

# Attacks on healthcare in Syria: qualitative and quantitative exploration of the impacts on health



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Qual



Quant



## Qualitative findings

- Attacks had both direct and indirect impacts on all levels of the health system including the delivery of care, governance, workforce, financing, infrastructure and supplies.
- Attacks result in ripple effects on the health of the community, particularly the most vulnerable.
- Healthworkers face the strain of severe psychological impacts and ethical dilemmas faced during and after attacks.

## Quantitative findings

- Outpatient and trauma consultations dropped 51% and 38% the day after an attack on average.
- Significant reductions in outpatient and trauma consultations continued for 37 and 20 days after an attack, respectively.
- Significant reductions in obstetric deliveries were observed beginning the second day after an attack and continued for 42 days.

**Research Question:** What are health worker perceptions of the impact of violence on healthcare based on their personal experiences and knowledge of attacks?

### Methods

Qualitative, in-depth interviews

**Study setting:** Areas across northwest Syria and northeast Syria experiencing a high frequency of attacks on healthcare, accounting for 7-8 million people

**Study sample:** Healthworkers with direct experiences of attacks on healthcare in northern Syria between 2011 and 2020 identified using purposive and snowball sampling.

**Data analysis:** The Framework Method was used to explore the short- and long-term impacts of attacks on:

- a) healthcare facilities
- b) health services
- c) community health
- d) health workers
- e) the health system.

Health system impacts were outlined based on WHO Health System Building Blocks.

### Limitations

- **Potential for recall and reporting bias** inherent in interview-based studies
- **Exclusion of perspectives from health workers** who ceased working may have skewed findings
- Despite efforts to recruit female participants, **fewer female health workers participated**, possibly due to safety and confidentiality concerns

### Results

**Participants:** 40 health workers (32.5% female) who experienced attacks on healthcare between 2013 and 2020.

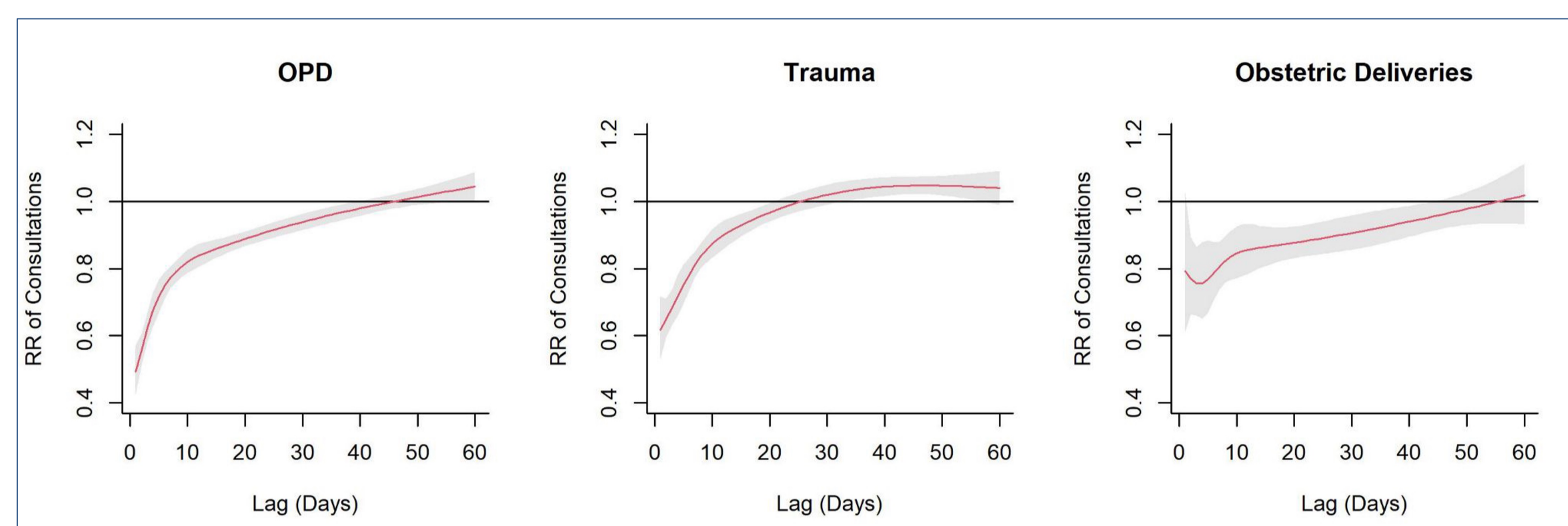
**Key findings:** Violence against healthcare results in intersectional and compounded impacts on the health system outlined under six themes:

1. Severe constraints on health service delivery
2. Challenges in health workforce retention and morale
3. Compounding loss in essential medicines and infrastructure
4. Weakened health governance
5. Uncertainties in health financing
6. Compromised security and protection

**“We told them that those locations were medical centres, but we were regarded as enemies and then we were attacked....No one... no one stopped these attacks.”**

### Recommendations

- Urgent need for concrete strategies to **prevent future attacks, protect health workers, ensure accountability, and support health systems.**
- Inclusive policies required to **prioritise well-being** of all health workers and **address systemic challenges.**
- Further research should **incorporate diverse perspectives** and employ **mixed-method approaches.**



*Relative risks in the days following a health facility attack by consultation type Burbach, R. et al., Quantifying the Effects of Attacks on Health Facilities on Health Service Use in Northwest Syria: A Case Time Series Study from 2017-2019, BMJ Global Health, 2024 (pending).*

**Research Question:** What was the effect of health facility attacks on health service delivery in 3 governorates in Syria between 2017 and 2019?

### Methods

Retrospective observational study

**Study scope:** Syrian-American Medical Society health facilities in Aleppo, Hama, and Idlib governorates 2017 to 2019

**Outcomes:** Outpatient and trauma consultations and obstetric deliveries from 18 health facilities (2.8 million total consultations)

**Exposure:** 69 health facility attacks on the 18 health facilities

**Covariates:** Conflict intensity, seasonality, holidays, day of the week

**Design:** Case time series with a generalised non-linear model

**Stratification:** Facility type, attack mechanism, and attack corroboration status

### Limitations

**No population-based rates** due to changes in administrative boundaries and high migration during the study period  
**Only 18 (9%) of the 206 health facilities** operating in NW Syria were included in the study  
**Attacks began six years before the study period**, allowing for mitigation strategies  
**Many unobserved variables** in the causal pathway

### Key discussion points

**Novel evidence** that health facility attacks are strongly associated with reductions in health service delivery

**Corroborated attacks and aerial bombardments** were associated with much stronger effects

**Need for guidance on systematic data collection** for attacks on health research

### Future research opportunities

Effect of attacks on health outcomes

Include population denominators

More explicit reasons that obstetric deliveries were not significantly different the day after an attack

Effects of our unmeasured covariates in other models

Effects by weaponry in other contexts

Explore effect differences by attack corroboration status

## Acknowledgements

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