Geospatial Analysis of Conflict-Related Sexual Violence and Survivor Relief Center Service Access in Ukraine

Introduction

Conflict related sexual violence (CRSV) is defined by the United Nations (UN) as “rape, sexual slavery, forced prostitution, forced pregnancy, forced abortion, enforced sterilization, forced marriage, and any other form of sexual violence of comparable gravity perpetrated against women, men, girls or boys that is directly or indirectly linked to a conflict. ” (i)

CRSV is an International War Crime and in some circumstances also recognized as a form of genocide. Since Russia's full-scale invasion of Ukraine in February 2022, CRSV has been documented across Ukraine. However, reported cases likely underestimate the true burden because survivors may face stigma, fear, trauma, and other barriers to disclosure and reporting. (ii, iii) Geospatial analysis can identify populations living near reported CRSV incidents and assess whether survivor support services are geographically accessible. This study examines the spatial relationship between CRSV, population density, Russian occupation, and Survivor Relief Centre (SRC) accessibility to identify populations potentially at greatest risk of lacking timely support.

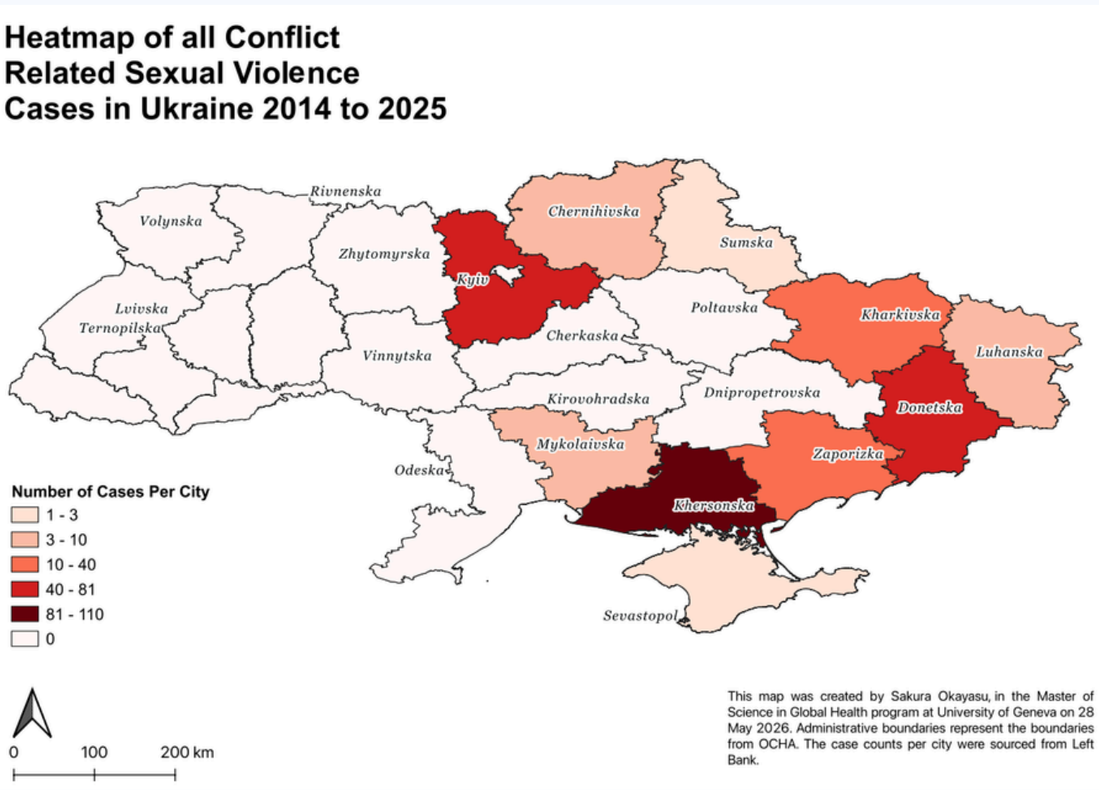
Methodology

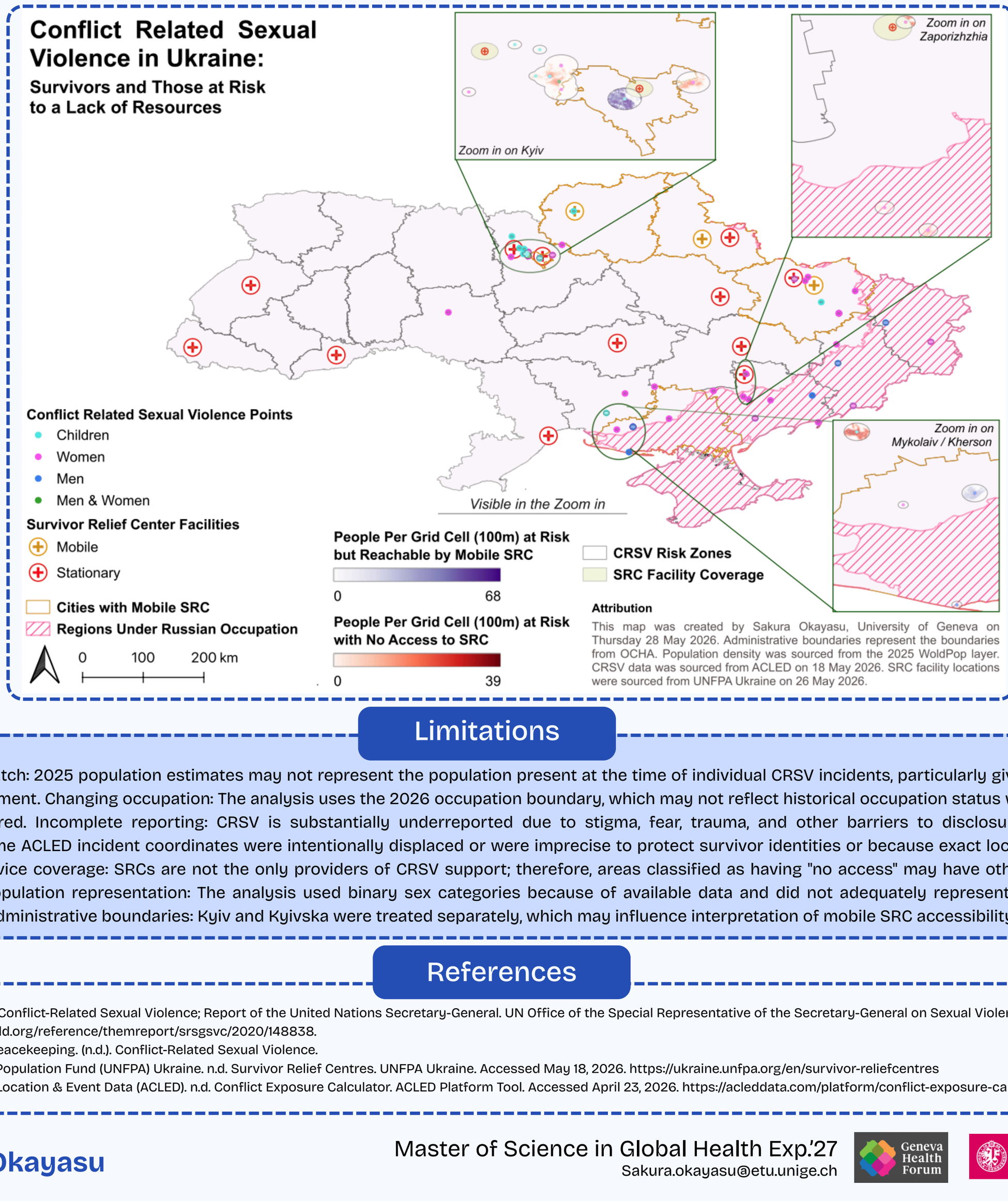
CRSV incidents were mapped and surrounded by risk buffers of 2 km for incidents without fatalities and 5 km for incidents involving fatalities. SRC accessibility was modelled using a 4 km buffer, representing approximately one hour of walking travel. Populations within CRSV risk zones were then classified according to access to stationary and/or mobile SRCs. Occupied territories were excluded from areas considered reachable by mobile SRCs. (iv)

Key Findings

- **2.68M** People living within modelled CRSV risk zones.
- **1.24M** People potentially at risk **without access to SRCs**.
- **315,868** People in Luhanska identified as at risk and without SRC access.
- **89** Reported CRSV incidents represented in the spatial dataset

Note: One reported incident may represent between 1 and 32 survivors and reported cases underestimate the true burden.





Limitations

Temporal mismatch: 2025 population estimates may not represent the population present at the time of individual CRSV incidents, particularly given conflict-related displacement. Changing occupation: The analysis uses the 2026 occupation boundary, which may not reflect historical occupation status when earlier incidents occurred. Incomplete reporting: CRSV is substantially underreported due to stigma, fear, trauma, and other barriers to disclosure. Location uncertainty: Some ACLED incident coordinates were intentionally displaced or were imprecise to protect survivor identities or because exact locations were unavailable. Service coverage: SRCs are not the only providers of CRSV support; therefore, areas classified as having "no access" may have other forms of assistance. Population representation: The analysis used binary sex categories because of available data and did not adequately represent non-binary populations. Administrative boundaries: Kyiv and Kyivska were treated separately, which may influence interpretation of mobile SRC accessibility.

References

(i)Pramila P. (2020). Conflict-Related Sexual Violence; Report of the United Nations Secretary-General. UN Office of the Special Representative of the Secretary-General on Sexual Violence in Conflict. https://www.refworld.org/reference/themreport/srsgsvc/2020/148838.
(ii)United Nations Peacekeeping. (n.d.). Conflict-Related Sexual Violence.
(iii) United Nations Population Fund (UNFPA) Ukraine. n.d. Survivor Relief Centres. UNFPA Ukraine. Accessed May 18, 2026. https://ukraine.unfpa.org/en/survivor-reliefcentres
(iv) Armed Conflict Location & Event Data (ACLED). n.d. Conflict Exposure Calculator. ACLED Platform Tool. Accessed April 23, 2026. https://acleddata.com/platform/conflict-exposure-calculator/

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