The possible impact of increased physical intimate partner violence during the COVID-19 pandemic on ocular health

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Abstract
During the COVID-19 outbreak, sheltering at home has led to an increase in physical intimate partner violence cases. Intimate partner violence–sustained ocular injuries may be higher during the pandemic due to the increase in physical intimate partner violence. Left untreated, intimate partner violence–related ocular or orbital trauma can lead to permanent vision loss. Even with treatment, patients often lose vision from intimate partner violence–related traumatic ocular injuries. Eye care providers and eye care facilities should understand the community services available to intimate partner violence survivors to better care for these patients. Due to the potential lasting economic burden and social strain of this pandemic, eye care providers and facilities should stay vigilant as there may still be a sustained increase in intimate partner violence even after the global COVID-19 pandemic.

Keywords
Epidemiology/public health, ophthalmology, women’s health, COVID-19, pandemic

Introduction
COVID-19 was declared a pandemic by the World Health Organization in March 2020 and continues to have significant impacts.1-3 The novel coronavirus SARS-CoV-2 causes an acute atypical respiratory disease.4,5 Individuals at a greater risk for COVID-19 are older and have underlying medical conditions that are not well-controlled.6 Moreover, those who are a part of the black and brown community are more likely to experience health burdens in COVID-19. This increased risk may be due to reduced access to health care services, decreased ability to work from home, higher poverty rates, and living in cities with greater numbers of COVID-19 cases.7,8

Around the globe, restrictions and orders have been put into place to enforce social distancing to combat the spread of COVID-19.9,10 These restrictions include stay-at-home orders or sheltering in place to decrease the spread of this virus.11,12 In addition, many occupations are considered non-essential during the pandemic, and many are not able to work remotely.13,14 Though the restrictions put into place help decrease a person’s risk for getting the novel virus and decrease the spread of the virus to others, these restrictions and orders may still negatively impact a person’s health. As more individuals spend time at home due to these restrictions, there has been an increase in physical intimate partner violence (IPV).15-17 A IPV incident can cause ocular and orbital injury, leading to permanent damage to an individual’s vision.18,19 In this review, we will explore how increased rates of IPV, including physical IPV, during COVID-19 can have lasting effects on ocular health and what could be implemented.

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Table 1. Increase in intimate partner violence (IPV) during global COVID-19 pandemic.

| Continent | Increase in IPV |
|-----------|-----------------|
| Africa    | • 87,000 cases of gender-based violence in South Africa during the first week of stay-at-home orders.54,55 |
| Asia      | • In China, IPV reports tripled during their stay-at-home orders compared to the previous year.56 |
|           | • India had a 100% increase in gender-based violence complaints in April 2020.57 |
| Australia | • 5% increase in IPV calls.58 |
|           | • 75% increase in Google search related to support for IPV.58 |
| Europe    | • Italian and French government commissioned hotels to provide shelter to those escaping IPV situations.58 |
|           | • 30% increase in IPV cases in France.9 |
|           | • UK had a 25% increase in IPV calls.58 |
| North America | • USA overall increase by state ranging from 21% to 35%.58 |
|           | • Canada’s COVID response package included funding to support women’s shelters for those experiencing gender-based violence.59 |
|           | • In Mexico, 911 related domestic violence calls increased by 60%, 3 weeks after social distancing orders.60 |
| South America | • 40%–50% increase in IPV cases in Brazil.9 |
|           | • In Peru, the incidence rate of calls for IPV was 9% greater.61 |
|           | • Argentina had a 25% increase in calls.62 |

Intimate partner violence

The Centers for Disease Control and Prevention states that intimate partner violence is sexual violence, physical violence, stalking, or psychological harm done by either a current or former spouse or partner. IPV can occur among heterosexual or same-sex couples and does not require sexual intimacy. IPV is a severe public health problem that affects millions of Americans and has negative individual and social outcomes.21–23 Almost 20% of women report that an intimate partner has caused severe physical violence in their lifetime.20 It is estimated that 1.3 million women are victims of physical IPV each year.24 Data throughout the years show that IPV increases during pandemics and economic crises.25–27 Almost 41% of women IPV survivors experience a form of physical injury related to IPV.20 Previous research has found that trauma to the eye can cause glaucoma, cataracts, retinal hemorrhaging, and retinal detachment.28–31 However, there is little research focusing on how IPV impacts eye health.32–34 Information on mechanisms of orbital and ocular trauma and secondary outcomes such as traumatic glaucoma and ruptured globes remains poorly explored.32,35

Racial and ethnic minorities are disproportionally burdened by IPV.36–38 Ethnic minority women experience a more significant burden of accessing help for IPV and secondary outcomes than non-Hispanic white women.39,40 Minority women who experience IPV are less likely to have access to services, including health care, due to higher rates of poverty, language barriers, fear of deportation, and limited job opportunities.41–43 Further research is needed to understand the prevalence of ocular or orbital trauma due to IPV and the potential associated risk factors for ocular or orbital trauma in this underserved population. Moreover, research is needed to develop interventions better to decrease blindness due to IPV ocular or orbital trauma health in underserved populations.44

Such as with COVID-19,45–47 IPV disproportionately burdens individuals from lower socioeconomic status. Insurance coverage which varies with socioeconomic status and employment status can influence likelihood of COVID diagnosis and treatment.48,49 IPV outcomes in terms of both mental and physical health are worse for those with lower-socioeconomic status.39,50 The homes may not be a safe space for individuals who experience IPV during the COVID-19 pandemic.25,51 The COVID-19 pandemic could initiate IPV in households where it did not occur or worsen during this time due to economic uncertainty, decreased access to community services, and increased stress due to the unknown.52,53

Increase of IPV during COVID-19

Cases of IPV have increased globally during the pandemic (Table 1). IPV is one of the unintentional adverse outcomes of implementing stay-at-home orders to prevent the spread of COVID-19.

The factors that influence IPV could be exacerbated during the pandemic. Individuals who rely on their partner financially may find it more difficult during the pandemic to have a stable income or the ability to find employment.61 In addition, IPV survivors may feel isolated and without support systems including family and friends,64–66 which can aid in them successfully leaving their abuser.67–69 Women who experience IPV are more likely to experience mental health problems.70 It is already stressful for IPV survivors to leave their abusive situation and planning to leave takes a lot of thought and effort because it can be dangerous.71,72

It is critical that health care providers, including eye care providers, assess individuals for IPV as they may access less care during this time. IPV is a leading cause of homelessness for women.73,74 Those who experience IPV may be more reluctant to stay at an IPV shelter because of the increased COVID-19 spread in community living situations.75 Access to health care services, including eye care services, has been reduced during the pandemic.76,77 This decreases the chances that an individual who has experienced IPV will come into contact with a health care provider who could provide...
necessary ocular treatment or additional IPV resources. Group therapy for IPV is effective, but social distancing orders can create a participation barrier.

### Ocular health and domestic violence

Forty-five percent of IPV injury incidents involve the eye. Orbital fractures are the most common eye injury associated with IPV incidents. In women, 7.6% of orbital floor fractures were due to IPV. In a study that included both men and women, researchers found that orbital fractures made up 13% of fracture locations in patients with IPV-related fractures. Additional research is needed to identify the prevalence of orbital fractures due to IPV in men because men tend to underreport their IPV experiences.

Annually 1.6 million people lose their sight due to ocular injury. Although orbital fractures are more common, ruptured globes result in more severe outcomes including severe vision loss and blindness and psychological impacts. More research is also needed to determine how often ocular trauma, glaucoma, traumatic cataracts, retinal hemorrhages, or retinal detachments occur and how often permanent loss of vision or blindness occur.

Vision loss is associated with secondary outcomes including depression, decreased mobility, a more significant economic burden, independence, and decreased life quality. Eye care for IPV survivors may prevent lifelong secondary outcomes from ocular trauma. However, poor access to eye care services reduces timely care for orbital fractures and ocular trauma due to an IPV incident. Delayed care also reduces access to social resources for the individuals who have experienced IPV.

### Addressing IPV and ocular health during a pandemic

Health care providers from all fields, including eye care providers, will need to remain vigilant during this pandemic and beyond. Specifically, eye care providers for patients with ocular trauma incidents should screen patients for IPV and be aware of local community resources. Community centers should have eye care providers to increase likelihood that eye and vision care services are received by those who may not be able to easily access care due to travel barriers, insurance coverage, cost, lack of services, or lack of culturally competent care.

Screening for IPV and providing intervention should be within the scope of practices of eye care providers and eye care facilities. Understanding the available resources is essential to the ability of the eye care providers and eye care facilities to address IPV. Eye care providers should refer those who have experienced IPV to counseling, hotlines, shelters, rape crisis centers, or health care facility social workers and counselors to improve their well-being. Ensuring that these connections are local will better serve the individual who has experienced IPV.

Before the pandemic, IPV was already underreported and underrecognized by health care professionals, so it is essential with the growing numbers that each provider and facility address this. Eye care providers should also train their medical team on IPV. Training on IPV impacts on health outcomes, specifically related to ocular eye health, is also needed. Addressing IPV during the COVID-19 pandemic and beyond should be a team-based effort to ensure IPV survivors have the needed tools and health care.

### Limitations

Prior research studies relevant to this review are limited but highlight the need for more research within this field. Also, many people who experience IPV may be hesitant to report, so that IPV cases may be underreported. Furthermore, IPV may be challenging to assess as, in many cases, this is written in the free-text area of the electronic health records and more difficult to quantify. This review highlights the need to understand IPV and incorporate appropriate screening and treatment during a global pandemic and after.

### Conclusion

IPV cases have increased globally since the COVID-19 pandemic. Eye care providers and eye care facilities should be vigilant that there can be a lasting increase in IPV cases due to the lasting economic and social strains that may occur even after the COVID-19 pandemic. Eye care providers can aid in assisting the growing number of individuals who have experienced IPV in multiple ways. Eye care providers should assess patients for physical IPV-related injuries that may have lasting effects on their vision and eye care needs even if treated. Eye care providers and eye and health care facilities should provide those with IPV-related injuries with community support tools.

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### Informed consent

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