ORIGINAL RESEARCH

Intimate Partner Violence and Telemedicine Usage and Satisfaction Early in the COVID-19 Pandemic

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Background: COVID-19 has transformed the landscape of telemedicine utilization, shifting from predominantly in-person services to increased virtual encounters. Although telemedicine offers increased accessibility for medical care, many advocates voice concern about utilization and satisfaction with these services among individuals who experience intimate partner violence (IPV) given the unique practical, mental, and physical health challenges many face.

Objective: The purpose of the present study was to evaluate differences in telemedicine utilization and satisfaction, as well as global health and perceived loneliness, among data-driven patterns of IPV during the early phases of the pandemic.

Methods: In this longitudinal survey study, participants first completed an online survey between May 2019 and February 2020 that assessed social, psychological, and physical functioning, as well as emotional and physical IPV. A follow-up survey sent in May 2020 assessed recent telemedicine use and satisfaction, as well as response to the COVID-19 pandemic.

Results: Latent class analysis favored 4 classes of IPV that differed based on severity and features of IPV experienced. Although all 4 classes reported high satisfaction with telemedicine, individuals reporting low IPV had the highest satisfaction with telemedicine and the lowest rates of telemedicine utilization. Individuals who experienced IPV, particularly multiple forms of emotional and physical IPV, reported high physical and social concerns and perceived stress.

Conclusions: Clinicians using telemedicine should be aware of the multiple challenges faced by individuals experiencing IPV and take additional steps to ensure their needs are met in a safe way. These results have potentially important clinical and policy implications. (J Am Board Fam Med 2023;00:000–000.)

Keywords: COVID-19, Intimate Partner Violence, Loneliness, Longitudinal Studies, Pandemics, Personal Satisfaction, Telemedicine

Introduction

COVID-19 has transformed the landscape of health care utilization, shifting from predominantly in-person services to increased delivery of telemedicine services.[1] Early in the pandemic, telemedicine demonstrated lower no-show rates and similar patient satisfaction rates when compared with in-person visits.[2] Although COVID-19 necessitated the rapid shift to telemedicine, its early presumed success has made its continuation tenable and, in many ways, desirable.[3] Indeed, telemedicine offers increased accessibility and the potential for needed care despite potential barriers, such as limited time, lack of transportation, and deficient support (eg, childcare).[4–6] However, although telemedicine has touted numerous advantages over in-person care, many advocates have voiced concern about utilization and satisfaction with telemedicine services among

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individuals who experience intimate partner violence (IPV).[6]

IPV victims face unique challenges that may affect telemedicine utilization and satisfaction. IPV victims may have been unwilling and unable to access medical care within their homes via telemedicine due to the possibility of undue influence from coercive partners and lack of privacy.[7] Yet, the story is likely more complex. COVID-19 led to a sense of loneliness and increased health concerns among many individuals,[8–10] and this was likely amplified for IPV victims.[11] Many of the COVID-19 social distancing measures mirrored the isolation imposed by IPV, including restricting visitors, having to stay home, and limiting visits with family and friends, which may have led to a profound sense of loneliness[11] and further increased the risk of IPV ("the pandemic paradox").[12–15] The feelings of intense loneliness may have impacted utilization and satisfaction with telemedicine, although it is unclear how. On one hand, IPV victims may have appreciated the opportunity to connect, albeit remotely.[16] On the other hand, the perceived danger imposed by connecting within the home and inability to meet in person and have private contact with a health care provider may have been restrictive and inadequate. In addition, IPV victims often report greater co-occurring physical and mental health concerns, increasing their need for health care more generally.[17–20] Pre-existing and exacerbated health-related concerns could, in turn, have contributed to increased need for telemedicine utilization early in the COVID-19 pandemic among IPV victims, although, again, the impact on satisfaction is unclear.

When considering the impact of IPV on telemedicine utilization and satisfaction, it is important to acknowledge the complexity and multifaceted nature of IPV.[21] Previous research has attempted to tackle this complexity by evaluating *patterns* of IPV.[19,21–24] The present study considered patterns of psychological and physical IPV, which provides the opportunity to explore the important dimensions of violence, control, and intimidation.[21,25] Previous research suggests that particular patterns have unique consequences on health outcomes. In general, patterns with more types or more severe violence have the worst impact on psychological and physical health[19,21,22] and may, in turn, be differentially associated with telemedicine utilization and satisfaction.[20]

COVID-19 rapidly moved many individuals into isolation, which may have amplified the impact of IPV and its effect on health care utilization and satisfaction. A nuanced evaluation of various patterns of psychological and physical IPV and their association with telemedicine utilization and satisfaction is imperative for future clinical and policy decisions – who might we miss, and who might we fail.[6] The purpose of the present study was to address this gap in the literature by evaluating the association between IPV history and telemedicine utilization and satisfaction early in the COVID-19 pandemic. The aims of the present study were to explore whether there were differences in telemedicine utilization, satisfaction, global health, and perceived loneliness among data-driven patterns of IPV.

Methods

Participants and Procedure
In this longitudinal survey study, Michigan Medicine patients originally completed an online survey (Pain and Social Experiences [PASE] Study[26]) between May 2019 and February 2020. The original survey (hereafter referred to as the "baseline survey") assessed social, psychological, and physical functioning, as well as emotional and physical IPV. On March 23, 2020, the State of Michigan issued a "Stay Home, Stay Safe" order requiring individuals to stay home except for essential business. The order was extended through June 1, 2020. PASE study participants were recruited from May 13, 2020, through May 27, 2020, for a follow-up survey (hereafter referred to as the "COVID-19 survey") to assess response to the COVID-19 pandemic and current functioning.

Measures
Demographics
Participants self-reported gender, age, education, and race. Gender included 1 (*Women*) and 0 (*Men*). Education was recoded to include 1 (*Any college education*) and 0 (*Less than college education*). Race was recoded to include 1 (*White*) and 0 (*non-White*).

Intimate Partner Violence
Emotional IPV was assessed using the 28-item Multidimensional Measure of Emotional Abuse[25] and physical IPV was assessed using the 8-item physical abuse subscale of the Conflict Tactics Scale.[27] Participants were asked to indicate how

often their partner had engaged in specific behaviors. Emotional abuse behaviors include restrictive engulfment (eg, "Secretly searched through the other person's belongings"), denigration (eg, "Called the other person worthless"), hostile withdrawal (eg, "Acted cold or distant when angry"), and dominance/intimidation (eg, "Threatened to hit the other person"). Examples of physical IPV include "Pushed, grabbed, or shoved the other one" and "Beat up the other one." In the present study, we evaluated whether this ever happened with a current partner. Thus, the scores were dichotomized to include 1 (*Ever happened with current partner*) and 0 (*Never happened with current partner*).

Perceived Loneliness
Perceived loneliness was evaluated with a modified version of the 5-item Patient Reported Outcomes Measurement Information System (PROMIS) Toolbox Item Bank v2.0 Loneliness (Ages 18+). The measure was modified by asking participants to rank how often they felt certain feelings since the COVID-19 response began (since March 15, 2020). Example items include "I feel alone and apart from others" and "I feel left out." Response options ranged from 1 (*Never*) to 5 (*Always*). A sum score was calculated and converted to t-values according to guidelines set forth by the Patient Reported Outcomes Measurement Information System (PROMIS).

General Health
General health was evaluated by the PROMIS-Preference (PROPr) summary score.[28] PROPr is a preference-based health utility score and is calculated from 7 PROMIS domains: cognitive function, depression, fatigue, pain interference, physical functioning, sleep disturbance, and ability to participate in social roles. The lowest possible score is -0.022 (health-related quality of life viewed as worse than dead) and the highest possible score is 1 (full health).

Telemedicine Utilization
In the present study, telemedicine was defined as video and telephone calls with your doctor and/or other medical providers that are similar to other clinical visits but occur over video or telephone. Participants were asked: "Since the COVID-19 pandemic started (from March 15 to now), approximately how many times have you used telemedicine?" Response options included *0 to More than 20*. For the present study, scores were dichotomized. As such, response options for the current study include 0 (*No telemedicine utilization*) and 1 (*Telemedicine utilization*).

Satisfaction with Telemedicine
After questions regarding utilization, participants who indicated any telemedicine utilization since COVID-19 were asked: "Overall, how satisfied have you been with your experience using telemedicine?" Response options ranged from 0 (*Not at all satisfied*) to 10 (*Completely satisfied*).

Post-Hoc Analysis Measures
Perceived Emotional Support
Perceived emotional support was assessed in the baseline and COVID-19 surveys using the 4-item PROMIS Item Bank v2.0 Emotional Support – Short Form 4a. In the baseline survey, participants were asked to respond to each item without reference to a specific time frame. In the COVID-19 survey, the measure was modified such that participants were asked to consider how they felt about other people since the COVID-19 response began (since March 15, 2020). Example items include: "I have someone who will listen to me when I need to talk" and "I have someone to confide in or talk to about myself or my problems." Response options ranged from 1 (*Never*) to 5 (*Always*). A sum score was calculated and converted to t-values according to guidelines set forth by PROMIS. A difference score was also calculated to assess change in perceived emotional support from the baseline survey to the COVID-19 survey (Time 2 – Time 1). Thus, positive scores indicate an increase in perceived emotional support and negative values indicate a decrease in perceived emotional support.

Perceived Ostracism
Perceived ostracism was assessed with 5 items modified from previous work on ostracism.[29] Participants were asked to consider their experiences with other people since COVID-19 began (since March 15, 2020). Example items include: "Treat you as though you are invisible" and "Have ignored you." Response options ranged from 1 (*Never*) to 5 (*Always*). A sum score was calculated.

Perceived Stress
Perceived stress was assessed in the baseline and COVID-19 surveys using the 10-item Perceived

Stress Scale.[30] In both surveys, participants were asked to consider how often they felt a certain way in the last month. Example items include: "Been upset because of something that happened unexpectedly" and "Felt that you were unable to control the important things in your life." Response options ranged from 0 (*Never*) to 4 (*Very often*). A sum score was calculated. A difference score was also calculated to assess change in perceived stress from the baseline survey to the COVID-19 survey (Time 2 – Time 1). Thus, positive scores indicate an increase in perceived stress and negative values indicate a decrease in perceived stress.

COVID-19 Concerns

Participants were presented with numerous potential concerns related to COVID-19 and asked to consider how worried they were about each situation. In the present study, we focused on 4 potential concerns: "Becoming socially isolated"; "Loss of social support"; "Worsening of my underlying medical problems"; and "Worsening of my mental health." Response options ranged from 1 (*Not at all worried*) to 5 (*Very worried*).

Data Analyses

Analyses were restricted to individuals who indicated that they were married in the baseline survey (n = 107) regardless of their past IPV experiences. We further determined that any experience of IPV from a marital partner across the span of the relationship was a better measure compared with past year IPV or lifetime experiences outside of that particular relationship. This was done for 3 reasons. First, we included individuals in marital relationships because we assumed some level of stability from the baseline survey to the COVID-19 survey. Second, we assumed that individuals who experienced IPV in their marital relationships would continue to experience IPV, discomfort, or a power imbalance in their relationship in the present. Third, past year IPV would have been 1 year before the baseline survey rather than the COVID-19 survey, and low rates would not necessarily reflect recent events from the time of COVID-19 or the overall relationship dynamic. Patterns of IPV were first evaluated using latent class analysis across the 36 dichotomous emotional and physical IPV variables. Two variables were not endorsed by any participants and were removed from the models (ie, "Threatened with a knife or gun" and "Used a knife

or gun"). In addition, gender was included in the model to control for its effects. Data were fit to models ranging from 2 to 5 groups. The appropriate number of groups was determined according to best model fit criteria, including: Akaike's Information Criterion (AIC); Bayesian Information Criterion (BIC); and sample-adjusted BIC. We also evaluated the size of the smallest group to ensure that the addition of groups did not overfit the model. AIC and BIC values that are smaller indicate a better fitting model. After determining the best fitting model, participants were then assigned to a single group according to their highest probability score. Frequencies of each form of IPV were then evaluated for each group.

Differences among the IPV groups were then assessed for demographics and the variables of interest. For categorical variables, Pearson's χ^2 tests were assessed. Fisher's Exact Test was used where expected cell counts were less than 5. For continuous variables, Kruskal-Wallis rank sum test was conducted. Because of the small sample sizes across IPV groups, effect sizes were prioritized for interpretation rather than significance of p values. Cohen's d was calculated for each pairwise comparison. Cohen's d indicating a medium effect size or higher (d > 50) was interpreted as a meaningful difference between groups. All analyses were conducted using R 4.2.1.

Results

Latent class analysis favored 4 classes of participants. See Table 1. As show in Table 2, Class 1 (n = 42) featured moderate levels of emotional IPV, particularly behaviors indicative of restrictive engulfment and hostile withdrawal. Class 2 (n = 24) featured similar levels of restrictive engulfment and denigration compared with Class 1 but showed higher levels of hostile withdrawal and some

Table 1. Fit Indices for Latent Class Analyses

Model	Aic	Bic	SA-BIC	Smallest *n*
2-class	2713.02	2902.79	2678.46	20
3-class	2609.14	2895.13	2557.06	14
4-class	**2600.68**	**2982.89**	**2531.08**	**14**
5-class	2627.68	3106.12	2540.56	12

Abbreviations: AIC, Akaike information criterion; BIC, Bayesian information criterion; SA-BIC, sample-adjusted BIC; Smallest *n*, the number of participants in the smallest class.
Note: Boldfaced values indicate the preferred model.

Table 2. Prevalence of Abuse Experiences Among Data-Driven Latent Class Analysis Categories of Intimate Partner Violence

Item Description	Class 1: Moderate Emotional IPV	Class 2: Moderate Emotional IPV with High Hostile Withdrawal	Class 3: Physical and Emotional IPV	Class 4: Low IPV
	(n = 42)	(n = 24)	(n = 14)	(n = 27)
Emotional abuse				
Asked where they've been	10 (24%)	8 (33%)	11 (79%)	1 (3.7%)
Secretly searched belongings	9 (21%)	2 (9%)	10 (71%)	0 (0%)
Stopped from seeing friends and family	3 (7%)	1 (4%)	9 (64%)	2 (7%)
Complained about time with friends	6 (14%)	0 (0%)	9 (64%)	2 (7%)
Got angry because went somewhere	6 (14%)	6 (25%)	9 (64%)	2 (7%)
Tried to make feel guilty	9 (21%)	9 (38%)	12 (86%)	0 (0%)
Checked on partner with friends/family	1 (2%)	2 (8%)	6 (43%)	0 (0%)
Said or implied partner is stupid	7 (17%)	8 (33%)	12 (86%)	1 (4%)
Called partner worthless	0 (0%)	0 (0%)	8 (57%)	0 (0%)
Called partner ugly	0 (0%)	0 (0%)	1 (7%)	0 (0%)
Criticized partner's appearance	5 (12%)	4 (17%)	8 (57%)	1 (4%)
Called partner a loser or failure	0 (0%)	0 (0%)	9 (64%)	0 (0%)
Belittled the other person	7 (17%)	7 (29%)	10 (71%)	2 (7%)
Said other person would be better	1 (2%)	2 (8%)	7 (50%)	0 (0%)
Became unable or unwilling to talk	20 (48%)	22 (92%)	12 (86%)	3 (11%)
Acted cold or distance when angry	36 (86%)	24 (100%)	14 (100%)	0 (0%)
Refused to discuss problem	11 (26%)	17 (71%)	12 (86%)	2 (7%)
Changed subject	17 (40%)	13 (54%)	12 (86%)	0 (0%)
Refused to acknowledge problem	13 (31%)	16 (67%)	14 (100%)	2 (7%)
Sulked or refused to talk	8 (19%)	23 (96%)	11 (79%)	2 (7%)
Intentionally avoided partner during conflict	17 (40%)	23 (96%)	11 (79%)	0 (0%)
Became angry enough to frighten partner	1 (2%)	9 (38%)	11 (79%)	0 (0%)
Put face in other person's face	0 (0%)	5 (21%)	10 (71%)	0 (0%)
Threaten to hit partner	0 (0%)	0 (0%)	4 (29%)	0 (0%)
Threaten to throw something at partner	0 (0%)	2 (8%)	9 (64%)	0 (0%)
Threw, smashed, hit, or kicked something in front of partner	1 (2%)	16 (67%)	12 (86%)	6 (22%)
Drove recklessly to frighten partner	1 (2%)	2 (8%)	4 (29%)	0 (0%)
Stood or hovered over partner	1 (2%)	3 (12%)	7 (50%)	0 (0%)
Physical abuse				
Threw something at partner	0 (0%)	1 (4%)	8 (57%)	2 (7%)
Pushed, grabbed, or shoved partner	0 (0%)	2 (8%)	8 (62%)	2 (7%)
Slapped partner	1 (2%)	0 (0%)	2 (15%)	0 (0%)
Kicked, bit, or hit with a fist	0 (0%)	0 (0%)	1 (8%)	0 (0%)
Hit or tried to hit with something	1 (2%)	0 (0%)	2 (15%)	0 (0%)
Beat up partner	0 (0%)	0 (0%)	1 (7%)	0 (0%)
Threatened with a knife or gun	–	–	–	–
Used a knife or gun	–	–	–	–
Latent class probability	0.407	0.22	0.131	0.243

Note: IPV, Intimate partner violence.

forms of dominance/intimidation. Class 3 (n = 14) exhibited nonzero frequencies for all forms of IPV, including high levels of restrictive engulfment, denigration, hostile withdrawal, dominance/intimidation, and mild forms of physical IPV. Some individuals in Class 3 also experienced severe forms of physical IPV. Class 4 (n = 27) exhibited low frequencies across all forms of IPV.

Overall descriptive statistics and differences between groups can be found in Table 3. Overall, most individuals identified as female, were middle-aged, were college educated, and identified as White. Nearly half of the sample had utilized telemedicine during the early weeks of COVID-19. Satisfaction with telemedicine was high. Participants reported slightly higher than average levels of loneliness. Overall, global health was midrange.

Differences among victims of IPV suggest that most individuals in each class were female, with a slightly higher proportion identifying as female in Class 2 (Moderate emotional IPV with high hostile withdrawal). Nearly all individuals in Class 1 (Moderate emotional abuse) reported being college educated, whereas roughly 4 out of 5 in Class 2 (Moderate emotional IPV with high hostile withdrawal), and 3 out of 4 in Class 3 (Physical and emotional IPV) and Class 4 (Low IPV) indicated being college educated. Class 4 (Low IPV) had the lowest proportion of individuals who had used telemedicine. Individuals in Class 4 (Low IPV) also exhibited the highest satisfaction with telemedicine, which translated to a large effect compared with the 3 other groups. Individuals in Class 4 also reported the lowest levels of loneliness and highest scores on global health, which both exhibited a medium effect compared with Class 3 (Physical and emotional IPV).

Post-Hoc Analysis

We expanded on the original analyses by evaluating perceived emotional support, perceived ostracism, perceived stress, and COVID-19 concerns related to social and emotional health. See Table 4. Class 3 (Physical and emotional IPV) reported the lowest scores on perceived emotional support. This difference exhibited a medium effect compared with the 3 other groups. However, change in perceived emotional support from baseline to the COVID-19 survey was not substantially different between groups. Class 3 (Physical and emotional IPV) reported the highest scores on perceived ostracism, which exhibited a medium effect compared with Class 1 (Moderate emotional IPV) and Class 4 (Low IPV). Individuals in Class 4 (Low IPV) reported the lowest levels of perceived stress, which exhibited a medium effect compared with the 3 other groups. However, change in perceived stress from baseline to the COVID-19 survey was not substantially

Table 3. Differences Among Victims of Intimate Partner Violence on Demographic Covariates and Variables of Interest

	Overall	Class 1: Moderate Emotional IPV (n = 42)	Class 2: Moderate Emotional IPV with High Hostile Withdrawal (n = 24)	Class 3: Physical and Emotional IPV (n = 14)	Class 4: Low IPV (n = 27)	p	Class 1 versus Class 2	Class 1 versus Class 3	Class 1 versus Class 4	Class 2 versus Class 3	Class 2 versus Class 4	Class 3 versus Class 4
									Effect Size Estimates[a]			
Female	84 (79%)	32 (76%)	21 (88%)	10 (71%)	21 (78%)	0.630	—	—	—	—	—	—
Age	43.80 (10.75)	42.31 (10.57)	44.58 (10.69)	46.64 (9.65)	43.96 (11.77)	0.504	—	—	—	—	—	—
College educated	91 (85%)	40 (95%)	20 (83%)	11 (79%)	20 (74%)	0.056	—	—	—	—	—	—
White	98 (92%)	38 (90%)	22 (92%)	13 (93%)	25 (93%)	1.000	—	—	—	—	—	—
Telemedicine utilization	48 (45%)	20 (48%)	14 (58%)	7 (50%)	7 (26%)	0.114	—	—	—	—	—	—
Satisfaction with telemedicine	8.54 (1.71)	8.00 (2.22)	8.79 (1.25)	8.57 (0.98)	9.57 (0.79)	0.131	0.44	0.33	**0.94**	0.19	0.75	**1.13**
Loneliness	54.25 (9.69)	54.77 (9.36)	55.55 (10.37)	57.39 (8.36)	50.65 (9.68)	0.131	0.08	0.30	0.43	0.20	0.49	**0.75**
Global health	0.44 (0.19)	0.44 (0.19)	0.43 (0.20)	0.39 (0.18)	0.49 (0.18)	0.373	0.08	0.30	0.23	0.22	0.31	**0.55**

Abbreviation: IPV, Intimate partner violence.

Note: Contingency analyses with associated χ^2 tests were run for categorical variables. Fisher's exact tests were run where expected counts were < 5. Kruskal-Wallis rank sum tests were run for continuous variables. [a] Effect size estimates use the absolute value of Cohen's d and are assessed only for continuous outcomes of interest. Boldfaced effect sizes indicate medium to large effect sizes using a cutoff of d > .50.

Table 4. Post-Hoc Differences Among Victims of Intimate Partner Violence on Social Functioning, Stress, and COVID-19 Concerns

	Overall	Class 1: Moderate Emotional IPV (n = 42)	Class 2: Moderate Emotional IPV with High Hostile Withdrawal (n = 24)	Class 3: Physical and Emotional IPV (n = 14)	Class 4: Low IPV (n = 27)	p	Effect Size Estimates[a]					
							Class 1 versus Class 2	Class 1 versus Class 3	Class 1 versus Class 4	Class 2 versus Class 3	Class 2 versus Class 4	Class 3 versus Class 4
Perceived emotional support	55.65 (7.56)	56.73 (7.52)	55.46 (7.67)	50.92 (8.15)	56.58 (6.61)	0.078	0.17	**0.74**	0.02	**0.57**	0.16	**0.76**
Change in emotional support (T2 - T1)	−1.45 (6.07)	−1.14 (6.24)	−2.68 (6.40)	−1.03 (4.80)	−1.07 (6.27)	0.545	0.24	0.02	0.01	0.29	0.25	0.01
Perceived ostracism	7.48 (3.15)	7.24 (2.85)	7.46 (3.28)	8.93 (3.75)	7.11 (3.11)	0.227	0.07	**0.51**	0.04	0.42	0.11	**0.53**
Perceived stress	15.44 (6.55)	16.45 (6.35)	16.00 (5.76)	16.64 (6.98)	12.74 (6.88)	0.104	0.07	0.03	**0.56**	0.10	**0.51**	**0.56**
Change in perceived stress (T2 - T1)	−0.15 (5.52)	−0.71 (5.35)	−0.33 (5.26)	0.36 (5.87)	0.63 (5.98)	0.848	0.07	0.19	0.24	0.12	0.17	0.05
Concerns about social isolation	2.86 (1.25)	2.83 (1.23)	2.83 (1.27)	3.14 (1.23)	2.78 (1.31)	0.784	0.00	0.25	0.04	0.25	0.04	0.29
Concerns about loss of social support	2.18 (1.16)	2.00 (1.15)	2.63 (1.31)	2.57 (1.02)	1.85 (0.95)	0.042	**0.51**	**0.53**	0.14	0.05	**0.68**	**0.73**
Concerns about worsening of medical problems	2.04 (1.20)	1.95 (1.19)	2.21 (1.14)	2.50 (1.35)	1.78 (1.16)	0.155	0.22	0.43	0.15	0.23	0.38	**0.58**
Concerns about worsening of mental health	2.52 (1.14)	2.57 (1.13)	2.83 (1.31)	2.43 (1.09)	2.22 (0.97)	0.334	0.21	0.13	0.33	0.34	**0.53**	0.20

Abbreviation: IPV, Intimate partner violence.

Note: Contingency analyses with associated χ^2 tests were run for categorical variables. Fisher's exact tests were run where expected counts were < 5. Kruskal-Wallis rank sum tests were run for continuous variables. [a]Effect size estimates use the absolute value of Cohen's d. Boldfaced effect sizes indicate medium to large effect sizes using a cutoff of d > .50. For Change in Perceived Stress, one was added to each value before calculating effect size estimates.

different between groups. The groups did not exhibit substantial differences in COVID-19 concerns related to social isolation. Class 2 (Moderate emotional IPV with high hostile withdrawal) and Class 3 (Physical and emotional IPV) reported the highest concerns regarding loss of social support, which exhibited medium effects compared with Class 1 (Moderate emotional IPV) and Class 4 (Low IPV). Class 3 (Physical and emotional IPV) reported the highest concerns about worsening of medical problems, which exhibited a medium effect compared with Class 4 (Low IPV). Finally, Class 2 (Moderate emotional IPV with high hostile withdrawal) reported the highest concerns related to worsening of mental health, which exhibited a medium effect compared with Class 4 (Low IPV).

Discussion

Health care professionals are an important bridge to support and resources for IPV victims.[14,31] However, it is unclear if a shift to telemedicine affords the same opportunities. The COVID-19 pandemic necessitated a rapid shift to telemedicine and, thus, an opportunity to evaluate potential drawbacks for IPV victims. Our findings suggest that health care professionals may frequently see IPV victims through telemedicine visits, but additional protocols should be enacted to ensure it is beneficial for IPV victims.

Our findings align with previous research on IPV such that distinct patterns emerge related to type and severity of IPV.[19,21–24] Specifically, our study revealed 4 classes of IPV that varied in emotional and physical abuse. Overall, our findings suggest that individuals experiencing all forms of emotional abuse as well as physical abuse report particularly poor health and the highest social distress, including loneliness, low perceived emotional support, and perceived ostracism. This may be due to the isolation that often occurs in abusive relationships. It is important to note that although emotional abuse might not leave physical traces, it has been found to be harmful to victims' health and well-being.[32,33] Indeed, all IPV classes exhibiting any abuse reported higher levels of stress compared with those reporting low IPV. As such, any form of IPV should be taken seriously by providers.

Our results suggest that many victims of IPV reported telemedicine utilization in the early phases of the pandemic. Indeed, across IPV classes, telemedicine utilization was higher compared with the class exhibiting low IPV. This may be due to the more extensive social and physical health needs among victims of IPV. In addition, COVID-19 presented more concerns for individuals who had experienced IPV, including concerns related to losing social support and decreased psychological and physical health. Furthermore, despite higher utilization, satisfaction with telemedicine among IPV victims was lower compared with those with low IPV, although satisfaction overall was high. This suggests that the needs of IPV victims might not have been adequately addressed in the telemedicine visits that occurred in the early phases of COVID-19. This should inform how telemedicine is implemented going forward.

Clinical Implications

It is recommended clinicians screen for IPV during their telemedicine visits so that individuals who screen positive can be referred for appropriate ongoing services.[34] Certain populations, such as women of reproductive age, especially pregnant women, may be important to prioritize given the increased risk of experiencing IPV during pregnancy[34,35]. In addition, it is crucial that health care professionals ask about IPV directly in a safe and private environment when it is suspected in all populations.[36] Yet, telemedicine may lack the needed privacy for such inquiry because the perpetrator may be home with the victims. Individuals may also be reluctant to discuss sensitive topics in front of other individuals, such as children, parents, household helpers, and others aside from the perpetrator[37], presenting missed opportunities for appropriate screening and referral to necessary services. Future research should assess whether administering short, structured screening measures (eg, Abuse Assessment Screen[38] or Woman Abuse Screening Tool[39]) privately via the electronic health record increases the likelihood of disclosure if patients are reassured of confidentiality. Furthermore, technology may be used as a tool for coercive control in abusive relationships and, thus, telemedicine may require additional precautions to ensure patient safety.[40] To help alleviate such concerns, clinicians may want to consider patient privacy by scheduling visits when an abusive partner is out of the home or at times patients believe they are absolutely safe to discuss their matters openly.

Numerous methods have also been proposed to offer discreet communication during telemedicine. For example, Jack and colleagues (2021)[40] and Simon and colleagues (2021)[7] provide a comprehensive script to prepare for telemedicine visits and respond to IPV disclosures. In addition, alternate forms of communication (eg, Signal for Help campaign)[41] offer nonverbal communication cues to elicit help or encourage the use of close-ended questions or other nonverbal responses.[15] Establishing a comprehensive protocol to prepare and aid providers is imperative due to the importance of safety of the patient and needed support for the provider during such stressful encounters.

It is also important to recognize the long-term effects of IPV and how this may impact utilization and satisfaction with telemedicine. History of IPV is associated with posttraumatic stress disorder, anxiety, and depression,[42] as well as poor health and somatic complaints.[43] Individuals who have experienced IPV at some point in their life may be more likely to use telemedicine for ongoing medical care even once the COVID-19 pandemic subsides. Thus, it is necessary to assess long-term satisfaction with telemedicine in this population. Ultimately, if inadequate patient satisfaction is a barrier to the use of telemedicine, this information is relevant to providers who may trial or prioritize other forms of patient care. The present study helps to elucidate which patients may be suitable for the use of telemedicine encounters based on their reported satisfaction.

Limitations
The present study had multiple strengths, including evaluating IPV before COVID-19 and its association with telemedicine utilization and satisfaction during the early phases of the pandemic. However, there are also multiple limitations. Although it was postulated that telemedicine utilization and satisfaction differed between IPV classes due to variations in emotional and physical health needs, future research should further examine causality underlying these relationships to have a better understanding of these outcomes. Because our statistical method was data-driven, each group exhibited some IPV, although group 4 showed little to no IPV. Future research may prioritize classifying individuals manually to obtain a group that reported no IPV. In addition, we restricted the

sample to individuals who reported being married in the baseline survey because we assumed marital relationships would be more stable than dating relationships. However, we did not assess whether they were in the same relationship during the COVID-19 survey, so this could not be determined with complete certainty. Evaluating the role of victimization and safety in telemedicine satisfaction and utilization is also important for individuals who are single and in nonmarital and dating relationships and should be investigated in future research. Another potential limitation was that telemedicine during the early stages of COVID-19 may have been perceived positively because access to other forms of social support were particularly restricted. In contrast, telemedicine that occurs when individuals are not forced to isolate may not be viewed as favorably because it is more distant than necessary. Thus, the early months of COVID-19, and all the accompanying fear and distress, formed a unique background to the present study. In addition, at the time of this study, many providers were becoming accustomed to using telemedicine due to necessity and likely did not incorporate the aforementioned safe screening tactics. We did not ask whether providers screened for IPV or perceived safety during the encounters. Satisfaction with telemedicine in this study may have been impacted by whether providers screened for IPV and whether they did so while ensuring the patient's safety. Future research should consider whether providers asked about or screened for IPV and perceived safety of telemedicine, as well as further evaluate presumed mediators and moderators of these associations.

Individuals who completed the present online survey study evidently had access to online technology. It is important to consider the many who do not have access to such technologies, either due to extreme control by the abusive partner or inability to afford smartphones or computers.[40,44] Further information on whether telemedicine visits were conducted via telephone or video could have been useful to determine whether individuals preferred one format or another due to ease of access and/or the format's perceived safety if individuals are in the near vicinity of their perpetrators. In addition, the individuals who participated in the present study did so after having completed a baseline survey assessing IPV. IPV victims who were willing to complete a follow-up study after providing

information regarding history of IPV may be different from those who avoided future participation. Finally, it is also important to recognize the intersectionality of IPV with structural inequities that may impact access to telemedicine.[6,16,40] Recent research suggests that race and living in a rural environment impacted telemedicine utilization since COVID-19 onset.[45] COVID-19 certainly amplified numerous inequities that already existed, including reduced access to medical care and lack of resources, which would be particularly difficult for IPV victims.[6]

Conclusion

IPV victims may be frequently seen in telemedicine visits, but additional steps should be taken to ensure their needs are met. In addition to safe disclosure methods, providers should consider additional needs related to social concerns, stress, and physical health. Given the burgeoning use of telemedicine, steps should be taken to prepare for such visits so this complexity can be appropriately and safely addressed.

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