Preliminary Data Extraction Report

Jack Galbraith-Edge
Queen Mary, University of London
London, United Kingdom
ha201591@qmul.ac.uk

Mark Stanton
Johannesburg, South Africa
trauma.1@mweb.co.za

Giles Cattermole
Queen Mary, University of London
London, United Kingdom
g.cattermole@qmul.ac.uk

April 2, 2025

1 Abstract

2 Introduction

2.1 Background

The global displacement crisis has reached unprecedented levels, with over 100 million forcibly displaced individuals reported by the United Nations High Commissioner for Refugees (UNHCR) as of May 2024 [1]. Refugees and asylum seekers often endure extreme hardships, compelling them to seek asylum in foreign countries [2, 3]. This vulnerable population frequently faces compounded mental health challenges due to traumatic pre-migration experiences, hazardous journeys, and difficult post-migration realities, including detention and instability of legal status [4, 5, 6, 7].

Self-harm, encompassing various behaviours where individuals inflict harm on themselves, is a particularly alarming manifestation of these mental health challenges. Rates of self-harm are significantly elevated among asylum seekers and refugees compared to general populations, especially among those who are detained, with rates up to 216 times higher in offshore detention facilities - where medical facilities are limited - than in the general population[8, 9, 10].

Methods of suicide and self-harm among refugees differ based on available means, cultural factors, and motivating factors [11]. Common methods include cutting, self-battery, attempted hanging, self-poisoning by medication or chemicals, and ingestion of foreign objects [9].

Globally, rates of foreign object ingestion are increasing. In the United States, rates doubled in 2017, with 14% of cases deemed intentional [12]. A review of IIFO presentations in 2009 found intentional ingestions in up to 92% of adults from lower socioeconomic populations, indicating that rates are likely much higher among refugees and asylum seekrs than the general population [13].

Most ingested foreign bodies (80–90%) pass spontaneously. However, approximately 10–20% of all cases require endoscopic removal, and less than 1% need surgery to extract the foreign body or treat complications. Guidelines emphasise prompt assessment and intervention to prevent serious outcomes [14, 15]. Applying these standards in refugee settings poses significant challenges due to geographical isolation and limited access to tertiary medical facilities, which can lead to delayed care and increased morbidity and mortality [16].

Despite the rising prevalence of intentional ingestion of foreign objects (IIFO) and associated risks, there is a significant lack of focused research on how motivations differ among various vulnerable populations and how these motivations influence clinical outcomes [17, 18, 19]. Current literature largely addresses IIFO in prison and psychiatric settings, with limited exploration within displaced and asylum-seeking populations, especially in detention centres where power dynamics are pronounced. In such environments, self-harm can serve as a form of communication or protest when other avenues for expression are obstructed [20]. Conversely, in psychiatric or prison populations, motivations may stem from underlying mental health conditions or other factors [21, 22, 23, 24, 25, 26, 27, 28, 29]. These differing motivations may lead to variations in clinical management, potentially influencing the rates of endoscopic and surgical interventions required. Surely if one's motivation is protest against perceived mistreatment, the goal isn't laparotomy?

This disparity underscores an urgent need for targeted research to understand how motivations for IIFO among vulnerable populations affect clinical outcomes, particularly concerning invasive interventions. This systematic review aims to address this critical gap by exploring the link between motivation and endoscopic and surgical endpoints. By examining how different motives influence intervention rates, we hope to inform more effective healthcare strategies and improve clinical decision-making for vulnerable groups engaging in IIFO.

This systematic review will be registered with PROSPERO and written in line with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [30].

2.2 Objectives

2.2.1 Research Question

"What are the rates of endoscopic and surgical interventions following intentional ingestion of foreign object in the global population of humans who intentionally ingest foreign objects?"

2.2.2 Hypothesis

"Motivations behind intentional ingestion of foreign objects and the type of object ingested significantly influence the rates of endoscopic and surgical interventions in vulnerable populations."

2.2.3 Null hypothesis

"There is no significant association between the motivations behind intentional foreign body ingestion, or the type of object ingested, and the rates of endoscopic and surgical interventions."

2.3 Aims and Outcomes

1. To determine the rates of endoscopic and surgical interventions for intentional ingestion of foreign object in people who ingest foreign objects. 2. To evaluate how, demographics, motivations (e.g. protest, suicidal/self-harm) influence the need for invasive interventions. 3. To analyse how the type of object ingested impacts clinical outcomes, including intervention rates and complications.

3 Methods

3.1 Design

A systematic review was chosen to...

3.2 Search Strategy

Relevant articles were identified through a systematic search of PubMed, Web of Science, Embase, Scopus, PsycINFO, CENTRAL and Google Scholar on 15th January 2025, with the assistance of a librarian.

The search was conducted using keywords and MeSH terms based on the concepts underpinning this review. The bibliography of each included article was search for any further relevant articles. The keywords and MeSH terms used can be found in Appendix A.

3.3 Eligibility Criteria

We included original studies involving humans of any age group who had intentionally ingested a foreign object through the oral cavity (mouth). Studies were excluded if the ingestion was not explicitly documented as intentional or if empirical data on individual intentional ingestions were unavailable.

Motivations or reasons for ingestion considered included protest, suicidal intent, self-harm, psychiatric conditions, and other documented motivations. Intervention details assessed included the number of ingestions and the management strategies employed (conservative, endoscopic, surgical). Object characteristics evaluated encompassed the ingestion of multiple, blunt, sharp-pointed, long (¿5 cm), and short (¡5 cm)

3.3.1 Outcomes of Interest

The primary outcomes of interest were rates of intervention: endoscopic intervention (defined as undergoing a minimally invasive procedure involving insertion of an endoscope to visually examine internal organs or tissues), surgical intervention (defined as any operative procedure involving an incision to retrieve ingested foreign objects or manage resulting complications), and conservative management (defined as cases not undergoing endoscopic or surgical intervention). Secondary outcomes included complication and mortality rates.

3.4 Study selection

The study selection process is illustrated in Figure 2.

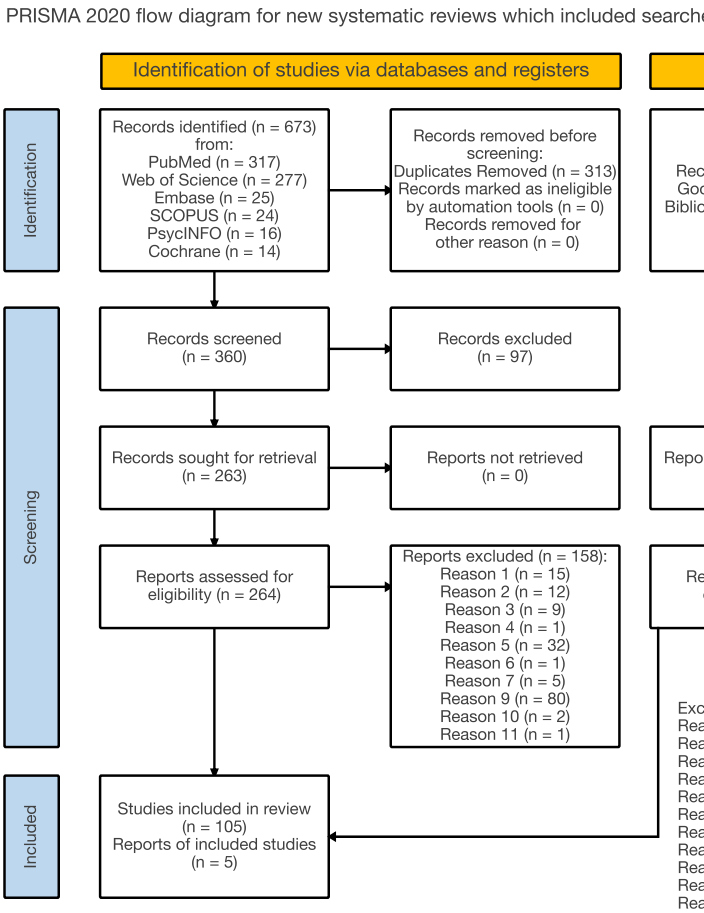

Figure 1: PRISMA 2020 flow diagram outlining the identification, screening, and inclusion of studies.

All identified articles were collated using Python (Pandas). Duplicate articles were identified and removed based on non-unique combinations of author, title, and DOI.

Following duplicate removal, all remaining articles underwent title and abstract screening conducted by the first author (JGE). To ensure consistency, a randomly selected 10% sample of these articles underwent independent screening by a second author (MS). Any discrepancies identified between these two reviewers were resolved by a third reviewer (GC).

Articles included after title and abstract screening proceeded to full-text review, which was initially performed by JGE. Again, a random 10% sample of these full-text articles underwent independent assessment by MS. Discrepancies between JGE and MS at the full-text screening stage were similarly resolved by a third review from GC.

Inter-reviewer agreement at each screening stage was calculated using Python (Pandas for data management and Sci-kit Learn for statistical analysis).

3.4.1 PRISMA Diagram

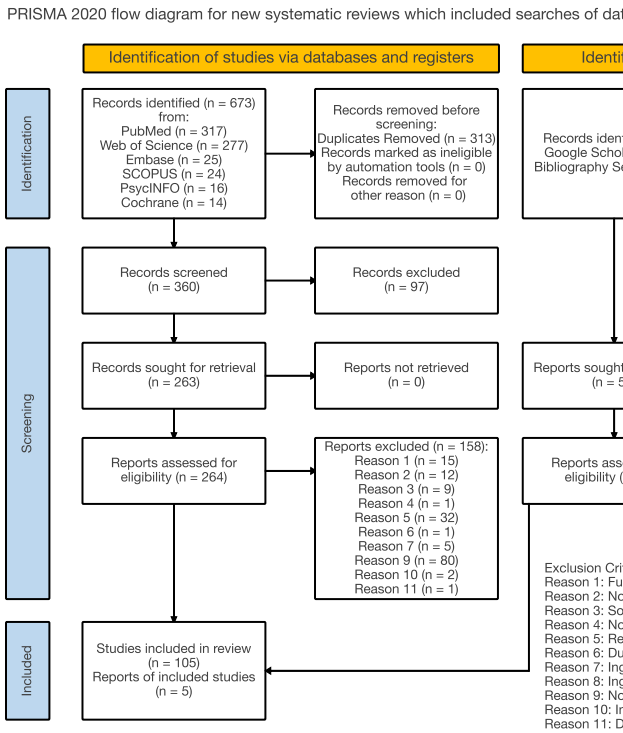

Figure 2: PRISMA Diagram

3.5 Data Collection Process

3.5.1 Prisoner Status (Is_Prisoner)

Individuals were classified as Is_Prisoner = 'Y' if they were documented as being in prison, held in police custody, or otherwise detained at the time of the encounter. This included immigration detention and other forms of custodial supervision. Where there was no indication of detention status, Is_Prisoner was marked as negative (N), or 'UK' if unknown.

3.5.2 Psychiatric History (Psych_Hx)

Psychiatric history was classified as positive (Psych_Hx = 'Y') if the individual had a documented diagnosis of a mental disorder as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). This included any clinical diagnosis such as depression, anxiety disorders, psychotic disorders, personality disorders, or neurodevelopmental disorders. Where no such diagnosis was recorded, Psych_Hx was marked as negative (N), or 'UK' if data were unavailable.

3.5.3 Displacement Status (Is_Displaced_Person)

Individuals were classified as Is_Displaced_Person = 'Y' if they met the definition of displaced persons as outlined by the International Organisation for Migration (IOM). This includes individuals who have been forced or obliged to flee or leave their homes or places of habitual residence, particularly as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights, or natural or human-made disasters [31]. Where no such displacement status was recorded, Is_Displaced_Person was marked as negative (N), or 'UK' if unknown.

3.5.4 Alcohol Influence (Under_Influence_Alcohol)

The variable Under_Influence_Alcohol was marked as 'Y' if there was documented evidence, clinical suspicion, or patient self-report indicating that the individual was under the influence of alcohol at the time of presentation. This included signs such as slurred speech, impaired coordination, smell of alcohol, or confirmed positive alcohol tests where available. The presence of alcohol use was considered relevant due to its potential influence on clinical presentation, risk behaviours, decision-making capacity, and healthcare outcomes. Where no such indication was present, the variable was marked as 'N' or 'UK' if unknown.

3.5.5 Psychiatric Inpatients (Is_Psych_Inpat)

Individuals were classified as psychiatric inpatients if they were admitted to a psychiatric facility, psychiatric ward, or designated mental health unit at the time of data collection or during the relevant clinical encounter. This included both voluntary and involuntary admissions. Classification was based on documentation in medical records or transfer/referral notes. Identifying psychiatric inpatients allowed for analysis of patterns and outcomes specific to individuals receiving inpatient mental health care.

3.5.6 Severe Disability History (Severe_Disability_Hx)

The variable Severe_Disability_Hx was marked as 'Y' if the individual had a documented history of significant cognitive or functional impairment consistent with severe disability. This was limited to individuals with: 1. Severe learning disabilities (e.g. profound intellectual disability, global developmental delay), and/or 2. Impairments of consciousness (e.g. persistent vegetative state, minimally conscious state, or severe acquired brain injury with loss of awareness).

This classification excluded milder forms of disability or functional limitation. The variable was marked as 'N', or 'UK' where no such history was documented.

3.5.7 History of Previous Ingestions (Previous_Ingestions)

The variable Previous_Ingestions was marked as 'Y' if there was documented evidence that the individual had a prior episode of foreign body ingestion before the current presentation. This included both intentional and unintentional ingestions, regardless of the time elapsed since the previous event. Documentation could include clinical notes, referral information, or electronic health records. The variable was marked as 'N' where it was explicitly stated that this was the first ingestion, or marked 'UK' if prior history was unknown.

3.5.8 Motivation - Intent to Harm (Motivation_Intent_To_Harm)

The variable Motivation_Intent_To_Harm was marked as 'Y' if there was documented evidence that the ingestion was carried out with the intent to cause self-harm, self-injury, or suicide. This included explicit statements by the individual, clinical impressions recorded by healthcare professionals, or circumstances strongly suggesting deliberate self-injurious behaviour. Ingestions motivated by other factors (e.g. attention-seeking, protest, escape, or psychosis without suicidal intent) were not included in this category. The variable was marked as 'N' where motivation was determined to be non-harm-related or marked 'UK' if intent could not be clearly established.

3.5.9 Motivation - Protest (Motivation_Protest)

The variable Motivation_Protest was marked as 'Y' if there was documented evidence that the ingestion was carried out as a form of protest, demonstration, or to express objection or dissatisfaction, including cases involving manipulation or attempts to secure betterment of conditions. This included ingestions in response to perceived injustice, detention conditions, delays in asylum processes, or efforts to influence external decision-making. Classification was based on explicit statements by the individual or clinical documentation suggesting protest-related intent. The variable was marked as 'N' where protest was not identified as a motivation, or marked 'UK' if intent was unclear.

3.5.10 Motivation - Psychiatric (Motivation_Psychiatric)

The variable Motivation_Psychiatric was marked as 'Y' if the ingestion was considered to be primarily driven by an underlying psychiatric condition. This included cases where ingestion occurred in the context of psychosis, impulsivity related to personality disorder, intellectual disability, severe emotional dysregulation, or other recognised mental health diagnoses. Classification was based on clinical documentation indicating a psychiatric motive or context, even if the individual did not explicitly state intent. The variable was marked as 'N' where no psychiatric motivation was identified, or marked 'UK' if unclear.

3.5.11 Motivation - Unknown (Motivation_Unknown)

The variable Motivation_Unknown was marked as 'Y' when no clear motivation for the ingestion could be identified from available documentation. This included cases where the individual did not disclose a reason, was unable to communicate, or where clinical notes did not specify a suspected or confirmed motive. The variable was marked as 'N' when a specific motivation was documented, or marked 'UK' if documentation was incomplete or ambiguous.

3.5.12 Object - Button Batteries (Object_Button_Battery)

This variable was marked as 'Y' if the ingested object was identified as a button battery. Classification was based on clinical documentation, radiological findings, or patient report. The variable was marked as 'N' when a button battery was not ingested, or marked 'UK' if object type was not recorded.

3.5.13 Object - Magnets (Object_Magnet)

This variable was marked as 'Y' if the ingested object was a magnet or included magnets. Special consideration was given to cases involving multiple magnets due to elevated clinical risk. Classification was based on clinical records, imaging, or patient report. The variable was marked as 'N' if no magnets were ingested, or marked 'UK' blank if unknown.

3.5.14 Object - Long (5cm) (Object_Long)

This variable was marked as 'Y' if the ingested object exceeded 5 cm in length, consistent with standard clinical thresholds for increased risk of obstruction or complications. Length was determined based on documentation, radiology, or object description. The variable was marked as 'N' for shorter objects, or marked 'UK' if object dimensions were not available.

3.5.15 Object - Sharp (Object_Sharp)

This variable was marked as 'Y' if the ingested object was described as sharp, pointed, or capable of causing mucosal injury or perforation. Examples included razor blades, nails, glass, and needles. Classification was based on object description or radiological appearance. The variable was marked as 'N' if no sharp object was ingested, or marked 'UK' if object type was unclear.

3.5.16 Object - Multiple (Object_Multiple)

This variable was marked as 'Y' if the individual ingested more than one object during the same episode. This included ingestion of identical or different objects. Classification was based on clinical notes, imaging, or patient report. The variable was marked as 'N' for single-object ingestion, or left blank if number of objects was not specified.

3.5.17 Outcome - Endoscopy (Outcome_Endoscopy)

The variable Outcome_Endoscopy was marked as 'Y' if the individual underwent endoscopic intervention during the clinical episode. Endoscopy was defined as a "minimally invasive medical procedure involving the insertion of a flexible tube equipped with a light and camera (an endoscope) into the body to visually examine internal organs or tissues". This included both diagnostic and therapeutic endoscopic procedures related to the ingestion. The variable

was marked as 'N' if no endoscopy was performed, or left blank if this information was unavailable.

3.6 Study Data

3.6.1 Study Types

Currently, the majority of data comes from case reports, with some data coming from case series and a minority coming from cases that are reported in reviews.

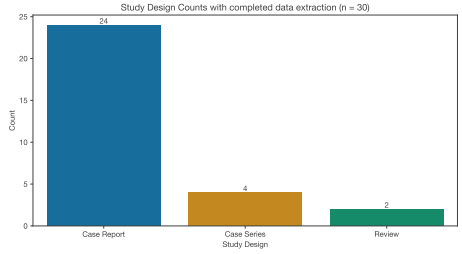

Figure 3: Bar plot showing the distribution of study design characteristics where data has been extracted.

3.6.2 Publication Dates and Case Counts

Although most of the data were collected from studies published after 1990, one large historical case series (n = 19) from 1886, which exclusively reports on surgical management of ingested foreign objects, currently skews the overall surgical intervention rate.

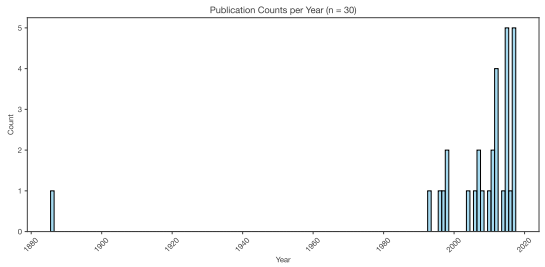

Figure 4: Histogram showing the distribution of publication dates of papers data collected from.

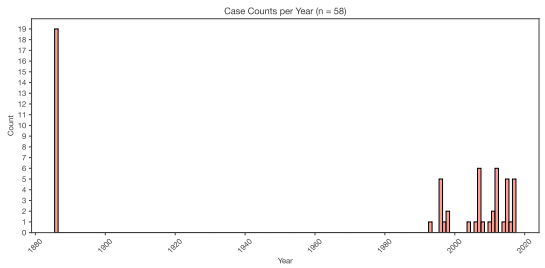

Figure 5: Histogram showing the distribution of case dates.

With this in mind, this historical paper was excluded from this analysis. The plots from above are now shown below, with historical data excluded.

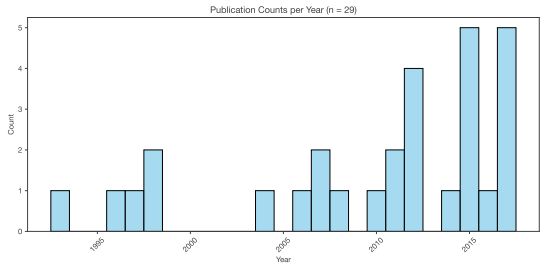

Figure 6: Histogram showing the distribution of publication dates of papers data collected from after exclusion of historic study.

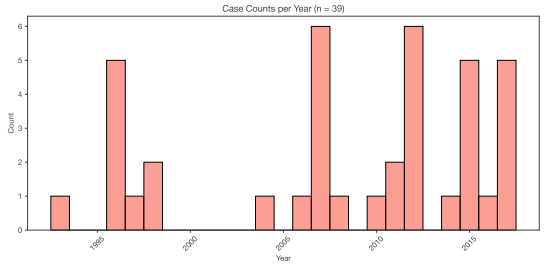

Figure 7: Histogram showing the distribution of case dates after exclusion of historic study.

3.7 Population Characteristics

3.7.1 Age

The mean age of included cases was 30.2 years (range: 12.0–62.0 years). The median was 28.0 years.

Statistic	Value
count	39.0
mean	30.666666666666668
std	12.346602629518292
min	12.0
25%	22.0
50%	28.0
75%	36.5
max	62.0

Table 1: Descriptive statistics for patient age (in years).

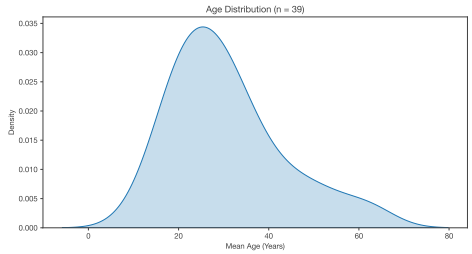

Figure 8: Kernel density estimate (KDE) plot showing the distribution of age among included cases.

3.7.2 Gender

Gender	Count	Percentage
Male	24	61.540000
Female	15	38.460000

Table 2: Summary of reported gender across cases of intentional foreign body ingestion in the first 30 extracted studies.

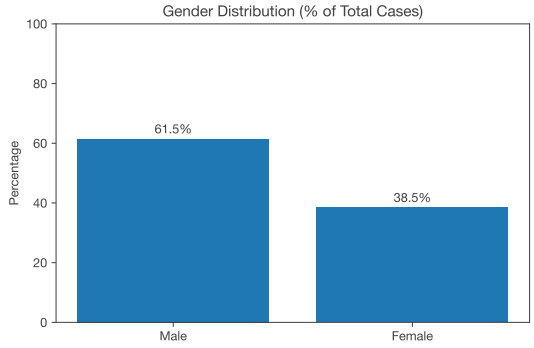

Figure 9: Gender Distribution as percentage of total cases.

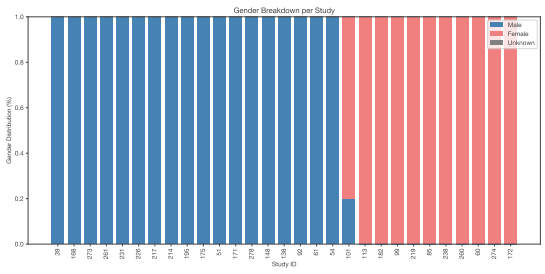

Figure 10: Gender breakdown per study.

3.7.3 Population Subgroups

Characteristic	Count	Total Recorded	Percentage
Psychiatric History	21.0	39.0	53.8
Prisoner	12.0	39.0	30.8
Previous Ingestion	11.0	39.0	28.2
Psychiatric Inpatient	4.0	39.0	10.3
Hx Severe Disability	3.0	39.0	7.7
Displaced Person	2.0	39.0	5.1
Under Influence of Alcohol	1.0	39.0	2.6

Table 3: Summary of population characteristics (where recorded).

Here we can see that the most common population subgroup is people with a record of psychiatric illness. This category encompasses the full bredth of psychiatric illnes, including Depression to Personality and adjustment disorders. Alcohol and substance misuse disorders are also categorised herein.

Prisoners are the second most common subgroup. Of course, these can be broken down into Prisoners with and without psychiatric disorder, but that is not elaborated on here.

Also, here we can see the percentage of cases with a history of previous ingestion, psychiatric inpatients and displaced persons.

3.8 Object Characteristics

3.8.1 Summary

Object Type	Count Y	Total Recorded	Percentage Y
Multiple	22.0	39.0	56.4
Sharp	16.0	39.0	41.0
Short Sharp	12.0	39.0	30.8
Long	11.0	39.0	28.2
Magnet	3.0	39.0	7.7
Long Sharp	3.0	39.0	7.7
Button Battery	0.0	39.0	0.0

Table 4: Summary of object characteristics (where recorded).

Here we can see that more than half of cases involved ingestion of multiple onjects. Objects were most often sharp (predominantly short sharp), defined as object ¡6cm length. There are no cases involving button battery ingestion, and few with magnets and long-sharp objects.

3.9 Ingestion Motivation

3.9.1 Summary

Motivation	Count Y	Total Recorded	Percentage Y
Motivation Intent To Harm	19.0	39.0	48.7
Motivation Psychiatric	17.0	39.0	43.6
Motivation Other	12.0	39.0	30.8
Motivation Unknown	10.0	39.0	25.6
Motivation Protest	8.0	39.0	20.5

Table 5: Summary of motivations for ingestions (where recorded).

We see here that the most common motivation for ingeston is 'Other'. We can explore this in more detail by looking at those with 'Other' as a motivation in specific subgroups (i.e. psychiatric history, or prisoner status, or similar).

Motivation	Count Y	Total Recorded	Percentage Y
Motivation Intent To Harm	19.0	39.0	48.7
Motivation Other	12.0	39.0	30.8
Motivation Unknown	10.0	39.0	25.6
Motivation Other No Psych Hx	8.0	39.0	20.5
Motivation Protest	8.0	39.0	20.5
Motivation Unknown Psych Hx	8.0	39.0	20.5
Motivation Other Psych Hx	4.0	39.0	10.3
Motivation Unknown No Psych Hx	1.0	39.0	2.6

Table 6: Summary of motivations for ingestions (where recorded) with additional information to breakdown possible motivations for 'Other'.

We see here that 20 percents of cases have a motivation of 'Other' and No Psychiatric history, where as nearly 30 percent have a motivation of 'Other' have a psychiatric history.

Motivation is unknown in nearly 40 percent of cases and motivation is other in nearly 50 percent. Suggesting motivation is poorly reported in the literature, or poorly categorised in data extraction.

Below, I have created a table of motivations with subgroup data alongside to explore this further.

3.9.2 Population Subgroup Motivation

Subgroup	Motivation	Count	Total	Percentage
Displaced Person	Other	1	2	50.0%
Displaced Person	Protest	1	2	50.0%
Displaced Person	Intent To Harm	0	2	0.0%
Displaced Person	Unknown	0	2	0.0%
Previous Ingestions	Intent To Harm	8	11	72.7%
Previous Ingestions	Unknown	4	11	36.4%
Previous Ingestions	Other	3	11	27.3%
Previous Ingestions	Protest	0	11	0.0%
Prisoner	Intent To Harm	9	12	75.0%
Prisoner	Protest	6	12	50.0%
Prisoner	Unknown	3	12	25.0%
Prisoner	Other	1	12	8.3%
Psych Hx	Intent To Harm	12	21	57.1%
Psych Hx	Unknown	8	21	38.1%
Psych Hx	Other	4	21	19.0%
Psych Hx	Protest	0	21	0.0%
Psych Inpat	Intent To Harm	2	4	50.0%
Psych Inpat	Unknown	2	4	50.0%
Psych Inpat	Other	0	4	0.0%
Psych Inpat	Protest	0	4	0.0%

Table 7: Summary of motivations for ingestions (where recorded) for each subgroup.

Here we can see motivations for each subgroup. Displaced persons seem to be motivated by 'Protest' and other. Other, in this case, was a Syrian refugee who ingested 1000 dollars for safekeeping. People who have previously ingested foreign objects appear to be motivated by an intention to cause harm to themselves, whilst 45 percent ingest for 'Other' and 'Unknown' reasons. Prisoners appear to be motivated by intent to harm and protest (for betterment of conditions of movement from prison). People with a psychiatric history often do not have a motivation recorded (in over half of cases), the siutation is similar for psychiatric inpatients.

3.10 Outcomes

3.10.1 Summary

Outcome	Count Y	Total Recorded	Percentage Y
Surgery	23.0	39.0	59.0
Injury Needing Intervention	20.0	39.0	51.3
Endoscopy	15.0	38.0	39.5
Perforation	12.0	39.0	30.8
Other	10.0	39.0	25.6
Conservative	6.0	39.0	15.4
Endoscopy Surgery	5.0	38.0	13.2
Obstruction	4.0	39.0	10.3
Death	1.0	39.0	2.6

Table 8: Summary of outcomes (where recorded).

It's commonly cited that only 1 percent of foreign body ingestions result in surgery. In this data, the rate is nearly 60 percent. Endoscopy in all foreign body ingestion occurs in 10-20 percent of cases, where in most cases conservative management suffices. Conservative management was only undertaken in 15.4 percent of these cases.

3.11 Conclusion

This preliminary descriptive analysis summarises data from the first 29 studies extracted for a systematic review of intentional foreign body ingestion. The majority of available literature consists of case reports, with a smaller number of case series and review-based reports. Most studies have been published in the last three decades, with one large historical case series excluded due to its disproportionate impact on surgical intervention rates.

The findings suggest that intentional ingestion is most frequently reported among individuals with psychiatric illness and among incarcerated populations. Sharp and multiple foreign objects are the most commonly ingested, with motivations often poorly reported or categorised as 'Other' or 'Unknown'. Where motivations are recorded, they range from self-harm and protest to more ambiguous or situational causes.

Outcomes vary significantly across cases, but conservative management is common. However, a substantial number of patients undergo endoscopic or surgical intervention, and complications are not infrequent.

In the next phase of this project, a meta-analysis will be conducted to estimate pooled rates of endoscopic and surgical interventions, and to evaluate how motivations, object types, and subgroup characteristics influence clinical outcomes. This will involve subgroup analyses and potentially meta-regression to assess the relationships between ingestion characteristics and rates of intervention, complications, and mortality. The goal is to produce clinically meaningful insights to inform future care pathways for vulnerable populations who intentionally ingest foreign objects.

References

[1] UNHCR. *UNHCR: A Record 100 Million People Forcibly Displaced Worldwide — UN News.* https://news.un.org/en/story/2022/05/1118772. May 2022. (Visited on 10/29/2024).

[2] UNHCR. *Convention and Protocol Relating to the Status of Refugees*. https://www.unhcr.org/media/convention-and-protocol-relating-status-refugees. 2010. (Visited on 10/29/2024).

[3] Amnesty International. *Refugees, Asylum Seekers and Migrants - Amnesty International*. https://www.amnesty.org/en/what-we-do/refugees-asylum-seekers-and-migrants/. 2024. (Visited on 10/29/2024).

[4] Harmit Athwal. "'I Don't Have a Life to Live': Deaths and UK Detention". In: *Race & Class* 56.3 (Jan. 2015), pp. 50–68. ISSN: 0306-3968. DOI: 10.1177/0306396814556224. (Visited on 10/29/2024).

[5] Angela Nickerson et al. "The Association between Visa Insecurity and Mental Health, Disability and Social Engagement in Refugees Living in Australia". In: *European Journal of Psychotraumatology* (Dec. 2019). ISSN: 2000-8198. (Visited on 10/29/2024).

[6] Francesco Bevione et al. "Risk of Suicide and Suicidal Behavior in Refugees. A Meta-Review of Current Systematic Reviews and Meta-Analyses". In: *Journal of Psychiatric Research* 177 (Sept. 2024), pp. 287–298. ISSN: 0022-3956. DOI: 10.1016/j.jpsychires.2024.07.024. (Visited on 10/29/2024).

[7] Maria Sundvall et al. "Assessment and Treatment of Asylum Seekers after a Suicide Attempt: A Comparative Study of People Registered at Mental Health Services in a Swedish Location". In: *BMC Psychiatry* 15.1 (Dec. 2015), p. 235. ISSN: 1471-244X. DOI: 10.1186/s12888-015-0613-8. (Visited on 10/29/2024).

[8] M. von Werthern et al. "The Impact of Immigration Detention on Mental Health: A Systematic Review". In: *BMC Psychiatry* 18.1 (Dec. 2018), p. 382. ISSN: 1471-244X. DOI: 10.1186/s12888-018-1945-y. (Visited on 10/29/2024).

[9] Kyli Hedrick et al. "Self-Harm in the Australian Asylum Seeker Population: A National Records-Based Study". In: *SSM - Population Health* 8 (Aug. 2019), p. 100452. ISSN: 23528273. DOI: 10.1016/j.ssmph.2019.100452. (Visited on 10/29/2024).

[10] Global Detention Project. *United Kingdom Immigration Detention Profile*. https://www.globaldetentionproject.org/countries/europe/united-kingdom. 2024. (Visited on 11/02/2024).

[11] Vladeta Ajdacic-Gross et al. "Methods of Suicide: International Suicide Patterns Derived from the WHO Mortality Database". In: *Bulletin of the World Health Organization* 86.9 (June 2008), p. 726. DOI: 10.2471/BLT.07.043489. (Visited on 10/29/2024).

[12] Antony Hsieh et al. "Trends and Clinical Features of Intentional and Accidental Adult Foreign Body Ingestions in the United States, 2000 to 2017". In: *Gastrointestinal Endoscopy* 91.2 (Feb. 2020), 350–357.e1. ISSN: 0016-5107, 1097-6779. DOI: 10.1016/j.gie.2019.09.010. (Visited on 11/02/2024).

[13] Renee Palta et al. "Foreign-Body Ingestion: Characteristics and Outcomes in a Lower Socioeconomic Population with Predominantly Intentional Ingestion." In: *Gastrointestinal endoscopy* 69.3 Pt 1 (Mar. 2009), pp. 426–433. ISSN: 1097-6779 0016-5107. DOI: 10.1016/j.gie.2008.05.072.

[14] Michael Birk et al. "Removal of Foreign Bodies in the Upper Gastrointestinal Tract in Adults: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline". In: *Endoscopy* 48.05 (Feb. 2016), pp. 489–496. ISSN: 0013-726X, 1438-8812. DOI: 10.1055/s-0042-100456. (Visited on 11/08/2024).

[15] Steven O. Ikenberry et al. "Management of Ingested Foreign Bodies and Food Impactions". In: *Gastrointestinal Endoscopy* 73.6 (June 2011), pp. 1085–1091. ISSN: 00165107. DOI: 10.1016/j.gie.2010.11.010. (Visited on 11/18/2024).

[16] Melanie Vujkovic. "The Suffering of Omid: How a Burns Victim Died despite Injuries That Were 'Very Survivable'". In: *ABC News* (Mar. 2019). (Visited on 10/29/2024).

[17] Dinesh Bhugra, Thomas K. J. Craig, and Kamaldeep Bhui. *Mental Health of Refugees and Asylum Seekers*. OUP Oxford, Aug. 2010. ISBN: 978-0-19-955722-6.

[18] Elisa Haase et al. "Prevalence of Suicidal Ideation and Suicide Attempts among Refugees: A Meta-Analysis". In: *BMC Public Health* 22.1 (Apr. 2022), p. 635. ISSN: 1471-2458. DOI: 10.1186/s12889-022-13029-8. (Visited on 10/29/2024).

[19] Kyli Hedrick and Rohan Borschmann. "Self-Harm among Unaccompanied Asylum Seekers and Refugee Minors: Protocol for a Global Systematic Review of Prevalence, Methods and Characteristics". In: *BMJ Open* 13.6 (June 2023), e069237. ISSN: 2044-6055, 2044-6055. DOI: 10.1136/bmjopen-2022-069237. (Visited on 10/29/2024).

[20] Raffaela Puggioni. "Speaking through the Body: Detention and Bodily Resistance in Italy". In: *Citizenship Studies* 18.5 (July 2014), pp. 562–577. ISSN: 1362-1025. DOI: 10.1080/13621025.2014.923707. (Visited on 10/29/2024).

[21] Joyce G. Karp, Laura Whitman, and Antonio Convit. "Intentional Ingestion of Foreign Objects by Male Prison Inmates". In: *Hospital & Community Psychiatry* 42.5 (May 1991), pp. 533–535. ISSN: 0022-1597.

[22] J. E. Losanoff and K. T. Kjossev. "Gastrointestinal Crosses". A New Shade from an Old Palette." In: *Archives of surgery (Chicago, Ill. : 1960)* 131.2 (Feb. 1996), pp. 166–169. ISSN: 0004-0010. DOI: 10.1001/archsurg.1996.01430140056015.

[23] S. T. O'Sullivan et al. "Deliberate Ingestion of Foreign Bodies by Institutionalised Psychiatric Hospital Patients and Prison Inmates." In: *Irish journal of medical science* 165.4 (1996 Oct-Dec), pp. 294–296. ISSN: 0021-1265. DOI: 10.1007/BF02943095.

[24] Benjamin Abraham and Adekola O. Alao. "An Unusual Foreign Body Ingestion in a Schizophrenic Patient: Case Report." In: *International journal of psychiatry in medicine* 35.3 (2005), pp. 313–318. ISSN: 0091-2174. DOI: 10.2190/7AE8-3AV0-W3UA-TKV4.

[25] Alexander R. Robertson. "Self-harm by Sharp Foreign Body Ingestion". In: *Suicide and Life-Threatening Behavior* 49.3 (June 2019), pp. 735–738. ISSN: 0363-0234. DOI: 10.1111/sltb.12474.

[26] Samuel Tromans et al. "Deliberate Ingestion of Foreign Bodies as a Form of Self-Harm among Inpatients within Forensic Mental Health and Intellectual Disability Services". In: *Journal of Forensic Psychiatry & Psychology* 30.2 (Apr. 2019), pp. 189–202. ISSN: 1478-9949. DOI: 10.1080/14789949.2018.1530287.

[27] Firas Shaker Mahmoud Al-Faham and Samer Makki Mohamed Al-Hakkak. "The Largest Esophageal Foreign Body in Adults: A Case Report." In: *Annals of medicine and surgery (2012)* 54 (June 2020), pp. 82–84. ISSN: 2049-0801. DOI: 10.1016/j.amsu.2020.04.039.

[28] Ioannis Pantazopoulos et al. "Intentional Ingestion of Batteries and Razor Blades by a Prisoner: A True Emergency?" In: *International Journal of Prisoner Health* 18.3 (2022), pp. 316–322. ISSN: 1744-9200. DOI: 10.1108/IJPH-06-2021-0054.

[29] Guy Aitchison and Ryan Essex. "Self-Harm in Immigration Detention: Political, Not (Just) Medical". In: *Journal of Medical Ethics* 50.11 (Nov. 2024), pp. 786–793. ISSN: 0306-6800, 1473-4257. DOI: 10.1136/jme-2022-108366. (Visited on 10/29/2024).

[30] Matthew J Page et al. "The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews". In: *BMJ* (Mar. 2021), n71. ISSN: 1756-1833. DOI: 10.1136/bmj.n71. (Visited on 12/10/2024).

[31] Francis Mading Deng, UN Representative of the Secretary-General on Internally Displaced Persons, and UN Office for the Coordination of Humanitarian Affairs. *Guiding Principles on Internal Displacement*. Tech. rep. UN Doc E/CN.4/1998/53/Add.2. United Nations Commission on Human Rights, Feb. 1998. (Visited on 03/31/2025).

A Appendix A - Keywords and MeSH Terms

A.1 PubMed

A.2 Embase

A.3 Cochrane (CENTRAL)

A.4 Web of Science

A.5 Scopus

A.6 PsycINFO

A.7 Google Scholar

B Appendix B - Search Strategy