

Cross-National Study of Mental Health and Employment Status Nine Months Post Social Distancing Implementation Practices

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Abstract

This cross-national study examined the mental health between those individuals working and those not working nine months post initial COVID-19 social distancing implementation. Respondents ($N=3,474$) were recruited through social media (e.g. Facebook, Twitter) and completed an online survey in October/November 2020. The respondents were from Norway, the UK, the USA and Australia. The mental health of those working and not working were analysed using t tests and socio-demographics were compared using one-way analysis of variance. Respondents who were working were significantly more likely to experience better mental health, were younger, report higher levels of education, and significantly less likely to worry about their own situation, health or financial situation than respondents who were not employed. Respondents who were retired reported better mental health than respondents who were not working for other reasons (laid off/dismissed, receiving benefits, studying, other). These findings raise the importance for social workers and other health service

providers to monitor the overall mental health of individuals especially when social distancing protocols are in place and as countries begin to recover from the pandemic.

Keywords: COVID-19, cross-national, employment, mental health, social distancing, unemployment

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Introduction

The emergence of the Corona Virus Disease 2019 (COVID-19) pandemic has brought unprecedented efforts in many countries to implement social distancing practices that over time are creating changes to how people engage with others and carry out the usual day-to-day activities. For example, some of the changes happened in work practices and social networking opportunities for individuals (Mathur, 2020; Saxena and Gautam, 2020). These social distancing practices resulted in workers self-isolating when experiencing COVID-19 symptoms, closure of ‘non-essential’ workplaces, closure of day-cares, schools and universities and bans on large gatherings (WHO, 2020). Many countries also enforced ‘stay-at-home’ orders or ‘lockdowns’ to combat the spread of COVID-19. It is critical for social work professionals, as well as, other service professionals to explore how mental health is affected by the prolonged social distancing changes and economic uncertainty. Economic uncertainty for many individuals places them at high risk for mental health problems (Godinic *et al.*, 2020). Understanding these changes in work status and mental health will provide the needed information on developing social service supports and services to mitigate the impact on one’s mental health of prolonged social distancing practices. In a previous study, Gostin (2006, p. 1702) found that ‘social separation, particularly for long durations, can cause loneliness and emotional detachment, disrupt social and economic life (education, trade, business) and infringe individual rights’.

Recent investigations uncovered an increase in employee’s focus on workplace wellness over financial compensation when considering retention of workers (Rodriguez-Sanchez *et al.*, 2020). The COVID-19 pandemic has disrupted work-life balance, especially as work settings and environments have changed to increase safety measures. Guidelines in many communities recommend that employees work remotely, when possible, to reduce physical interactions and prevent spread of the infection.

The COVID-19 pandemic impacts employed and non-employed individuals in unique ways. Feelings of mental distress have been reported due to isolation and fear of economic security (Saxena and Gautam, 2020; Siddiquei and Khan, 2020). Earlier studies have found that for non-employed individuals, changes in financial stability and falling into financial debt increase social isolation, depression and anxiety (Godinic, Obrenovic and Khudaykulov, 2020). Suicide risk is elevated when individuals are not employed (Kawohl and Nordt, 2020).

For individuals who are employed in diverse work environments, understanding how the mental health of workers is affected by where they work is vital, whether primarily at home or primarily at the workplace. Although early studies during the COVID-19 pandemic identified no increase or decrease in stress levels from people in the workforce during the first ninety days of required social distancing, as restrictions are prolonged, reassessing the mental wellness of individuals is critical (CPA Practice Advisor, 2020; Østertun Geirdal *et al.*, 2021). In these early studies, some workers were finding that working remotely was a positive experience, whilst some workers expressed a desire to return to the office/workplace even if there is a higher risk of contracting COVID-19 (Mathur, 2020). Since the COVID-19 social distancing protocols and work setting changes have now been in place for over nine months, it is important to explore if the early studies' findings regarding mental health are still relevant for both those employed and those unemployed (Sasaki *et al.*, 2020).

For social work as one of the essential professions providing mental health and substance abuse services during the COVID-19 pandemic, understanding how the mental health of individuals who are working or not working is affected may help to better target services for these populations.

The study aims to explore the differences in mental health between those working and those not working nine months post the initial COVID-19 social distancing implementation in four Western countries (Norway, UK, USA and Australia).

Methods

Design and procedures

This study employed a cross-sectional survey design. Respondents were recruited using social media (e.g. Facebook) where a link to the survey was provided. Respondents were from four Western countries (Norway, UK, USA and Australia). Data collection occurred from 24 October until 29 November 2020. Each participating university created a site for the survey data collection: OsloMet—Oslo Metropolitan University,

Norway; University of Michigan, USA; Northumbria University, UK; and the University of Queensland, Australia. The project lead was from OsloMet in Norway but each participating country also identified a lead researcher for the study. The survey was simultaneously co-developed by the researchers in two languages, Norwegian and English, and was based on a previous survey conducted by the research group in the early phase (April 2020) of the pandemic outbreak (Østertun Geirdal *et al.*, 2021; Ruffolo *et al.*, 2021). Researchers addressed not only language but also cultural variations in the development phase of the survey. This included ensuring that the survey items would convey the same meaning in each language and that the items reflected culturally embedded phrasing that would be appropriate in each language.

Inclusion and exclusion

The inclusion criteria for the study were broad. Any respondent of eighteen years or older could participate if they could access the electronic survey and could read—Norwegian or English. Respondents who did not live in Norway, USA, UK or Australia were excluded from the study.

Measures

Socio-demographic characteristics

Socio-demographic variables included ‘gender identity’ (male, female, other, prefer not to respond); ‘highest completed education level’ (high school, associate/technical degree, bachelor’s degree, master’s degree, doctoral degree); ‘age group’ (twenty-four years or less, twenty-five to thirty-four years, thirty-five to forty-four years, forty-five to fifty-four years, fifty-five to sixty-four years, sixty-five to seventy-four years, seventy-five years and above); ‘employment status’ (working or not working); ‘employed current work situation’ (work primarily at home, work partly at home and partly at workplace, work primarily at workplace); ‘work settings’ (health care, trade industry, e.g. retail); ‘construction industry’ (e.g. building houses); ‘education, other critical functions’ (e.g. government, police, fire; other work setting); and ‘current reasons for not employed’ (temporarily laid off, dismissed or fired from job, retired, recipient of disability benefits, on medical leave, recipient of worker’s compensation, on parental leave, student, other).

Pandemic concerns related to health, finances and the future

Pandemic concerns related to health, finances and the future were assessed with three separate items. Each item was phrased: ‘During the

ongoing COVID-19 pandemic, are you worried about...’ followed by ‘your own health’, ‘your own financial situation’ or ‘the future’. Respondents used a rating scale for each item, indicating not at all (0), a bit (1), pretty much (2), very much (3) and extremely much (4).

Mental health measures

General Health Questionnaire (GHQ-12). GHQ-12 is a self-report measure of mental health (Goldberg *et al.*, 1997; Goodwin *et al.*, 2013). Several large studies of adults in the general population and in work populations support the validity of this measure (Firth, 1986; Adlaf *et al.*, 2001; Gorter *et al.*, 2008; Aalto *et al.*, 2012; Goodwin *et al.*, 2013). Six items of the GHQ-12 are phrased positively (e.g. ‘able to enjoy day-to-day activities’), whilst six items are phrased as a negative experience (e.g. ‘felt constantly under strain’). On each item, the person indicates the degree to which the item content has been experienced during the two preceding weeks, using four response categories (‘less than usual’, ‘as usual’, ‘more than usual’ or ‘much more than usual’). Items are scored between 0 and 3, and positively formulated items are recoded prior to analysis. As a result, the GHQ-12 scale score range is 0–36, with higher scores indicating poorer mental health (more psychological distress). The Cronbach’s α was 0.88 for this measure.

Psychosocial Well-being (PSW). Consisting of ten items the PSW measure captures—an individual’s psychological experience of well-being. The ten items include five positive and five negative statements. A score of 1 indicates the highest well-being and a score of 5 the lowest well-being (Kaasa *et al.*, 1988). The five positive statements responses are reversed scored and then the total score is calculated by averaging the scores on the ten items. The Cronbach’s α was 0.81 for this measure.

Loneliness scale. Six statements measure loneliness on The Loneliness Scale (de Jong Gierveld and van Tilburg, 2006). Each statement is rated on a discrete scale from 0 (totally disagree) to 4 (totally agree). The Loneliness Scale measures overall loneliness as well as social loneliness (e.g. ‘There are plenty of people I can rely on when I have problems’) and ‘emotional loneliness’ (e.g. ‘I experience a general sense of emptiness’). The scale in prior studies supports a two-factor solution as the best fit and the six statements contribute to two different scales reflecting the social and emotional aspects of loneliness, respectively (de Jong Gierveld and van Tilburg, 2006; Bonsaksen *et al.*, 2019). For the social loneliness scale and the emotional loneliness scales, score range is 0–12 with higher scores indicating more loneliness. The overall measure of loneliness is also used by combining all six items in one scale (score range: 0–24). Cronbach’s α in this study were 0.88 for social loneliness, 0.70 for emotional loneliness and 0.80 for overall loneliness.

Statistical analysis

The overall sample of those working and those not working, as well as for each country sub-sample were analysed. For categorical variables, frequencies and percentages were used. To explore overall differences in proportions between groups the chi-square test was used. Means and standard deviations (SDs) were used to describe the continuous variables. Independent *t*-tests were employed to assess differences in mental health (GHQ-12, PSW and loneliness (emotional loneliness, social loneliness, overall loneliness)) between respondents who were working and those who were not working. Effect sizes capture the standardized mean differences between two groups and were calculated using Cohen's *d*. A small effect size is about 0.20, a medium effect size is about 0.50, and a large effect size is about 0.80 or above (Cohen, 1992). One-way analyses of variance (ANOVAs) were conducted for respondents who were working by country and type of work (primarily remote, partly remote and partly at the workplace, primarily at the workplace) and age. The ANOVAs were also conducted for respondents who were not working by country. The dependent measures included the three measures of mental health. Post hoc analyses used Bonferroni post hoc test.

Ethics

The researchers followed all relevant regulations concerning ethics and data collection and protection. The data collected from respondents were anonymous. Each researcher sought and received approval to conduct the study in their respective countries: Norway (OsloMet (20/03676) and the regional committees for medical and health research ethics (REK; ref. 132066)), USA (University of Michigan Institutional Review Board for Health Sciences and Behavioral Sciences (HUM00180296)), UK (Northumbria University Health Research Ethics (HSR1920-080)) and Australia (HSR1920-080 2020000956).

Results

Respondents

The socio-demographic characteristics of the total sample by work and not work status and by country are presented in Table 1. Overall, 2,300 (69 percent) respondents reported working and 1,056 (31 percent) respondents reported not working. Similar to the overall sample results, within each country, significant differences ($p < 0.001$) emerged between respondents working and respondents not working in level of education

Table 1: Key socio-demographic variables by employment status and country.

Socio-demographic characteristics	Total sample		Norway		UK		USA		Australia	
	n (percent) Percentage within	p-Value	n (percent) Percentage within	p Value	n (percent) Percentage within	p-Value	n (percent) Percentage within	p-Value	n (percent) Percentage within	p-Value
Gender identity	Gender identity	NS	Gender identity	NS	Gender identity	NS	Gender identity	NS	Gender identity	NS
Male	495 (64.9)		77 (65.3)		90 (72.0)		310 (63.7)		18 (54.5)	
Not working	268 (35.1)		41 (34.7)		35 (28.0)		177 (36.3)		15 (45.5)	
Female	1747 (69.6)		297 (69.9)		356 (74.8)		1019 (67.9)		75 (68.8)	
Not working	763 (30.4)		128 (30.1)		120 (25.2)		481 (32.1)		34 (31.2)	
Working	32 (68.1)		0 (0)		1 (33.3)		29 (69)		2 (100)	
Not working	15 (31.9)		0 (0)		2 (66.7)		13 (31)		0 (0)	
Level of education	Education Level	<0.001	Education Level	<0.001	Education Level	<0.001	Education Level	<0.001	Education Level	<0.001
Less than high school	7 (30.4)		1 (33.3)		2 (22.2)		3 (33.3)		1 (50.0)	
High school	16 (69.6)		2 (66.7)		7 (77.8)		6 (66.7)		1 (50.0)	
Working	237 (54.9)		67 (48.9)		33 (50.0)		130 (60.5)		7 (50.0)	
Not working	195 (45.1)		70 (51.1)		33 (50.0)		85 (39.5)		7 (50.0)	
Vocational training/ Associate's degree/Certificate or diploma	263 (56.7)		0 (0)		94 (68.1)		156 (51.5)		14 (56.5)	
Bachelor degree	201 (43.3)		0 (0)		44 (31.9)		147 (48.5)		10 (43.5)	
Working	841 (70.6)		144 (74.6)		164 (78.1)		497 (67.5)		36 (69.2)	
Not working	350 (29.4)		49 (25.4)		46 (21.9)		239 (32.5)		16 (30.8)	
Master's degree	714 (74.6)		122 (74.4)		100 (78.7)		468 (74.4)		24 (64.9)	
Working	243 (25.4)		42 (25.6)		27 (21.3)		161 (25.6)		13 (35.1)	
Not working	237 (82.6)		39 (84.8)		58 (96.7)		125 (76.7)		15 (83.3)	
Doctoral degree	50 (17.4)		7 (15.2)		2 (3.3)		38 (23.3)		3 (16.7)	

(continued)

Table 1: (continued)

Socio-demographic characteristics	Total sample		Norway		UK		USA		Australia	
	n (percent) within	p-Value	n (percent) within	p-Value	n (percent) within	p-Value	n (percent) within	p-Value	n (percent) within	p-Value
Age Twenty-four years or less	Age 193 (68.7)	<0.001	Age 30 (71.4)	<0.001	Age 45 (59.2)	<0.001	Age 108 (71.1)	<0.001	Age 10 (90.9)	<0.001
Twenty-five to thirty-four years	Not working 88 (31.3)		12 (28.6)		31 (40.8)		44 (28.9)		1 (9.1)	
	Working 637 (82.7)		74 (79.6)		82 (82.0)		464 (82.2)		17 (89.5)	
Thirty-five to forty-four years	Not working 133 (17.3)		19 (20.4)		18 (18.0)		94 (16.8)		2 (10.5)	
	Working 477 (84.1)		98 (83.8)		103 (86.6)		258 (82.7)		18 (94.7)	
Forty-five to fifty-four years	Not working 90 (15.9)		19 (16.2)		16 (13.4)		54 (17.3)		1 (5.3)	
	Working 430 (85.8)		93 (86.1)		112 (90.3)		205 (84.4)		20 (76.9)	
Fifty-five to sixty-four years	Not working 71 (14.2)		15 (13.9)		12 (9.7)		38 (15.6)		6 (23.1)	
	Working 265 (60.8)		56 (69.1)		54 (61.4)		137 (57.6)		18 (62.1)	
Sixty-five to seventy-four years	Not working 171 (39.2)		25 (30.9)		34 (38.6)		101 (42.4)		11 (37.9)	
	Working 85 (21.3)		19 (26.8)		6 (20.7)		52 (19.2)		8 (28.6)	
Seventy-five years and older	Not working 314 (78.7)		71 (73.2)		29 (79.3)		271 (80.8)		20 (71.4)	
	Working 9 (9.1)		3 (9.7)		0 (0)		7 (10.3)		0 (0)	
	Not working 100 (90.9)		28 (90.3)		10 (100)		61 (89.7)		1 (100)	

and age. Respondents less than sixty-four years were more likely to be working than those respondents sixty-five years of age or older. In terms of level of education, those respondents with more education were more likely to be working. In terms of pandemic concerns, respondents who reported working were significantly ($p < 0.001$) more likely to not worry or worry just a bit about their own situation, their own health, their financial situation and the future than those who were not working in Norway, UK and the USA. All countries had a variation of lockdown or stay-at-home orders to work remotely, if possible, when the data collection occurred.

Table 2 identifies how work situations have changed for respondents who were working across countries, the types of settings that respondents worked and reasons for not working. Significant differences ($p < 0.001$) between countries surfaced for current work situations. In all four countries, the proportion of respondents who worked were more likely to work at the workplace (and not primarily remote, or partly remote and partly at workplace) except in the UK, where 62.6 percent worked primarily at home. In terms of work settings, health care, education and other categories were identified as the primary settings for Norway, the USA and Australia, whilst education surfaced as primary for the UK. Reasons for not working were significantly different ($p < 0.001$) across the four countries. In Norway, 32.7 percent of respondents who were not working received disability benefits, whilst only 3.6 percent in the UK, 2.1 percent in the USA and 3 percent in Australia did. In the UK, 34.7 percent were students, whilst only 0.8 percent in Norway, 18.2 percent in USA and 20 percent in Australia were. In the USA, 39.5 percent of the respondents not working were retired, whilst in Norway no respondents were retired, 22.3 percent were retired in the UK and 28 percent were retired in Australia.

Table 3 captures the results of t test of differences on mental health measures between respondents who were working and those not working by country. In Norway, respondents who were working had a significantly lower mean score than those not working on the mental health distress measure ($p < 0.01$), the PSW measure ($p < 0.001$), the social loneliness measure ($p = 0.001$), emotional loneliness measure ($p < 0.02$) and overall loneliness ($p < 0.001$). There were small to medium effect sizes recorded for these measures (-0.237 , -0.35 , -0.496 , -0.223 , -0.40). Higher mean scores on these measures for respondents who were not working indicate greater levels of mental health distress, lower PSW, higher social loneliness, greater emotional loneliness and greater overall loneliness. In the UK, there were no significant differences found between respondents working and those not working on the mental health distress measure and the emotional loneliness measure. Significant differences were found in the UK between respondents working and those not working on the PSW measure ($p < 0.05$), social

Table 2: Cross country comparison for COVID-19 work situation changes, types of settings and reasons not working.

Items	Norway <i>n</i> (percent) Percentage within country	UK <i>n</i> (percent) Percentage within country	USA <i>n</i> (percent) Percentage within country	Australia <i>n</i> (percent) Percentage within country	<i>p</i> -Value
Working current work situation					< 0.001
Work primarily at home	129 (34.6)	199 (62.6)	415 (39.9)	12 (26.1)	
Work partly at home and partly at workplace	82 (26.66)	38 (11.9)	187 (18.0)	13 (28.3)	
Work primarily at workplace	162 (43.4)	81 (25.5)	438 (42.1)	21 (45.7)	
Work settings					< 0.001
Health care	70 (18.2)	73 (18.9)	205 (16.2)	19 (24.1)	
Trade industry (e.g. retail)	22 (5.7)	23 (5.9)	86 (6.8)	7 (8.9)	
Construction industry (e.g. building houses)	6 (0.3)	3 (0.1)	23 (1.8)	1 (1.3)	
Education	94 (24.5)	164 (42.4)	330 (26.1)	19 (24.1)	
Other critical functions for society (e.g. government, police, fire)	23 (6)	26 (6.7)	109 (8.6)	6 (7.6)	
Other work	169 (44)	98 (25.3)	511 (40.4)	27 (34.2)	
Current reasons for not working					<0.001
Temporarily laid off	5 (1.9)	16 (5.8)	51 (5.2)	4 (4)	
Dismissed or fired from job	3 (1.2)	7 (2.6)	42 (4.3)	7 (7)	
Retired	0 (0.0)	61 (22.3)	386 (39.5)	28 (28)	
Recipient of disability benefits	85 (32.7)	10 (3.6)	34 (2.1)	3 (3)	
On medical leave	43 (16.5)	3 (1.1)	1 (0.1)	2 (2)	
Recipient of worker's compensation	8 (3.1)	3 (1.1)	2 (0.2)	4 (4)	
On parental leave	26 (10.0)	3 (1.1)	7 (0.7)	1 (1)	
Student	2 (0.8)	95 (34.7)	178 (18.2)	20 (20)	
Other	6 (23.8)	76 (27.7)	275 (28.2)	31 (31)	

loneliness ($p < 0.05$) and overall loneliness ($p < 0.01$). The small effect sizes recorded for these measures were -0.199 , -0.23 and -0.258 . These working UK respondents had lower mean scores than UK respondents not working on these three measures, indicating that employment can lead to reporting greater PSW, less social loneliness and less overall loneliness. In the USA, working respondents had significantly lower mean scores on the mental health distress measure ($p < 0.01$), the PSW measure ($p < 0.01$), the social loneliness measure ($p < 0.05$) and the emotional loneliness measure ($p < 0.01$) than respondents not working.

Table 3: Mental health measures by working and not working participants by country.

Mental health measures by working and not working participants by country	Mental health distress	Psychological well-being	Social loneliness	Emotional loneliness	Overall loneliness
Norway					
Working (n = 373)	Mean (SD)	2.49 (0.84)	2.58 (2.61)	5.17 (2.97)	7.75 (4.84)
Not working (n = 170)	Mean (SD)	2.80 (0.97)	3.91 (2.78)	5.85 (3.28)	9.76 (5.22)
	Mean difference	-0.309	-1.32	-0.684	-2.01
	Effect size (Cohen's d)	-0.24	-0.5	-0.22	-0.40
	p-Value	<0.001	<0.001	<0.05	<0.001
UK					
Working (n = 403)	Mean (SD)	2.97 (0.778)	4.47 (3.03)	6.75 (2.46)	11.20 (4.42)
Not working (n = 149)	Mean (SD)	3.12 (0.831)	5.18 (3.07)	7.18 (2.61)	12.36 (4.62)
	Mean difference	-0.16	-0.71	-0.44	-1.15
	Effect size (Cohen's d)	-0.20	-0.23	-0.17	-0.26
	p-Value	<0.05	<0.05	NS	<0.01
USA					
Working (n = 1,239)	Mean (SD)	2.80 (0.81)	4.66 (3.04)	6.18 (2.77)	10.85 (4.88)
Not working (n = 627)	Mean (SD)	2.66 (0.92)	5.03 (3.13)	5.75 (2.94)	10.80 (5.07)
	Mean difference	0.13	-0.37	0.43	0.05
	Effect size (Cohen's d)	0.16	-0.12	0.15	0.01
	p-Value	<0.01	<0.05	< 0.01	NS
Australia					
Working (n = 90)	Mean (SD)	2.64 (0.85)	4.45 (2.92)	4.87 (2.94)	9.26 (4.69)
Not working (n = 44)	Mean (SD)	2.83 (0.93)	5.24 (3.49)	5.60 (2.79)	10.85 (5.56)
	Mean difference	-0.19	-0.79	-0.73	-1.59
	Effect size (Cohen's d)	0	-0.26	-0.25	-0.32
	p-Value	NS	NS	NS	NS

The small effect sizes recorded for these measures included 0.146, 0.157, -0.122 and -0.153 . There were not significant differences in the USA between respondents working and those not working on the overall loneliness measure. Respondents working in the USA reported more mental health distress, less PSW, less social loneliness and greater emotional loneliness than respondents not working did. In Australia, no significant differences were emerged between respondents working and those not working on the mental health measures.

The ANOVAs showed that working respondents significantly differed by country on the self-report of mental health distress ($F(3, 3,101) = 24.66, p < 0.001$), PSW ($F(3, 3,101) = 23.63, p < 0.001$), social loneliness ($F(3, 3,171) = 50.42, p < 0.001$), emotional loneliness ($F(3, 3,161) = 30.11, p < 0.001$) and overall loneliness ($F(3, 3,049) = 45.18, p < 0.001$). Post hoc analyses showed that respondents working in the UK ($M = 19.21, SD = 7.41$) had significantly higher mean scores on the mental health distress measure than respondents who were working in Norway ($M = 16.06, SD = 8.08$), the USA ($M = 15.75, SD = 6.95$) and Australia ($M = 15.25, SD = 7.14$). On the PSW measure, post hoc analyses showed that respondents working in Norway ($M = 2.80, SD = 0.97$) had significantly lower mean scores than respondents working in the UK ($M = 3.12, SD = 0.83$). In addition, working UK respondents ($M = 3.12, SD = 0.83$) had a significantly higher mean scores than respondents working in the USA ($M = 2.66, SD = 0.92$). Post hoc analyses on the social loneliness measure showed that respondents working in Norway ($M = 3.91, SD = 2.78$) had significantly lower mean scores than respondents working in the UK ($M = 5.18, SD = 3.07$) and the USA ($M = 5.03, SD = 3.13$). On the emotional loneliness measure, post hoc analyses showed that respondents working in Norway ($M = 5.85, SD = 3.28$) had a significantly lower mean score than respondents working in the UK ($M = 7.18, SD = 2.61$). In addition, the respondents working in the UK on this emotional loneliness measure had a significantly higher mean score than respondents working in the USA ($M = 5.75, SD = 2.94$) and Australia ($M = 5.60, SD = 2.79$). Post hoc analyses on the overall loneliness measure showed that working respondents in Norway ($M = 9.76, SD = 5.22$) had significantly lower mean scores than respondents working in the UK ($M = 12.36, SD = 4.62$). The working respondents in the UK ($M = 12.36, SD = 4.62$) had significantly higher mean score than the working respondents in the USA ($M = 10.80, SD = 5.07$).

No significant differences on the self-reported mental health measures (mental distress ($F(2, 1,640) = 1.96, NS$); PSW ($F(2, 1,639) = 0.67, NS$); or the social loneliness ($F(2, 1,634) = 2.58, NS$), emotional loneliness ($F(2, 1,632) = 2.67, NS$) and overall loneliness ($F(2, 1,628) = 0.06, NS$)) measures based on type of work setting (primarily work at home, work partly at home and partly at the workplace, work primarily at the workplace) were noted for working respondents based on ANOVAs results.

Significant differences on the self-reported mental health distress measure ($F(5, 2,089) = 21.39, p < 0.001$), PSW measure ($F(5, 2,088) = 19.35, p < 0.001$), emotional loneliness ($F(5, 2,078) = 32.78, p < 0.001$), and overall loneliness ($F(5, 2,069) = 9.81, p < 0.001$) measures based on the age of the working respondent were also found based on ANOVAs results. On the mental distress measure, working respondents who were younger than twenty-four years ($M = 18.68, SD = 6.75$) and between twenty-five and thirty-four years of age ($M = 17.61, SD = 6.24$) had significantly higher mean scores than did older respondents between fifty-five and sixty-four years ($M = 14.51, SD = 6.09$) and over sixty-five years ($M = 12.83, SD = 5.43$). For PSW, working older respondents with ages fifty-five to sixty-four years ($M = 2.33, SD = 0.74$) and over sixty-five years ($M = 2.26, SD = 0.72$) had significantly lower mean scores than did younger respondents who were under twenty-four years old and working ($M = 3.11, SD = 0.84$), between twenty-five and thirty-four years ($M = 2.92, SD = 0.78$), between thirty-five and forty-four years ($M = 2.81, SD = 0.82$) and between forty-five and fifty-four years ($M = 2.65, SD = 0.83$). Respondents who were working and less than twenty-four years of age ($M = 7.4, SD = 2.65$), between twenty-five and thirty-four years ($M = 6.68, SD = 2.54$) and between thirty-five and forty-four years ($M = 6.02, SD = 2.73$) had significantly higher mean scores on the emotional loneliness measure than did those respondents who were working and aged forty-five to fifty-four years ($M = 5.52, SD = 2.77$), fifty-five to sixty-four years ($M = 5.07, SD = 2.86$) and over sixty-five years ($M = 4.49, SD = 2.95$). On the overall loneliness measure, younger respondents who were working less than twenty-four years ($M = 11.63, SD = 4.76$), between twenty-five and thirty-four years ($M = 10.78, SD = 4.58$), between thirty-five and forty-four years ($M = 10.45, SD = 5.21$) had significantly higher mean scores than did the older respondents, between fifty-five and sixty-five years, who were working ($M = 9.10, SD = 4.8$) and over sixty-five years of age ($M = 8.69, SD = 4.87$).

The ANOVAs found that respondents not working also significantly differed by country on the self-report of mental health distress ($F(3, 986) = 9.65, p < 0.001$), PSW ($F(3, 986) = 10.3, p < 0.001$), social loneliness ($F(3, 969) = 6.82, p < 0.001$), emotional loneliness ($F(3, 958) = 9.38, p < 0.001$) and overall loneliness ($F(3, 955) = 6.81, p < 0.001$). Respondents who were not working and lived in Norway ($M = 16.06, SD = 8.08$) had a significantly lower mean score on the mental health distress measure than did respondents not working in the UK ($M = 19.21, SD = 7.41$). The respondents who were not working in the UK ($M = 19.21, SD = 7.41$) also had significantly higher mean score on the mental health distress measure than did respondents not working in the USA ($M = 15.75, SD = 6.94$) and Australia ($M = 15.25, SD = 7.14$). On the PSW, the respondents not working in the UK ($M = 3.12, SD = 0.83$)

reported significantly a significantly higher mean score than respondents not working in Norway ($M=2.80$, $SD = 0.97$) and the USA ($M=2.66$, $SD = 0.92$). Respondents not working in Norway ($M=3.91$, $SD = 2.78$) had a significantly lower mean score on the social loneliness measure than did respondents not working in the UK ($M=5.18$, $SD = 3.07$) and the USA ($M=5.03$, $SD = 3.13$). Respondents in the UK ($M=7.18$, $SD = 2.61$) who were not working had significantly higher mean score on the emotional loneliness measure than did respondents in the other three countries (Norway ($M=5.85$, $SD = 3.28$), USA ($M=5.75$, $SD = 2.94$) and Australia ($M=5.60$, $SD = 2.79$)). On the overall loneliness measure, respondents not working in the UK ($M=12.36$, $SD = 4.62$) reported a significantly higher mean score than did those respondents who were not working in Norway ($M=9.76$, $SD = 5.22$) and the USA ($M=10.8$, $SD = 5.07$).

The ANOVAs examined the association of mental health measures to reasons for not working. The reasons for not working for these analyses included being laid off or dismissed, being retired, receiving benefits (disability, medical leave, worker's compensation, parental leave), being a student and other reasons. Significant differences emerged between reasons for respondents not working and the mental health distress measure ($F(4, 1,475) = 33.54$, $p < 0.001$), PSW measure ($F(4, 1,475) = 36.9$, $p < 0.001$), emotional loneliness ($F(4, 1,446) = 31.35$, $p < 0.001$) and overall loneliness ($F(4, 1,439) = 12.66$, $p < 0.001$). No significant differences on the means scores were noted for the social loneliness measure based on reasons for not working. Respondents who were not working and were retired reported lower mental health distress ($M=13.97$, $SD = 5.78$) than respondents who were laid off/dismissed ($M=19.13$, $SD = 8.11$), received benefits ($M=15.97$, $SD = 7.59$), had a student status ($M=19.34$, $SD = 7.24$) or other reasons ($M=17.54$, $SD = 6.92$). On the PSW measure, respondents who were not working and retired ($M=2.43$, $SD = 0.82$) had significantly lower mean scores than respondents who were laid off/dismissed ($M=3.06$, $SD = 0.93$), received benefits ($M=2.84$, $SD = 0.94$), had a student status ($M=3.16$, $SD = 0.81$), or other reasons ($M=2.91$, $SD = 0.89$). On the emotional loneliness measure, respondents who were laid off/dismissed ($M=6.67$, $SD = 3.25$), received benefits ($M=5.79$, $SD = 3.23$), were students ($M=7.47$, $SD = 2.53$), or were not employed for other reasons ($M=6.42$, $SD = 2.81$) had a significantly higher mean score than respondents who were retired ($M=5.07$, $SD = 2.82$). On the overall loneliness measure, respondents who were retired ($M=9.85$, $SD = 4.85$) and those who were receiving benefits ($M=10.02$, $SD = 5.4$) reported significantly lower mean scores than those who were laid off/dismissed ($M=11.81$, $SD = 5.32$), students ($M=12.29$, $SD = 4.66$) or were not employed for other reasons ($M=11.19$, $SD = 5.04$).

Discussion

On most measures of mental health, employed respondents from all four countries reported less mental health distress, higher levels of PSW and lower levels of overall loneliness, emotional loneliness and social loneliness than the respondents who were not employed. This finding is consistent with findings from early COVID-19 studies (Saxena and Gautam, 2020; Ruffolo *et al.*, 2021).

Most of the respondents who were employed worked primarily at home in the UK and in Norway, the USA and Australia; respondents who were employed worked primarily at the workplace. This difference in where respondents worked (at home or the workplace) reflects the different levels of restrictions in place in each of the countries due to the COVID-19 pandemic at the time of the survey. In the UK, more restrictive ‘lock down’ and ‘stay-at-home’ orders were in place at the time of this survey when compared with Norway, Australia and the USA. The deaths per million due to COVID-19 in the UK (1909.84) were much higher than in Australia (35.88) and Norway (147.53) (Statista, 2021). Whilst the deaths per million due to COVID-19 in the USA (1819.52) was similar to the UK (1909.84), the ‘stay-at-home’ policies varied based on what state an individual resided (Statista, 2021). It is important to note that there were no significant differences on the mental health measures based on whether respondents worked primarily at home, partly at home and partly at the workplace or primarily at the workplace. In an earlier study of the COVID-19 pandemic (Ruffolo *et al.*, 2021), respondents who were working—remotely had better mental health than those working at the workplace. Possibly, people were more concerned about infection in the early days of the pandemic, and those who had to show up at work then were more concerned about the risk they were exposed to, compared with those working from home. The lack of adequate supplies of personal protective equipment (PPE) at many workplace sites at the start of the pandemic in the four countries may have also contributed to people working remotely reporting better mental health than those working at the workplace. This may logically explain better mental health amongst those working from home in the first stage of the pandemic. Nine months later, this difference was no longer present. It is possible that, nine months later, people may have become confident that they were able to be at work whilst still maintaining a secure physical distance to other people, less worried about the infection rates. This change could also be related to the setting where a majority of the respondents in this study were working (health care, education or other work). Government programmes that provided easy access to COVID-19 testing, adequate PPE supplies and lessening of restrictions related to social distancing may also have contributed to this change.

It is interesting to note that on measures of mental health, respondents from the UK who were working reported significantly higher levels of mental distress and lower psychological well-being than did respondents from Norway and the USA who were working. The government in the UK imposed more restrictions related to social distancing and 'lock-downs' for longer periods than did respondents from the USA, even though the infection and death rates from COVID-19 were high in both countries. Prolonged social isolation in the UK seems to be associated with higher levels of mental distress and this finding is consistent with earlier studies (Godinc *et al.*, 2020; Saxena and Gautam, 2020).

For younger respondents (less than thirty-four years) who were working, they reported higher levels of mental distress, lower psychological well-being and high levels of emotional loneliness than did older respondents (greater than fifty-five years) who were working. This finding may be related to younger workers feeling more financial uncertainty and experiencing more financial stress than older workers who are more established in the work setting.

Amongst the total sample who were not working, respondents who were retired had better mental health than the respondents who were not working for other reasons. Students and respondents who were laid off/dismissed appear to experience higher levels of mental health distress, lower PSW, higher levels of emotional loneliness and higher levels of overall loneliness during this COVID-19 pandemic when compared with respondents who were retired or had benefits. With the pandemic outbreak, students had to leave campus and were required to stay away from their student peers. Being laid off/dismissed is also an abrupt and negative change in social life, with financial concerns added. On the other hand, respondents who were already retired or on disability benefits may not have experienced such a drastic change in their daily lives, and income prospects are probably not changed. Ensuring that mental health services are targeted to these two groups will be important as the current environment continues to create uncertainty for these respondents.

It is also important to note that respondents in Norway, the USA and Australia who were working reported worrying less about their own situation, their own health and financial situation than did respondents who were not working in those countries. The respondents from the UK who were working were just as worried about their own situation, their own health and financial situation as were the respondents who were not working. Employment often buffers against various types of stress. Whilst it appears to function as a buffer in most countries, it does not do so in the UK. Possibly, buffering effects may not be valid under all circumstances. For example, levels of stress can become so high that having a job is no longer a remedy or comfort. In support of this reasoning, the GHQ scores were found to be significantly higher amongst the

UK respondents, compared with respondents from all other countries (almost two points higher than USA, where stress levels come closest to UK). In addition, the level of stress may be related to the confidence that individuals have in their government to effectively handle the COVID-19 pandemic. In a study conducted by [Szmigiria \(2021\)](#), 37 percent of participants from the UK reported having confidence in their government's ability to meet the challenges of the COVID-19 pandemic compared with the early phase of the pandemic (65 percent confidence).

For social workers and other service professionals, this study raises important policy and practice challenges in trying to meet the mental health needs of individuals during a pandemic where social distancing and safety protocols need to be in place to not only address the needs of individuals receiving social services or mental health services but also for the professionals serving this population. Changes in work situations, closure of 'non-essential' businesses and educational sites (e.g. day-cares, schools, universities) and restrictive social distancing practices due to the COVID-19 pandemic over time created high levels of stress, anxiety and loneliness for many individuals who may not have been involved in the mental health services prior to the pandemic. Providing individuals with access to crisis hot lines and tele-mental health services are critical during this pandemic period when access to social networks is limited. Social workers and other service professionals partnering with work settings, local communities and governmental systems to promote mental health and substance abuse prevention efforts may help address anxiety, depression, family stress and the increases in suicide that are arising during the COVID-19 pandemic.

Study limitations

The study used well-tested questionnaires to measure mental health, as well as, measures that were developed by the study team to address pandemic-related concerns. The mental health measures did not focus on assessing specific mental health disorders but overall mental health and psychological well-being. Whilst the newly developed measures around pandemic concerns appear to be clear and simple to understand, they are, new and untested measures and any interpretation of the results need to consider this fact.

Since the primary method of outreach to potential respondents involved, the use of social media, it is important to not generalise the results to the general population since respondents only included individuals who use social media. Women and persons with higher levels of education were a greater proportion of this sample than in the general population. The relatively large sample and the cross-national

composition of the sample may reduce demographic bias, which is a strength of this study (Brouwer *et al.*, 2020).

The four countries in this study had different levels of infection and death rates due to COVID-19 at the time of the survey with two countries, the UK and the USA, having many more individuals who died from the COVID-19 infection and who were infected with COVID-19 when compared with Norway and Australia. In addition, the UK and Norway implemented more restrictive policies that resulted in longer 'lock down' periods than in the USA. These differences between the countries may have influenced the study results.

Next steps

For social workers and other service providers, the study findings support monitoring the overall mental health of individuals who are working and, in particular, those who are not working. Worries about health and financial situations are associated with lower levels of mental health. Exploring the long-term impacts on the mental health of students and those currently laid off or dismissed from a job will also be important, especially as the countries focus on recovering from the pandemic. The changes in work-life balance for many individuals, financial uncertainty and the increases in social isolation due to 'lock down' or 'stay at home' practices have increased mental distress in individuals who are working and those who are not working. Social workers and other service providers need to advocate for resources to enhance access to mental health and substance abuse services and to work on policies to sustain these efforts over time.

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