

## **An Observational Study of proximity between Community Mental Health Facilities and Off-Licenses and Bookmakers in Dublin**

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### **Abstract**

#### ***Aims***

Addiction is a common comorbidity amongst patients attending community mental health services. This observational study investigates the proximity of off-licenses and bookmakers surrounding community mental health facilities (CMHFs).

#### ***Methods***

Data collected for this study relied exclusively on existing publicly available data. Distance Matrix Application Programming Interface (API) Distances from Google Cloud Platform were used to measure the shortest walking distances one-kilometre and under from each CMHF to off-licenses' and bookmakers' locations in county Dublin.

#### ***Results***

There are 123 (16.9%) off-licenses and 43 (17.6%) bookmakers within one-kilometre walking distance from CMHFs. All CMHF has at least one off-license within 1km. The North City area has the highest average number and shortest distance to an off-license per CMHF. The average distance to the closest bookmaker per CMHF is 590 meters (SD 225; Median 567), and 338 meters (SD. 245; Median 269) to the closest off-license per CMHF.

#### ***Conclusion***

Individuals with major mental illness and co-morbid addiction cannot attend treatment services in Dublin without significant exposure to off-licenses and bookmakers. There is no public health regulation in Ireland regarding unhealthy shops and services locations surrounding CMHF's nor any guideline or protocol in choosing a location for a new CMHF.

## Introduction

Addiction is a common complicating factor for individuals with major mental illnesses. Patients with a substance misuse disorder in combination with a major mental illness have increased hospitalisation, longer duration of admission, and greater frequency of Emergency Department attendance<sup>1</sup>. This dual diagnosis is often treated by the community mental health teams (CMHTs)<sup>2</sup>. Addiction services and CMHTs often fail to address the illness co-morbid with the condition they primarily treat<sup>3</sup>.

An Australian cross-sectional study found that one-third of individuals misusing alcohol met criteria for at least one comorbid mental disorder in the previous year<sup>4</sup>. CMHT attendees have high rate of alcohol use<sup>5</sup>. Gambling disorder is also a form of addiction<sup>6</sup> more prevalent in individuals attending CMHT<sup>7</sup>. A cross-sectional study in Canada showed that at-risk, or problem gambling, was associated with an increased prevalence of depression, obsessive-compulsive disorder, alcohol dependence and illegal drug use in young adults<sup>8</sup>. There is a shared vulnerability for substance misuse and problem gambling among individuals attending mental health services<sup>9</sup>.

‘Health On The High Street’ – a British report published in 2015 – focused on the positive and negative impacts that businesses on the high street can have on public's health and wellbeing<sup>10</sup>. This report listed tanning shops, fast food takeaways, bookmakers, and payday lenders as the least health-promoting and most detrimental to public health. Over half of the interviewed members of the public reported that bookmakers discourage healthy choices, while 52% believed they negatively impact mental wellbeing. Co-location of potentially harmful services in different local shopping streets disproportionately affected mental health and addictions problems in socially deprived communities in the United Kingdom<sup>11</sup>. In vulnerable communities, there was increased proximity, availability and consumption of unhealthy services<sup>11</sup>.

Ireland's mental health policy ‘Sharing the Vision’ – which commenced in February 2017 – highlights that treatment options must address both the mental illness and addiction when the two conditions co-occur<sup>12</sup>. It also identified three pertinent factors to improve mental health: (i) the importance of primary prevention and positive mental health, (ii) a requirement to focus on social inclusion and recovery, and, (iii) expansion of mental health services to address the spectrum of conditions and needs<sup>12</sup>. These three factors underpin our research question. How many and how proximate are off-licenses and bookmakers located around community mental health facilities (CMHFs), where individuals with dual diagnoses are commonly treated?

This article aims to generate discussion about the planning and placement of CMHFs. We hoped to create awareness around overlooked or ignored factors in urban planning and advocate for a healthy high street within a community, particularly in the direct proximity of CMHFs.

## Methods

Data collected for this study relied exclusively on existing publicly available data. A cross-sectional study was conducted in which the location of CMHFs (outpatient clinics and day hospitals) were obtained from the electronic version of Health Service Executive (HSE) National Directory of Mental Health Services<sup>13</sup>. Any unclear or outdated address information from the directory was updated based on the detail of the HSE websites. All off-licenses and bookmakers with addresses in County Dublin were obtained from the Register of Bookmaking Office on 31st October 2020<sup>14</sup> and the Register of Renewed Liquor License on 4<sup>th</sup> August 2020 through the Irish Revenue Commissioners website<sup>15</sup>. In the Register of Renewed Liquor License, all businesses with Spirit, Beer and Wine Retailers' off-license in Co. Dublin are included in this study. Any wholesale dealers, publicans, on-licenses, and special restaurant licenses companies were excluded.

Distances between individually listed CMHFs, and off-licenses and bookmakers in the individual areas across Dublin were measured using Distance Matrix Application Programming Interface (API) from Google Cloud Platform. This provided real life walking distance measurement as opposed to straight line (as the crow flies) distances.

Using the data collected from the API, a programming script generated a matrix of the shortest walking distances under one-kilometre from each Community Mental Health Facility (CMHF) to off-licenses' and bookmakers' locations. The mean, median, and standard deviation of the data were calculated.

## Results

According to the HSE National Directory of Mental Health Services, Dublin's community mental health services (CMHS) are governed by three different HSE Community Health Care Organisations (CHO), CHO 6, CHO7 and CHO 9. There are 29 CMHFs across the Co. Dublin. They are distributed in six geographical areas of Dublin: North, North City, North West, South Central, South East and South West. There are 727 off-licenses and 245 bookmakers offices in Co. Dublin.

Overall, 16.9% (n=123) of off-licenses and 17.6% (n=43) of bookmakers are within one-kilometre walking distance from CMHFs in the Co. Dublin. On average, there are 5.2 (SD 3.0; Median 5.0) off-licenses and 1.7 (SD 1.7; Median 1) bookmakers in each CMHF. Table 1 details the number of identified off-licenses and bookmakers within one kilometre (km) from each CMHF per Dublin area.

Table 1: Numbers of off licenses and bookmakers in 1 km radius from each Community Mental Health Facility per Dublin area.

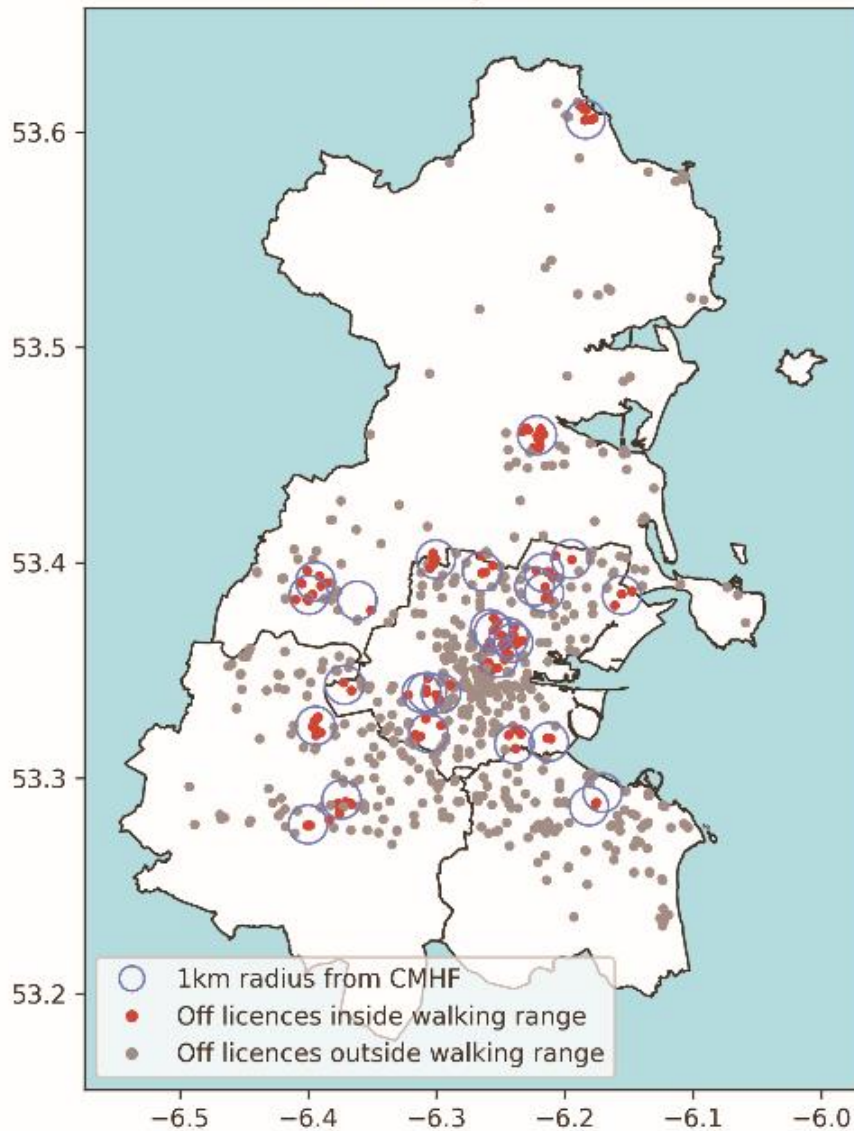
Dublin Area	Number of Community Mental Health Facilities	Average number of off-license per CMHF	Average distance of the closest off-license per CMHF (in	Average number of bookmaker per CMHF	Average distance of the closest bookmaker per CMHF (in

			meters)		meters)
North	7	4.9	287	1.9	506
North City	6	8.2	262	2.2	550
North West	4	4.5	428	0.5	920
South Central	4	5.0	319	3.5	696
South East	4	2.5	539	0.3	811
South West	4	5.0	272	1.8	497
Average per Area	4.8				
S.D. of the total population	1.2				
Median	4.0				
Total (% of total numbers in Co. Dublin)		123(16.9%)		43 (17.6%)	

The North City area has the highest average number of off-licenses within one km per CMHF. It also has the average shortest distance (262 meters) per Dublin area. Meanwhile, the South East area has the lowest density of off-licenses. The average distance to the closest off-licenses per CMHF is 338 meters (SD. 245; Median 269). The CMHF with the shortest distance to an off-license business is 37 meters at Swords. The CMHFs with the most off-license businesses within one km walking radius are Swords and Drumcondra (12 off-licenses). All CMHF has at least one off-license within 1km. Figure 1 demonstrates the distribution of off-licenses across Co. Dublin.

Figure 1: Infographic of Off Licences within 1km walking distance from CMHF in Dublin.

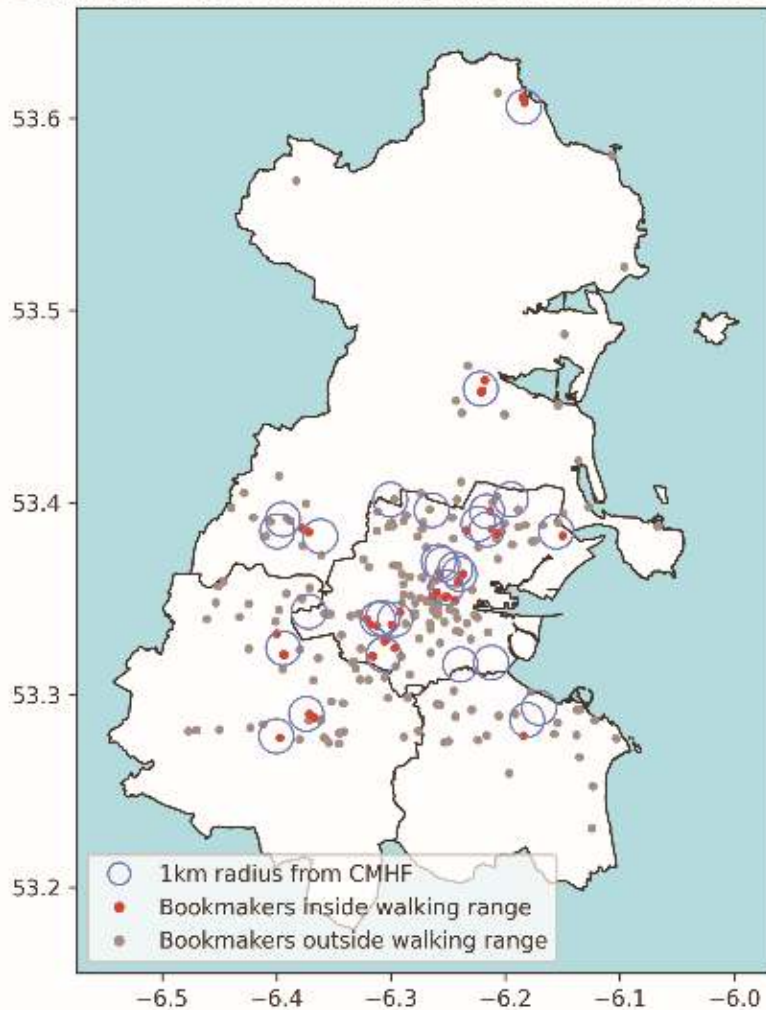
Off Licences within 1km walking distance from CMHF in Dublin



The South Central area has the highest density of bookmakers within one km of CMHF. There are on average 3.5 bookmakers within one km of a CMHF within this area. The South West area has the average shortest distance to a bookmaker (497 meters). There are, on average, 1.7 (SD 1.7; Median 1) bookmakers within one km of each CMHF. The average distance to the closest bookmakers per CMHF is 590 meters (SD 225; Median 567). The shortest distance to the bookmaker from a CMHF in Dublin is 201 meters at Drumcondra. Summerhill has the most bookmaker offices (7 bookmakers) within one km. 31% (9/29) of CMHFs have zero bookmakers within 1km. Figure 2 demonstrates the distribution of bookmakers across Co. Dublin.

Figure 2: Infographic of bookmakers within 1km from CMHF in Dublin.

Bookmakers within 1km walking distance from CMHF in Dublin



## Discussion

Approximately 17% of off-licenses and bookmaker businesses in Co. Dublin were within one km of CMHFs. Off-licenses showed a shorter average distance to a mental health facility than bookmaker offices. The results showed high accessibility of alcohol and gambling for patients attending CMHFs. Interestingly, Townshend suggests that some unhealthy behaviours may be mutually reinforcing, particularly between problem gambling, debt, and increased risk of developing common mental health disorders<sup>11</sup>. Placing bookmakers near CMHFs may increase pressure on already susceptible populations to participate in potentially harmful practices. These factors may add to debt and risk taking, although studies linking the locations of bookmakers and CMHFs have not been carried out.

Strikingly, the South East area showed a lower average number of off-licenses and bookmakers within one km of CMHF. The South East area of Co. Dublin is an affluent area, where the Dún

Laoghaire-Rathdown electoral district is the least deprived area nationally<sup>16</sup>. Targeting of deprived communities by off-license and gambling businesses cannot be confirmed, however the co-location of businesses is rarely random<sup>11</sup>.

High streets are the focus of local communities. Businesses occupying the high street may be vital in promoting healthier consumption, as evidence suggests that access and proximity encourage consumption<sup>11</sup>. Therefore, CMHFs could be placed in, or designing around, 'healthier streets'. Since the COVID-19 pandemic, there has been increased shop vacancies on high streets. Occupying these empty shopfronts with health services may also benefit the surrounding areas by facilitating accessibility and increasing foot traffic<sup>10</sup>. In Cumbria, co-location of NHS physiotherapy services and leisure facilities led to improvements in individual self-management, increased accessibility to services, and a higher quality of life<sup>10</sup>. Another case study involved the town of Warrington, UK, where extensive engagement from the community resulted in proposals for the town centre including but not limited to: a health and wellbeing hub using vacant retail space, a health and social care academy, digital enterprise and cultural hubs, and an advanced construction training centre to upskill those affected by the pandemic<sup>10</sup>.

This is the first study illustrating the prevalence of off-licenses and bookmakers within walking distance to CMHFs in Ireland. The use of programming scripts with cloud computing in this study improved the efficiency, accuracy, and reliability of distance calculations. There are several limitations to this study. First, the addresses provided by the HSE National Directory of Mental Health Services were not up to date. The directory did not indicate when it was last updated. There were discrepancies between the HSE directory and its website. Some of the addresses from the directory were unclear, so it was difficult to identify their geographical coordinations. Second, the Distance Matrix API cannot measure the walking distance when the locations are on the same premise. The actual walking distance in such a situation may be underreported. Third, the study did not include inpatient units, community hostels, or day centres as CMHFs. Fourth, the off-license register does not differentiate sole alcohol merchants from other grocery businesses, such as supermarkets, small convenience stores, and petrol stations. Compared to alcohol merchants, these businesses do not have the same level of alcohol promotion to customers and pedestrians. The Public Health (Alcohol) Act 2018 stated that alcohol products must be separated from other products with a physical barrier in such businesses<sup>17</sup>. Currently, from health and environmental perspectives, there is neither regulations nor guidelines nor policies pertaining to planning and placement of CMHFs in the Republic of Ireland.

Future research should investigate service users' opinions on impact of surrounding businesses' such as off-licenses and bookmakers proximity to location of CMHFs. Other area of interest may include investigating the link between deprivation index and co-morbidity services. The potential of alcohol-free or bookmaker-free streets could be examined as a future environmental health intervention.

Individuals with major mental illness and co-morbid addiction cannot attend treatment services in Dublin without significant exposure to off-licenses and bookmakers. This may still be preferable to

having CMHFs removed from town centres; however, town planners and licensing bodies have a responsibility to consider the needs of individuals with major mental illnesses, and psychiatrists have a role in advocating for them. Recovery requires a community approach; it is essential to recognise the importance of how we structure establishments. as their locations could be potential triggers for patients in the community. Psychiatrists may consider planning dual diagnosis clinics before the opening hours of off-licenses and bookmakers. It may even be worth discussing route planning with patients with vulnerabilities.

There is no public or environmental health regulation in the Republic of Ireland regarding unhealthy shops and services locations surrounding CMHF's. Nor is there any guideline or protocol in choosing a location for a new CMHF. Establishing CMHF's near 'unhealthy' shops and services could provoke undesirable outcomes and increase the risk of relapse among mental health patients. The Department of Health and Health Service Executive should develop a guideline and protocol for the CMHS's in developing their outpatient services.

**Conflicts of Interest:**

None declared.

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