

Service Evaluation of an Adult Inpatient Mental Health Services: Identifying demographics and risk factors for transfer to a Psychiatric Intensive Care Unit

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Aims & Background

We aimed to identify risk factors and assess demographics of patients which may increase the risk of admission to a Psychiatric Intensive Care Unit (PICU) from an adult inpatient mental health unit. We predict that patient demographics and features such as diagnosis, social history and legal status are likely to increase the risk of requirement for specialist services.

There is need to ensure that mental health services adapt to the increasing demand for inpatient beds, particularly beds within specialist services such as those at a PICU. There has been limited literature investigating such risk factors since the global financial recession in 2008 and the subsequent austerity measures in the UK.

Method

We conducted a retrospective analysis of electronic records of 85 patients from an adult mental health unit from 4th March 2019 – 5th August 2019. Demographics, admission details, social history, diagnosis as per the ICD-10, physical health comorbidities and discharge details were recorded. We compared two cohorts; those who required admission to a PICU and those who did not.

A follow up period of six months was included to assess re-admission risk. Odds ratios, confidence intervals and P values were calculated with a 95% confidence interval.

Results

Demographics

During the observation period, 18 (21.2%) service users required a period of stay in PICU and 67 (78.8%) did not. The PICU patients were younger with a mean age of 39.7 years (range 21-71, standard deviation 12.7 years) versus 43.7 years (range 19-74, standard deviation 14.5 years). The vast majority of PICU patients were British, White British or Mixed British, were male, single and unemployed.

Social History

11 (61.1%) of the PICU cohort had a positive forensic history compared to 18 (26.9%) of the non-PICU cohort (odds ratio 4.28, confidence interval 1.437-12.733, P = 0.009). Details of specific substance use were recorded and the results showed an increased frequency of cannabis and synthetic cannabinoid use in the PICU group but reduced frequency of alcohol dependence, cocaine, heroin, ketamine and other stimulants.

Features of admission

Those in the PICU cohort were more likely to be detained under the Mental Health Act on admission, more likely to require a period of seclusion, be involved in a police incident during admission, require medical/surgical input or require a period of physical health care at the local acute trust.

Schizophrenia and schizoaffective Disorder (F20-29 diagnoses as per the ICD-10) were less frequent than substance misuse disorders within the PICU cohort. (P=0.535) which contradicts the current literature. Re-admission within three and six months was more common in the PICU cohort however this was not statistically significant.

Characteristic	PICU n = 18	Non-PICU n = 67	Odds Ratio	CI (95%)	Significance Level
Demographic					
Male Gender	12	37	1.62	0.544-4.832	P=0.386
Single Marital Status	14	34	3.4	1.013-11.193	P=0.048
Social History					
Positive Forensic History	11	18	4.28	1.437-12.733	P=0.009
Substance Misuse History	14	36	3.01	0.898-10.112	P=0.074
Admission Features					
F10-19 Diagnosis	5	13	1.46	0.444-4.775	P=0.535
F20-29 Diagnosis	4	25	0.48	0.142-1.620	P=0.237
F30-39 Diagnosis	2	2	0.34	0.071-1.629	P=0.177
F40-49 Diagnosis	2	6	1.27	0.234-6.904	P=0.781
F60.3 Diagnosis	2	8	0.92	0.178-4.777	P=0.923
Detained Status On Admission	15	43	2.79	0.733-10.620	P=0.132
Episode of Seclusion	10	4	19.69	4.987-77.272	P<0.001
Police Incident	5	13	1.6	0.483-5.283	P=0.443
Medical/Surgical Advice	5	5	4.77	1.204-18.887	P=0.026
A&E Attendance	5	4	6.06	1.430-25.671	P=0.015
Re-admission					
Within 3 months	6	11	2.55	0.787-8.234	P=0.119
Within 6 months	6	15	1.73	0.557-5.398	P=0.343

Table 1. Prevalence of characteristics including OR, CI and P value

Demographics and Social History

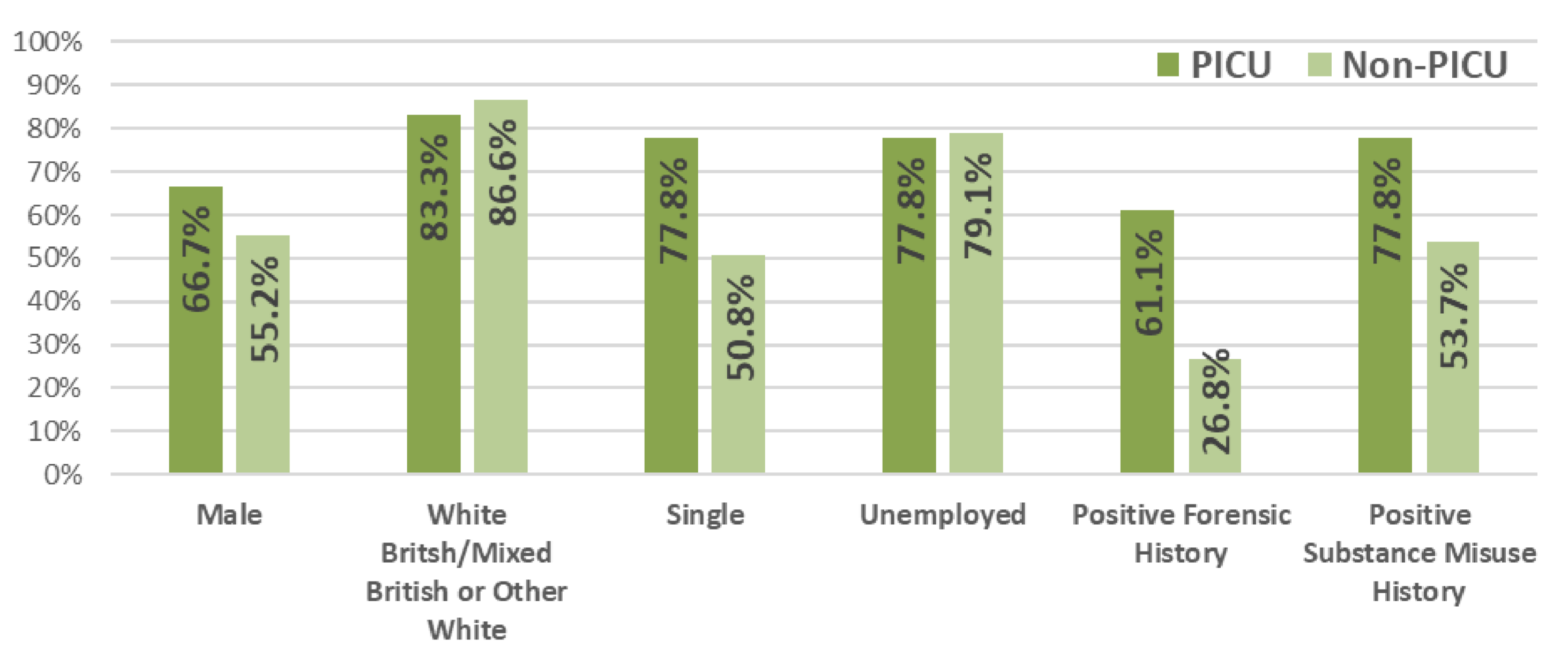


Figure 3. Prevalence of demographics and social history

Features of Admission

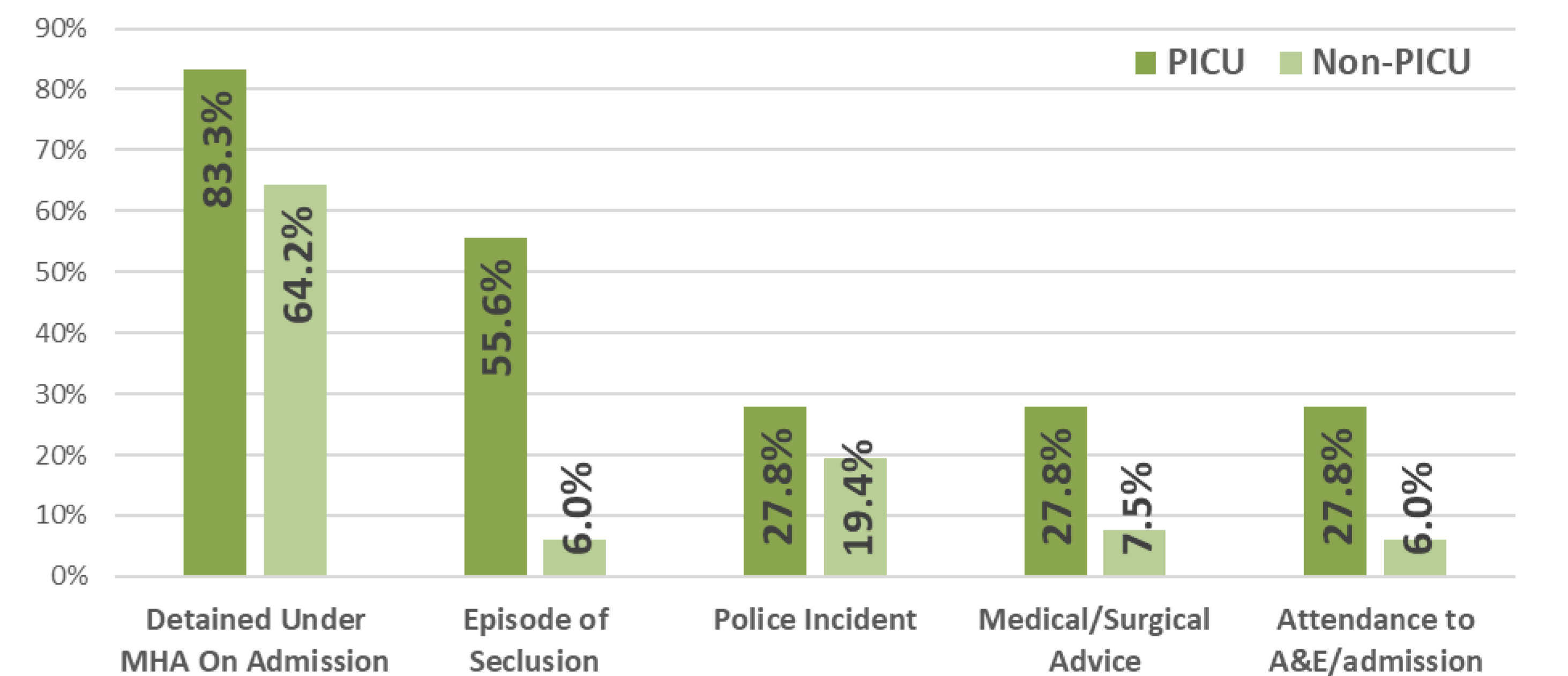


Figure 2. Prevalence of features of admission

Diagnosis

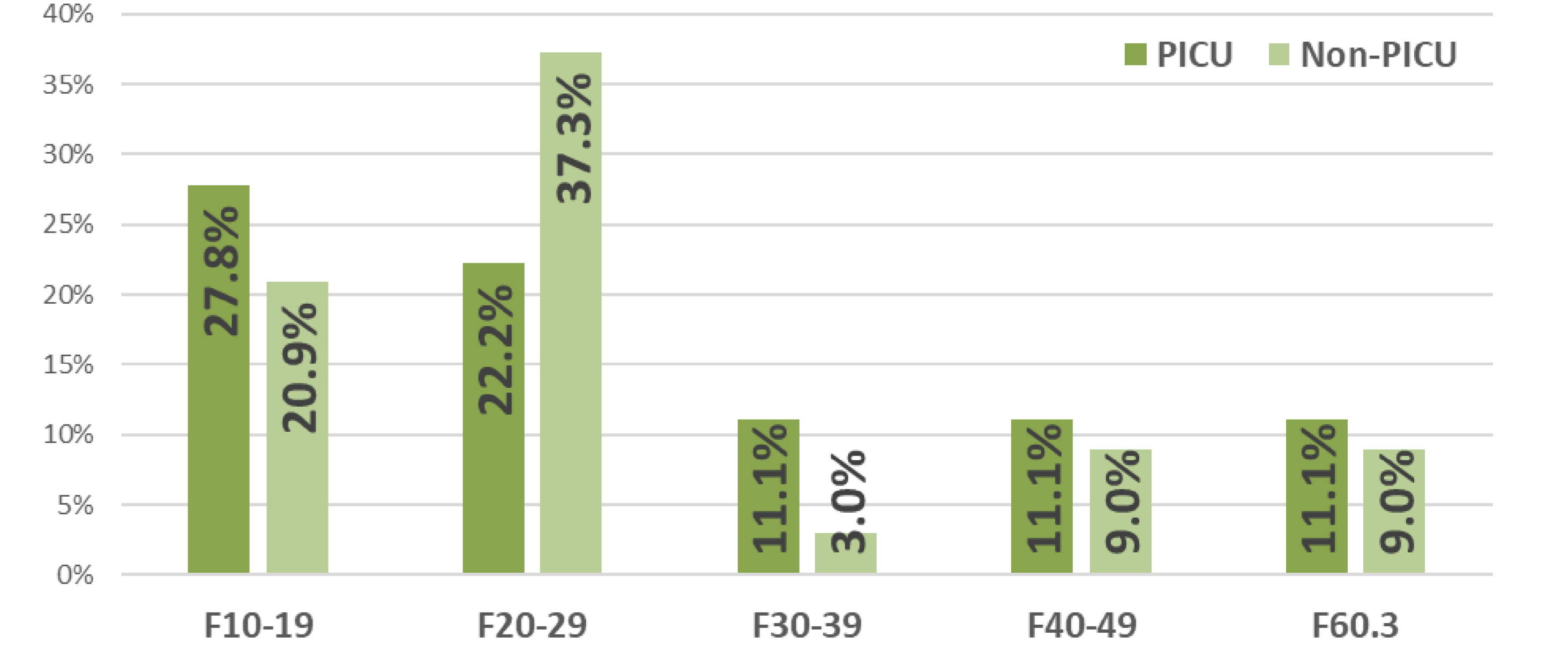


Figure 3. Prevalence of diagnoses (grouped as per ICD-10)

Conclusion

We identified demographics, social characteristic and admission related risk factors which were associated with an increased risk of requiring PICU admission. The diagnoses documented in the PICU patients were not consistent with findings from earlier studies and there was an increase in substance misuse diagnoses and lower prevalence of psychotic disorders however this may be due to the small sample size. This demonstrates the need for specialist services such as PICUs to adapt to the needs and demographics of the service users and also allows clinicians to identify individuals who may require increased support. However we recognise the broad confidence intervals demonstrated in the features which are statistically significant which is likely secondary to the small numbers within the PICU group