The COVID-19 Pandemic, Socioeconomic Effects, and Intimate Partner Violence Against Women: A Population-Based Cohort Study in 2020, Iran

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See also Alang and Blackstock, p. 194, Ferreira and Buttell, p. 136, and Kapadia, p. 144.

Objectives. To investigate the prevalence, pattern, and socioeconomic risk factors of intimate partner violence (IPV) before and 6 months after the pandemic onset among a cohort of Iranian women.

Methods. We conducted a population-based IPV survey among 2502 partnered Iranian women aged 18 to 60 years before (n = 2502) and 6 months after (n=2116) the pandemic's onset. We estimated prevalence and incidence of psychological, physical, and sexual IPV, and the odds of different forms of IPV associated with main exposure variables, adjusted for participant relationship factors.

Results. Pandemic prevalence of IPV (65.4%; 95% confidence interval [CI] = 63.4%, 67.4%) was higher than prepandemic prevalence (54.2%; 95% CI = 52.2%, 56.3%). At follow-up, the incidence of IPV was 25.5% (95% CI = 22.9%, 28.4%). The highest incidence was in cases of physical and sexual IPV. Women whose partners lost their employment were at significant risk of new exposure to IPV. Highest socioeconomic status (SES) was associated with less physical IPV (odds ratio = 0.03; 95% CI = 0.01, 0.14).

Conclusions. IPV prevalence has risen since the COVID-19 epidemic began with many women who had never experienced IPV now facing it. Unemployment of women or their partners and prepandemic lower socioeconomic status are risk factors of IPV. Monitoring programs should target these populations. (*Am J Public Health*. 2023;113(2):228–237. https://doi.org/10.2105/AJPH.2022.306839)

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Intimate partner violence (IPV) against women is a challenging and preventable global health concern.[1] IPV can cause a wide range of negative outcomes, including acute traumatic injuries, mental illnesses, decreased quality of life, and even premature death.[2,3]

According to reports published worldwide, IPV against women has sharply increased in the era of the COVID-19 pandemic.[4,5] Porter et al. performed a telephone survey in Peru, questioning a cohort about their experiences with physical IPV throughout the lockdown period. Comparing the newly collected data with those from their last round of data collection in 2016, they found an 8.3% increase in reported physical violence within households.[6] In a cross-sectional study in Ethiopia, the prevalence of IPV during COVID-19 pandemic restrictions was 22.4%, which is close to the national prepandemic figures.[7] A cross-sectional survey conducted by Hamadani et al. in Bangladesh revealed a significant decrease in the economic and psychosocial well-being of women since the lockdown, with over half of participants reporting "more frequent" IPV than in the prelockdown era.[8] Several other reports have also demonstrated a surge in IPV.[9] Furthermore, the number of calls to hotlines has decreased in some contexts where IPV victims were unable to call because they had been confined with their abusive partner during the stay-at-home order.[5] These reports highlight the urgency of conducting systematic studies that actively survey women to investigate the effects of the COVID-19 pandemic on IPV

instead of merely relying on hotline call data.

Although the most significant risk factors of IPV are well established, it is less clear who is at increased risk of experiencing IPV during a social and public health crisis, such as the COVID-19 pandemic.[10] During the first months of the epidemic, a large number of people lost their jobs and some fell into poverty for the first time.[11,12] This newfound position could be stressful and result in a higher likelihood of violent behaviors.[13] The pandemic could also act through its effects on mental health. High levels of psychological distress—which have a mutual relationship with IPV—were reported during the pandemic.[14] Economically, COVID-19 has hit low- and middle-income countries particularly hard.[15] In low- and middle-income countries, a considerable portion of jobs could be lost and many people could experience poverty early during a lockdown or social-distancing situation.[16,17] Iran, a middle-income country, has experienced an extensive spread of COVID-19. Prior to the start of COVID-19, Iran was subjected to harsh unilateral economic sanctions imposed by the United States, which resulted in a dire economic situation, high inflation, and a high unemployment rate.[18] According to official reports, about 1 million jobs were lost in the first year of the pandemic, and the labor force participation rate has dropped from more than 44% to 41.3%.[19] Before the onset of COVID-19, the rate of IPV against Iranian women was more than 50%, with the most prevalent types being psychological and physical.[20,21]

No study has yet transpired to investigate the impact of the COVID-19 pandemic on different types of IPV and to determine its risk factors in a cohort group. We conducted a population-based survey on the prevalence and patterns of IPV against women soon before the start of the COVID-19 pandemic, using a standard IPV questionnaire; we were thus uniquely positioned to build a cohort of women to follow 6 months into the pandemic. We chose this time range because we could not foresee how long the epidemic would last, and 6 months is plenty of time for the pattern of IPV to have its full effect as families' finances deplete and the mental effects of the new living condition set in. Following these women allowed us to ascertain exposure rates to psychological, physical, and sexual IPV before and during the COVID-19 pandemic. To our knowledge, this is the first study to analyze rates of new exposures to different forms of IPV during COVID-19 and to use longitudinal data to identify women at higher risk of being newly exposed to IPV during the pandemic. Our study aimed to estimate the prevalence of IPV against women who stayed with the same partner 6 months into the beginning of the pandemic (hereafter, "pandemic phase"), estimate the portion who have been newly exposed to IPV (incidence) in the era of the pandemic, and investigate the effects of job loss and socioeconomic status (SES) on the prevalence and incidence of IPV against women.

METHODS

This population-based cohort study was conducted in the city of Isfahan in 2020. COVID-19 was first confirmed in Iran in February 2020, after which restrictions and mandates on closing some businesses were implemented. The employment rate in Isfahan province dropped from 41.2% in spring 2019 to 36.3% in spring 2020.[11] More information about the COVID-19 situation in the city of Isfahan can be found in the Appendix (available as a supplement to the online version of this article at http://www.ajph.org).

Study Design and Participants

We collected baseline data in a population-based survey primarily designed to estimate the prevalence of IPV in a cross-sectional study design. We collected the baseline data from January 14 to February 15, 2020, 4 days before the first cases of COVID-19 were officially confirmed in Iran. The inclusion criteria for this phase were as follows: women were 18 to 60 years old, had lived in Isfahan for at least 1 recent year, could speak Persian, and expressed informed consent to participate in the study. Considering the COVID-19 pandemic as a natural exposure, we designed a new data collection phase to be conducted 6 months after the onset of the pandemic. Women who were interviewed in our baseline phase were eligible to participate. This phase was completed from August 15 to September 14, 2020. We excluded participants who were divorced or widowed at the baseline measurement phase or during the follow-up period, as well as those who were not partnered with the same person or not interested in participating in the follow-up.

We obtained a list of all active female-owned cellphones with a residential address located in each of the different urban districts of the Isfahan metropolis. More information about cellphone number acquisition is available in the Appendix. We defined each urban district of Isfahan as a sampling stratum, and we conducted proportional-to-size sampling. We selected participants by applying a random-digit-number dialing procedure for the study's first phase;

participants were then contacted by 2 female social workers for a telephone interview. The same interviewers followed up the participants with a phone interview 6 months later.

Although extramarital relationships are already widespread and increasing in Iranian society (especially among the younger generation), they are still socioculturally unacceptable and even punishable by law.[22] For these sociocultural reasons, we were obliged to exclude women who had intimate partner relationships outside of marriage.

We calculated the sample size for our prevalence survey (prepandemic). In the prepandemic phase, 3250 calls were made. A total of 2502 women completed the prepandemic survey (response rate = 89%). Of these 2502 women, 188 were divorced or widowed before the pandemic and 14 terminated their relationship during the pandemic and thus were not eligible for follow-up. Additionally, 184 women did not participate in the follow-up survey. The final number of women who completed the pandemic phase was 2116 (Appendix, Figure A).

Data Collection

The primary outcome was the self-reported experience of IPV during the last 6 months. We measured physical (6 items), psychological (11 items), and sexual (3 items) IPV using the validated Persian version of the World Health Organization multicountry study questionnaire on women's health and domestic violence.[23,24] The questions about physical IPV assessed severe (hitting repeatedly, kicking, dragging, choking, intentional burning, and threatening with a weapon or actual use of a weapon) and moderate (slapping, pushing, and throwing objects) forms of violence. We asked participants if they had been exposed to different forms of IPV during their lifetime, the past 12 months, and the past 6 months. In this study, we analyzed data from the past 6 months. We defined severity of experience as the number of IPV types a woman was exposed to in the pandemic phase.

We obtained demographic variables for women and their partners in the prepandemic phase. These included current age, age at the beginning of the relationship, duration of the intimate relationship, cohabitation status (together or separate), education level, employment (participant = housewife, employed; partner = full-time, part-time, unemployed, other), number of children, SES, and housing occupancy status (owner, tenant, other). At follow-up, we readministered the questions on the employment status of the participant and her partner and all IPV items, and we created new variables.

We established SES level by collecting asset data using the SES questionnaire developed for the PERSIAN Cohort (Prospective Epidemiological Research Studies in IrAN).[25] More information about the SES and employment data are provided in the online Appendix.

Experienced female social workers trained to collect data in this study via a lecture, a standard interview, and 2 role-playing scenarios performed the phone interviews. In the prepandemic phase of the study, we assessed interviewers' agreement in a pilot study (n = 25; κ coefficient = 0.89). The same interviewers conducted the follow-up interviews of the pandemic phase. To improve the representativeness of our sample, 3 additional calls to reach participants who did not answer the first call were scheduled at different times. At the beginning of each interview, participants were informed of the study's purpose and provided informed verbal consent in both study phases. The participants were given time to complete any urgent tasks they were doing at the moment, then to go to a private place to answer the questions safely and calmly. They were told they could end the conversation anytime they wanted, and were assured that their answers to the questions were fully confidential. Interviews lasted for an average of 10 to 15 minutes. Further conversations with women who asked for counseling were made. At the end of each interview, the social workers provided their phone numbers and an IPV hotline number to the participants.

Statistical Analysis

We estimated prevalence and its 95% confidence interval (CI) for each type of IPV. We estimated cumulative incidence proportion of IPV (hereafter, "incidence") and its 95% CI among women with no previous exposure to IPV. We calculated relative increase as follows: [absolute excess prevalence/(prepandemic prevalence × 100)]. We applied the χ^2 test to compare IPV incidence in different subpopulations during the pandemic. We used 2 independent sample *t* tests to compare the mean of different continuous variables between those exposed to IPV during the pandemic and those not exposed. Because SES data comprised discrete variables and many qualitative variables with different assigned scales, we used multiple correspondence analysis to categorize SES (Appendix, "SES Determination and Categorization"). We applied binary logistic regression modeling to identify the independent association of main exposure variables (job loss, partner's job loss, and prepandemic SES) with the study outcomes (incidence of different forms of IPV) when adjusted

for confounding variables (i.e., age, age at the beginning of the relationship, duration of the intimate relationship, cohabitation status, education level, and number of children). None of these variables were collinear, and no variable selection technique was applied. A cutoff *P* value of less than .05 indicated significance. We performed data analysis using Stata software (Release 11; StataCorp LP, College Station, TX).

RESULTS

A total of 2300 women participated in the prepandemic phase, with a follow-up rate of 92% (n = 2116; online Figure A). Participants' average age was 37.4 years. The prevalence of all types of IPV was 54.2% (95% CI = 52.2%, 56.3%) at baseline (prepandemic) and 65.4% (95% CI = 63.4%, 67.4%) 6 months into the pandemic. Employment status did not improve for any of the participants or their spouses during the pandemic. All women who had lost their job in the pandemic reported exposure to violence (Table 1).

To demonstrate which factors made women susceptible to experiencing IPV in the pandemic, we compared the mean of continuous variables between women who experienced IPV for the first time in the first 6 months of the pandemic and those who did not (Table 2). Women who experienced IPV in the pandemic were married longer and had more children.

Of women reporting no experience of IPV before the pandemic, 25.5% (95% CI = 22.9%, 28.4%) revealed that they were exposed to at least 1 episode of IPV during the first 6 months of the pandemic. Incidents accounted for 17.9% of all pandemic cases of IPV. Table 3 presents the prevalence and incidence of different types of IPV by the time of measurement.

We used multivariable logistic regression modeling to evaluate the impact of COVID-19–related fallout in different groups. We considered an exposure to each type of IPV in women not previously exposed to that type of IPV (i.e., at-risk population) to be an outcome. This model showed that the loss of employment for a woman or her spouse increased her chances of being exposed to IPV (for women, adjusted odds ratio [AOR] = 355.35; 95% CI = 127.2, 993; for spouses, AOR = 342.44; 95% CI = 33.19, 3533.51). This increase is especially discernible in the case of psychological IPV (AOR = 23.72; 95% CI = 13.36, 42.12). On the other hand, physical IPV is a major issue in women with low SES (OR = 32.94; 95% CI = 7.07, 153.49). Table 4 presents associated factors of experiencing different types of IPV among women who were not exposed before the pandemic.

DISCUSSION

To our knowledge, this is one of the first longitudinal studies globally to investigate the prevalence and severity of IPV against women before and during the COVID-19 pandemic. Our study of 2116 women in Isfahan, Iran showed that the prevalence of IPV increased to more than 65% (relative increase = 21%). We also demonstrated that 25.5% of women with no previous experience of IPV before the pandemic were newly exposed to IPV during the first 6 months of the pandemic. Having a low to moderate SES at baseline, loss of the woman's job, and negative changes in the employment status of the woman's partner (job loss or demotion) were associated with being newly exposed to IPV.

Hamadani et al.[8] reported a similar increase in IPV incidence during the first month of the pandemic in a rural area in Bangladesh; they had to rely on participants retrospectively reporting their IPV experiences. Most available evidence is not population-based but generated from surveillance data from IPV hotlines. Major metropolitan areas in the United States, for instance, have observed an increase in IPV hotline calls since the onset of the COVID-19 outbreak, whereas a decrease in the number of calls has occurred in other US cities.[5,26] Such decreases are likely because of a rise in underreporting IPV due to having to quarantine with violent partners and not having private locations to call for help. Our study differs from studies based on the hotline data in that we actively reached women and, by doing a telephone survey, we reached those who may not have been informed about the existence of a hotline or those who would not want to call a hotline as they believed it would not be of use.

We also found significant associations between SES and employment loss and the risk of exposure to IPV. Women with a low or middle SES were at higher risk of more exposure to IPV during the pandemic. Many middle- and low-SES families were rental tenants who might have experienced greater housing insecurity in addition to other stressors. In Iran, the cost of living and rent during the pandemic has increased markedly.[27] Consequently, it can be deduced that a portion of families have been forced to live in smaller houses and relocate to lower-income urban neighborhoods. Middle- and low-SES families may have had less savings to buffer the effects of the slowing economy.[28] Furthermore, women who had partners who lost

TABLE 1— Characteristics of Women Who Experienced Any Type of Intimate Partner Violence (IPV) Before and During the COVID-19 Pandemic: Isfahan, Iran, 2020

Characteristics	Prepandemic (n = 2300), No. (%)	Those Lost to Follow-Up (n = 184), No. (%)	All Participants With Completed Follow-Up (n = 2116)		At-Risk Participants With Completed Follow-Up (n = 972)[a]		*P*
			No. (%)	IPV Prevalence (95% CI)	No. (%)	IPV Incidence (95% CI)	
Woman's age, y							.67
18–29	564 (24.5)	33 (17.9)	531 (25.1)	57.8 (53.6, 62.0)	283 (29.1)	20.8 (16.3, 26.1)	
30–39	913 (39.7)	127 (69.0)	786 (37.1)	69.1 (65.8, 72.2)	339 (34.9)	29.8 (25.0, 35.0)	
40–49	466 (20.2)	10 (5.4)	456 (21.5)	62. 9 (58.4, 67.3)	218 (22.4)	23.4 (17.9, 29.6)	
50–60	357 (15.5)	14 (7.6)	343 (16.2)	72 (67.0, 76.5)	132 (13.6)	28.0 (20.6, 36.5)	
Woman's education							.011
Illiterate	263 (11.4)	13 (7.0)	250 (11.8)	73.2 (67.4, 78.3)	101 (10.4)	34.7 (25.5, 44.8)	
Up to diploma	862 (37.5)	77 (41.8)	785 (37.1)	68.4 (65.1, 71.6)	356 (36.6)	31.2 (26.4, 36.3)	
Post-diploma to bachelor	819 (35.6)	75 (40.7)	744 (32.3)	63.6 (60.1, 67.0)	337 (34.7)	20.5 (16.3, 25.2)	
Master's degree or more	356 (15.5)	19 (10.3)	337 (15.9)	56.7 (51.3, 61.9)	178 (18.3)	18.5 (13.1, 25.0)	
Woman's job							<.001
Housework	1512 (65.7)	98 (53.2)	1414 (66.8)	67.9 (65.4, 70.3)	656 (67.5)	31.6 (28.0, 35.3)	
Employed	788 (34.2)	86 (46.7)	702 (33.2)	60.4 (56.7, 64.0)	316 (32.5)	13.0 (9.5, 17.2)	
Change in woman's job status							<.001
Remained employed	NA	NA	702 (33.2)	60.4 (56.7, 64.0)	316 (32.5)	13.0 (9.5, 17.2)	
Became unemployed	NA	NA	31 (1.5)	100 (88.8, 100)	31 (3.2)	100 (88.8, 100)	
Remained a housewife	NA	NA	1383 (65.3)	67.2 (64.7, 69.6)	625 (64.3)	28.2 (24.7, 31.9)	
SES							<.001
Low	548 (23.8)	41 (22.2)	507 (24.0)	76.5 (72.6, 80)	196 (20.2)	41.3 (34.4, 48.6)	
Low-middle	652 (28.3)	52 (28.2)	600 (28.3)	66.2 (62.3, 69.8)	274 (28.2)	25.9 (20.8, 31.5)	
Middle-high	590 (25.6)	50 (27.1)	540 (25.5)	63.1 (59, 67.1)	262 (26.9)	24.0 (19.0, 29.7)	
High	510 (22.2)	41 (22.2)	469 (22.2)	55 (50.5, 59.5)	240 (24.7)	13.8 (9.7, 18.77)	
Spouse's age, y							.12
18–29	222 (9.6)	21 (11.4)	201 (9.5)	46.3 (39.5, 53.2)	133 (13.7)	18.8 (12.5, 26.5)	
30–39	899 (39.0)	105 (57.0)	794 (37.5)	67 (63.7, 70.2)	342 (35.2)	24.6 (20.1, 29.5)	
40–49	626 (27.2)	34 (18.4)	592 (28.0)	66.4 (62.5, 70.1)	277 (28.5)	28.9 (23.6, 34.6)	
50–59	300 (13.0)	10 (5.4)	290 (13.7)	64.1 (58.4, 69.4)	142 (14.6)	28.2 (20.9, 36.3)	
≥ 60	253 (11.0)	14 (7.6)	239 (11.3)	75.3 (69.4, 80.4)	78 (8.0)	24.4 (15.3, 35.4)	
Spouse's job							<.001
Full-time	1417 (61.6)	119 (64.6)	1182 (55.8)	56.1 (53.2, 58.9)	554 (57.0)	6.9 (4.9, 9.3)	

Continued

TABLE 1— Continued

Characteristics	Prepandemic (n = 2300), No. (%)	Those Lost to Follow-Up (n = 184), No. (%)	All Participants With Completed Follow-Up (n = 2116)		At-Risk Participants With Completed Follow-Up (n = 972)[a]		*P*
			No. (%)	IPV Prevalence (95% CI)	No. (%)	IPV Incidence (95% CI)	
Part-time	643 (27.9)	46 (25.0)	577 (27.3)	77.1 (73.5, 80.4)	190 (19.6)	32.1 (25.5, 39.2)	
Unemployed	86 (3.7)	6 (3.2)	210 (9.9)	84.8 (79.2, 89.0)	152 (15.6)	79.6 (72.3, 85.7)	
Other	154 (6.7)	13 (7.0)	147 (6.9)	66.7 (58.6, 73.8)	76 (7.8)	36.8 (26.1, 48.7)	
Change in spouse's job status							<.001
Full-time remained full-time	NA	NA	1182 (55.9)	56.1(53.2, 58.9)	554 (57.0)	6.9 (4.9, 9.3)	
Full-time became part-time or unemployed	NA	NA	116 (5.5)	96.6 (91.2, 98.7)	116 (11.9)	96.6 (91.4, 99.1)	
Part-time remained part-time	NA	NA	559 (26.4)	76.4 (72.7, 79.7)	172 (17.7)	25.0 (18.7, 32.2)	
Part-time became unemployed	NA	NA	47 (2.2)	78.7 (64.8, 88.2)	47 (4.8)	78.7 (64.3, 89.3)	
Unemployed remained unemployed	NA	NA	80 (3.8)	77.5 (67.1, 85.3)	22 (2.3)	22.7 (7.8, 45.4)	
Other	NA	NA	132 (6.2)	62.9 (54.3, 70.7)	61 (6.3)	21.3 (11.9, 33.7)	
Spouse's education							.009
Illiterate	300 (13.0)	18 (9.7)	282 (13.3)	71.3 (65.7, 76.3)	117 (12.0)	30.8 (22.6, 40.0)	
Up to diploma	756 (32.8)	64 (34.7)	692 (32.7)	68.6 (65.1, 72.0)	315 (32.4)	31.7 (26.6, 37.2)	
Post-diploma or more	1244 (54.0)	102 (55.4)	1142 (54.0)	62 (59.1, 64.8)	540 (55.6)	20.7 (17.4, 24.4)	

Note. CI = confidence interval; NA = not applicable; SES = socioeconomic status.
[a]At risk for any new IPV experience during the first 6 months of the pandemic.

employment were at higher risk of being newly exposed to IPV.

None of the women whose husbands or themselves lost their jobs reported prepandemic IPV. Even though it is unlikely that these groups had indeed never been exposed to violence, one can rationalize that these groups stayed away from significant violence until unemployment—a major risk factor—was introduced. Also, because we do not see this zero prepandemic violence in the larger subgroups, we can assume that sparse data bias may have contributed to this finding. Moreover, all women who were employed before the pandemic but lost their employment during the pandemic reported that they experienced IPV; this may be because these women were not accustomed to staying at home, and the extra time they spent with their partner resulted in conflict. Tension resulting from spending extra time with a newly unemployed partner may be one of the reasons violence increased among women whose partners or themselves lost employment. A fascinating finding is that the spouses' job loss was more influential than women's job status change, which can be explained by men in Iranian households being the primary breadwinners.

The pattern of IPV varies in different SES groups. As shown in Table 4, although chances of experiencing psychological violence vary only slightly in the different SES subgroups, lower SES was associated with a significantly higher chance of sexual and physical violence. This may stem from the lower-class culture, where some traditional or oppressive beliefs regarding women still exist that entitle men to perpetuate and compel women to accept physical and sexual violence. It is also possible that women from higher

TABLE 2— Mean of Continuous Variables Among Women Who Were Exposed to Intimate Partner Violence (IPV) for the First Time During the Pandemic Versus Those Who Were Not: Isfahan, Iran, 2020

	Any IPV, Mean (95% CI)			Physical IPV, Mean (95% CI)			Psychological IPV, Mean (95% CI)			Sexual IPV, Mean (95% CI)		
Factor	Not Exposed After Start of Pandemic (n = 724)	Exposed During First 6 Months of Pandemic (n = 248)	*P*	Not Exposed After Start of Pandemic (n = 1,649)	Exposed During First 6 Months of Pandemic (n = 125)	*P*	Not Exposed After Start of Pandemic (n = 920)	Exposed During First 6 Months of Pandemic (n = 159)	*P*	Not Exposed After Start of Pandemic (n = 1600)	Exposed During First 6 Months of Pandemic (n = 146)	*P*
Current age, y	36.31 (35.56, 37.05)	37.61 (36.38, 38.85)	.08	37.01 (36.52, 37.50)	37.59 (35.98, 39.20)	.53	36.68 (36.02, 37.34)	37.45 (35.94, 38.97)	.38	37.78 (37.27, 38.29)	36.57 (34.96, 38.18)	.18
Age at marriage, y	24.08 (23.64, 24.53)	23.56 (22.90, 24.21)	.22	23.65 (23.37, 23.93)	23.13 (22.32, 23.93)	.33	23.86 (23.47, 24.24)	24.03 (23.19, 24.87)	.73	23.80 (23.52, 24.09)	23.71 (22.87, 24.54)	.84
Marriage duration, y	12.22 (14.37, 15.64)	14.06 (12.72, 15.39)	.022	13.36 (12.83, 13.90)	14.46 (12.93, 16.22)	.28	12.82 (12.1, 13.54)	13.42 (11.78, 15.06)	.53	13.98 (13.42, 14.54)	12.86 (11.24, 14.48)	.26
No. of children	2.24 (2.17, 2.32)	2.48 (2.35, 2.60)	.003	2.36 (2.31, 2.41)	2.64 (2.33, 2.43)	.004	2.34 (2.27, 2.40)	2.38 (2.21, 2.54)	.63	2.40 (2.35, 2.45)	2.40 (2.23, 2.57)	> .99
Age difference with spouse, y	1.89 (1.86, 1.93)	1.89 (1.83, 1.94)	.83	1.93 (1.90, 1.95)	1.95 (1.85, 2.05)	.58	1.91 (1.87, 1.94)	1.89 (1.87, 1.94)	.64	1.92 (1.89, 1.94)	1.88 (1.79, 1.96)	.37

Note. CI = confidence interval.

SES were more reluctant to admit to receiving physical or sexual violence because it is more taboo and harder to accept in their general milieu.

Women newly exposed to IPV may be unaware of how to access and utilize available services, a situation that puts them at a higher risk for repeated IPV exposures.[29] The recent exposure to economic stressors and employment loss could strain communication and interactions in intimate relationships when both partners are at home together without social or vocational social support.[4,30] Accordingly, more focused IPV screening should target families in which one or both partners have lost their jobs.

Nationwide or multination studies can further prove the impact of the COVID-19 pandemic on domestic violence in lower-income settings. However, Isfahan can act as a standard metropolis with similar features to most other metropolises in Iran, as it has a similar male-to-female ratio, age, religion, and income composition.[31] Furthermore, given that in our sampling method women from different social backgrounds were included, we believe these reports are generalizable to women residing in Iranian urban areas, especially metropolises, and by extension to other countries with similar income brackets and similar sociocultural values—for example, low-income and middle-low-income countries with traditional Middle Eastern or Islamic culture.

Recently, strategies have been proposed to address the so-called hidden crisis of IPV embedded within the COVID-19 pandemic.[5,32–34] Many recommendations come from high-income settings. These strategies may not translate well to low-resource countries with less infrastructure to provide

TABLE 3— Prevalence, Incidence, and Pattern of Intimate Partner Violence (IPV) During the COVID-19 Pandemic: Isfahan, Iran, 2020

	Prevalence During First 6 Months of Pandemic (n = 2116), % (95% CI)	Relative Increase (% of Prepandemic Prevalence)	At-Risk Participants (n = 2116), No. (%) of Completed Follow-Ups	Incidence During First 6 Months of Pandemic, % (95% CI)
Type of IPV				
Any	65.4 (63.3, 67.4)	21	972 (45.9)	25.5 (22.9, 28.4)
Physical	21.1 (19.5, 22.9)	33	1774 (83.8)	7.0 (5.9, 8.3)
Moderate physical	17.7 (16.1, 19.4)	34	1995 (94.3)	5.4 (4.5, 6.5)
Severe physical	3.6 (2.9, 4.5)	33	2060 (97.4)	1.2 (0.8, 1.8)
Psychological	56.2 (54.1, 58.3)	12.2	1079 (51.0)	14.7 (12.7, 17.0)
Sexual	23.5 (21.7, 25.3)	34	1746 (82.5)	8.3 (7.1, 9.7)
Severity of experience[a]				
1 type	37.6 (35.5, 39.7)	16.1	972 (45.9)	22.3 (19.8, 25.1)
2 types	20.2 (18.5, 21.9)	33.4	972 (45.9)	2.8 (2.0, 4.1)
3 types	7.6 (6.5, 8.8)	13.6	972 (45.9)	0.2 (0.05, 0.8)

Note. CI = confidence interval.
[a]Severity of experience is defined as number of IPV types women were exposed to in the pandemic phase.

TABLE 4— Factors Associated With Incidence of Each Type of Intimate Partner Violence (IPV) During the Pandemic: Isfahan, Iran, 2020

Factor	IPV (n = 972),[a] AOR (95% CI)	Physical IPV (n = 1774),[a] AOR (95% CI)	Psychological IPV (n = 1079),[a] AOR (95% CI)	Sexual IPV (n = 1746),[a] AOR (95% CI)
SES				
Low	5.28 (1.93, 14.42)	32.94 (7.07, 153.49)	1.83 (0.76, 4.39)	5.03 (2.09, 12.09)
Low-middle	1.87 (0.78, 4.51)	13.76 (3.09, 61.28)	0.58 (0.27, 1.22)	4.19 (1.91, 9.19)
Middle-high	2.32 (0.98, 5.47)	9.37 (2.10, 41.87)	1.12 (0.56, 2.28)	1.87 (0.84, 4.14)
High (Ref)	1	1	1	1
Change in woman's job status				
Remained employed (Ref)	1	1	1	1
Became unemployed	342.44 (33.19, 3533.51)	1.03 (0.25, 4.17)	3.22 (1.21, 8.58)	3.50 (1.34, 9.4)
Remained housewife	3.03 (1.44, 6.43)	1.48 (0.83, 2.63)	1.15 (0.64, 2.07)	1.41 (0.84, 2.92)
Change in spouse's job status				
Full-time remained full-time (Ref)	1	1	1	1
Full-time became part-time or unemployed	355.35 (127.2, 993)	5.82 (3.12, 10.84)	23.72 (13.36, 42.12)	8.10 (4.63, 14.15)
Part-time remained part-time	2.25 (1.2, 5.8)	1.37 (0.80, 2.34)	3.06 (1.54, 6.05)	1.76 (1.05, 2.96)
Part-time became unemployed	28.62 (11.27, 72.67)	2.22 (0.89, 5.53)	19.48 (8.45, 44.92)	4.36 (1.85, 10.27)
Unemployed remained unemployed	1.42 (0.42, 4.84)	1.62 (0.62, 4.24)	1.00 (0.2, 5.06)	3.70 (1.56, 8.46)
Other	2.55 (1.11, 5.84)	1.08 (0.83, 2.63)	2.24 (0.87, 5.06)	2.08 (0.97, 4.48)

Note. AOR = adjusted odds ratio; CI = confidence interval; SES = socioeconomic status. Adjusted for participant and her partner's age, age difference between participant and her partner, participant's age at current marriage or beginning of relationship, duration of marriage or relationship, their cohabitation status, participant's educational level, and her partner's educational level.
[a]The sample sizes represent the at-risk population for incidence (new exposure) of IPV (i.e., those who had not experienced IPV at the start of the pandemic).

shelter and resources for women who choose to separate from abusive partners. Integrating national IPV guidelines into COVID-19 public health response strategies is imperative. Considering how to leverage available health care services to include IPV screening and service linkage will be instrumental. Although daily life today has changed since the pandemic's early days, the pandemic is still around, with multiple new mutations and disease peaks bringing different countries under newly imposed restrictions. Results from this study can help target the limited resources in such settings to the most vulnerable groups for screening and intervention programs to tackle domestic violence in similar health or economic crises.

Limitations

There are some limitations to this study. As in any other study using surveys, the results could be due to changes in reporting or response bias. Random digit dialing could have missed women without an active phone number. Employed or otherwise occupied women may be less likely to answer calls from unknown numbers and participate in survey interviews. IPV victims with controlling partners may have less access to their phones or private spaces. However, there was no other choice for sampling and data collection in the era of social isolation.

This study focused on the incidence of different types of IPV in women who were not exposed to IPV at baseline; however, women with persistent or worsening IPV are also relevant. The study was designed in this manner because our pilot study proved that asking women about the frequency of their experiences would result in inaccurate answers. This may be because an extended call duration puts women at risk or makes them uninterested in answering.

Conclusion

This study showed increased prevalence, incidence, and severity of IPV against women across different subpopulations in an urban setting in Iran from before COVID-19 and 6 months into the pandemic. Women at risk for being newly exposed to IPV were those who became unemployed or had partners who became unemployed or those from prepandemic middle- or low-SES households. Screening programs should target such populations in low-resource settings. Guidelines for IPV should be adapted for low- and middle-income countries and integrated into COVID-19 response plans. AJPH

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This study was performed in accordance with the Declaration of Helsinki and was approved by the institutional review board (IRB) of Shiraz University of Medical Sciences (approval code IR.SUMS.MED.REC.1399.486). All participants provided verbal consent. Ethics board approvals were separately provided for 2 phases of studies. According to Iranian law, sharing of data containing potentially identifying or sensitive patients' information is restricted. Data are available for academic researchers via the research deputy of Shiraz Medical School (med_thesis@sums.ac.ir) upon reasonable request.

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