



The impact of Covid 19 pandemic on life satisfaction and health of Iranian bank employees

Hadis Amiri^{a,*}, Meysam Aminizadeh^b, Maysam Rezapour^c, Asghar Tavan^c, Mohsen Aminizadeh^d

^a Department of Paramedical Sciences, Mazandaran University of Medical Sciences, Sari, Iran

^b Tejarat Bank of Iran, Iran

^c Health in Disasters and Emergencies Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

^d Department of Psychology, Azadshahr Branch, Islamic Azad University, Azadshahr, Iran

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ABSTRACT

Background: COVID-19 pandemic has affected various aspects of human life. Bank employees who are more in contact with people are more likely to be infected during the pandemic situation. Moreover, mental, physical and social impacts of COVID-19 are more intense among these employees.

Objective: this study aims to determine the effect of COVID-19 pandemic on bank employees' health and life satisfaction in Iran.

Methods: This cross-sectional study was conducted during the fifth wave of COVID-19 from July to October 2021. The population included all the employees of Tejarat Bank in 20 provinces of Iran, 350 of whom were selected using the multi-stage cluster sampling method. The data were collected by demographic questionnaire, 12-item short-form (SF-12) personal health assessment survey and satisfaction with life scale (SWLS). The objective of the study was examined by the structural equation modeling (SEM).

Results: The results showed the two default models of health function (CFI = 0.95) and life satisfaction (CFI = 0.99) had acceptable fit. Assessing the bank employees with COVID-19 revealed this disease had no direct impact on life satisfaction ($\beta = -0.05$, $P = 0.28$) and health function ($\beta = 0.04$, $P = 0.48$). However, it had a direct impact on physical function ($\beta = -0.18$, $P = 0.001$) and, consequently, an indirect impact on life satisfaction. Moreover, low mental function reduced life satisfaction.

Conclusion: COVID-19 infection had no direct impact on life satisfaction. However, it had an indirect and positive impact on it. Considering gender showed COVID-19 infection had a direct and positive impact on life satisfaction among women. The employees who recovered from COVID-19 infection reported higher life satisfaction after returning to work for various reasons than those who never got it.

1. Introduction

COVID-19 pandemic, first reported in China in late 2019, has been a major concern for many countries and businesses. According to

* Corresponding author.

E-mail address: amirih80@gmail.com (H. Amiri).

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World Health Organization [1], COVID-19 was introduced as a public health emergency of international concern on January 31, 2020, and a pandemic on March 11, 2020 [2]. Iran, with its high prevalence and mortality rates, is among the first countries affected by COVID-19 [3]. Accordingly, the government took strict measures to prevent the spread of the virus such as closure of schools and businesses, curfews, telecommuting, travel restrictions, etc. [4,5].

Health center staff have been at the forefront of the fight against the disease without the opportunity of being laid off or telecommute during the outbreak [6,7]. Other jobs like bank employees also continued to serve during these difficult conditions, but they have not received great attention. According to Iran's National Headquarter for Combating Coronavirus (NHCC), the probability of a bank employee being infected with COVID-19 is about 7.5 times higher than that of an ordinary citizen [8]. From the beginning of the COVID-19 outbreak, bank employees were among the first groups affected, 260 of whom have unfortunately died from this disease so far [8].

These working conditions could have a significant impact on employees' life satisfaction and health. Life satisfaction has recently been a topic of interest for researchers and addressed by positive psychology [9–11]. In general, positive psychology examines well-being through the experiences of individuals such as socioeconomic status [12,13], employment [14], physical health [13], income [15] etc. COVID-19 pandemic is among the most recent human experiences.

One study on Weibo (one of China's most popular social media) users before and after the COVID-19 outbreak showed negative emotions such as anxiety, depression and indignation increased and life satisfaction and some positive emotions decreased [16]. Another study conducted one month after the onset of the COVID-19 pandemic in China revealed the adults who did not work at the time of the outbreak were worse off in terms of life satisfaction, mental and physical health and distress [17]. Studies have demonstrated women are more likely to be less satisfied with life and experience more anxiety and stress during the COVID-19 pandemic [18, 19].

The impact of individuals' health status on life satisfaction and conflicting with the disease is another concern that some studies have addressed. Physical fitness in the current lifestyle is considered as a means for achieving a better quality of life. Physical activity has many health benefits, including improving cardiorespiratory function and boosting the immune system [20,21]. Furthermore, the current state of health and exercise can affect the correlation between life satisfaction and COVID-19 severity [18]. WHO launched "be active during COVID-19" campaign with recommendations for weekly levels of physical activity that could be achieved in the limited space of home without any specific equipment [22]. Zhang et al. found that life satisfaction was negatively correlated with hours of exercise, suggesting that physically active people might be more susceptible to poor well-being during the quarantine [18].

Given that bank employees are one of the high-risk groups due to their occupational nature and a potential source of virus transmission in the community, this study aims to examine life satisfaction and health status of these people during the COVID-19 pandemic.

2. Methodology

This cross-sectional study was performed during the fifth wave of COVID-19 in Iran. The population included the employees of Tejarat Bank who were exposed to COVID-19 to varying degrees. The employees who worked directly with clients and were less likely to be laid off or telecommute were selected from 20 provinces of Iran using random cluster sampling method. The sample size was determined to be 350 people. Questionnaires were set up electronically and sent to about 500 individuals via WhatsApp, 350 of whom completed them. Necessary arrangements were made with the central headquarters in Tehran to have the list of the personnel of the selected provinces.

3. Measures

3.1. Personal health survey

SF-12 personal health survey assesses the standard physical and mental health function. This scale that was previously translated into Persian and localized by Pakpour et al. was evaluated [23,24]. SF-12 scale consists of 12 items and 8 dimensions: Physical function (2 items), physical role (2 items), body pain (1 item), general health (1 item), vitality (1 item), social function (1 item), role of emotional health (2 items) and mental health (2 items). The eight dimensions provide the two composite scores of physical (PCS) and mental (MCS) health scales, ranging from 0 to 100. Higher SF-12 scores indicate better health. Cronbach's alpha as internal consistency reliability was obtained as 0.89 and 0.90 for the physical and mental scales, respectively and 0.746 for total scale.

Scoring is computed using the scores of twelve questions and range from 0 to 100, where a zero score indicates the lowest level of health measured by the scales and 100 indicates the highest level of health.

3.2. Life satisfaction

Satisfaction with life scale (SWLS) was used to assess life satisfaction. This scale consists of 5 items, scored based on the 5-point Likert scale [25]. Diener et al. distributed SWLS among a group of students and evaluated its validity and reliability. Two months after implementation, the test-retest correlation coefficient and Cronbach's alpha coefficient were obtained as 0.82 and 0.87, respectively [25]. Schimmack et al. (2002) assessed the reliability of SWLS and reported its Cronbach's alpha coefficient as 0.90, 0.82, 0.79, 0.76 and 0.61 among American, German, Japanese, Mexican and Chinese nations, respectively [26]. In Iran, Mozaffari evaluated the validity of the Iranian version of SWLS by comparing it with the positive and negative affect schedule (PANAS) and reported a

positive and significant correlation between these two scales [27]. Cronbach’s alpha was obtained 0.86 for SWLS in current study.

Scoring of this scale is based on the Likert scale, which is scored from 1 to 5.

Lower score limit	average score limit	upper score limit
5	15	25

- If the scores of the questionnaire are between 5 and 10, the level of satisfaction with life in this society is weak.
- If the scores of the questionnaire are between 10 and 15, the level of satisfaction with life is at an average level.
- If the scores are above 15, the level of life satisfaction is very good.

3.3. Data analysis

Structural equation modeling (SEM) was used to examine the research question. Prior to conducting SEM analysis, the measurement models for each latent factor were examined by Confirmatory Factor Analyses (CFAs), and factor loadings ≥ 0.5 for each factor indicator as well as acceptable fit indices for the overall factor were to ensure adequate measures. Model goodness of fit was evaluated by χ^2 and degree freedom, the comparative fit index (CFI) (good fit > 0.90), the root mean square error of approximation (RMSEA < 0.08). In the analysis of this study, 1000 bootstrap samples were used to examine the indirect effects of morbidity with Covid-19 and quality of life (physical and mental functions) on the satisfaction of life. The bootstrapping method also adjusts standard errors, so they are appropriate for indirect effects [28]. To test for gender differences, the multiple group analysis was used to test invariance of regression coefficients. Preparing data and descriptive analysis were performed in STATA 16, and Structural equation modeling analyses were conducted in Mplus 8.

4. Results

The correlation, means, and standard deviations for indicators are shown in Table 1 for the total sample. Table 1 also includes skewness and kurtosis that help to evaluate the normality of the distributions. As a preliminary step, separate measurement models were fit for life satisfaction and health functions (Table 2). The both models demonstrated acceptable model fit, CFI = .95, TLI = 0.94, SRMR = 0.04, RMSEA = 0.09 for health functions (with two factors: Physical function and Mental function), and CFI = 0.99, TLI = 0.98, SRMR = 0.02, RMSEA = 0.054 for Life Satisfaction scale (Table 2). Each of factors were compared across the socio-demographic variables and morbidity to Covid-19 infection (Table 3). 74.1% of participants experienced infection with Covid-19. There was significant difference for physical ($P = 0.004$) and mental ($P = 0.01$) functions between those with Covid-19 and those did not. Also, here was significant difference for physical ($P = 0.04$) and mental ($P < 0.001$) functions between female and male.

We begin by examining a baseline model of life satisfaction (see Fig. 1). In this model, morbidity with Covid-19 is not directly associated with changes in life satisfaction ($\beta = -0.05, P = 0.28$), the mental function ($\beta = 0.04, P = 0.48$), but is directly associated with change physical function ($\beta = -0.18, P = 0.001$). The indirect effects from Covid-19 \rightarrow PF \rightarrow MF \rightarrow LS ($\beta = 0.06, P = 0.008$) and total indirect ($\beta = 0.11, P = 0.004$) were significant (Table 4).

Table 1
Descriptive statistics of the total sample (N = 355).

	Sf2	Sf3	Sf4	Sf5	Sf8	Sf9	Sf10	Sf11	Sw1	Sw2	Sw3	Sw4	Sw5
Sf2	1.00												
Sf3	0.67	1.00											
Sf4	0.63	0.49	1.00										
Sf5	0.63	0.50	0.76	1.00									
Sf8	0.33	0.28	0.42	0.42	1.00								
Sf9	0.35	0.28	0.43	0.50	0.65	1.00							
Sf10	-0.27	-0.27	-0.31	-0.37	-0.48	-0.44	1.00						
Sf11	0.33	0.27	0.37	0.42	0.66	0.64	-0.59	1.00					
Sw1	-0.30	-0.23	-0.34	-0.36	-0.44	-0.38	0.45	-0.48	1.00				
Sw2	-0.26	-0.23	-0.33	-0.37	-0.43	-0.37	0.43	-0.46	0.76	1.00			
Sw3	-0.28	-0.24	-0.29	-0.36	-0.39	-0.40	0.43	-0.49	0.68	0.72	1.00		
Sw4	-0.24	-0.15	-0.29	-0.30	-0.38	-0.32	0.37	-0.37	0.60	0.65	0.63	1.00	
Sw5	-0.15	-0.14	-0.11	-0.13	-0.22	-0.22	0.25	-0.27	0.42	0.38	0.32	0.36	1.00
Mean	1.14	1.16	1.06	1.08	1.07	1.01	1.03	1.10	1.11	1.16	1.14	1.11	1.15
SD	2.24	2.52	2.53	2.32	2.93	2.70	3.28	2.92	2.74	2.75	3.32	2.97	2.32
Skewness	0.57	0.32	0.13	0.44	-0.08	0.06	-0.35	-0.01	0.09	0.17	-0.52	-0.08	0.71
Kurtosis	-0.53	-0.70	-0.71	-0.60	-0.60	-0.60	-0.62	-0.75	-1.11	-1.03	-0.71	-1.21	-0.39

Note. All paired correlations were significant ($P < 0.05$).

Table 2
Factor Loadings of Latent Factor name and relevant indicators.

	Physical Function [46]	λ	Θ
SF2	(The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?) MODERATE ACTIVITIES, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf:	0.76	0.65
SF3	Climbing SEVERAL flights of stairs:	0.63	0.77
SF4	(During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities AS A RESULT OF YOUR PHYSICAL HEALTH?) ACCOMPLISHED LESS than you would like:	0.85	0.53
SF5	Were limited in the KIND of work or other activities:	0.87	0.50
Mental Function (MF)			
SF8	During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work outside the home and housework?)	0.80	0.60
SF9	(The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST 4 WEEKS)? Have you felt calm and peaceful?	0.78	0.63
SF10	Did you have a lot of energy?	-0.63	0.77
SF11	Have you felt downhearted and blue?	0.83	0.56
Fit indices: CFI = .95, TLI = .94, SRMR = 0.04, RMSEA = 0.09. Cronbach's Alpha = 0.75. Also the correlation coefficient PF with MF was 0.60.			
Satisfaction With Life Scale (SWLS)			
Sw1	In most ways my life is close to my ideal	0.85	0.53
Sw2	The conditions of my life are excellent.	0.89	0.46
Sw3	I am satisfied with my life	0.82	0.58
Sw4	So far I have gotten the important things I want in life	0.74	0.68
Sw5	If I could live my life over, I would change almost nothing.	0.45	0.89
Fit indices: CFI = .99, TLI = .98, SRMR = 0.02, RMSEA = 0.054. Cronbach's Alpha = 0.86.			

Table 3
Comparison across the socio-demographic variables and morbidity to Covid-19 infection.

	N	%	SLWS Mean \pm SD	PF Mean \pm SD	MF Mean \pm SD
job status					
Employed at work	332	93.5	14.2 \pm 4.5	9.5 \pm 3.5	11.7 \pm 2.3
Employed remotely	12	3.4	13.5 \pm 4.3	11.0 \pm 4.9	12.8 \pm 1.8
Leave due to Covid 19	7	2.0	11.4 \pm 5.7	13.1 \pm 5.5	12.7 \pm 2.8
lost job because of Covid 19	4	1.1	11.7 \pm 5.1	8.5 \pm 6.4	13.7 \pm 2.2
P-value			0.271	0.035	0.103
gender					
female	106	29.9	13.5 \pm 4.4	10.5 \pm 3.8	12.6 \pm 2.2
male	249	70.1	14.3 \pm 4.6	9.2 \pm 3.6	11.5 \pm 2.3
P-value			0.122	0.04	<0.001
family_number					
1	16	4.5	13.7 \pm 6.0	9.3 \pm 5.1	11.6 \pm 2.7
2	38	10.7	13.8 \pm 4.5	9.0 \pm 3.3	11.9 \pm 2.4
3 or 4	239	67.3	14.1 \pm 4.6	9.6 \pm 3.7	11.8 \pm 2.3
>5	62	17.5	14.3 \pm 4.1	9.9 \pm 3.5	11.6 \pm 2.2
P-value			0.923	0.671	0.863
education					
diploma	27	7.6	13.8 \pm 4.1	9.6 \pm 3.7	12.2 \pm 2.5
Bachelor	179	50.4	14.1 \pm 4.5	10.1 \pm 3.6	11.9 \pm 2.4
master and up	149	42.0	14.2 \pm 4.6	9.0 \pm 3.7	11.6 \pm 2.3
P-value			0.911	0.033	0.378
Marital status					
Married	287	80.9	13.9 \pm 4.6	9.7 \pm 3.7	11.8 \pm 2.3
single	68	19.2	14.6 \pm 4.8	9.1 \pm 3.8	11.7 \pm 2.3
P-value			0.302	0.2	0.67
Covid 19					
yes	263	74.1	13.9 \pm 4.7	9.9 \pm 3.7	12.0 \pm 2.3
no	92	25.9	14.4 \pm 4.1	8.6 \pm 3.5	11.3 \pm 2.5
P-value			0.362	0.004	0.01
Age cat					
<40	152	42.8	14.2 \pm 4.5	9.1 \pm 3.6	11.7 \pm 2.4
>40	203	57.2	14.02 \pm 4.5	10.0 \pm 3.7	11.9 \pm 2.3
P-value			0.692	0.032	0.55

SLWS: Satisfaction with life scale.

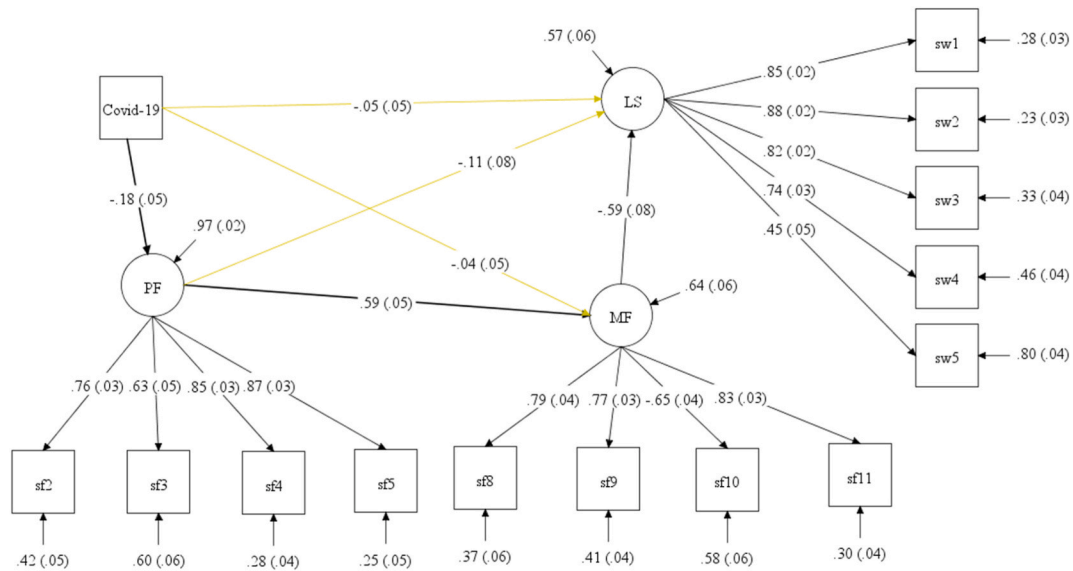


Fig. 1. Fit indices: Chi-square = 146.03; df = 72; Root mean squared error of approximation (RMSEA) = 0.054, 90% CI: (0.041, 0.066); Akaike's information criterion (AIC) = 11612.18; Bayesian information criterion (BIC) = 11786.43; Comparative fit index (CFI) = 0.963; Tucker-Lewis index (TLI) = 0.953; Standardized root mean squared residual (SRMR) = 0.038.

Table 4
Direct and indirect effects on life satisfaction.

effects	Total sample	Female	Male
Total	0.05 (0.05)	-0.10 (0.09)	0.13 (0.06)*
Direct (Covid-19 → LS)	-0.05 (0.05)	-0.20 (0.08)*	0.01 (0.06)
Total Indirect	0.11 (0.03)**	0.09 (0.06)	0.13 (0.05)**
Indirect 1: (Covid-19 → PF → LS)	0.02 (0.01)	0.02 (0.02)	0.03 (0.02)
Indirect 2: (Covid-19 → MF → LS)	0.02 (0.03)	0.02 (0.05)	0.03 (0.04)
Indirect 3: (Covid-19 → PF → MF → LS)	0.06 (0.02)**	0.06 (0.04)	0.07 (0.03)*

Note. LS: life satisfaction; PF: physical function, MF: mental function. *P-value <0.05, **P-value <0.01, ***P-value <0.001.

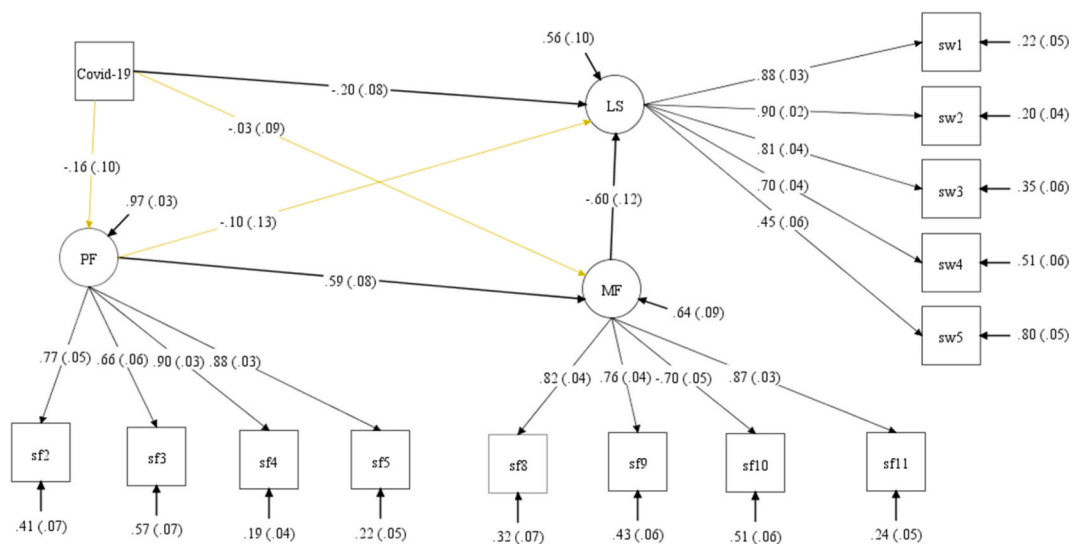


Fig. 2. Female. Fit indices: Chi-square = 117.41; df = 72; Root mean squared error of approximation (RMSEA) = 0.077, 90% CI: (0.05, 0.101); Akaike's information criterion (AIC) = 3362.13; Bayesian information criterion (BIC) = 3482.03; Comparative fit index (CFI) = 0.939; Tucker-Lewis index (TLI) = 0.922; Standardized root mean squared residual (SRMR) = 0.061.

4.1. Female group

In this model (see Fig. 2), morbidity with Covid1-19 is directly associated with negative changes in life satisfaction ($\beta = -0.20$, $P = 0.017$), but is not directly associated with change physical function ($\beta = -0.16$, $P = 0.09$) and change mental function ($\beta = -0.03$, $P = 0.71$). The indirect effects from all paths of Covid-19 \rightarrow LS were not significant (Table 4).

4.2. Male group

In this model (see Fig. 3), morbidity with Covid1-19 is not directly associated with changes in life satisfaction ($\beta = 0.01$, $P = 0.94$), the mental function ($\beta = -0.05$, $P = 0.46$), but is directly associated with change physical function ($\beta = -0.22$, $P = 0.001$). The indirect effects from Covid-19 \rightarrow PF \rightarrow MF \rightarrow LS ($\beta = 0.07$, $P = 0.017$) and total indirect ($\beta = 0.13$, $P = 0.005$) were significant (Table 4).

5. Discussion

The results showed getting COVID-19 had no direct effect on life satisfaction by ignoring the impact of gender. However, it had an indirect and positive impact on life satisfaction. Moreover, low mental function reduced life satisfaction. Previous studies have shown mental function has a direct impact on life satisfaction [9,29]. Our results revealed changes in mental function were affected by physical function, so that enhancing physical function could improve mental function. Studies have emphasized regular physical activity could improve mental function [30]. The results indicated COVID-19 reduced physical function. Belli et al. found that about half of the post-COVID-19 patients manifested severe physical dysfunction [31]. Considering the significant impact of COVID-19 on physical function as well as the impact of physical function on mental function and, finally, the impact of mental function on life satisfaction, the indirect and positive impact of COVID-19 on life satisfaction could be explained. In other words, getting COVID-19 increased life satisfaction. This indirect positive correlation seems logical, because the participants rated life satisfaction based on their present and past feelings. Moreover, the individuals who recovered from COVID-19 and resumed working at their workplace had a relative satisfaction with themselves and their lives. As, previous research has demonstrated that traumatic experiences such as Covid-19 infection can lead to positive reactions [32].

Previous studies have revealed recovery from the disease has a positive effect on quality of life and life satisfaction [33,34]. According to Gundogan's study, psychological resilience could be the reason for this high satisfaction [35]. However, psychological resilience was not evaluated in the present study, which is recommended to be considered in future research. Psychological resilience is defined as an individual's ability to stay strong in the face of negative conditions and overcome them [36]. Kai Hou et al. indicated high psychological resilience was associated with better mental health during the COVID-19 pandemic [37].

Zhang et al. conducted a study to assess the health, distress and life satisfaction of working adults one month after the outbreak of COVID-19 in China and found that the employees who stopped working had poorer mental and physical conditions as well as higher distress [17]. In general, returning to normal working conditions during the COVID-19 pandemic could increase life satisfaction. It seems that even in conditions of being afraid of contracting an infectious disease, stopping working could have psychological negative consequences.

Another study showed having a dynamic work environment during the COVID-19 outbreak could improve the meaning of life and life satisfaction. Therefore, it seems that returning to a dynamic work environment after recovery from COVID-19 could have positive psychological impacts such as life satisfaction [38].

Moreover, the correlation between getting COVID-19 and life satisfaction was examined considering gender as a moderator variable. The results showed getting COVID-19 had a direct impact on life satisfaction among women. As studies have indicated women are psychologically skeptical and more afraid of the consequences of COVID-19 or full recovery from this disease, this finding seems logical [39–41]. In contrast, getting COVID-19 had no direct effect on life satisfaction among men. However, the indirect effect of COVID-19 on life satisfaction and physical-mental function was significant and positive. Thus, getting COVID-19 indirectly had a positive effect on men's life satisfaction.

Men considered getting COVID-19 and recovering from it as overcoming this problem, which caused them to feel satisfied with themselves and their lives. This argument could be justified by examining the effect of COVID-19 on physical function. Getting COVID-19 had a negative effect on men's physical function and they felt satisfied after recovering from this disease and returning to their normal physical function, while low mental function of men and women had a negative effect on life satisfaction [42,43].

One study on the psychological effects of quarantine and lockdown among German adolescents showed making it mandatory to stay home had greater adverse effect on life satisfaction among girls. Girls were more vulnerable when pandemic restrictions were applied and life satisfaction was more negatively affected among women. These results were consistent with those of the present study suggesting that life satisfaction was higher among women after getting the virus [44].

Another study on the fear of illness, family conflicts and life satisfaction among school administrators in Turkey showed female administrators, despite reporting higher fear scores than males at the time of the COVID-19 pandemic, gained higher life satisfaction score during this period. These results were in line with those of our study in terms of differences in life satisfaction between men and women during the COVID-19 pandemic [45].

5.1. Limitations

This study had several limitations: 1. This study had a cross-sectional design; so, no causal argument could be deduced from it. It is

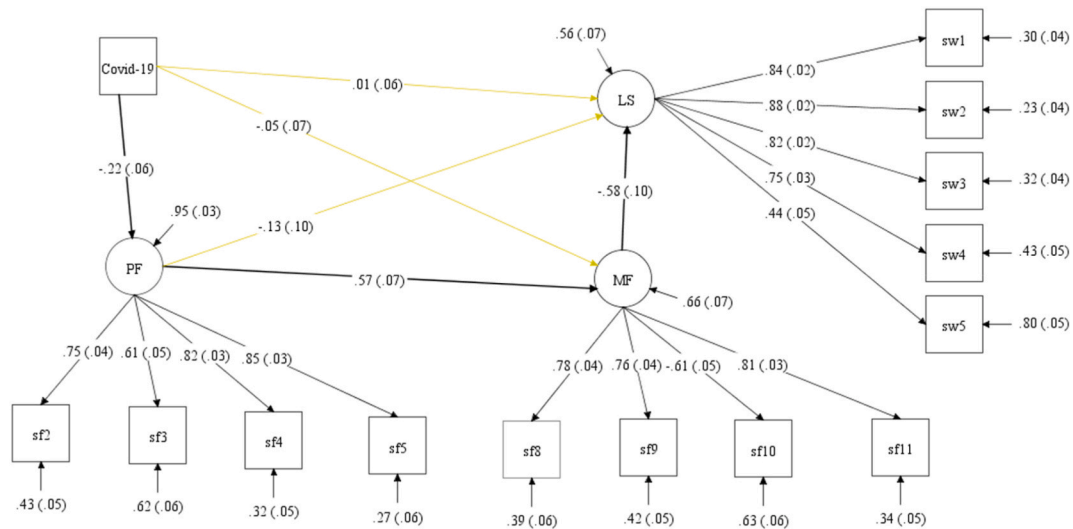


Fig. 3. Male. Fit indices: Chi-square = 114.45; df = 72; Root mean squared error of approximation (RMSEA) = 0.049, 90% CI: (0.031, 0.065); Akaike’s information criterion (AIC) = 8265.79; Bayesian information criterion (BIC) = 8424.07; Comparative fit index (CFI) = 0.968; Tucker-Lewis index (TLI) = 0.960; Standardized root mean squared residual (SRMR) = 0.038.

recommended to use longitudinal and cohort designs in future research 2. This study could have a good internal validity, because it included a homogeneous population (bank employees) considering many socio-demographic components such as lack of significance of life satisfaction/quality of life (physical/mental function) in terms of job status, age groups, marital status, educational status, etc. However, generalizing the results to other populations should be done with caution 3. The obtained results might be influenced by time, because fear of the unknown, social panic, etc. At the beginning of the pandemic could have direct and indirect impacts on life satisfaction and quality of life. Therefore, it is recommended to perform a review study or meta-analysis to examine the obtained results during the pandemic (at the early, middle and late stages of the pandemic). Finally, the long – covid19 effect such as fatigue, depression, difficulty on concentration and etc. Not considered in this study.

6. Conclusion

COVID-19 pandemic had no direct impact on life satisfaction. However, it had an indirect and positive impact on life satisfaction. Considering gender showed COVID-19 had a direct and positive impact on life satisfaction among women. The employees who recovered from COVID-19 reported higher life satisfaction after returning to work for various reasons than those who never got it. Different dimensions of COVID-19 pandemic impacts still need to be investigated. The results revealed COVID-19 had indirect and direct impacts on life satisfaction among men and women, respectively. Women were more influenced by life satisfaction than men. This impact was positive in both groups. Therefore, it is recommended that managers, while supporting employees during the illness, attempt to return employees to normal work conditions after recovery and strengthen the sense of recovery and life satisfaction among employees.

Author contribution statement

Maysam Rezapour: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data. Meysam Aminizadeh: Conceived and designed the experiments; Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper. Hadis Amiri: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data. Asghar Tavan; Mohsen Aminizadeh: Contributed reagents, materials, analysis tools or data.

Data availability statement

Data will be made available on request.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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