially for teachers in primary and middle schools, they face great challenges during and after the pandemic, including challenging online teaching, taking the responsibilities for caring for their families (Deng et al., 2023), managing mental health problems caused by the pandemic, as well as providing support for students with mental health problems (Zhou & Yao, 2020), etc. Previous evidence showed that teachers' psychological well-being and satisfaction decreased following disasters (Tao et al., 2009), which may further reduce their enthusiasm for teaching and overall effectiveness. Therefore, it is worth assessing teachers' satisfaction with both personal lives and

online teaching, as well as relevant factors, in the context of the normalised pandemic.

Patterns of teachers' satisfaction with personal lives and online teaching

Researchers paid much attention to the current situation of teachers' satisfaction with personal lives and online teaching during the pandemic. For example, researchers investigated the level of satisfaction with online teaching among Chinese teachers and found that they were satisfied overall with the online teaching process (Fu et al., 2020; Kong et al., 2021; Zhu et al., 2023). However, the majority of teachers in Australia reported negative themes related to the change to online teaching (Van Bergen & Daniel, 2022), which indicated that they may experience low levels of satisfaction with online teaching. These inconsistent findings also existed in teachers' satisfaction with personal lives. Kirkiç and Yahsi (2021) found that teachers' life satisfaction, in Turkey, was just above medium level. However, Lizana and Vega-Fernandez (2021) found that teachers from Chile had low median scores on the Quality of Life survey, which indicated that they may be dissatisfied with their personal lives. In addition to the differences in research tools and the time of data collection, focusing on the population average and neglecting the heterogeneous nature of participants may also lead to the inconsistent findings. It is worth clarifying the heterogeneity in teachers' satisfaction with personal lives and online teaching, to enhance our understanding of the research inconsistency, as well as to develop targeted intervention improving teachers' satisfaction.

Latent profile analysis is frequently used to identify homogeneous latent profiles of respondents based on correlations among multiple variables and heterogeneous characteristics of co-existing variables. People are classified so that all the individuals in the same group are highly homogeneous in variables, but different groups are significantly different (Vermunt & Magidson, 2003). We therefore aimed to use latent profile analysis to identify latent profiles of satisfaction with personal lives and online teaching among primary and secondary school teachers during the pandemic, as a way to support the development of targeted intervention measures.

Factors and satisfaction with personal lives and online teaching

Researchers also showed interest in the factors of teachers' satisfaction with personal and professional lives (Fritzsche & Parrish, 2005; Lent, 2008). According to the conservation of resources theory (Freedy et al., 1992; Hobfoll, 2001), resource loss, such as sense of control, is the best predictor of motivation to cope and of the negative impact of disaster. Individuals with low sense of control feel incapable to control themselves and the world, and experience negative emotions, such as helplessness and pessimism (Zhou et al., 2018). On the contrary, those with high levels of sense of control under the pandemic tend to experience more positive emotions and positively evaluate their work and life. Hence, sense of control may associate with individual satisfaction with both professional (McGlone & Chenoweth, 2001) and personal (Sun et al., 2010) lives.

In addition, according to the social cognitive model of job satisfaction (Lent et al., 2011; Lent & Brown, 2006), people are more likely to improve their satisfaction with professional lives directly when they have high job efficacy, are exposed to favourable work conditions, attain work goals, and experience positive affectivity. These factors including sense of efficacy, achievement and emotion at work, and working environment, were also related to one's satisfaction with personal lives (Duffy et al., 2013; Lent et al., 2011).

For teachers, their teaching efficacy is a key reflection of their self-efficacy. Teaching efficacy is the degree of trust that teachers have in their ability to promote students' learning, stimulate their learning motivation, and achieve established goals (Tschannen-Moran & Hoy, 2001). Teachers with a high sense of teaching efficacy show great enthusiasm for teaching (Allinder, 1994). They carry out teaching activities in a planned and organised way, deal with problems effectively and have positive experiences during the teaching process (Chong et al., 2010). Thus, teaching efficacy may be associated with an increase in satisfaction with professional lives (Barouch Gilbert et al., 2014; Moè et al., 2010; You et al., 2017). In addition, this experience may also affect many aspects of their lives. Teachers therefore experience high levels of satisfaction with personal lives (Karademas, 2006; Lin, 2012).

An important indicator that reflects teachers' sense of accomplishment and emotions at work is job burnout (Wang et al., 2003). In specific, teachers with high levels of job burnout hardly experience any sense of accomplishment from teaching, have more negative emotions, and fail to deal with interpersonal relationships effectively. Hence, job burnout may be related with a decrease in satisfaction with professional lives (Skaalvik & Skaalvik, 2009; Yorulmaz et al., 2017). In addition, teaching is an important part of teachers' life, and their sense of life worth can be reflected in their teaching work. Thus, high levels of job burnout may also be related to a decrease in satisfaction with personal lives (Karakose et al., 2016; Li, 2015). In this study, we will further investigate the association between teachers' job burnout and two types of satisfaction during the pandemic.

Favourable work environment is also emphasised as an important resource in the job demands–resources model (Demerouti & Bakker, 2011), and work environments have often been restricted to specific workplaces. However, primary and secondary school teachers during the COVID-19 pandemic in China spent much time in shifting teaching from conventional classrooms to asynchronous and synchronous online teaching, and worked at home. The ambiguous boundary between family life and working environment may lead to work–family conflict. Juggling both work and family roles may lead to a negative 'state of being', and teachers may experience dissatisfaction with both their job and lives.

In specific, work–family conflict is differentiated into two dimensions: work interference with family (WIF) and family interference with work (FIW) (Greenhaus & Beutell, 1985). Family interference with work may consume individual work resources, and lead people to experience more stress, which impairs their assessment of the job. People therefore experience low levels of satisfaction with professional lives (Gözükara & Çolakoğlu, 2016; Zhao & Namasivayam, 2012). Work interference with family consumes individual personal resources and leads people fail to meet the requirements of

family life (Voydanoff, 2005). People therefore hardly experience the positive emotions associated with family life, and have low levels of satisfaction with personal lives (Qiu & Fan, 2015). This kind of conflict also makes it impossible to effectively balance the relationship between work and family. This may lead people to negatively evaluate specific aspects of work, and experience low levels of satisfaction with their professional lives (Bruck et al., 2002; Ford et al., 2007). It needs further exploration that how the two forms of work–family conflicts relate to teachers' satisfaction during the pandemic.

The present study

After a critical review of the relevant literature, we found some limitations in the research about teachers' satisfaction and its factors. First, most studies evaluated the overall situation of teachers' satisfaction during the pandemic and ignored examining individual differences in satisfaction, especially the co-existent patterns of satisfaction with personal lives and online teaching, among teachers. Second, it remains unclear what roles some psychological and environmental measures play in differentiating the latent profiles of teachers' satisfaction. Thus, based on the conservation of resources theory (Hobfoll, 2001), the job demands–resources model (Demerouti & Bakker, 2011), and the social cognitive model of job satisfaction (Lent et al., 2011; Lent & Brown, 2006), we aimed to firstly identify the patterns of satisfaction with personal lives and online teaching among primary and middle school teachers, and secondly examine the roles of demographic variables, sense of control, teaching efficacy, job burnout, and work-family conflict in differentiating such patterns.

Methods

Participants

We recruited 751 primary and secondary school teachers working during the COVID-19 pandemic. Of these, 257 (34.2%) were men and 494 (65.8%) were women. The mean age was 40.02 years (standard deviation 8.40 years; range 19–59 years). There were 241 high school teachers (32.1%), 144 junior high school teachers (19.2%), and 366 primary school teachers (48.7%).

Measures

Sense of control

We used the certainty in control sub-scale of the Security Questionnaire developed by Cong and An (2004) to measure teachers' sense of control. The sub-scale includes eight items, each scored on a five-point Likert scale (1 = completely inconsistent, 5 = completely consistent). The sub-scale demonstrated excellent internal reliability ($\alpha = 0.90$).

Online teaching efficacy

We developed the Teacher's Sense of Online Teaching Efficacy Scale by drawing on the items from the personal teaching efficacy dimension in the Teacher's Sense of

Teaching Efficacy Scale (Yu et al., 1995), and the results of interviews with primary and secondary school teachers during the pandemic. The scale contains eight items, such as ‘I can control online teaching well’ and ‘I can solve problems that students encounter in the process of online learning’. Each item is scored on a five-point Likert scale (1 = totally disagree, 5 = totally agree). In the original version of the Teacher’s Sense of Teaching Efficacy Scale (Yu et al., 1995), internal reliability was 0.77, and criterion-related validity was 0.51 ($p < .001$). The scale also had acceptable internal reliability and validity in previous studies (Shi & Gao, 2010). In this study, Cronbach’s α of the scale was 0.79.

Job burnout

We used the educator burnout inventory revised by Wang et al. (2003) to assess job burnout syndrome among primary and secondary school teachers. The inventory is revised based on the Maslach Burnout Inventory (Maslach & Jackson, 1981) and the results of interviews with teachers in China, which is more suitable for Chinese teachers. It contains 22 items divided into three dimensions: emotional exhaustion, sense of personal accomplishment, and depersonalisation. Each item is scored on a seven-point Likert scale (1 = never, 7 = every day). The educator burnout inventory had acceptable internal reliability and validity in previous studies (Qi & Wu, 2014), and good internal reliability in this study ($\alpha = 0.89$).

Work–family conflict

We used the Work–Family Conflict Scale (Carlson et al., 2000) translated by Tong and Zhou (2009). The scale includes 18 items divided into two sub-scales: work interference with family and family interference with work, and each sub-scale contains nine items. Each item is scored on a five-point Likert scale (1 = completely inconsistent, 5 = completely consistent). The questionnaire demonstrated excellent internal reliability ($\alpha = 0.94$), and the α values of the two sub-scales were both 0.91.

Online teaching satisfaction

We developed an Online Teaching Satisfaction Questionnaire to measure teachers’ satisfaction with online teaching. The questionnaire was developed from the results of open interviews with primary and secondary school teachers. The questionnaire contains six items, including ‘Your attitude towards questioning forms in online courses’, and ‘Your attitude towards communication between teachers and students during online teaching’. Each item was scored on a five-point Likert scale (1 = dissatisfied, 3 = ordinary, 5 = satisfied). In this study, Cronbach’s α of the scale was 0.89. The median of each item was three. A score of more than three meant that the individual was satisfied with the content described in the question, and <3 meant that they were not satisfied.

Life satisfaction

We used the Life Satisfaction Scale revised by Leung and Leung (1992). The scale contains five items, each scored on a seven-point Likert scale (1 = completely inconsistent, 7 = completely consistent). In this study, Cronbach’s α of the scale was 0.89.

The median of each item was four, and a score of more than four meant that the individual was satisfied with the content of this question, and <4 meant that they were not satisfied.

Data analysis

From 12 March to 16 March 2020, an electronic questionnaire was made available to investigate the psychological and behavioural status of primary and secondary school teachers in the Chinese mainland region during the COVID-19 pandemic. We informed teachers of the study's purpose and methods of investigation through WeChat (the most widely used social media in China), and invited them to publicise the study to other teachers, including their colleagues and friends. The questionnaire was disseminated using WeChat and WeChat groups. The first page of the electronic questionnaire contained information about the study purpose and the voluntary and anonymous nature of participation, and made clear that teachers were free to withdraw from the investigation at any time. Teachers who chose the option 'I consent to participate in this investigation' could complete the remaining parts of the questionnaire. In total, we obtained responses from 759 teachers, of whom eight were kindergarten teachers, and whose responses were excluded. This left 751 questionnaires with valid data from primary and secondary school teachers. We used Pearson correlation analysis, latent profile analysis, and multiple logistic regression analysis to analyse the data, with SPSS 23.0 and Mplus 7.0.

Results

Descriptive statistics and correlations among main variables

Pearson correlation analysis was conducted to examine the association between satisfaction with personal lives and online teaching. There was a statistically significant and positive correlation between them ($r=0.34$, $p<.001$). We also investigated the associations between gender, age, grade, sense of control, online teaching efficacy, job burnout, work-family conflict, and two types of satisfaction. The results are shown in Table 1. The correlations between gender and satisfaction were not statistically significant. Age was statistically significantly and positively associated with satisfaction with personal lives, but not with satisfaction with online teaching. Grade was statistically significantly and negatively associated with satisfaction with online teaching, but not with satisfaction with personal lives. Sense of control and online teaching efficacy were statistically significantly and positively associated with satisfaction with both

Table 1. Means, standard deviations, and correlations among main variables.

Variables	Gender	Age	Grade	Sense of control	Teaching efficacy	Job burnout	WIF	FIW	
	<i>M (SD)</i>	–	40.02 (8.40)	–	27.87 (6.24)	26.64 (4.69)	64.56 (16.50)	23.85 (6.67)	21.67 (6.31)
TS	18.13 (3.96)	–0.07	–0.02	–0.12**	0.12**	0.55***	–0.29***	–0.10**	–0.05
LS	21.24 (5.92)	0.04	0.07*	–0.04	0.32***	–0.40***	–0.26***	–0.21***	–0.21***

WIF: work interference with family; FIW: family interference with work; TS: teaching satisfaction; LS: life satisfaction.

* $p<.05$, ** $p<.01$, *** $p<.001$.

personal lives and online teaching. Job burnout and work interference with family were statistically significantly and negatively associated with satisfaction with both personal lives and online teaching. Family interference with work was statistically significantly and negatively associated with satisfaction with personal lives, but not with satisfaction with online teaching.

Latent profile analysis of satisfaction with personal lives and online teaching

To examine the co-existent patterns of satisfaction with personal lives and online teaching, we used latent profile analysis to analyse items in the questionnaires and assess the fit of 1-class to 6-classes models. The fit indices are shown in Table 2. We used standard criteria to select the best-fitting model, including lower Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Adjusted Bayesian Information Criterion (aBIC). Entropy values closer to 1.0 were considered to indicate a more accurate model estimation. The significant p -values of Lo–Mendell–Rubin likelihood ratio test (LRT) and Lo–Mendell–Rubin adjusted likelihood ratio test (aLRT) indicate that the k -class model fits significantly better than the $(k-1)$ -class model (Qiu, 2008). Mean probability shows the averages of the probabilities for the most likely latent class membership by latent class.

Table 2 shows that the AIC, BIC, and aBIC values decreased from the 1-class to 6-classes model, indicating that the 6-classes model fitted relatively well. Entropy values of all models were higher than 0.80, indicating that the precision of all models was as high as 90%. However, the LRT values were statistically significant for the 1-class to 4-classes models, indicating that the 4-classes model was statistically significantly better than the 3-classes one. The LRT and aLRT values of the 5-classes and 6-classes models were not statistically significant, indicating that they were not statistically significantly better than the 4-classes model. The 4-classes model was therefore considered to be the best-fitting model. The mean probabilities of four types of teachers in each latent group were 0.95, 0.94, 0.95, and 0.96.

The means of 11 items in the 4-classes model of satisfaction with online teaching and personal lives are shown in Figure 1. The means of the online teaching satisfaction items in group 1 were lower than 3, and the means of the life satisfaction items were lower than 4. This indicated that this group had low satisfaction with both personal lives and online teaching, and we named this group the ‘Low satisfaction group’ ($n = 85$, 11.3%). In group 2, the means of the online teaching satisfaction items were lower than 3, but the means of the life satisfaction items were >4 . This group therefore had relatively low satisfaction with online teaching, but relatively high satisfaction

Table 2. Latent profile analysis table of satisfaction with online teaching and personal lives.

	AIC	BIC	aBIC	Entropy	LRT	aLRT	Mean probability
1-class	24,032.22	24,133.89	24,064.03	–	–	–	1.00
2-classes	22,328.03	22,485.16	22,377.19	0.86	1728.19***	1706.71***	0.96/0.95
3-classes	21,493.42	21,706.00	21,559.93	0.93	858.61***	847.94***	0.95/0.98/0.96
4-classes	20,727.95	20,995.99	20,811.82	0.90	789.47**	779.65**	0.95/0.94/0.95/0.96
5-classes	20,382.38	20,705.88	20,483.60	0.91	369.57	364.98	0.94/0.95/0.94/0.94/0.93
6-classes	20,067.56	20,446.52	20,186.14	0.92	307.28	303.46	0.93/0.95/0.94/0.92/0.94/0.96

Note. ** $p < .01$, *** $p < .001$.

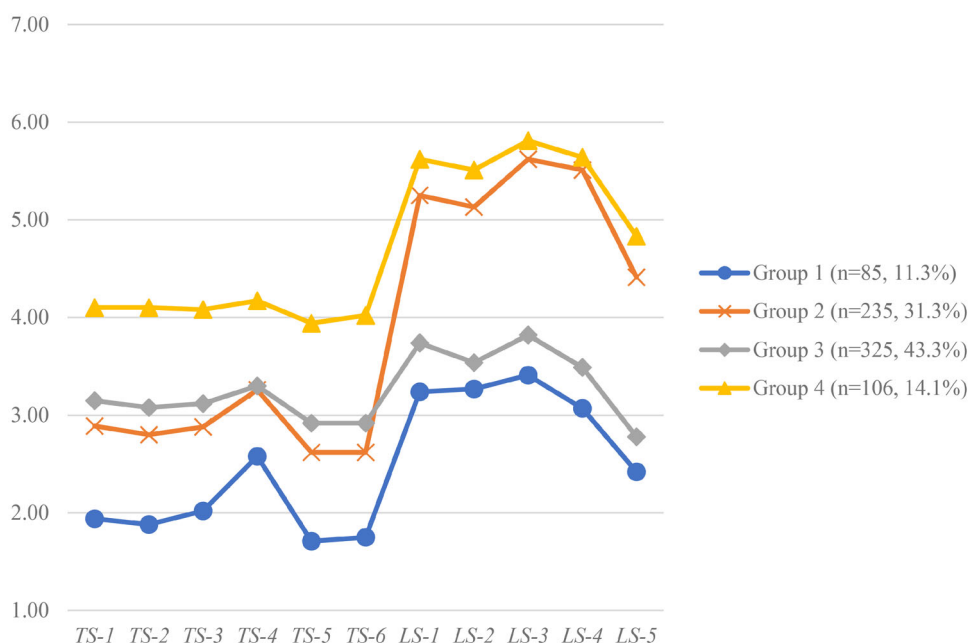


Figure 1. Item means of satisfaction with personal lives and online teaching for the 4-classes latent profile model. *Note.* Group 1: Low satisfaction group; Group 2: High life–Low teaching satisfaction group; Group 3: Low life–Medium teaching satisfaction group; and Group 4: High satisfaction group. *TS-N* represents the *N*th item of the online teaching satisfaction scale, and *LS-N* represents the *N*th item of the life satisfaction scale.

with personal lives. We named this group the ‘High life–Low teaching satisfaction group’ ($n = 235$, 31.3%). In group 3, the means of four items of online teaching satisfaction were slightly higher than 3, but the means of the other two items were slightly lower than 3, and the means of the life satisfaction items were all lower than 4. Teachers in this group, therefore, had moderate satisfaction with both personal lives and online teaching, and we, therefore, named it the ‘Low life–Medium teaching satisfaction group’ ($n = 325$, 43.3%). Finally, the means of all items of online teaching and life satisfaction in group 4 were higher than their median, and we, therefore, named this group the ‘High satisfaction group’ ($n = 106$, 14.1%).

The satisfaction group was taken as the dependent variable for multiple logistic regression analysis. The independent variables were gender (female as control group), age, grade (high school as control group), sense of control, online teaching efficacy, job burnout, and two dimensions of work–family conflict. The High satisfaction group was used as the reference group. The results of the multiple logistic regression analysis are shown in Table 3. All the factors except gender and age had statistically significant correlations with types of groups. Compared with high school teachers, primary school teachers were more likely to have high satisfaction with both personal lives and online teaching. Teachers with a high level of job burnout and work interference with family were more likely to be dissatisfied with online teaching or had moderate satisfaction with personal lives and online teaching. Teachers with a high level of teaching efficacy and family interference with work were more likely to have high

Table 3. Logistic regression analysis of different factors on patterns of satisfaction with personal lives and online teaching.

Variables	Ref = High satisfaction group		
	Low satisfaction group OR (95% CI)	High life–Low teaching satisfaction group OR (95% CI)	Low life–Medium teaching satisfaction group OR (95% CI)
Male (<i>Ref</i> = female)	1.10(0.52–2.32)	0.63(0.35–1.12)	1.36(0.79–2.34)
Age	0.97(0.93–1.02)	1.00(0.97–1.03)	0.98(0.95–1.01)
Grade (<i>Ref</i> = high school)			
Primary school	0.40(0.17–0.93)*	0.58(0.31–1.10)	0.77(0.41–1.43)
Secondary school	0.71(0.28–1.83)	0.49(0.23–1.05)	0.55(0.27–1.15)
Sense of control	1.04(0.97–1.12)	1.08(1.02–1.14)**	1.02(0.97–1.07)
Teaching efficacy	0.57(0.51–0.63)***	0.72(0.67–0.78)***	0.76(0.71–0.82)***
Job burnout	1.06(1.03–1.09)***	1.01(0.99–1.04)	1.03(1.01–1.05)**
WIF	1.11(1.02–1.21)*	1.07(0.99–1.14)	1.08(1.02–1.16)*
FIW	0.82(0.75–0.90)***	0.89(0.82–0.96)**	0.91(0.84–0.97)**

Ref: reference group; WIF: work interference with family; FIW: family interference with work.

* $p < .05$, ** $p < .01$, *** $p < .001$.

satisfaction with both personal lives and online teaching. Teachers with a high sense of control were more likely to be satisfied with personal lives.

Discussion

In the present study, we investigated the co-existent patterns of satisfaction with personal lives and online teaching among primary and secondary school teachers during the COVID-19 pandemic, as well as the factors associated with the patterns. Our results showed that there were four satisfaction patterns among teachers, indicating the heterogeneous characteristics of teachers' satisfaction. Besides, factors including demographic, psychological, and environmental variables were found to play different roles. The findings provided implications for targeted intervention to improve the satisfaction of teachers, especially when major emergencies come again in the future.

Patterns of teachers' satisfaction with personal lives and online teaching

Four patterns were identified: Low satisfaction ($n = 85$, 11.3%), High life–Low teaching satisfaction ($n = 235$, 31.3%), Low life–Medium teaching satisfaction ($n = 325$, 43.3%), and High satisfaction group ($n = 106$, 14.1%). This indicates that two types of satisfaction among teachers showed heterogeneous characteristics, which was similar to previous findings on satisfaction with personal lives and well-being (Chen & Lin, 2014; Suh et al., 2017).

The largest group was the Low life–Medium teaching satisfaction group, which indicated that the pandemic continued to have a negative impact on teachers. Teachers in the High life–Low teaching satisfaction group were satisfied with their personal lives under pandemic prevention and control measures. This may be because living at home during the pandemic can meet individual needs for family life. However, the pandemic amplified the existing problem that teachers in China were under heavy pressure to improve students' performance ranks and test scores in standardised tests like Zhong Kao and Gao Kao (Wu et al., 2014). Teachers were sceptical about the

effectiveness of online teaching, resulting in a negative evaluation and less satisfaction with this aspect of work during the pandemic.

Factors of satisfaction with personal lives and online teaching

We found that grade was significantly associated with the co-existing patterns of teachers' satisfaction, but age and gender were not. Specifically, primary school teachers were more likely to be satisfied, compared with high school teachers. Since primary school teachers have fewer teaching tasks and less teaching pressure (Yao, 2019), they may have more leisure time to deal with matters in personal lives. Primary school students are also more likely to comply with teachers, making it easier for teachers to manage classes and deal with discipline issues.

Teachers with a higher sense of control were more likely to be in the High life–Low teaching satisfaction group. Individuals with a high sense of control have higher coping efficacy and are willing to invest more time and effort in solving problems. They achieve their established goals (Kay & Heckhausen, 2015), and find this process a positive experience (Barlow et al., 2015). However, when failing to achieve established goals, they may deny themselves and develop mental health problems (Heckhausen et al., 2010). The complexity of online teaching made it hard for teachers with a high sense of control to achieve 'ideal' teaching effect, although they might invest much effort and time. This may have led to frustration and dissatisfaction with online teaching.

Teachers with high online teaching efficacy were more likely to experience high levels of satisfaction with both personal lives and online teaching, which is consistent with previous research (Barouch Gilbert et al., 2014; Lin, 2012; Moè et al., 2010; You et al., 2017). Teachers with high online teaching efficacy enjoyed utilising the advantages of online teaching and were satisfied with this work method. As teaching online at home, positive emotions they experienced at work might diffuse into family life, and promote positive interaction and communication among family members. Teachers with high satisfaction with professional lives are therefore likely to have high satisfaction with personal lives as well (Demirel, 2014).

Teachers who scored higher on the measure of burnout tended to belong to the Low satisfaction or Low life–Medium teaching satisfaction group, supporting previous findings (Karakose et al., 2016; Skaalvik & Skaalvik, 2009; Yorulmaz et al., 2017). During the pandemic, teachers with high levels of job burnout are often sceptical about their ability to complete teaching-related tasks (Yorulmaz et al., 2017), especially when they have to adapt to an online teaching style, resulting in a negative experience in teaching life. According to the theory of emotional contagion (McIntosh et al., 1994), teachers' negative emotions may transmit to their family members, hence leading to low satisfaction with family life.

Teachers experiencing a high level of work interference with family tended to belong to the Low satisfaction or Low life–Medium teaching satisfaction group, which is consistent with previous research results (Ford et al., 2007; Qiu & Fan, 2015). The pandemic required teachers to take more responsibilities, such as implementing prevention strategies and managing both students' and their own mental health.

Prolonged exposure to high job demands drains individual energy, but may also have knock-on effects on family life, and make it harder to perform family duties (Li et al., 2015). Teachers are therefore more likely to experience lower satisfaction with personal lives, and may also resist the requirements of work, leading to dissatisfaction with online teaching.

In contrast, teachers with a high level of family interference with work were more likely to experience high satisfaction with both personal lives and online teaching, which is different from previous studies (Gözükara & Çolakoğlu, 2016; Lu et al., 2009). This may be due to the timing of this investigation, which was during a global pandemic. Fear and worry about the pandemic may have made people focus more on their families, and invest more energy and time in family life, gaining positive experience in this process. In addition, home-based online teaching promoted teachers to take more care of family members, and therefore even when family interfered with work, teachers were still satisfied with this work method.

Limitations and implications

Some limitations of this study should be addressed. This study only investigated teachers during the COVID-19 pandemic, so the findings generalised to other emergencies should be with caution. Second, because of the design limitations, teachers' professional resources were not included in this study. This should be examined in a future study. Third, some causal language about the main measures was based on previous research or theoretical assumptions. The research findings only indicate correlations, not causality.

Despite these limitations, this study was among the first to explore the latent profiles of satisfaction with personal lives and online teaching among primary and secondary school teachers during the COVID-19 pandemic, making an important contribution to the theoretical development of the social cognitive model of job satisfaction and the job demands–resources model. It has also added to the empirical evidence about teachers' satisfaction for the future. In addition, we simultaneously examined the roles of demographic variables, personal resources, and family factors within the job demands–resources model, which expended the framework of this model. From the perspective of mental services, the findings suggest that more attention should be paid to middle school teachers. We can help to improve their satisfaction by guiding teachers to maintain appropriate levels of sense of control, efficiently utilise internet and improve online teaching efficacy, relieve job burnout, and balance the relationship between work and family.

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Author contributions

RZ collected the data. BC, QL, TL, XW, LS, and RZ wrote, revised, and proofread the manuscript. RZ designed the study and performed data analysis. All authors read and approved the manuscript.

Disclosure statement

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