**Introduction:**

The COVID-19 pandemic led many governments to implement strict lockdowns in an effort to reduce viral transmission and prevent excess mortality. In the early phases, such policies proved effective in limiting movement and reducing deaths — for example, mobility in London dropped to only 10–20% of pre-pandemic levels during the most stringent restrictions *(Anderberg et al., 2020, Quantifying Domestic Violence in Times of Crisis).* However, growing evidence suggests that the public health benefits of prolonged lockdowns tend to plateau, while unintended social harms — particularly in the form of domestic violence (DV) — begin to rise.

A large body of research has documented that lockdowns contributed to increases in DV across the world. Kourti et al. (2021, *Domestic Violence During the COVID-19 Pandemic: A Systematic Review*) found that 78% of 18 reviewed studies reported increases in DV after lockdowns began, with average global rises of 7.9%. Similar concerns were reported by Sacco et al. (2020, *The Dark Side of Home Isolation*), who described how enforced proximity, isolation from support services, and emotional stress created high-risk environments, especially for women and children.

Notably, the timing of DV increases followed a pattern. Anderberg et al. (2020) observed no immediate rise in police-recorded DV crimes during London’s March 2020 lockdown. Instead, the increase became visible only after 3–5 weeks, peaking around day 50 of lockdown. Moreover, their study revealed a critical underreporting problem: while police data showed a 5–7% increase, DV-related Google searches rose by 35–40%, suggesting that many victims were unable to report abuse safely.

These findings align with global reports of dramatic increases in DV helpline usage. For example, UN Women (2020) and the Wikipedia summary (*Impact of the COVID-19 pandemic on domestic violence*) cite country-level reports showing spikes in DV calls of up to 80%. Peterman et al. (2020) also estimate that a six-month lockdown could generate up to 31 million additional cases of intimate partner violence globally.

Other factors may influence the severity of lockdown-related violence. Evans et al. (2020, *Measuring the Shadow Pandemic*) and Sharma & Borah (2020) emphasize how job loss, income instability, and closed schools and workplaces can exacerbate domestic conflict and reduce opportunities for outside detection or escape. On the other hand, governments that maintained strong income support programs may have softened these effects.

This body of evidence raises a key question: **Can we find an optimal lockdown length for each country — one that limits deaths but avoids triggering a surge in domestic violence?** This study aims to model that trade-off using cross-national data on lockdown length, COVID-19 deaths, income support, workplace closures, and reported DV incidents. If such a point can be found — and appears consistently across countries — it could provide valuable policy guidance for managing future crises without worsening home violence.