

Psychiatric NHS in Gozo during COVID-19

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Background

The COVID-19 pandemic greatly affected the daily lives of the population, resulting in psychological burden and difficulties in coping; having direct effects on mental wellbeing and, by extension, mental health services. This study investigates the impact COVID-19 had on psychiatric national health services in Gozo.

Methods

Data of psychiatric services utilisation during the study period was gathered from Gozo General Hospital records and cross-referenced with e-medical records. Data was stratified and statistically analysed comparing pre- and post-COVID groups.

Results

3,462 participants were recruited. Despite a 34% decrease in total inpatient cases ($n=199$ to $n=98$), an overall increase in new cases ($p=0.008$) was reported. Voluntary admissions decreased ($p=0.001$) against a numerically stable involuntary cohort. 2912 patients utilised out-patient services. New cases dropped by 35.9% while follow-up cases increased ($p<0.001$) from 41.7% to 77.6%. Multiple follow-up appointments increased from 85.27% to 93.33%. There was an increase ($p<0.001$) in both new (21.3% to 39.8%) and follow-up (17.5% to 38.7%) cases in liaison psychiatry despite a 26.4% drop in the total caseload.

Conclusion

This study highlights the impact COVID-19 had on psychiatric services in Gozo; accentuating challenges imposed by the pandemic, increased mental health needs and how service and policy implementation affected workload. Studies analysing the long-term effects of the pandemic and the ongoing changes in the mental health needs are necessary.

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The Coronavirus 2019 (COVID-19) pandemic necessitated the imposition of social distancing measures to diminish transmission as much as possible. These measures had significant ramifications on daily activities, social interactions, employment, finance as well as mental health and health service provision.¹ In the process of achieving physical isolation, Activities of Daily Living (ADLs) and Quality of Life (QoL) were further impacted, adding to the perceived psychological burden.² Studies have shown how COVID-19 affected the rate and composition of psychiatric referrals to Community Mental Health Clinics³ and in-patient psychiatric services and by extension, the mental health services in Malta's main island.⁴

Gozo General Hospital's (GGH) catchment area comprises the entirety of the island of Gozo and is the only National Health Service (NHS) available providing psychiatric service coverage for the 39,287 Gozitan residents.⁵ COVID-19 was first identified in Wuhan in December 2019. In January 2020 initial forecasts on the Maltese population were predicted followed by screening and quarantines for returning travellers in February. March saw the first COVID-19 cases in Malta followed by the first social restrictions. This study aims to investigate and compare the impact COVID-19 had on the psychiatric services offered at GGH before and after the COVID-19 period (1st January 2019 – 31st December 2020); using the 1st January 2020 to differentiate between pre- and post-COVID-19 periods. In the process, the study aims to shed light on the effect cultural variations of a similar but distinct population may have in relation to mental health.

MATERIALS AND METHODS

Ethical Approval

Prior to collecting any data, research governance approval was obtained from the Head of Department of Psychiatry, Data Protection Officer and the Chief Executive Officer (CEO) at GGH. No direct patient, relative or staff contact was established throughout the study. Data was accessible solely to the authors and deleted once the study was completed. Only data relevant to this study was collected, which was anonymised to ensure data protection and confidentiality.

Data Collection

Within its catchment area, GGH offers 3 main settings of psychiatric services to the community: acute inpatient wards, psychiatric outpatients (POP) and general hospital liaison psychiatry services. The centralisation of services and readily accessible data facilitates auditing and research processes. Each service maintains registers of its respective service users, logging demographic data, admissions, referrals, presenting complaints, statistical data and Mental Health Act (MHA) status. Data for this study was collected from these registers and electronic records.

In this study, each of the 3 settings was considered as an individual category and separately analysed for the parameters under investigation, these being: new cases, follow-up cases, frequency of returning patients, source of referrals, presenting complaints, demographics, discharge destination, MHA status, waiting time and length of stay. Data was collected from each register for the period between 1st January 2019 and 31st December 2020; and cross-referenced with data from NHS electronic medical records.

Terms used to differentiate between participants within the same category are: new cases, follow-up and repeat participants. New cases are participants who had no previous contact with NHS psychiatric services and established contact for the first time during the study period. Follow-up cases are defined as individuals who already had contact with NHS psychiatric services. Repeat participants were those individuals with more than one presentation during the given timeframe within the same category. Additionally, acute in-patient clients are sometimes sent on-leave; patients are sent in the community for periods ranging from a few hours to days with the aim of re-settling back in their respective community in a supported mechanism.

Data Analysis

Data Analysis Data collected was stratified into two groups: the pre-COVID group and the post-COVID group. The onset of COVID-19 in December 2019⁶ was used as demarcating between pre- and post-COVID periods. In Malta, the first social distancing measures were subsequently implemented by the Public Health Directorate on the 12th of March 2020. The anonymised data was statistically analysed using the IBM Statistical Package for the Social Sciences Statistics (version 27.0) was used.

RESULTS

A total of 3,462 participants were identified to have utilised GGH's psychiatric services between 2019 and 2020 across all categories (Figure 1). Data for every category was analysed comparing pre- and post-COVID statistics against the parameters listed in Table 1. Some parameters were omitted from certain categories either due to no data being logged in the registers or irrelevance to the respective category.

In-Patient Services

A total of 297 participants (Table 2) required admission to GGH in-patient psychiatric wards during the time period analysed, of which 199 were pre-COVID period and 98 post-COVID period. A statistically significant [χ^2 (2, N=297) =9.774, $p=0.008$] increase in new cases was reported from 16.6% (n=33) to 26.5% (n=26) accompanied by a mild decrease in follow-up cases from 76.9% (n=153) to 73.5% (n=72).

The overall number of post-COVID cases decreased to a rate of 49.25% of pre-COVID cases from 199 to 98 cases, while cases of whom no information was available also decreased from pre-COVID 6.5% (n=13) to post-COVID 0%. 35 pre-COVID repeat participants had more than one presentation amounting to 51.76% (n=103) of total admissions which decreased to a rate of 33.67% (n=33) in 2020 (13 repeat participants).

Presenting Complaints

The commonest presenting complaints (Figure 2) in the pre-COVID period were depression (17.1%), suicidal ideations (12.1%), and psychosis (10.5%). Within the post-COVID group, the commonest presentations were depression (16.7%), psychosis

Table 1 Categories vs Parameters

Parameters	Categories		
	In-patient	POP	Liaison Psychiatry
New Cases	✓	✓	✓
Follow-up	✓	✓	✓
Frequency of returning patients	✓	✓	X
Source of referrals	X	X	✓
Presenting complaints	✓	X	X
Gender & age	✓	X	✓
Nationality	✓	X	✓
Discharge destination	✓	X	X
MHA Status	✓	X	X
Waiting time	X	X	✓
Length of stay	✓	X	X

Table 2 In-Patient Cases

Cases	Pre-COVID (2019)	Post-COVID (2020)
New Cases	16.6% (33)	26.5% (26)
Follow-up	76.9% (153)	73.5% (72)
No Information	6.5% (13)	0% (0)
Total	67% (199)	33% (98)

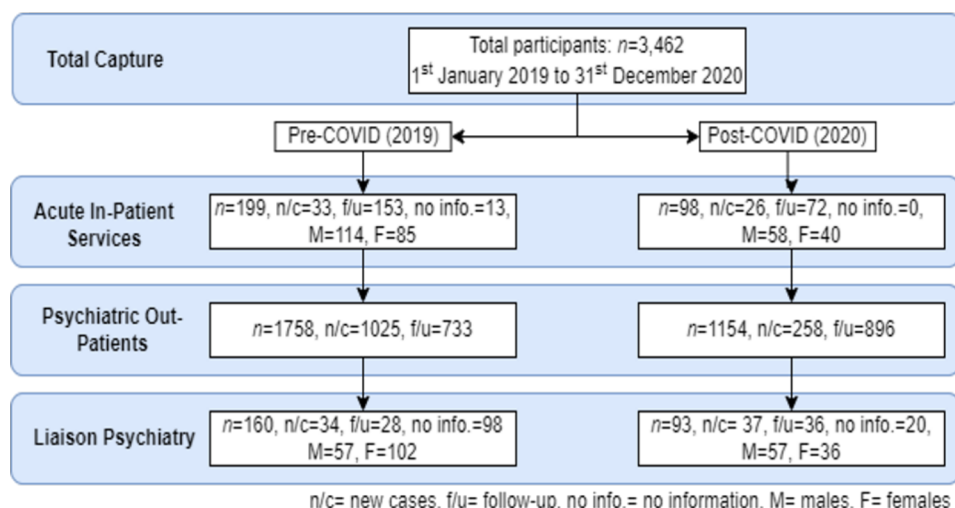


Figure 1 Audit Flow Diagram

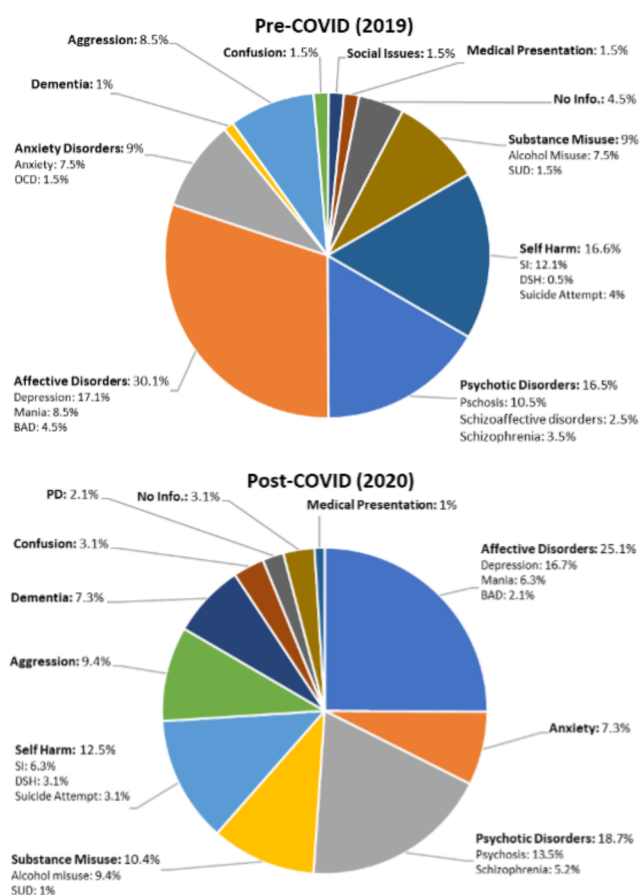


Figure 2 Presenting complaints. OCD: Obsessive Compulsive Disorder, BAD: Bipolar Affective Disorder, SUD: Substance Use Disorder, SI: Suicidal Ideations, DSH: Deliberate Self-Harm, PD: Personality Disorder.

Table 3 In-Patient Age Groups

Years	Pre-COVID (2019)	Post-COVID (2020)
0-18	9% (18)	1% (1)
18-29	17.1% (34)	15.3% (15)
30-39	17.6% (35)	17.3% (17)
40-49	12.6% (25)	12.2% (12)
50-59	15.6% (31)	20.4% (20)
60-69	18.1% (36)	15.3% (15)
70-79	9.0% (18)	15.3% (15)
80+	1.0% (2)	3.1% (3)

Table 4 :Patients On-Leave

	Pre-COVID (2019)	Post-COVID (2020)
Attending Ward-Round	318	134
Attending Treatment	812	836
Total Ward-Attendees	1130	970

(13.5%), and aggression and alcohol misuse (9.4%, n=9) rising from 8.5% (n=17) and 7.5% (n=15) respectively. Suicidal ideations dropped from pre-COVID 12.1% to post-COVID 6.3%. The frequency of patients presenting with alcohol misuse (7.5% to 9.4%), psychosis (10.5% to 13.5%) and dementia 1.0% to 7.3%) all increased from the pre-COVID period to the post-COVID period. No statistically significant difference [χ^2 (20, N=297) =29.716, p=0.075] in presenting complaints between pre- and post-COVID cases were identified.

Demographics

There was no statistically significant difference in gender presentation [χ^2 (1, N=297) =0.097, p=0.755] from the pre-COVID period to the post-COVID period. Males made up the majority of cases during both time periods (57.3% to 59.2%). Differences in mental disorders across different age groups (Table 3) were not statistically significant [χ^2 (7, N=297) =11.898, p=0.104]. There was no statistically significant difference in nationality [χ^2 (14, N=297) =15.438, p=0.349] of cases before and after COVID. During both time periods, Gozitans made up the commonest group (60.8% to 56.1%).

MHA status

A statistically significant difference in MHA status [χ^2 (1, N=297) =10.968, p=0.001] was identified. While the majority of cases were voluntary both before and after COVID, these decreased from 82.3% (n=163) to 64.9% (n=63) and involuntary admissions increased from 17.7%³⁵ to 35.1% (n=34).

Length of Admission

Prior to the pandemic period, patients used to be followed-up whilst on-leave from the ward by the acute in-patient services, receiving close and regular follow-up reviews, treatment administration, and if need be facilitating the re-admission process. Due to COVID-19 pandemic restriction measures, on-leave patients were discharged from acute in-patient services and offered close POP follow-up (Table 4). Arguably, patients were admitted for longer observational periods since they could not be observed during the on-leave period within the community. However, a one-way ANOVA revealed that there was no statistically significant difference

in the length of stay before and after the COVID-19 pandemic period [$F(1, 295) = [0.183]$, $p=0.669$].

There was no statistically significant difference in the discharge destination [$\chi^2 (9, N=297) = 9.300$, $p=0.410$] of cases; the commonest remaining POP from 23.1%⁴⁶ to 20.4%.²⁰ Transfers to medical wards decreased from 8.0%¹⁶ to 4.1%.⁴ (Figure 3).

Psychiatric Out-Patients

A total of 2912 participants (Table 5) required POP follow-up appointment between 2019(1758) and 2020.(1154) New case referrals dropped from 58.3%(1025) in 2019 to 22.4%²⁵⁸ in 2020 while follow-up cases increased from 41.7%⁷³³ in 2019 to 77.6%⁸⁵⁶ in 2020. Significant changes in the composition of cases reached high statistical significance ($\chi^2 [1, N=2912] = 365.271$, $p < 0.001$).

There was also an increase in patients presenting for more than one appointment during the study period. In 2019, 527 participants had more than one presentation resulting in 1499 POP appointments, while in 2020, 374 participants amounted to 1077 appointments: marking an increase from the pre-COVID period (85.27%) to the post-COVID period (93.33%) of total appointments.

MHA status

Participants in this category were all reported to being followed-up on a voluntary criterion according to the MHA. However, proof of other MHA schedules in act was retrieved within the same cohort, exposing systematically inconsistent data collection and management.

General Hospital Liaison Psychiatry

A total of 253 participants were identified. 160 in 2019 (34 new cases, 28 follow-up cases and 98 with no information) and 93 in 2020 (37 new cases, 36 follow-up cases and 20 with no information). There was a highly significant increase [$\chi^2 (2, N=253) = 37.578$, $p < 0.001$] in the percentage of both new (21.3% to 39.8%) and follow-up (17.5% to 38.7%) cases referred together with a 26.4% drop in the total number of referred cases from 63.2% to 36.8%. Concomitantly, the percentage of cases for which no information was available decreased from 61.3% ($n=98$) to 21.5% ($n=20$).

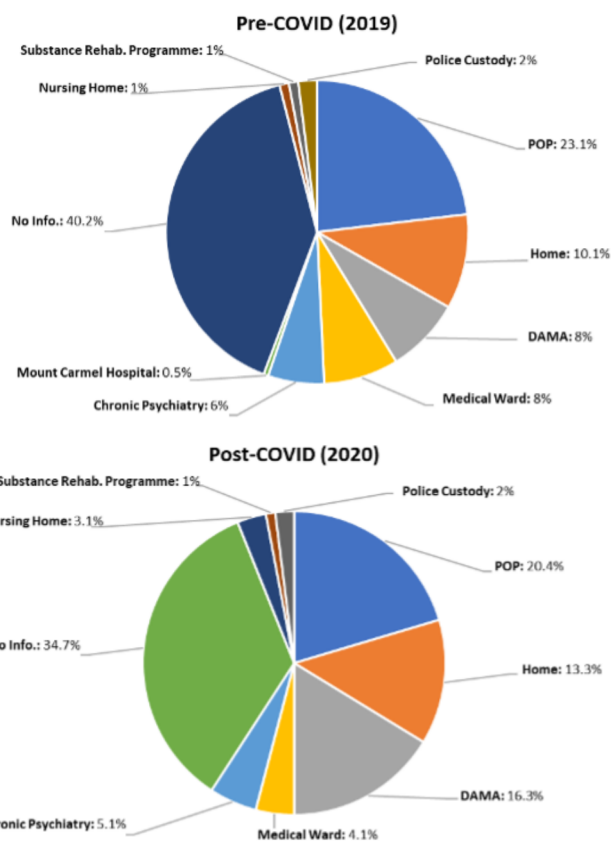


Figure 3 Discharge destination. POP: Psychiatric Out-Patients, DAMA: Discharge Against Medical Advise.

DISCUSSION

The findings of this study revealed several noteworthy trends and changes in psychiatric service utilisation during the COVID-19 pandemic period.

Inpatient Services

In the inpatient services category, there was a statistically significant increase in new cases accompanied by a mild non-significant decrease in follow-up cases indicating a notable impact on the population leading to an increased demand for acute care.

The overall number of cases decreased by 49.25%, aligning with previous research indicating that

Table 5 POP Cases

Cases	Pre-COVID (2019)	Post-COVID (2020)
New Cases	58.3% (1025)	22.4% (258)
Follow-up	41.7% (733)	77.6% (856)
No Information	60.37% (1758)	39.63% (1154)

admission rates decreased during the pandemic period globally.⁷ In India, in-patient admissions decreased by 76.6%.⁸ In Italy 98.8% of psychiatric wards reported declining admission rates.⁹ In the United States, decreased admission rates corresponded to pandemic period peaks¹⁰, with similar trends in Brazil.¹¹ This can be attributed to various factors, including apprehensiveness of clinical settings associated with the pandemic, hindered access to services due to admission pathway alterations, and changing prevalence of mental health conditions. The number of cases with no available information decreased, indicating improved data collection and documentation practices. Bottom of Form

Despite not reaching significance, presenting complaints of patients seeking in-patient services exhibited some changes. The frequency of anxiety remained stable (7.5% in the pre-COVID period, 7.3% in the post-COVID period), and the same was found for depression (17.1% in the pre-COVID period to 16.7% in the post-COVID period). This stable pre-/post-pandemic prevalence highlights the importance of continuous mental health support and intervention. This trajectory opposes local mainland studies showing a relative increase in depression and a drop in anxiety.³ A systematic review collecting data from 134 cohorts reported that most international studies conducted in medium to high income countries showed no significant changes in mental disorder presentations amongst the general population. Minimal worsening of symptoms of depression and general mental health was noted for women.¹² An increase in self-reported mental health symptoms was described by Penninx et al¹³ without finding objectively measurable and statistically significant increase in rates of mental disorders, self-harm or suicide rates. Furthermore, while possibly being indicative of high levels of resilience and adaptation, results indicated a possible time-lag between onset and presentation.¹³

Frontline professionals in rural communities have been reported to exhibit increased levels of depression, anxiety and burnout when compared to the general population.¹⁵ Employment support, communication and financial independence were the principal concerns. Despite experiencing decreased pandemic-related stress, a higher and inversely

proportional correlation between stress and financial income was observed^{15,16}; the higher the financial income and security, the low the perceived stress. The changing mental health profile exhibited in Gozo indicates that the urbanisation of the island is having measurable objective effects on the comorbidity rates of the population; being a potential confounding factor.

There was a statistically insignificant increase in cases related to aggression, alcohol misuse, and dementia. While on-premises alcohol consumption plummeted in the European Union, alcohol sales increased by 3-5% in Germany and the United Kingdom with online sales increasing by 234% in the United States.¹⁷ This mirrors the results obtained from this study. Higher increases in alcohol consumption were reported amongst: individuals co-morbid to anxiety and depression¹⁸, older individuals, essential workers, and individuals with children.¹⁹ Furthermore, emergency department calls for domestic violence precipitated by alcohol misuse rose by 60%.¹⁷

The pandemic together with social restrictions resulted in psychological sequelae predominantly experienced by caregivers with resulting worsening mental health and increased physical and psychological burden, independent of the patients' severity of disease.²⁰ The increase in dementia presentations may be associated with the increased burden experienced by respective caregivers²¹ precipitated by the closure of day/respite centres and public health restrictions.

Despite the increased referral of retirement age patients observed in mainland local studies (Galea, et al, 2023), demographic characteristics did not show significant changes during the pandemic period. There were no statistically significant differences in terms of gender presentation, age group representation, or nationality of the cases.

A significant difference was observed in the MHA status of admitted patients. The proportion of involuntary admissions increased, while voluntary admissions decreased, mirroring local mainland⁴ and similar international studies.²² While involuntary cases remained numerically stable, their statistical representativeness increased due to the significant decrease in voluntary admissions. During the pandemic period, the rate of mental health crises

requiring involuntary admission remained stable. The Gozitan population remained stable due to the travel restrictions imposed. Access to emergency services was maintained. Thus, whereas the number of voluntary individuals who would have benefitted from an admission in 2020 should have remained stable, this was not reflected in the results; arguably being successfully managed in the community. However, this would be best evaluated through further research excluding the potential of a rebound increase in voluntary cases following the pandemic period.

Psychiatric Out-Patients

The number of new cases reviewed at the Gozo POP significantly decreased, accompanied by an increase in follow-up cases. This differed from local mainland findings in which new cases in community mental health clinics increased by three-fold.³ Collectively, these findings suggest that a proportion of individuals requiring psychiatric intervention did not seek medical attention, potentially contributing to a surge in psychiatric referrals following the relaxation of COVID-19 restrictions and a higher rate of mental health morbidity. This highlights the importance of robust crisis intervention strategies and strong acute psychiatric services.

Global access to health services was considerably impaired predominantly due to concerns of spreading COVID-19 accompanied by a shift in the modus operandi largely by online and telephone consultations.⁸ Italy experienced a 25% drop in community MHS.¹⁰ A perceived decreased access to services was reported in the United States. 42.7% of this cohort responded that this limited access directly contributed to increasingly seeking psychiatry crisis services.²³ Despite the initially increased hesitancy for teleconsultations, overall attrition eventually decreased⁸, reflecting the need for further local studies looking into the long-term effects during the post-COVID period. Furthermore, the closure of services and clinics led to a decrease in referral rates which was more prominent for individuals without recorded severe mental illness with a resultant subsequent increase to previous levels in 2021.⁸

Locally, this shift may reflect a hesitancy within the population to newly seek out health services due to the pandemic and an increased need to re-speak these services. During the COVID-19 pandemic period in

SUMMARY BOX

- The changing mental health profile exhibited in Gozo indicates that the urbanisation of the island is having measurable objective effects on the comorbidity rates of the population.
- Despite increased referrals of retirement age patients in mainland Malta, demographic characteristics did not reflect similar changes in Gozo.
- The proportion of involuntary admissions increased, while voluntary admissions decreased; arguably being successfully managed in the community. However, this would be best evaluated through further research excluding the potential of a rebound increase in voluntary cases following the pandemic.
- Increased POP follow-up appointments but decreased rate of new case referrals.
- Improved data management systems.

Gozo, one health centre operated only during the day; many general practitioners are employed by GGH while private practice plummeted due to health concerns and isolation.

Although no significance was found in post-discharge planning, most cases were discharged with POP follow-up, reflecting the continuity of care and the need for follow-up after inpatient treatment. Furthermore, all POP patients were registered as voluntary attendees under the MHA criteria. Other MHA schedules are available and their utilisation was not categorically excluded while GGH annual reports refer to the application of other MHA schedules being utilised during the study period; highlighting inconsistent systematic incongruencies in data collection and management. Locally, a lacuna existed in data registers and accessible online data records for healthcare systems analysis and studies. While no outreach services are available in Gozo, since then a care plan with clear discharge destinations, identified Key Healthcare Professional and an MHA register have been introduced in GGH.

Added to the 2020 POP follow-up cohort are also the acute inpatient service users who were being followed up while on-leave from the ward and resultantly discharged as part of the hospital's COVID-19 policy with resultant multiple close follow-up appointments; ultimately achieving the same results through adequate utilisation of different NHS pathways by respective responsible units. This practice was continued due to the improved distribution of workload, timely follow-up, clinic-time allocation, and lessened burnout. Patients discharged while on-leave from acute psychiatric services are not represented due to systemic data input methods. This highlights the importance of investment and empowerment of outpatient and community services as these may well prevent relapses and re-admissions. Additionally, the length of stay in the in-patient services did not show a statistically significant difference between the two periods.

General Hospital Liaison Psychiatry Services

In the general hospital liaison psychiatry referrals, there was a decrease in the total number of referred cases. This was accompanied by a significant increase in the percentage of both new and follow-up cases referred, mainly due to limited information being available within the pre-COVID period group. This indicates improved data collection and documentation practices in the liaison psychiatry referrals category. Despite a statistically significant correlation, the drastic change in no information cases confounds the true significance of such change making it difficult to extrapolate inferences from this data.

A limitation of this study was that data was obtained exclusively from GGH, possibly impacting on the study's generalisability. However, this is in line with the study's

research question. Another limitation was the lack of a local database bridging private and public services. Additionally, the timeframe was relatively short, capturing data from January 2019 to December 2020, and therefore further studies are needed to analyse long-term post-COVID effects of the pandemic. A further limitation is the lack of information available for certain variables such as severity of illness, relapse rates and time between discharge and community follow-up; which limit the analysis of this data. Systematic data methodologies applied can be improved providing a more precise understanding of the local population and associated variables.

CONCLUSION

This study provides valuable insights into the impact of the COVID-19 pandemic period on psychiatric services in Gozo, highlighting the changes that this pandemic period imposed on mental health needs of the studied population and how the respective services evolved. Service restructuring and staff deployment together with policy implementation re-directed workload and patient distribution to community services. Systematic lacunae were identified which potentially can be improved to enhance access and delivery of care for patients while increasing job satisfaction and lessening staff burnout. Recommendations include developing a more methodical data collection systems and improving community service resources. Further studies would be well-suited to analyse the long-term effects of the pandemic as well as the ongoing changes in the mental health needs of the population. A follow-up study investigating the same parameters would shed light on whether rebound increase in cases was experienced due to the reduced frequency of seeking help in a timely and appropriate fashion.

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