Abusers use smart devices to spy on and harass their intimate partners.

Abuse Vectors: How Abusers Leverage Smart Devices

Is the device overt? No → Covert Spying
Yes → Does the abuser own the device? No → Unrevoked Access
Yes → Is the primary functionality used? No → Repurposing
Yes → Intended Use

Covert Spying
Abusers hide smart devices to spy on their partners.

Example: Video and audio surveillance with a hidden camera.

Unrevoked Access
Abusers take advantage of lingering access to smart devices they no longer own.

Example: Changing the home’s temperature after moving out.

Repurposing
Abusers use a device’s secondary functionality for abuse.

Example: Using motion-activated lights to infer when a partner is at home.

Intended Use
Abusers leverage smart devices as intended by the manufacturer.

Example: Spying on a partner through a shared Ring Doorbell.

Method

Generate 25,000 search queries related to IoT abuse

Filter irrelevant web pages using manual pruning & ML; 26,286 URLs remain

Analyze a sample of 220 web pages, plus 100 forum posts from Reddit and Quora

Identify 32 devices used for abuse and 4 abuse vectors, or patterns of IoT abuse

Using queries, search Google to collect 70,399 unique URLs

"Abuse Vectors: A Framework for Conceptualizing IoT-Enabled Interpersonal Abuse."
Sophie Stephenson, Majed Almansoori, Pardis Emami-Naeini, Danny Yuxing Huang, and Rahul Chatterjee.