

Self-harm and Attempted Suicide by Inpatients

Professor Len Bowers

**Karen James, Duncan Stewart,
Ben Thomas, Noreen Gul**

Overview

- Literature review on inpatient suicide
- Prevented inpatient suicide
- Self-harm by inpatients in England

Systematic review of the literature

- Method:
 - Electronic search of the databases (PsycInfo, Cochrane, Medline, EMBASE Psychiatry, CINAHL and the British Nursing Index)
 - Search terms suicide and (inpatient or hospital) and (psychiatr* or mental*)
 - In English, German or Dutch
 - Post 1960
- Result: 98 papers reporting empirical studies

Methodologies of the suicide studies

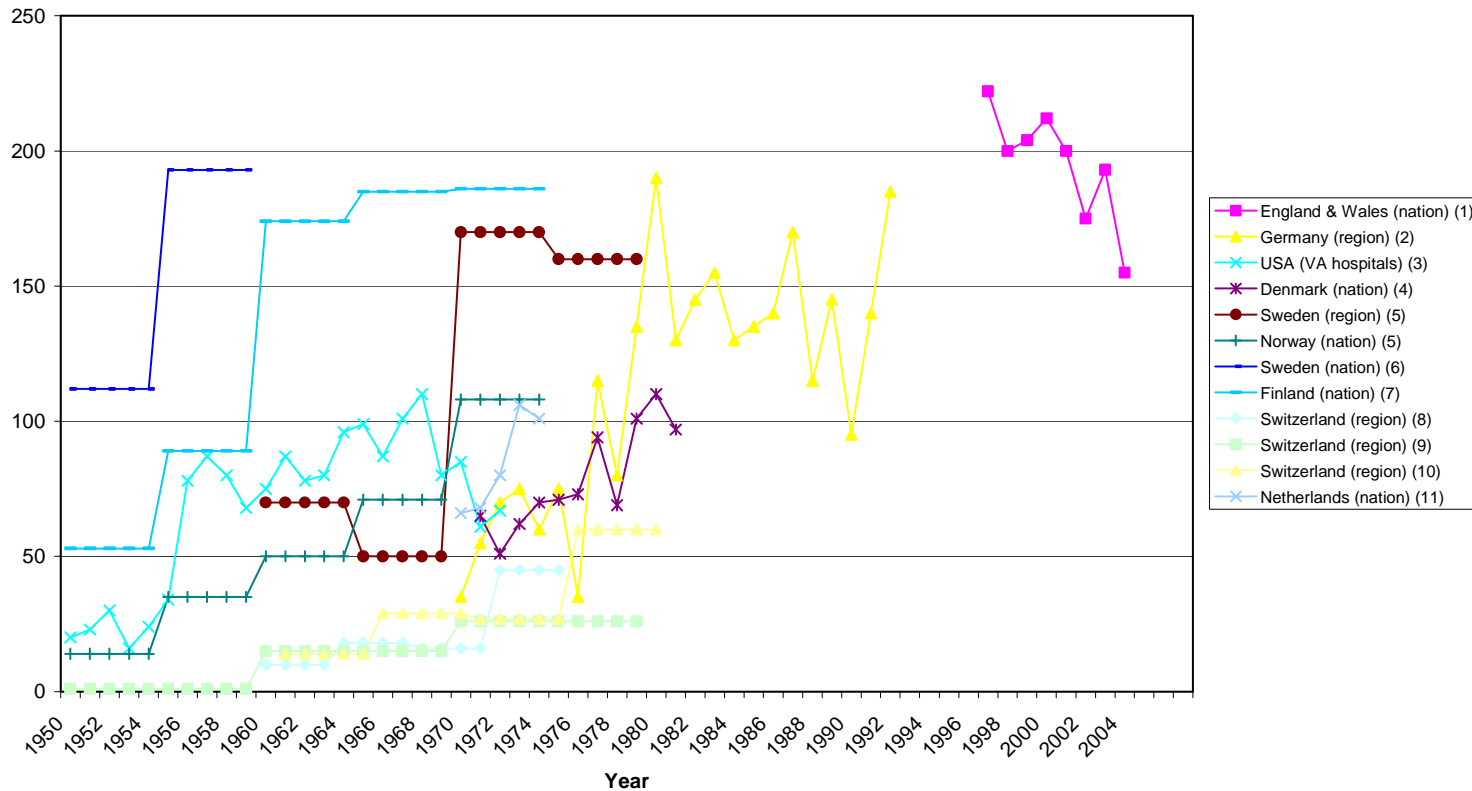
- Retrospective descriptive analyses of past suicides (36)
- Longitudinal (trends over time or clustering) (28)
- Case control (30)
 - Matched populations varied from all other patients to matching on multiple criteria
 - Statistical sophistication varied with early papers giving on univariate analyses and later ones multivariate
- Qualitative studies, including one book (14)
- Studies were conducted in 17 countries, with the highest outputs from the USA (21), Germany (20) and the UK (17)
- Sample sizes varied from small (10-20 suicides) to very large (many hundreds in national datasets).
- Scope of the studies varied from international to single hospitals, within different health care policy settings & eras

How many inpatient suicides?

- The rate of inpatient suicide per 1000 admissions can vary hugely between different reports, ranging from 0.01 in one region of Germany in the 1960s, to 5.66 in the USA during the same time period
- The rate of inpatient suicide per 100,000 head of population per year ranges from 0.28 to 2.8
- The rate of inpatient suicide as a proportion of all suicides ranges from 0.01 to 0.15.
- None of these figures show much stability or commonality, therefore rates are strongly determined by social and service organisation factors.
- England and Wales data indicates an average acute ward will encounter a suicide once every 3 - 4 years

Change over time

Raw suicide numbers by year



Suicide and staff variables

- Three small sample retrospective studies show an association with negative and rejecting attitudes by staff, but two did not.
- One large case control study showed no difference in evidence for a poor staff/patient relationship between cases and controls
- Qualitative studies of suicide clusters indicate a link between staff turnover and suicide
- This is supported by a longitudinal study, but two case control studies give opposite results
- Qualitative studies suggest a link between staff demoralisation and patient suicide, but this could be in either direction

Patient demography

- Three case control studies found suicides to be significantly younger, whereas 16 found no difference
- The majority of studies show that male inpatient suicides are more frequent than female, however most case control studies found no differences between cases and controls.
- Most case control studies found no difference by marital status, but three found suicides were less likely to be married.
- Seven case control studies showed no association between employment status and inpatient suicide, with one study showing suicides were more likely to be unemployed and two showing suicides were less likely to be unemployed.
- Those case control studies which have explored educational qualifications with only one exception have found no connection with suicide.
- Overall, the evidence suggests that age, gender, marital status, employment and educational qualifications are not generally associated with inpatient suicide.

Diagnosis

- Overall ten descriptive studies showed more sufferers of schizophrenia than affective disorder amongst inpatient suicides, and 17 the reverse.
- Case control studies also show differing results, with nine showing suicide more likely amongst patient suffering from schizophrenia, seven affective disorder, and in three of these studies both diagnoses were significantly associated with suicide.
- In only one small case control study was schizophrenia inversely associated with suicide.
- Conclusion: both groups of patients are at risk of suicide

Symptoms and suicide

- Seven case control studies have found depressive symptoms (as opposed to formal diagnoses) are more common among inpatient suicides.
- For schizophrenia suicides, diametrically opposite results in relation to insight and negative symptoms have been found, however two studies agree in finding fewer positive symptoms among the suicide cases.
- Conclusion: depressive symptoms are an indicator of suicide risk, regardless of diagnosis.

Previous self-harm or suicide attempt

- There is robust support from case control studies for a strong association between previous suicidal behaviour and inpatient suicide
- Every one of the 14 case control studies testing for this variable found a statistically significant result.
- High levels of previous self-harm are also noted in retrospective descriptive studies, with the frequency of previous suicidal behaviour ranging from 43% to 75% in suicide cases, with a mean of 60% across studies.
- Odds ratios for previous suicidal behaviour compared to non-suicide controls are in the range of 3.6 to 14.3, and the link seems to be stronger for suicidal behaviour in association with the current admission.

Interactions between features of inpatient suicides

- There is evidence for intersecting subgroup differences in relation to age gender and diagnosis. Profiles and risk indicators may differ.
- Affective disorder patients more likely to commit suicide at earlier stages of their stay, schizophrenia patients have more family problems in relation to living at home.
- Male inpatient suicides use more violent means, are more likely to be single, less educated, unemployed and younger
- Depressed suicides are older, more likely to be living with a partner, more likely to be capable of working and less likely to have had previous admissions

Suicide clusters (epidemics)

- Community studies do find a clustering/contagion effect
- Of nine inpatient studies, only one finds the cluster significant (one other does not, and the rest apply no test)
- Only one study has examined a large dataset for clusters, finding no significant result
- Two main mechanisms are suggested:
 - patients copy each other (good evidence provided)
 - decreases in staff competence/confidence secondary to organisational change (but why aren't there clusters whenever these occur?)

Method, timing and location

- Methods used reflect access to the means: tall buildings, mountains, open water, railways, metro systems, etc. Hanging frequent within the hospital.
- Some evidence of early morning and/or evening/night clustering.
- No difference by day of the week (when weekend leave patients excluded).
- Suicides more likely early in an admission, but risk declines more slowly for people with schizophrenia.
- 40% of suicides take place during agreed leave, 27% following absconding, and 33% within the hospital

Suicides during agreed leave (40%)

- Patients who committed suicide on leave were (compared to other inpatient suicides): less likely to be unemployed, or homeless, or have a history of violence, or alcohol or drug use, be considered an immediate suicide risk, be detained under the mental health act, or die during the first week of admission; and were more likely to be living alone and to die during a period when discharge was being planned.
- Only one specific study of leave suicides: most of the suicides took place in patients' homes, and the majority (79%) were confronted with emotional conflicts with spouse, parents or children during their leave.
- Conclusion: both patients living alone and those with conflict ridden family relationships are at risk

Suicides during an abscond (27%)

- About 25% of abscond suicides do not take place immediately, offering scope for prevention through absconding reduction
- Patients who committed suicide during an abscond were (as compared to other inpatient suicides): more likely to suffer from schizophrenia or other delusional disorders, and more likely to have been noncompliant in the previous month.

Locked ward doors

- All nine descriptive studies reporting this item showed that suicides were prevalent on locked as well as open wards.
- It is unclear whether locking the door makes no difference to the rate of abscond suicides, or whether it simply increases the proportion of suicides occurring on the ward itself.
- Ernst Swiss studies:
 - A longitudinal study covering one hospital from 1900-1977 reported a rise in suicide rates, credited this to the co-occurring opening of wards, showing that the proportion of the total inpatient suicides occurring inside the hospital declined over the period.
 - A follow up study, 1960-80, patient freedoms declined in the final five years whilst suicides tripled
- In a natural experiment, one psychiatric hospital opened the doors of the wards and found no increase in suicide comparing the five years before with the five years after
- One German case control study of 64 suicides and 64 control patients found open ward patients were no more likely to commit suicide than locked ward patients.
- Conclusion: the preponderance of evidence is therefore that locking the ward door has no effect on inpatient suicide rates, and ward doors can safely be left open.

Summary and recommendations for clinical practice

- There is no need to lock the ward doors, unless there are exceptional circumstances
- An anti-absconding intervention may reduce the risk of some impulsive suicides
- Agreed leave should be given cautiously when the patient lives alone or has family conflicts
- Inpatient treatment should include work with families
- Support should be provided for patients on leave
- As much attention should be given to suicide risk in patients with schizophrenia as those with affective disorder
- Access to the means is important: remove ligature points, search patients' property, banning items such as sharp instruments, observing patients for hoarding of tablets, etc. This should be undertaken with due attention to local traditions and recently successfully used suicide methods, to prevent copycat events.

Summary and recommendations for research

- The most reliably identified risk indicators are previous self-harm, and depressive symptoms. But these are too ubiquitous to be of real clinical utility.
- Inpatient suicides are heterogeneous. A number of subgroups exist in relation to diagnosis, demography, location of suicide, etc., and these need to be identified in detail and studied separately.
- Generic case control studies are not delivering consistent findings, and should be abandoned in favour of separate analyses of differing subgroups.
- Much more use could be made of qualitative cross case analysis, especially if coupled with quantitative approaches in mixed method designs.
- Even the relatively cheap and easily applied method of retrospective descriptive analysis suicide cases could be considerably improved, and yield new knowledge on subgroup differences.
- Longitudinal studies could be conducted in far more sophisticated ways, and the national datasets available in some countries have not yet been thoroughly exploited for what they can teach us.

Learning from prevented inpatient suicide

To discover the interventions which prevent completion of attempted suicide in psychiatric inpatient care.

The data

- 602 reports of attempted suicide from the NPSA
- Between 01st January 2009 and 31st December 2009
- In mental health inpatient units
- Included only attempts made **on the ward**, and attempts made off the ward where the actions of ward staff prevented the suicide.

Coding the data

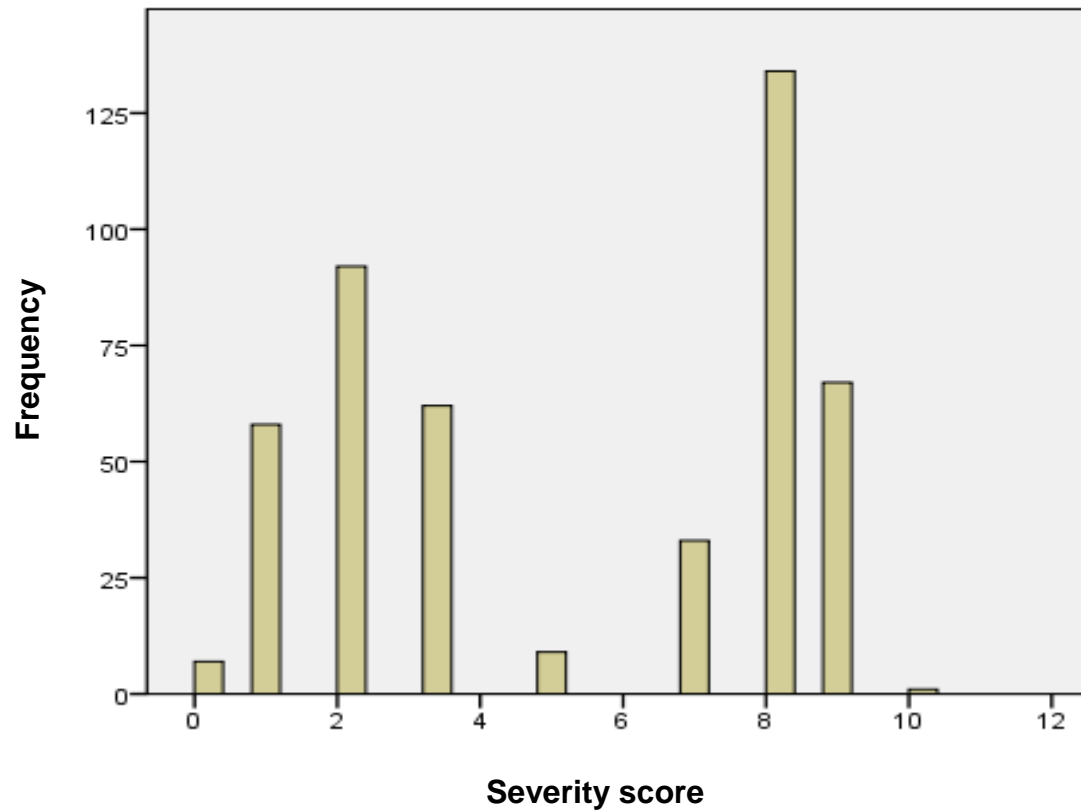
- NPSA data: Demographics, time and place
- ‘Description of what happened’
 - Method
 - Detail of strangulation/suffocation
 - Location on ward
 - Objects used
 - Concealment strategies
 - **How the suicide was prevented**

Coding lethality

The Lethality of Suicide Attempt Rating Scale (Smith, Conroy and Ehler, 1984)

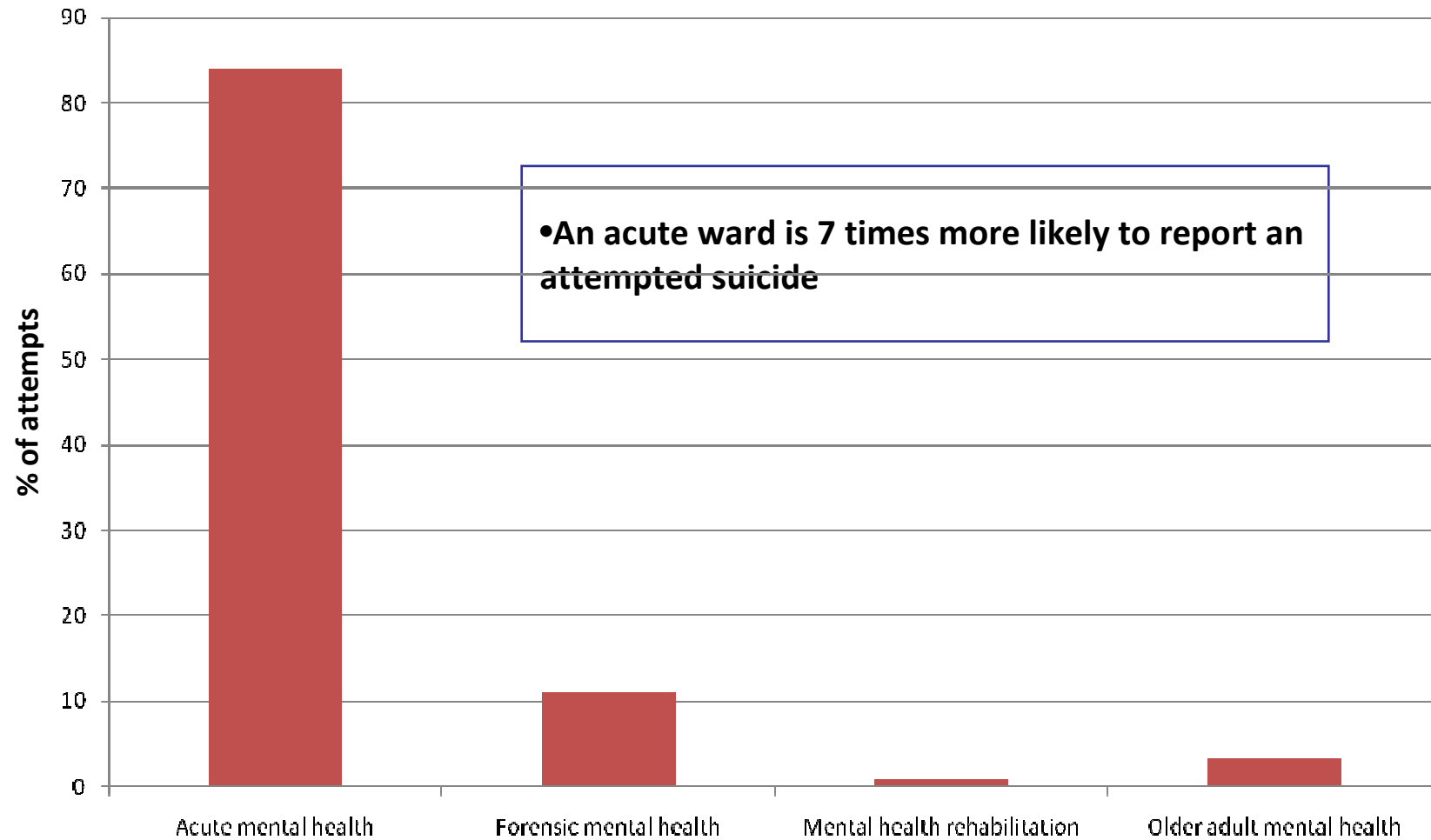
- 11 point scale of severity (0-10)
- Scores the **potential lethality** of the act
- The National Confidential Inquiry was consulted about the potential lethality of specific acts. www.medicine.manchester.ac.uk/psychiatry/
- TOXBASE was used to determine the lethal doses of medications and poisons used. www.toxbase.org/

Severity scores

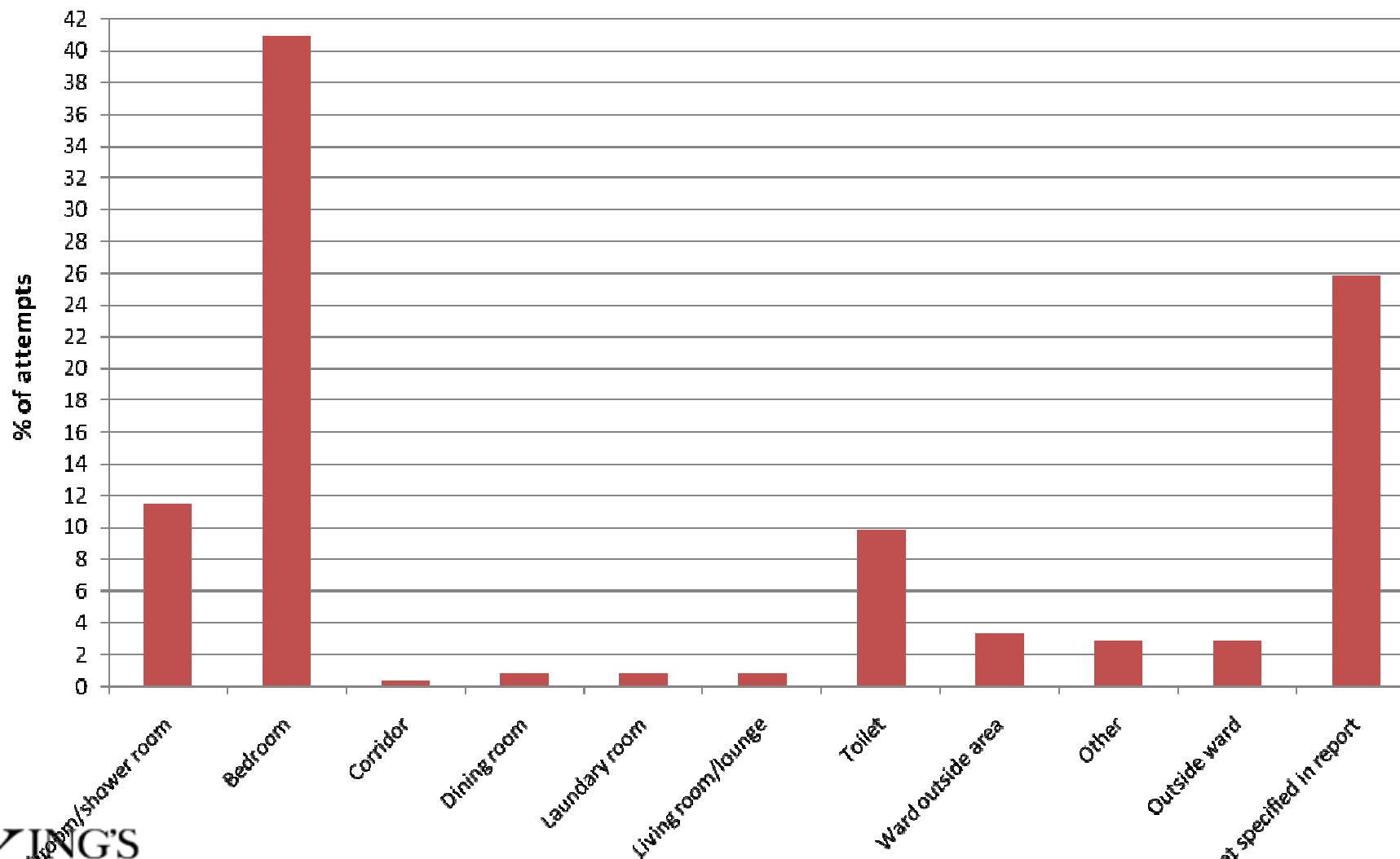


High severity = score of 5 or above (**n= 244**)

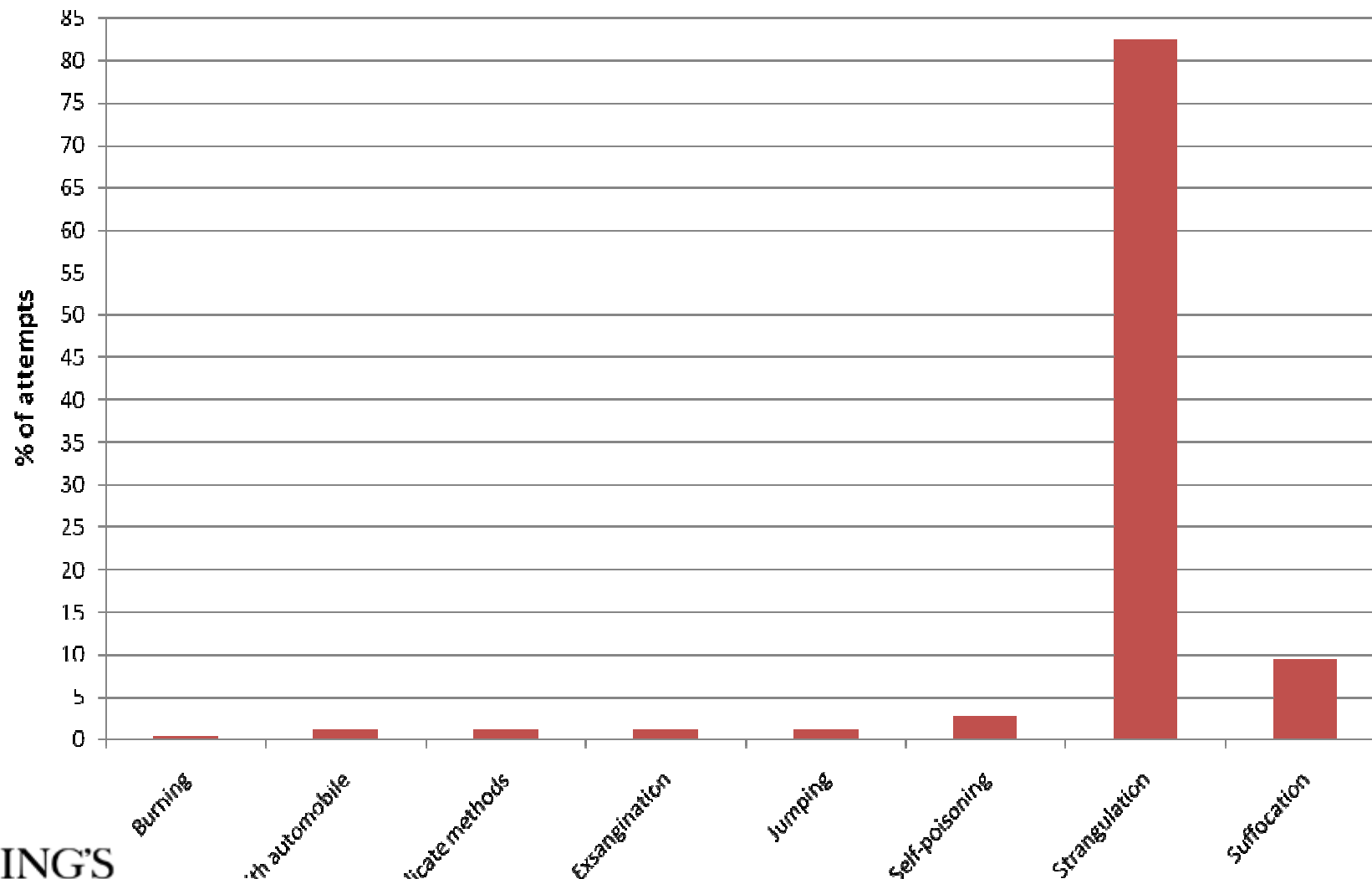
Type of ward



Location



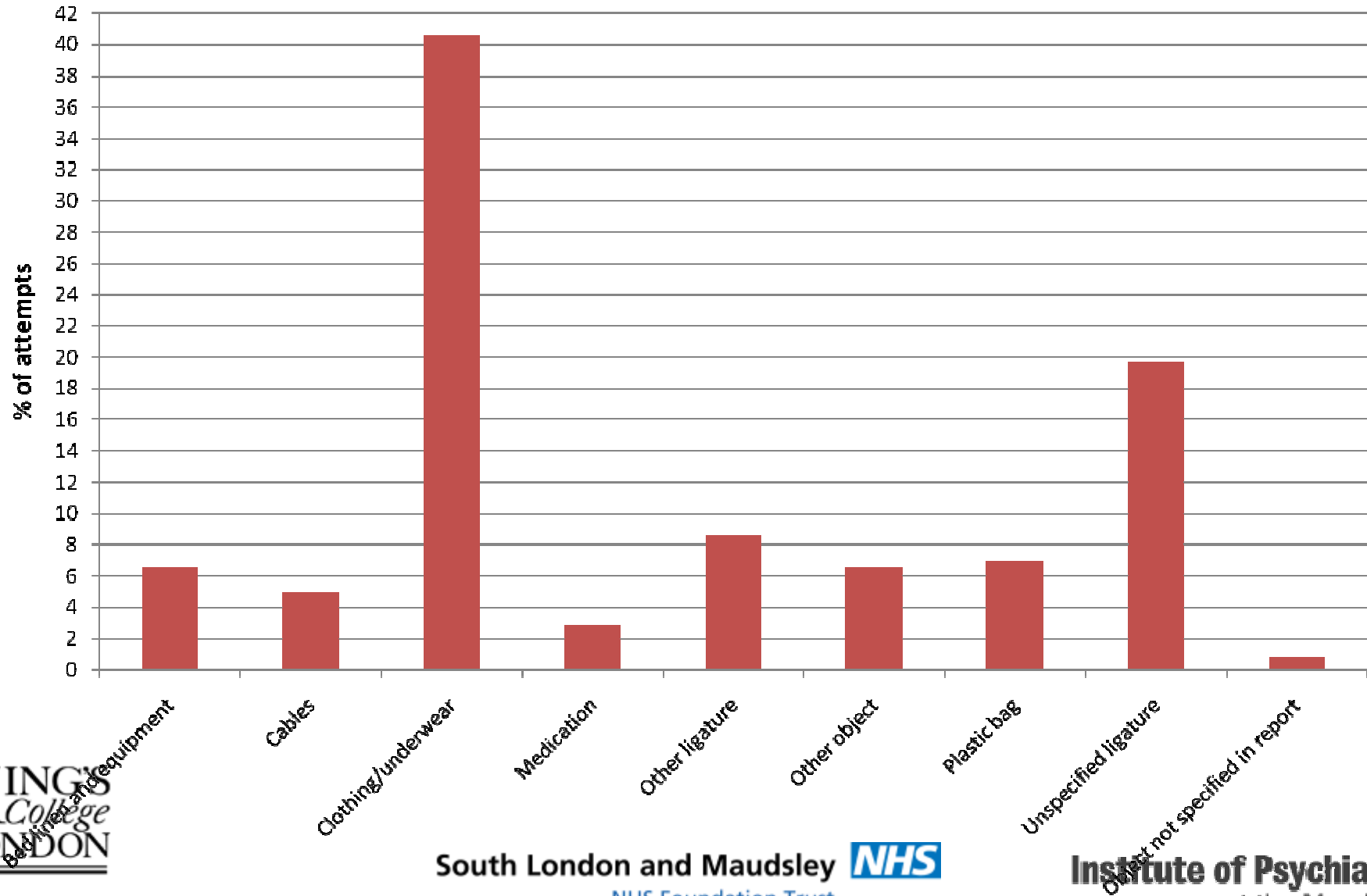
Method



Method of strangulation

Method	Frequency	%
Tied around neck	113	56
Attached to window	11	6
Secured over door	9	5
Attached to bed	6	3
Attached to bathroom rails	5	3
Attached to door handle	4	2
Attached to door hinge	4	2
Attached to ceiling	4	2

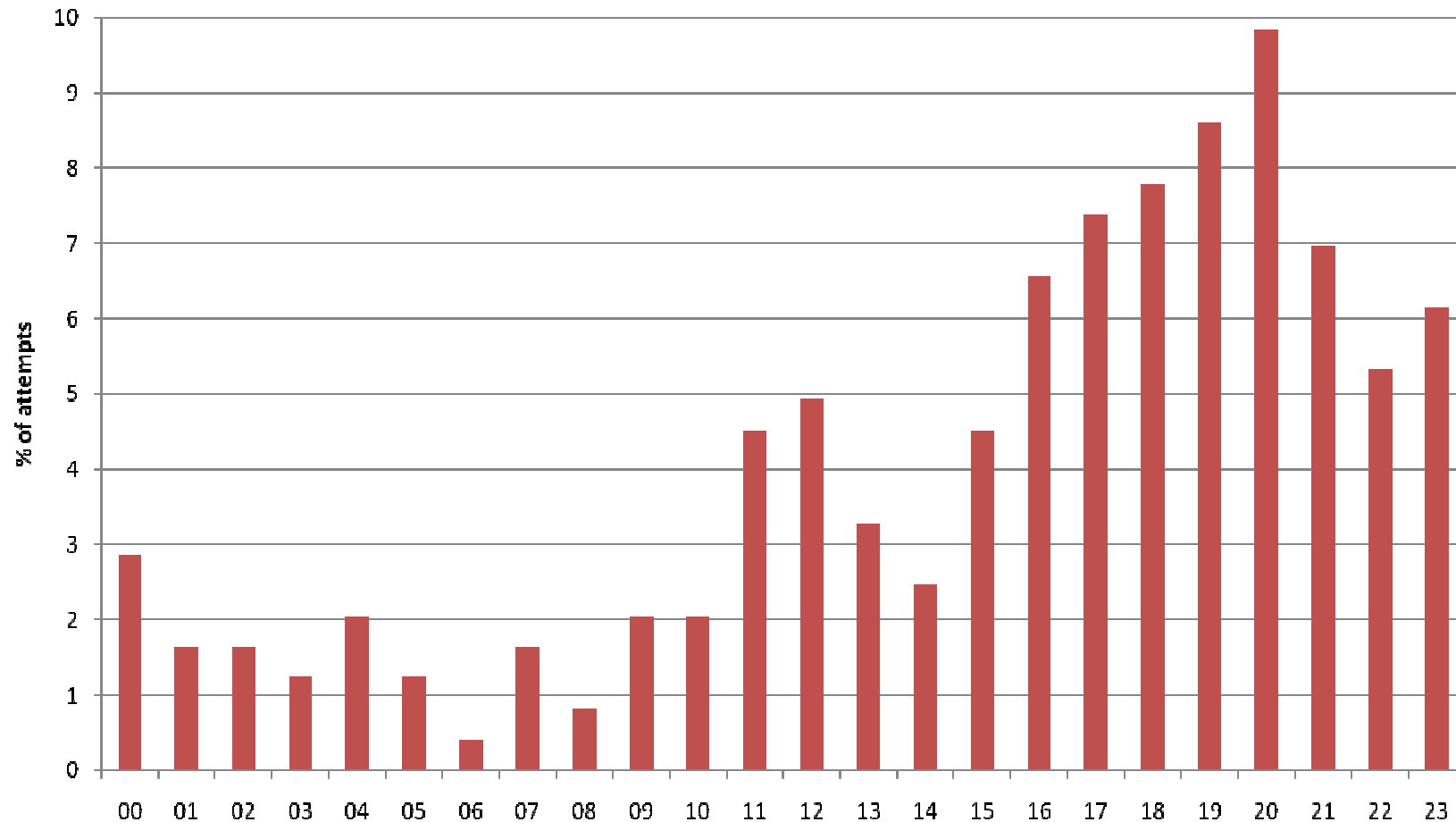
Object used



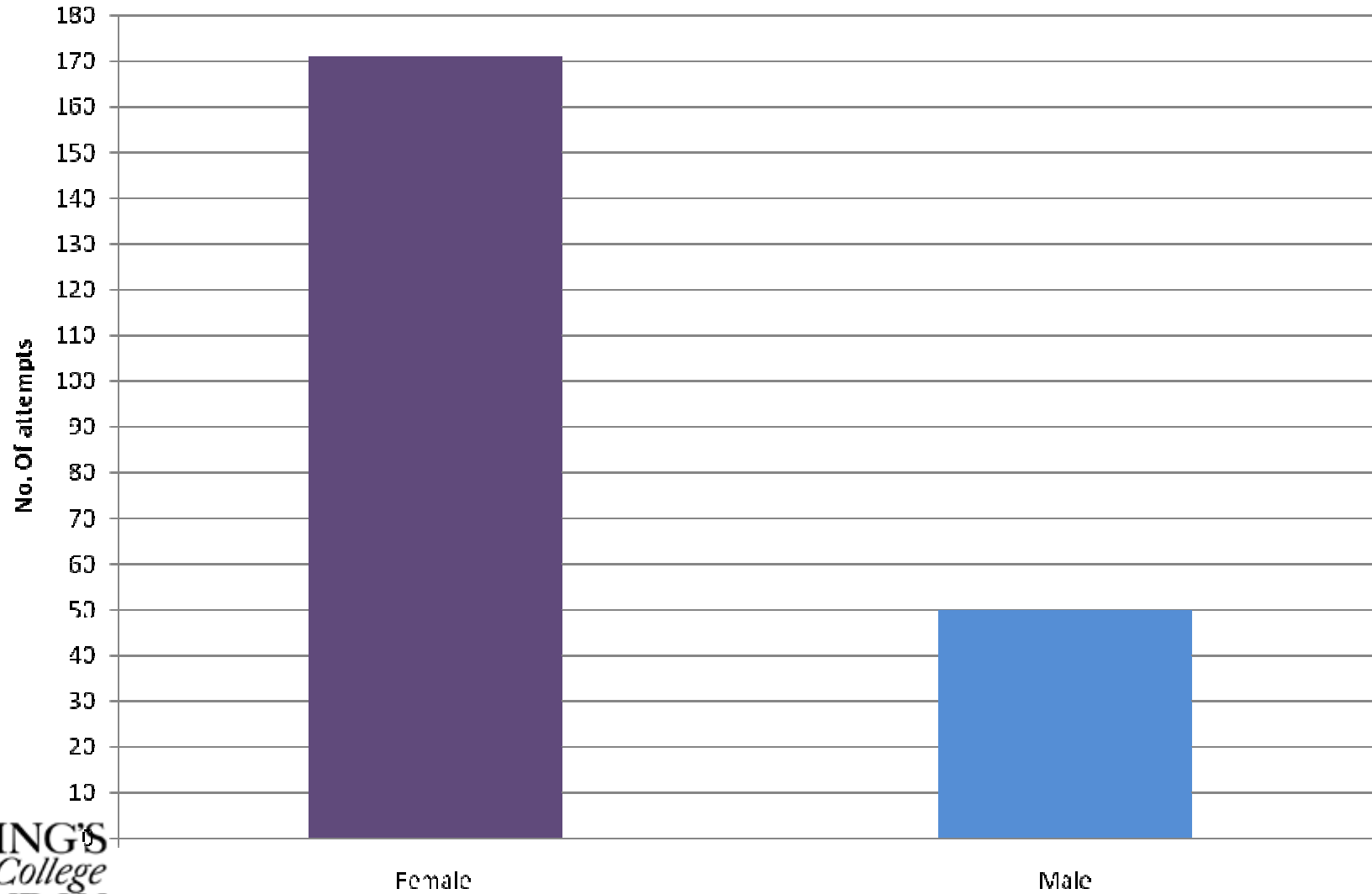
Objects used most frequently

Object	Frequency	%
Belt	26	11
Shoe lace	19	8
Plastic bag	16	7
Dressing gown cord	14	6
Bed sheet	11	5
Lace/cord	11	5
Towel	9	4

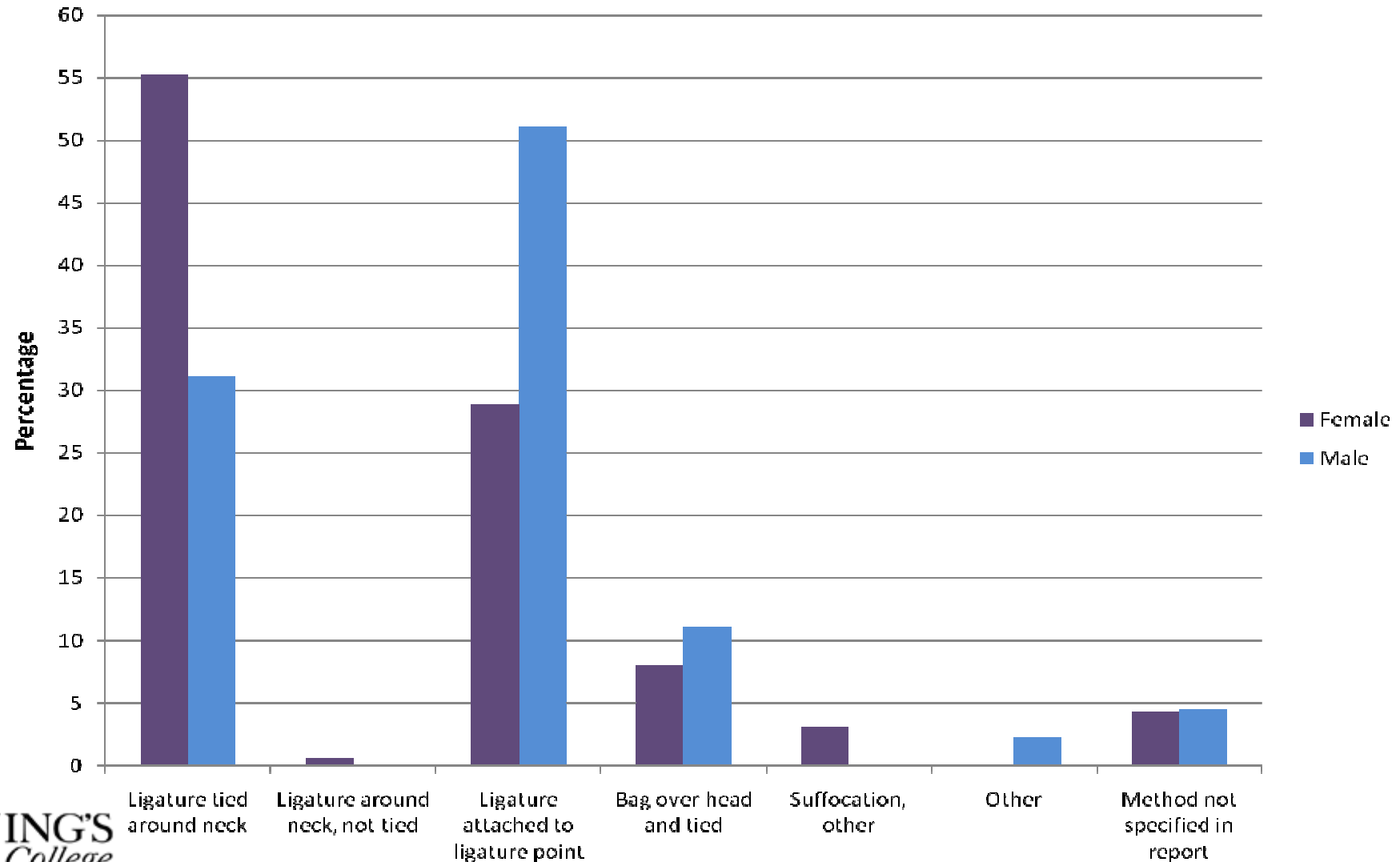
Time of day



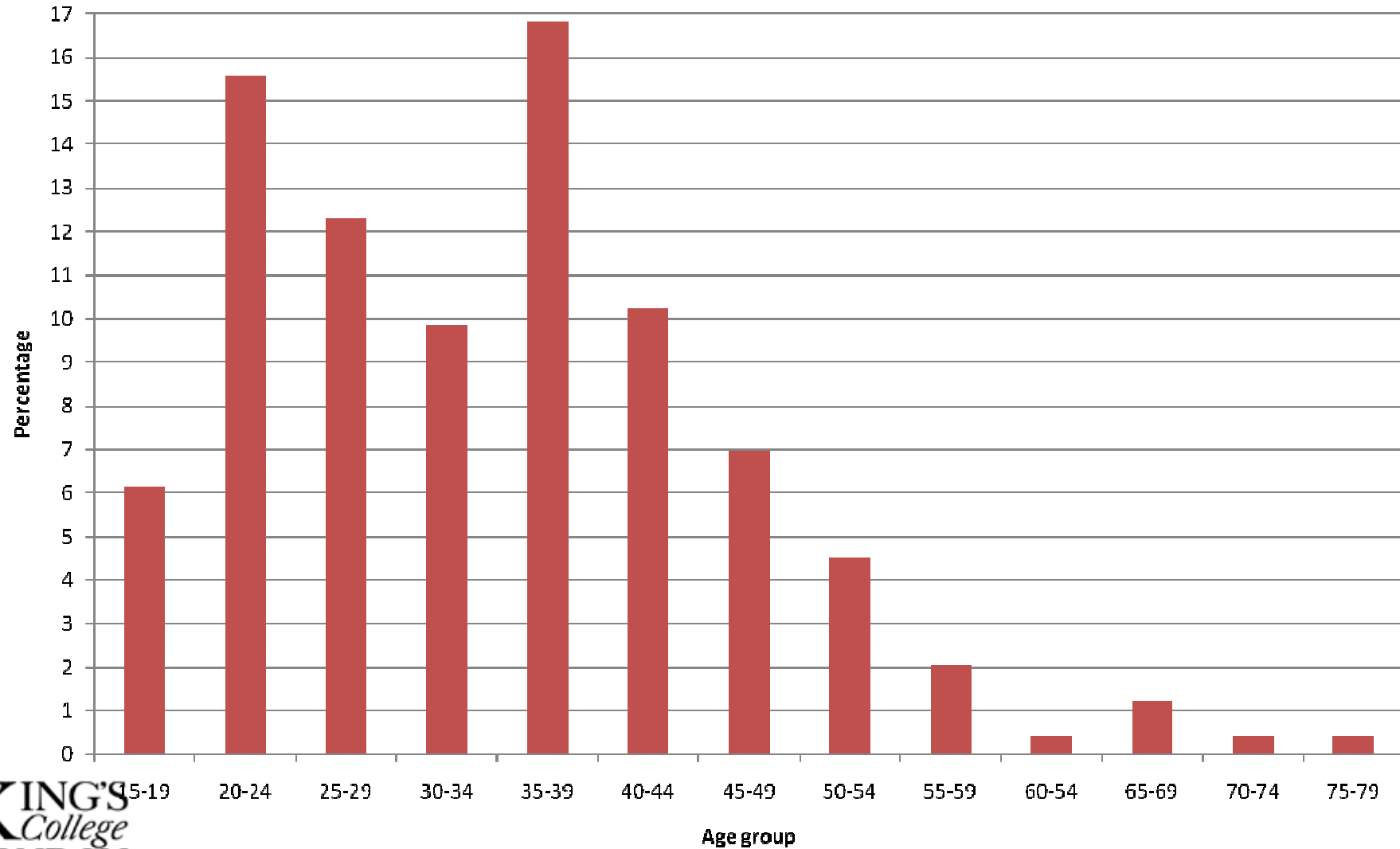
Gender



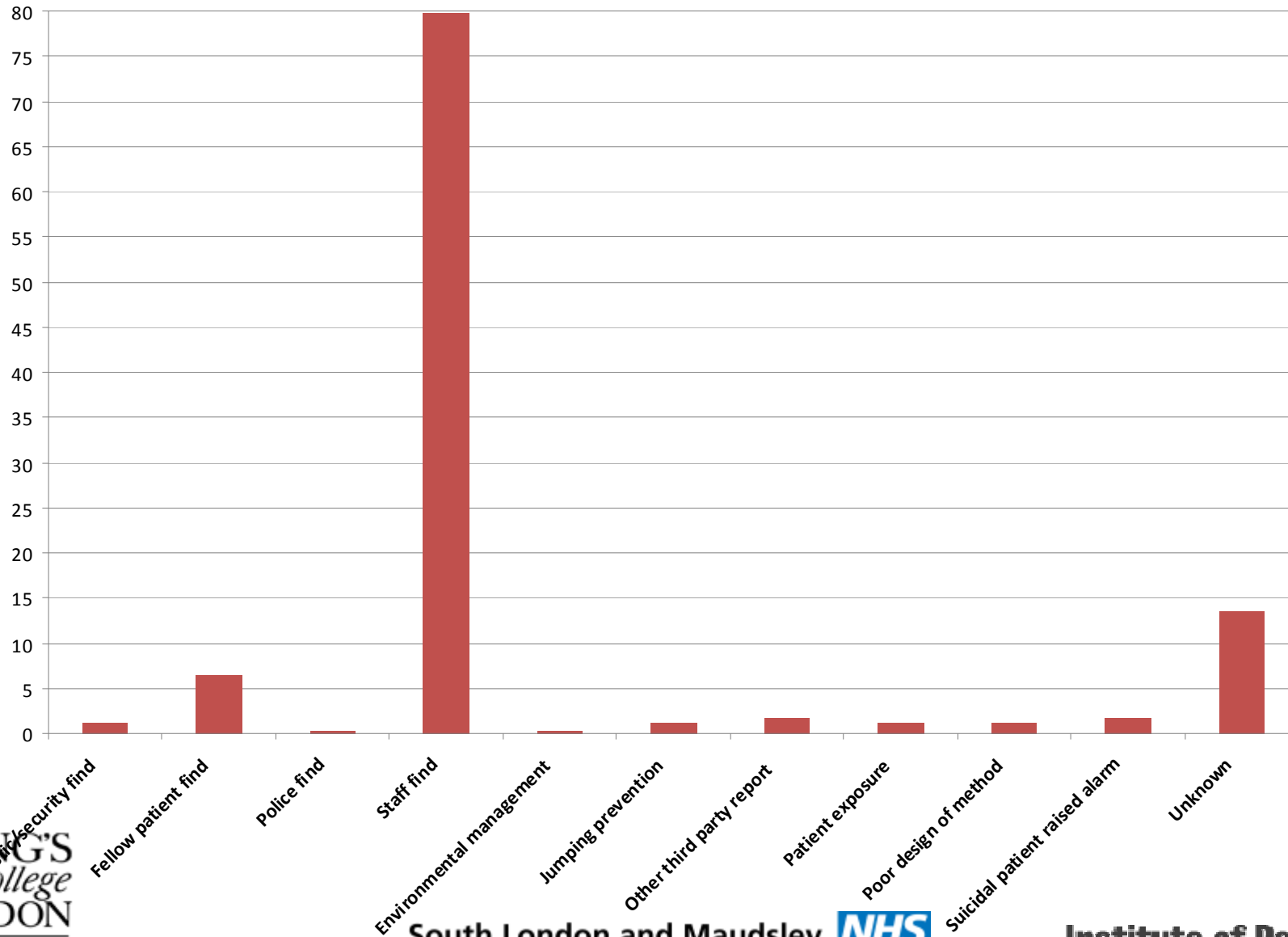
Method and gender



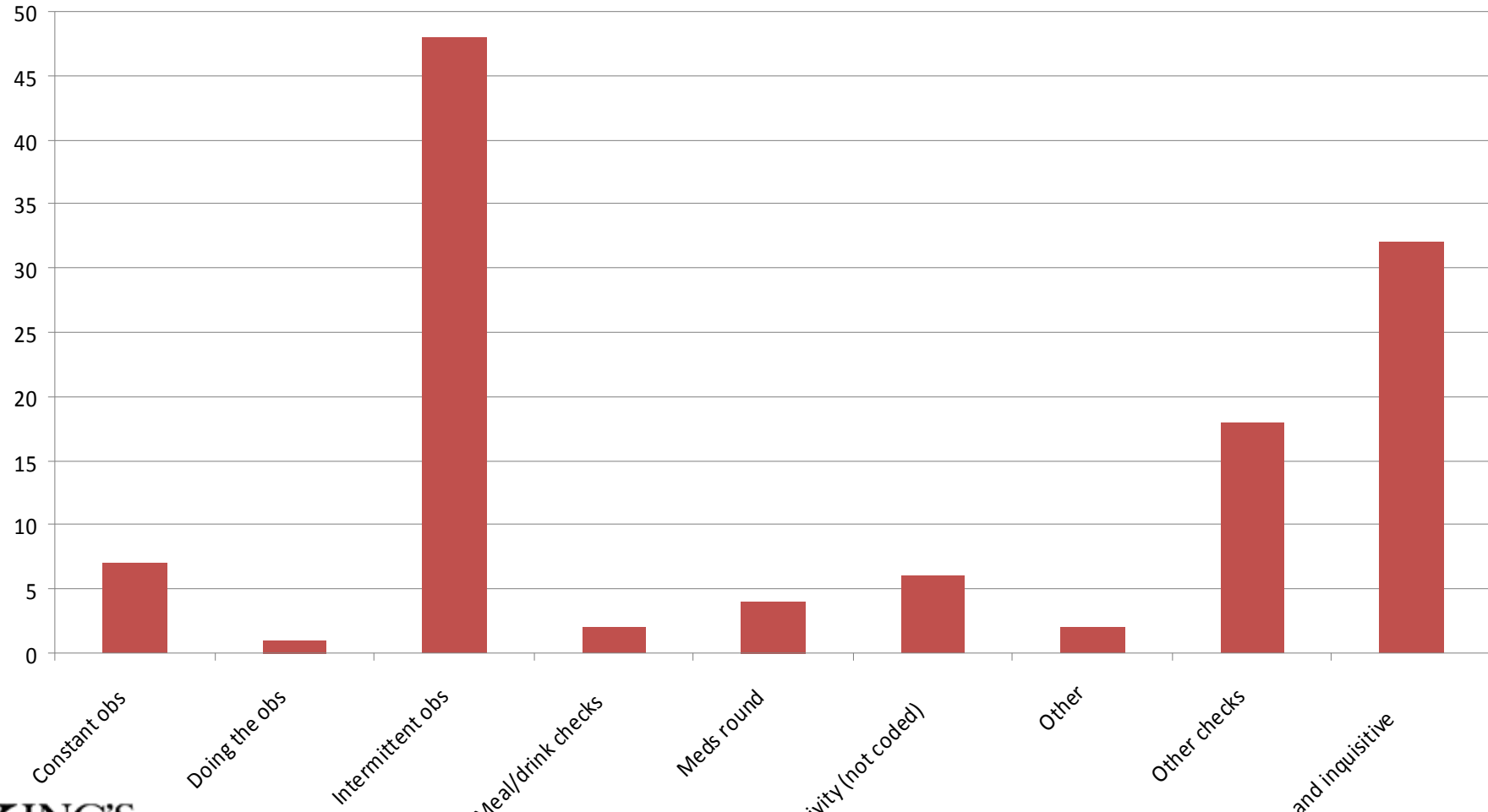
Age and severity



Preventative actions



How patients were found by staff



Caringly vigilant and inquisitive??

1. Noticing a patient's absence

“Staff became concerned when the patient was not in communal areas of ward. She was located in a toilet with a ligature tied tightly around her neck. She appeared to have lost consciousness, and was not breathing.”

2. Noticing that a patient appears physically ill

“A female patient came to the office and was observed to be dazed and pale in colour. The patient's bag was searched, there were empty packets of 32 tablets. She had taken the tablets as an overdose.”

3. Following a patient in distress

“The patient was in the garden and came up crying and ran into her bedroom. Staff were close behind and followed her in.”

4. Noticing that a patient is taking a long time in the toilet

“The patient went to the toilet and appeared to be taking a long time. Staff investigated & found she had formed a ligature from her bra.”

Caringly vigilant and inquisitive??

5. Noticing suspicious actions

“The patient was lying on her bed, she turned on her front and staff saw her elbow moving slightly . Staff stood over the patient to see what she was doing and saw a strap wrapped around her neck.”

6. Listening carefully to safety calls

“The client was in the toilets. Staff called out to client but did not feel happy with the response. On opening the toilet door, client was found with a pyjama top wrapped around her head.”

7. Responding to an unusual noise

“I heard rustling from patient’s bedspace, when I entered patient was lying on her bed with a plastic carrier bag over her head and attempting to tie it.”

Summary of main findings...

- The majority of attempts occurred in the bedroom
- The majority of patients attempted to take their own life by strangulation
- Suicide attempts were more likely to occur in the evening
- There were significant differences in the number of attempts for each month of the year
- More women than men attempted to take their own life by high risk methods
- The majority of attempts were stopped by the actions of staff
- Of these attempts most patients were found because of intermittent observations, or staff being caringly vigilant and inquisitive

Implications for practice

1. Increase checks:

- Don't stop using intermittent observations
- Increased checks in the evening and during handover
- Target bedrooms, bathrooms and toilets

2. Be awake, be aware, trust your instincts:

- Attend to obvious and subtle cues
- Check without hesitation

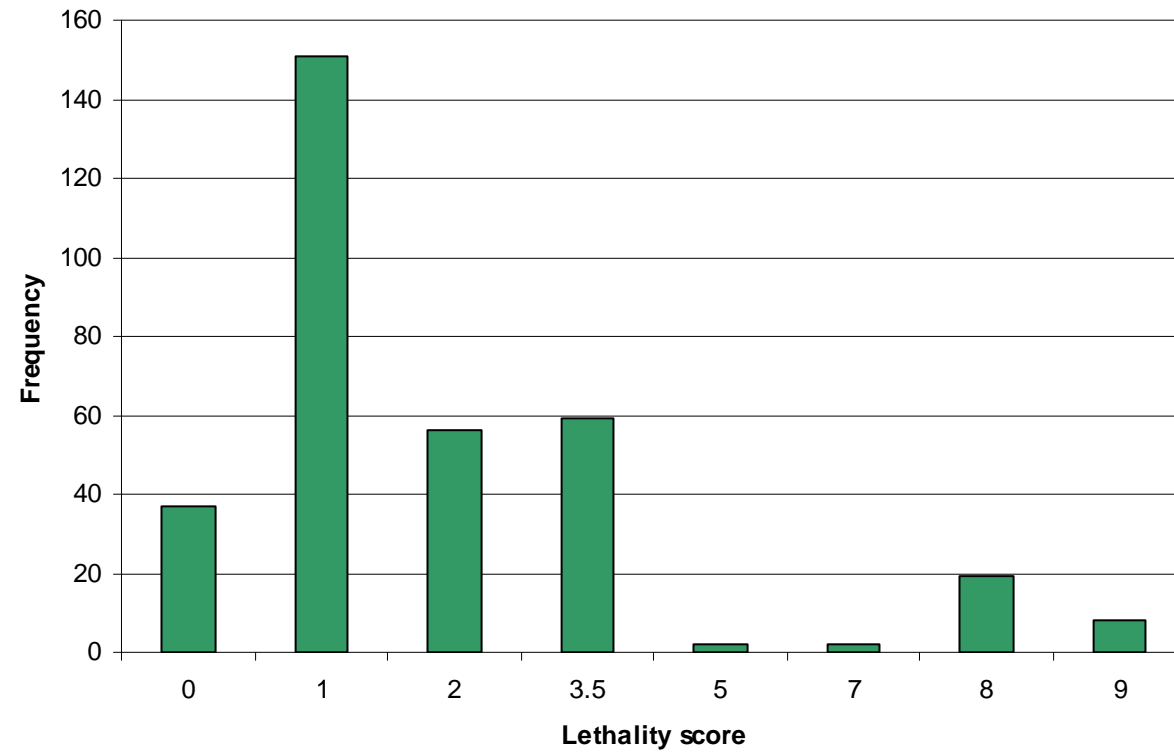
Self harm

To describe the nature, circumstances and outcome of self-harm by inpatients

Methods

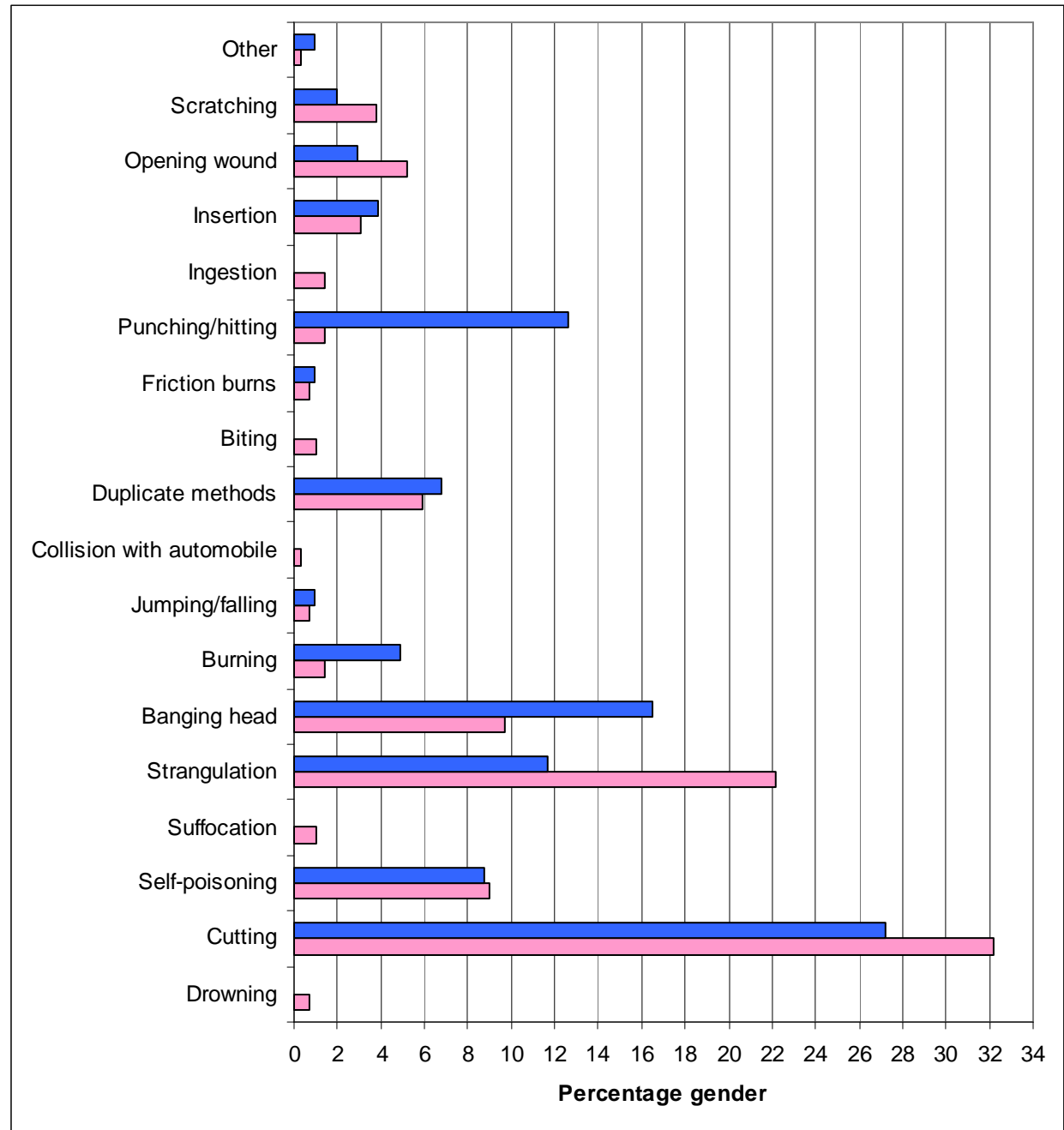
- 14, 271 reports of self harm during 2009, NPSA
 - Random sample of 500 reports of self harm
 - On the ward
- = 448 reports

Lethality

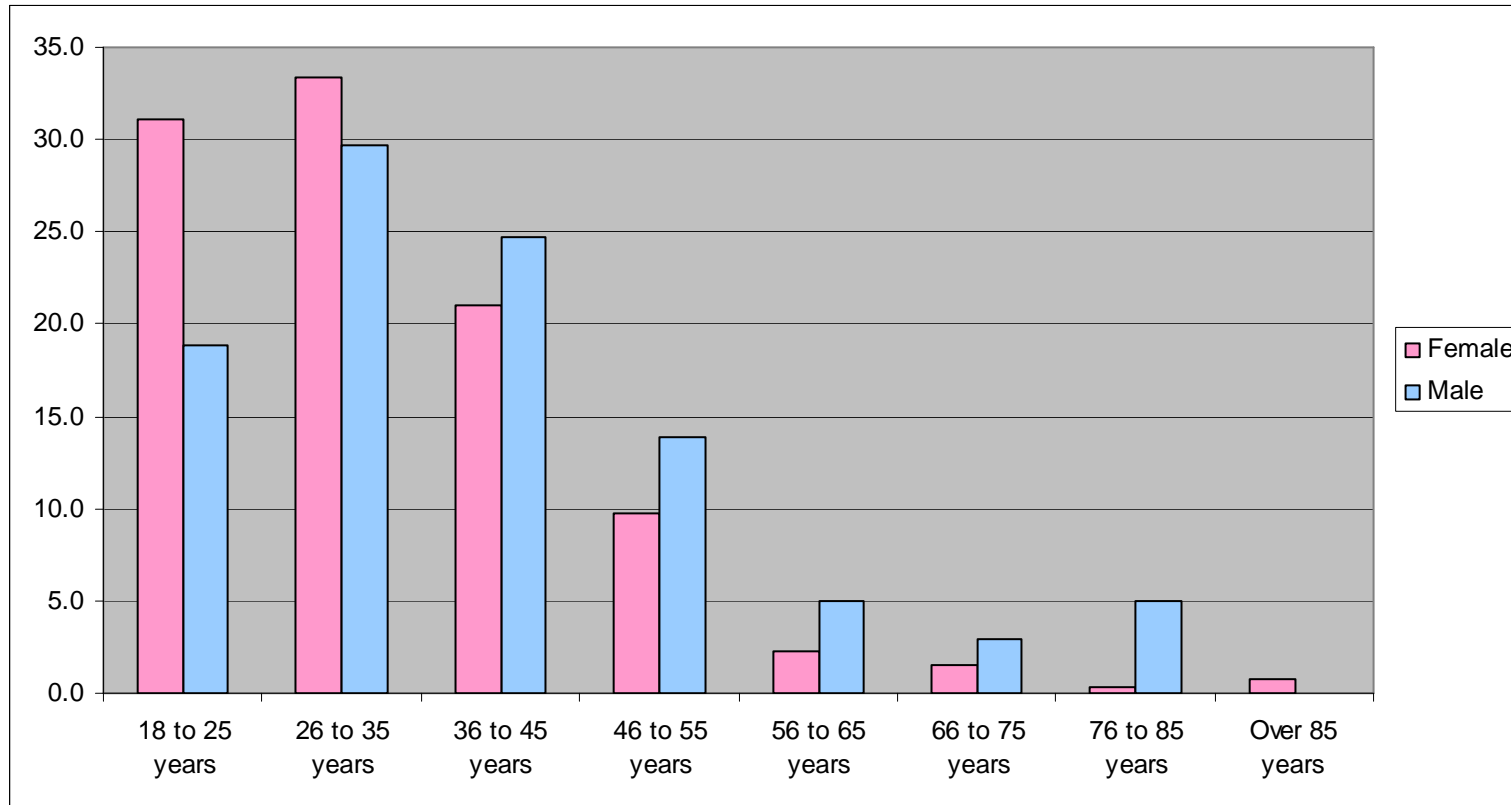


Method by gender

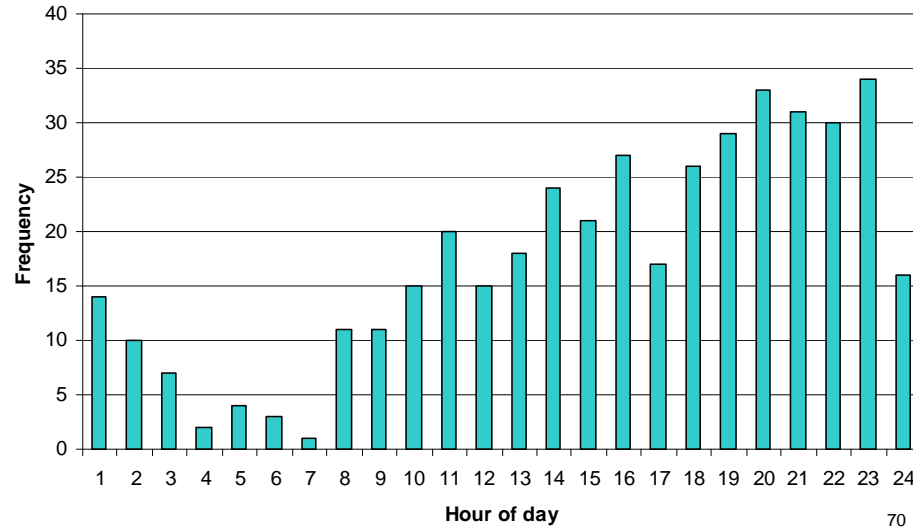
n female
292, male
106,
unspec 50.



Gender by age

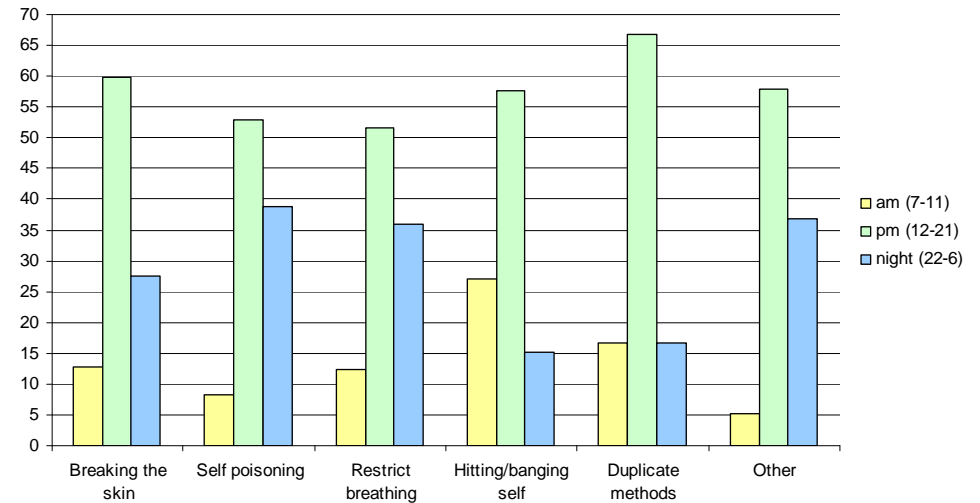


Time of day

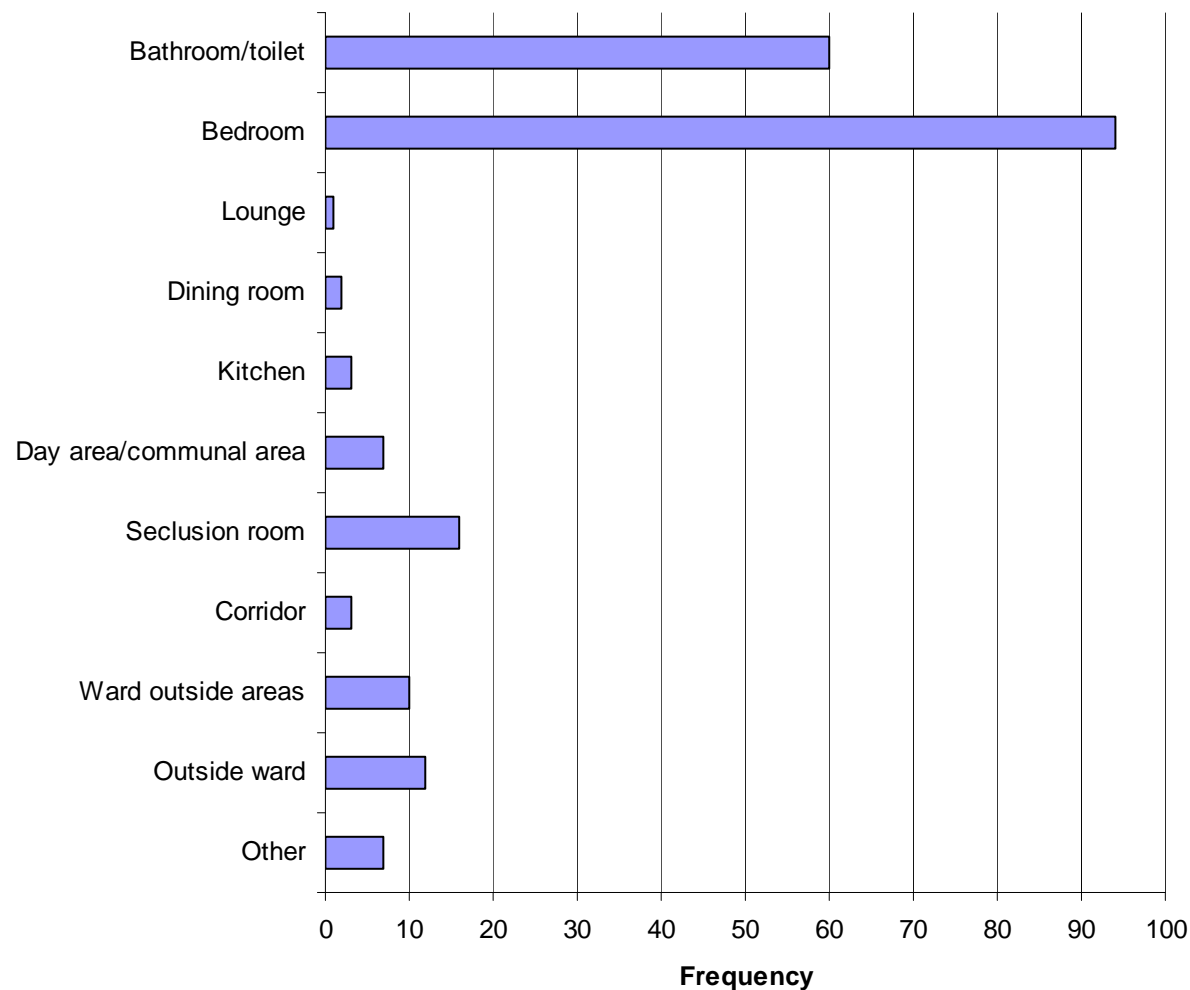


Time by lethality,
not significant

Time by method,
 $P = 0.024$

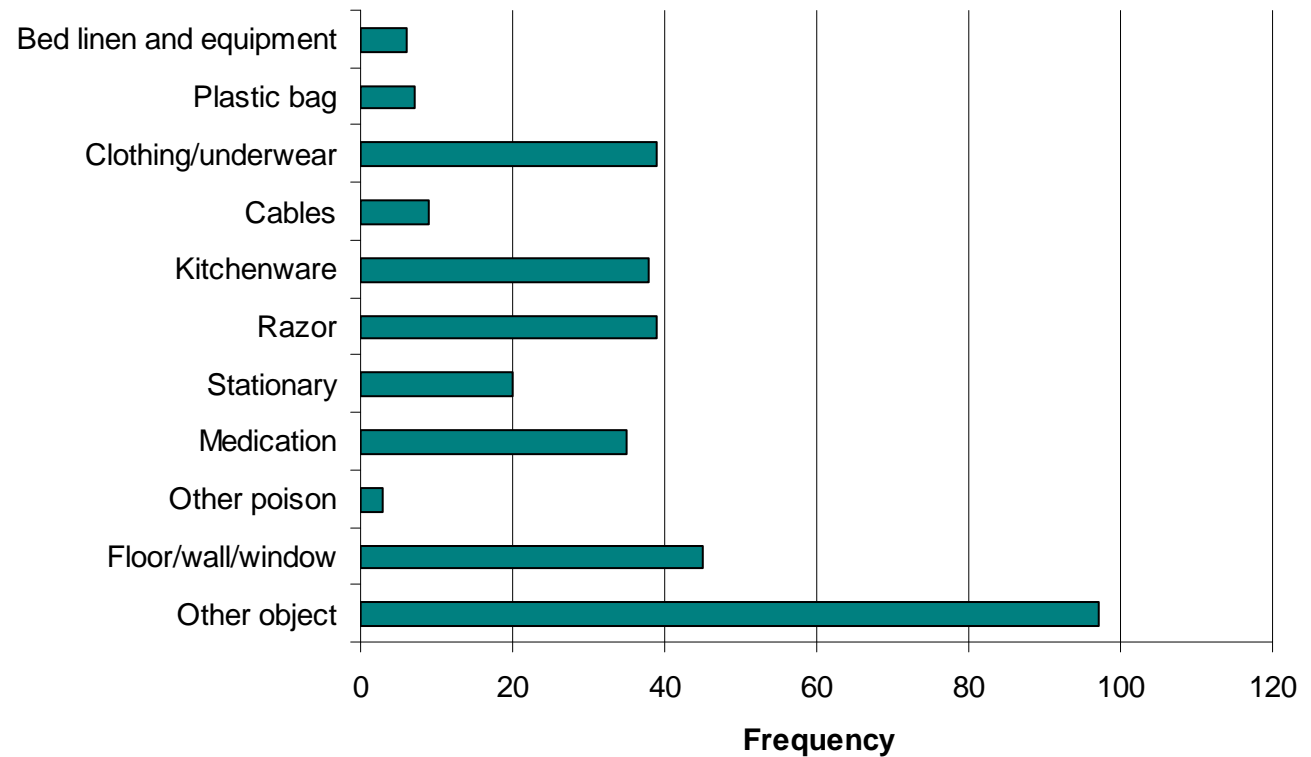


Location

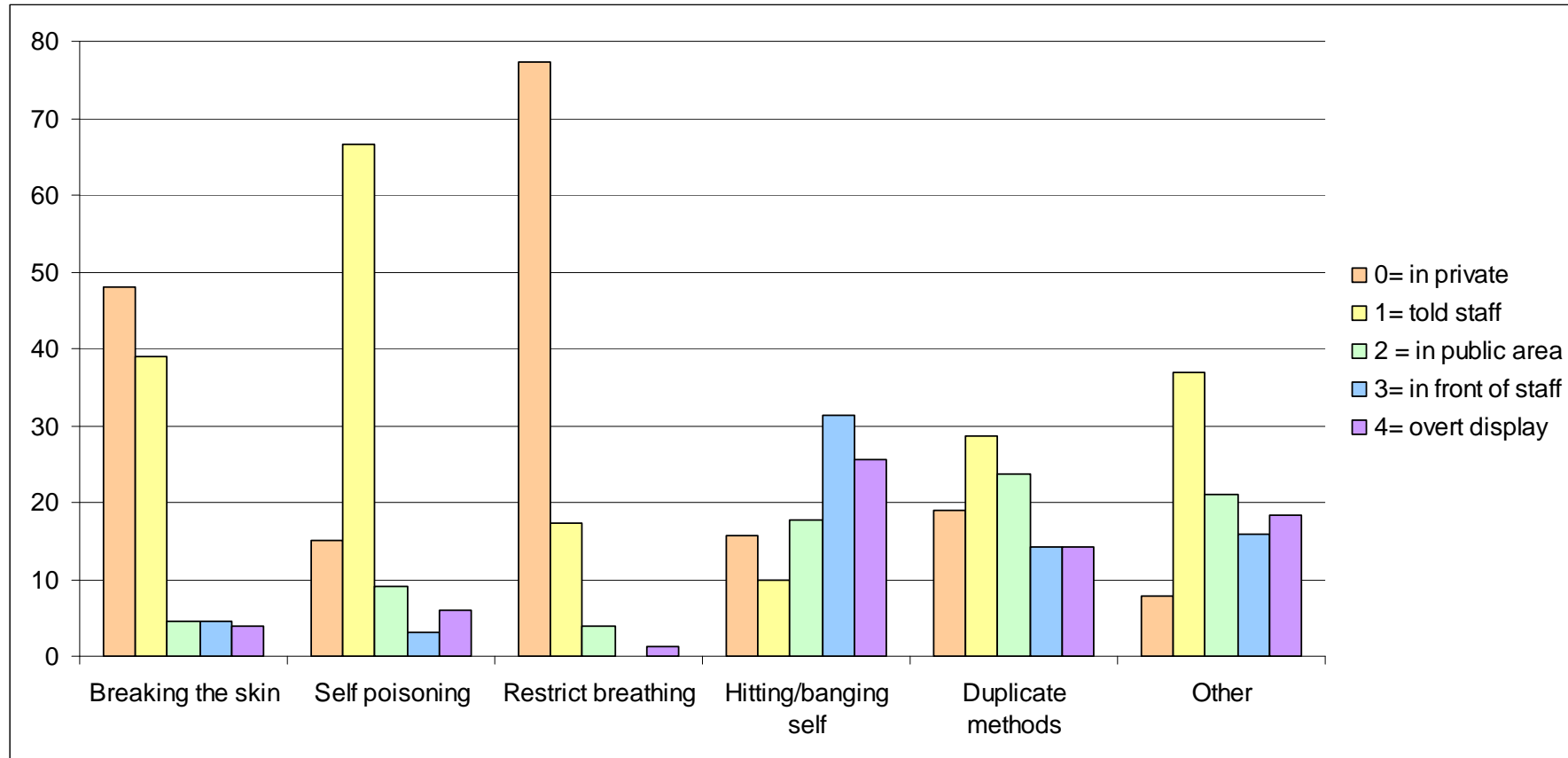


Objects used

n = 142
unique
objects

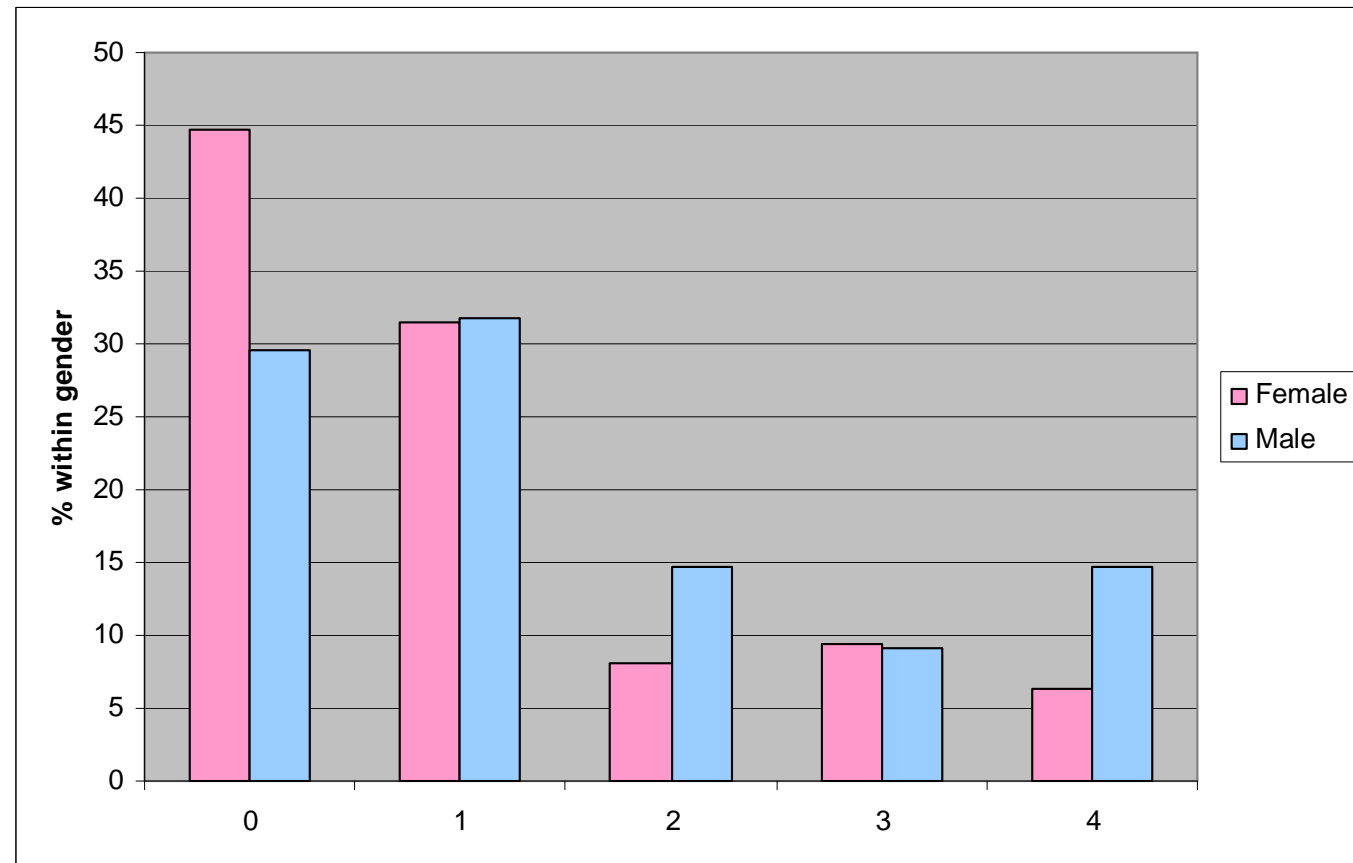


Openness by method



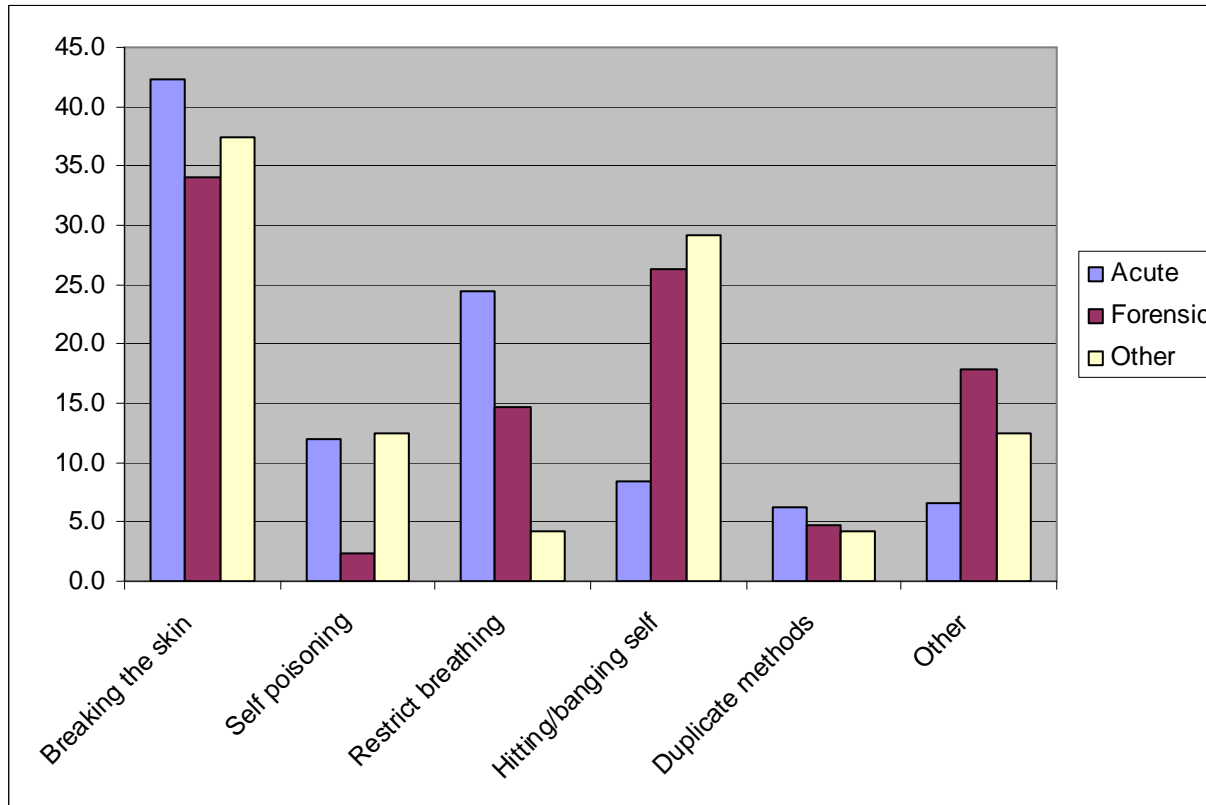
Openness by gender

Gender,
P = 0.02

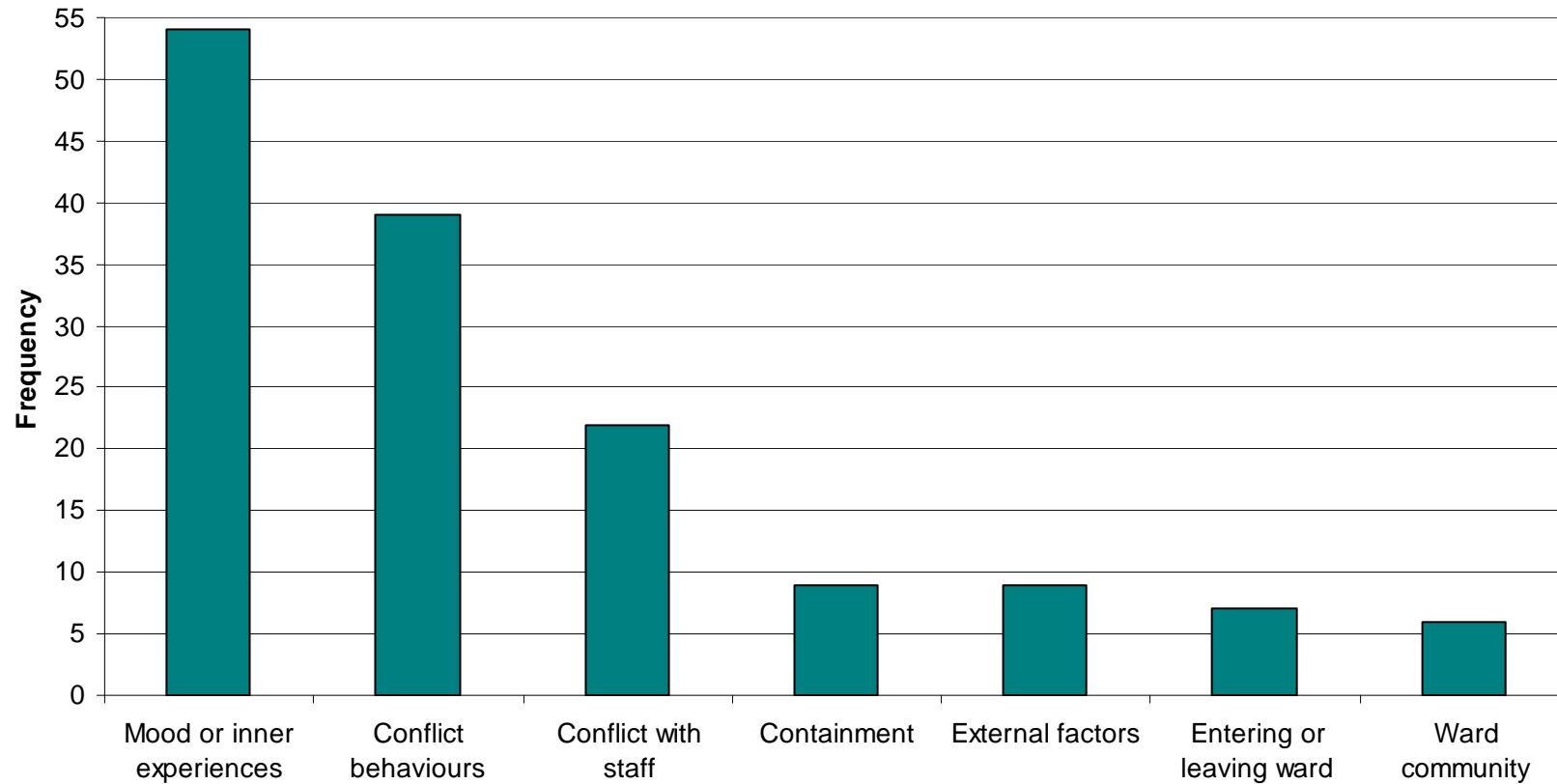


Method by speciality

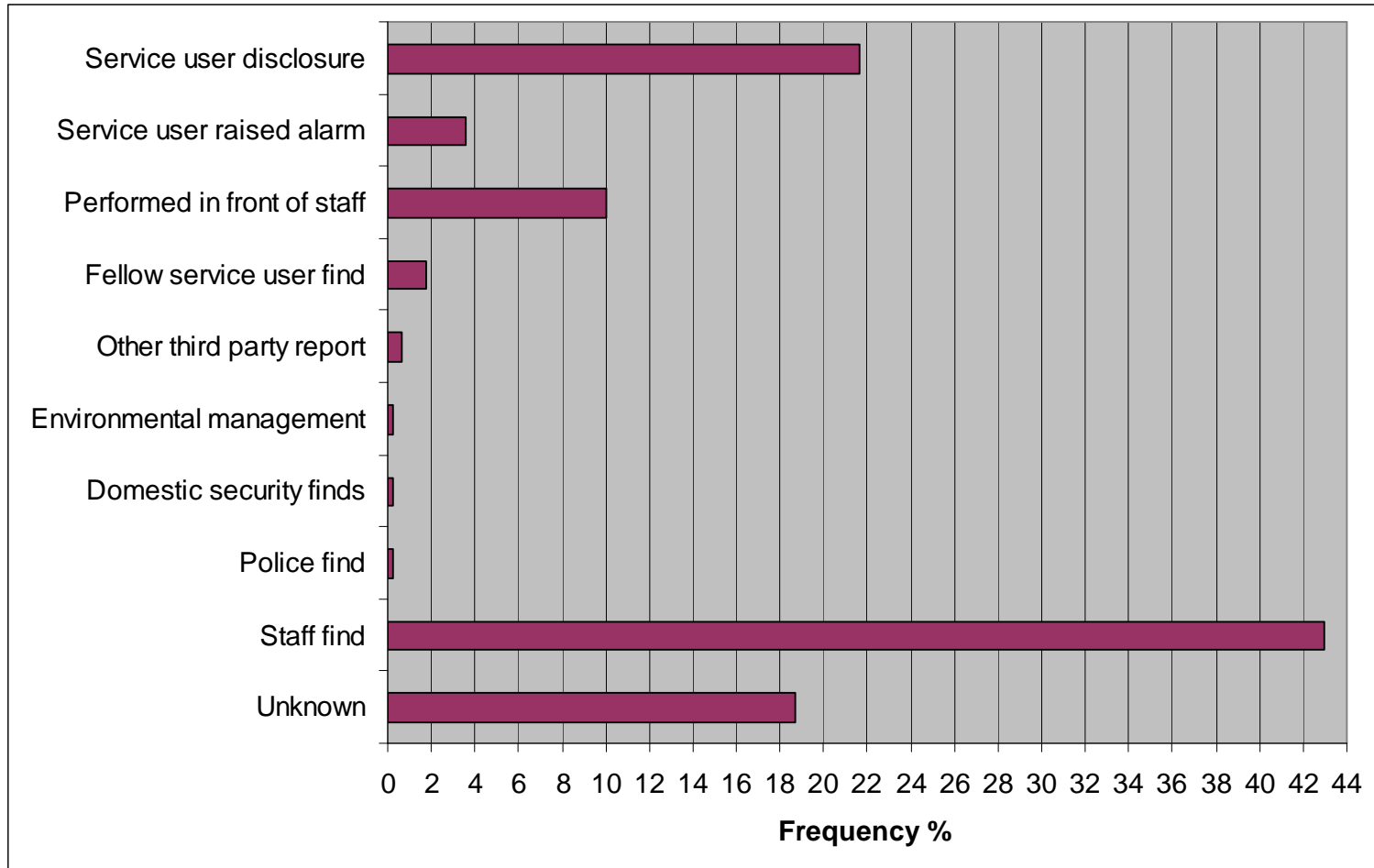
$p < 0.001$



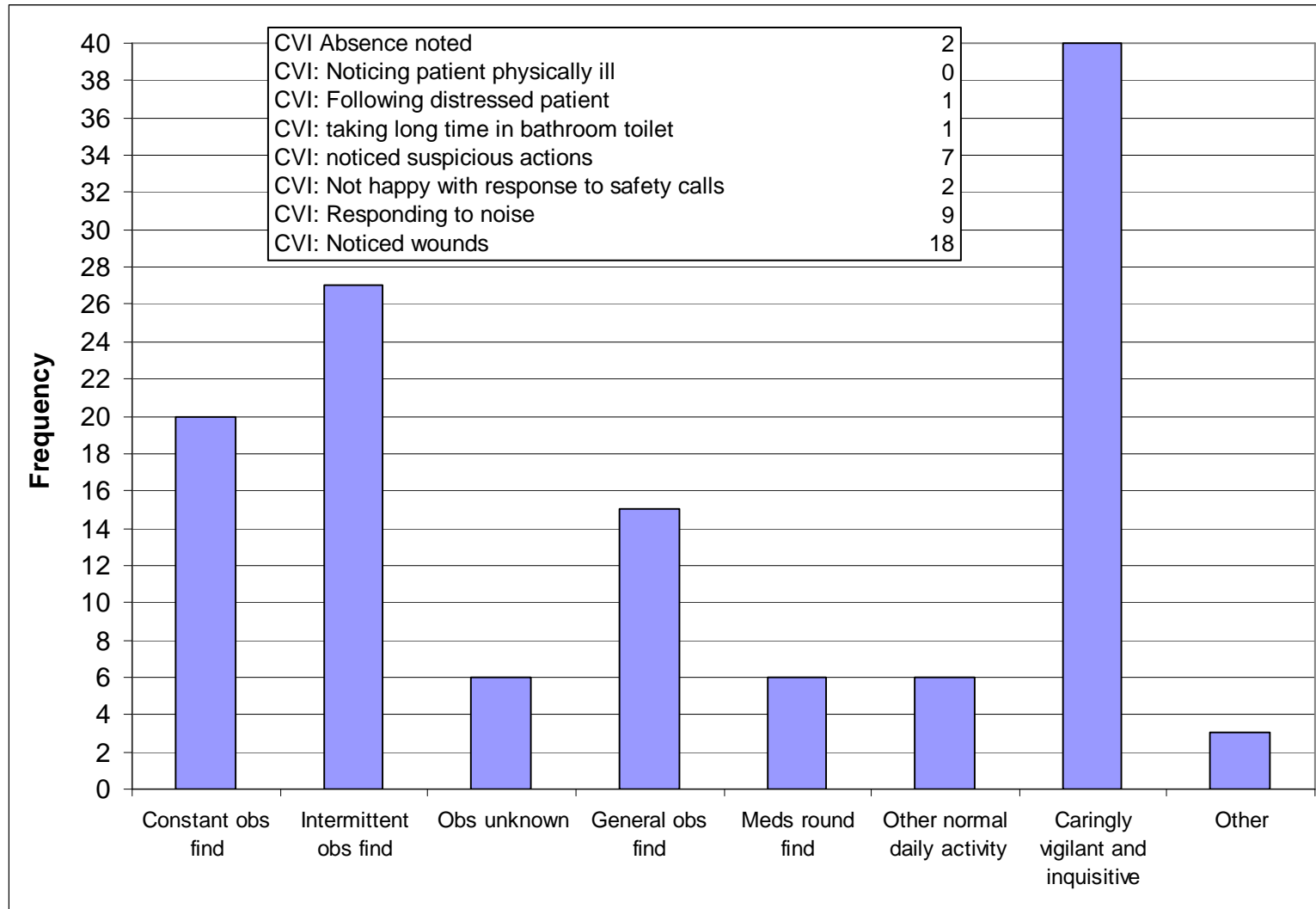
Antecedents



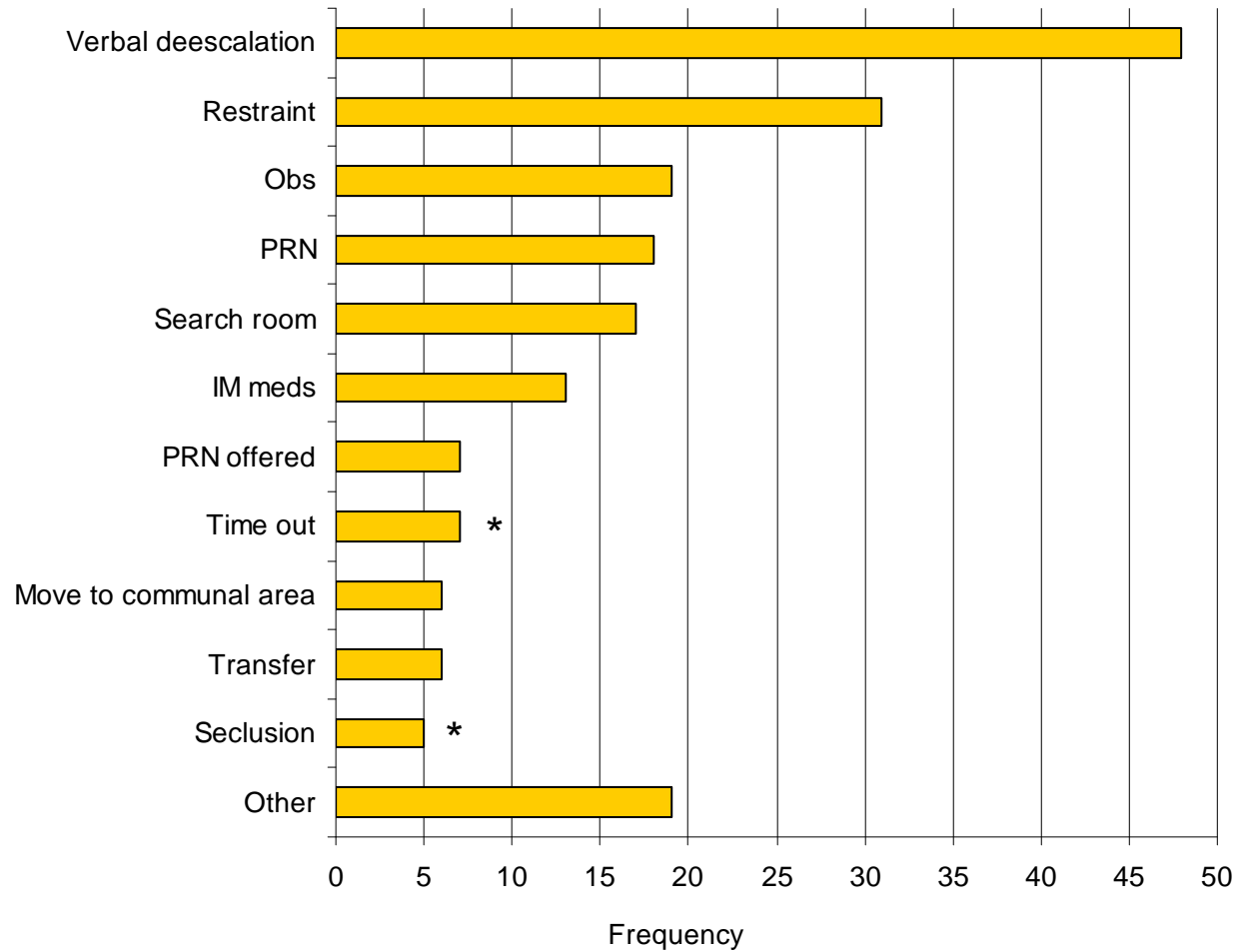
How discovered?



Breakdown of staff find



Interventions



Summary & conclusions

- Women more likely to self-harm, male self-harm more likely to be aggressive and open
- Self-harm on forensic wards more likely to be aggressive and open, much less likely to involve restricted breathing
- Men more likely to be secluded or timed out – methods of exclusion
- Diversity of objects used – restricting access to the means difficult
- Evenings a high risk period – both for frequency and use of high risk methods
- Most self-harm occurs within a social rather than solely psychological context, and may be amenable to change

- len.bowers@kcl.ac.uk
- www.kcl.ac.uk/mentalhealthnursing
- Forthcoming internet based course