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Self-harm and Suicide- A COVID-19 Pandemic fallout

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Abstract: **Background: The world is dealing with COVID pandemic and its consequences. The medical fraternity & the governments of their respective countries are taking avid measures in curtailing the epidemic to a minimum. With the focus mainly on the case detection and treatment, issue that has been grossly overlooked, is the mental repercussions of the COVID pandemic and its economic fallout. The plastic surgery department observed a high incidence of suicidal wrist cut injuries during the Lock down phase in India and planned to study such suicidal cases in details and assess the reason behind them.**

Methods: A retrospective observational epidemiological assessment over a period of three months of lockdown was conducted, the cases included hand cut injuries especially with suicidal intent. Similar data was retrieved for the years 2019, 2018 and 2017. The suicidal cases were studied in details as to their cause of suicide, previous psychiatric history, depth of cut, if on any medication et cetera. Fischer's Exact T test was used to calculate significant correlation.

Results: There was a significant correlation of suicidal hand cut injuries and COVID pandemic. 75% of the causes were related to COVID pandemic directly or indirectly. The suicides showed a true intent in the self-harm inflicted.

Conclusions: The management of the population vulnerable to mental diseases has become disrupted. Filling the lacunae of awareness at the grass root level is the need of the hour. Also measures need to be taken to regain the waning of empathy shown by the already taxed health care professional while dealing with patients in OPD and emergency.

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Keywords: **Wrist cut, COVID, awareness, Self-harm, poor management.**

1. INTRODUCTION

For a long time no such event has gripped the world like the on going COVID pandemic. Though people have put a brave front to unite against the pandemic there are always those who are vulnerable and cannot cope with the stresses of the consequences of the pandemic. Nonetheless the world was poorly prepared for the COVID-19 pandemic.

Psychodynamics and behaviourism cannot be widely separated, if not otherwise, from some form of actual physical cause. The presence of a disease in society and its effect on people affects the psyche of many in a population. Mental illnesses thus a consequence of this pandemic is but natural. The strictly instated lockdown and containment in COVID-19 crisis has disrupted the deliverance of psychiatric treatment worldwide. This is especially true in many lower-income and middle-income countries, like India Itself where mental health services are weak and fragmented.

Self-harm and attempted suicidal behaviour as per the WHO suicide surveillance system [1] is one of the most common manifestations of mental illnesses. The reported suicidal attempts represent the tip of the iceberg of which wrist is a common site [2]. Considering the status quo the first suicidal death reported due to COVID reasons was in India Itself [3].

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The Plastic Surgery department at our institute observed many cases of attempted suicide in the lock down period during COVID-19 pandemic in India. We here try to draw a relation whether such self harm attempts were because of stress in COVID and assess the reasons for the same.

2. SUBJECTS AND METHODS

A retrospective observational study was conducted in the department of Plastic Surgery. Data was collected in terms of hand injury cases operated in the department during the lock down period in COVID pandemic in the months of April, May and June 2020. The cases were classified according to their cause into accidental, occupational, assault and suicidal. A similar data was determined for the same months in the years of 2017, 2018 and 2020. Fischer's exact T test was used to find if there was a positive correlation in the suicidal cases in the COVID lock down phase. Institutional and Departmental permissions were taken at the onset of the study.

A thorough history and examination of the suicidal cases was done. Data was collected and tabulated in terms of their age sex, reason of self-harm, current and previous psychiatric history, psychiatric treatment if any and details of injury were recorded for each patient. Depth of injury for each patient [2] was classified as shown in Table-1. Assessment was done whether the self-harm reason was related to the COVID pandemic or not.

TABLE 1 - Showing the classification of the depth of injury

Classification of Depth of Injury	
Classification	Structures Cut
Surface	Skin and Sub Cutaneous
Superficial	PL, FCR, FCU, FDS- Middle Finger, FDS- Ring Finger
Middle	FDS-Index Finger, FDS-Little Finger, Median Nerve , Radial artery, Ulnar Nerve and Artery
Deep	FDP all Finger, FPL, PQ
(PL- Palmaris Longus, FCR- Flexor Carpi Radialis, FCU- Flexor carpi ulnaris, FDS- Flexor Digitorum Superficialis, FDP- Flexor Digitorum Superficialis, FPL- Flexor Pollicis Longus, PQ- Pronator Quadratus)	

Following their operative procedures patients were either discharged or referred to the mental health department. Telephonic follow up was also done for their mental state at home.

3. RESULTS

There are 8 cases of suicidal deaths with mode of wrist cut injury of the total 75 hand injury cases in the 2020. All of these patients were operated. Suicidal cases and assault cases in other years that 2017, 2018, 2019, 2020 hand cut injuries who reported in the duration of lock down of COVID period are tabulated in Table-2. There was a positive correlation in the suicidal cases during the lock down period (P - 0.0281, <0.05) on the three months of April, March and June 2020. On the contrary, there was no significant relation in hand injury causes because of assault, accidental and occupational causes in the COVID lockdown months as compared to previous three months. However, the data showed a spike in assault cases in 2020 the relation was nonsignificant (p-value = 0.5290, >0.05).

TABLE 2- Showing total number of Suicidal and Hand Injury cases from other causes in the four years included in the study

	2017	2018	2019	2020
Suicidal Attempts	1	1	2	8
Assault	6	0	7	13
Accidental	11	17	11	19
Occupational	38	53	46	35
Total Hand Injury	56	71	66	75

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Of the suicidal cases the age group varied between 25 years to 54 years. There were two female patients of the total eight cases. The main reason cited for self-harm was related directly to COVID in two patients, indirectly in three patients. One patient had previous history of psychosis with self-harm history. The reason for the last case was unrelated to COVID. The details of these suicidal cases are summarised in table 3. The cause of suicide has been deemed as direct when the patient was exposed to the virus in some form itself and indirect because of the consequences of the pandemic.

Case 1:-the first case of self-harm in the lockdown phase presented on 15th April 2020. This was 25 year old female. The reason of self-harm or suicidal attempt was depression which stems from one of her relatives becoming COVID positive resulting in dissolution of her marriage. This led to her becoming depressed and a suicidal attempt. She attained a superficial cut at Zone 5 on the volar aspect of the Left forearm which included Palmaris Longus tendon only. She was started on . Forearm repaired on 16/04/2020. Patient was discharged with advice to the relatives regarding regular follow up with the mental health department

Case 2:- The second case presented to us on 08th May 2020 was a 29 year old male who had cut his wrist with a knife because of a girl and love affair (Figure:- 1,1). Patient was under alcohol influence at the time of the event. There was no relation of this patient with the ongoing COVID pandemic. He had middle depth cut wound on the left wrist with injury to Palmaris longus, FCR, FDS of Middle finger and ring fingers, FCU partial and the radial artery. Repair done the next day and treatment started for anxiety disorder.

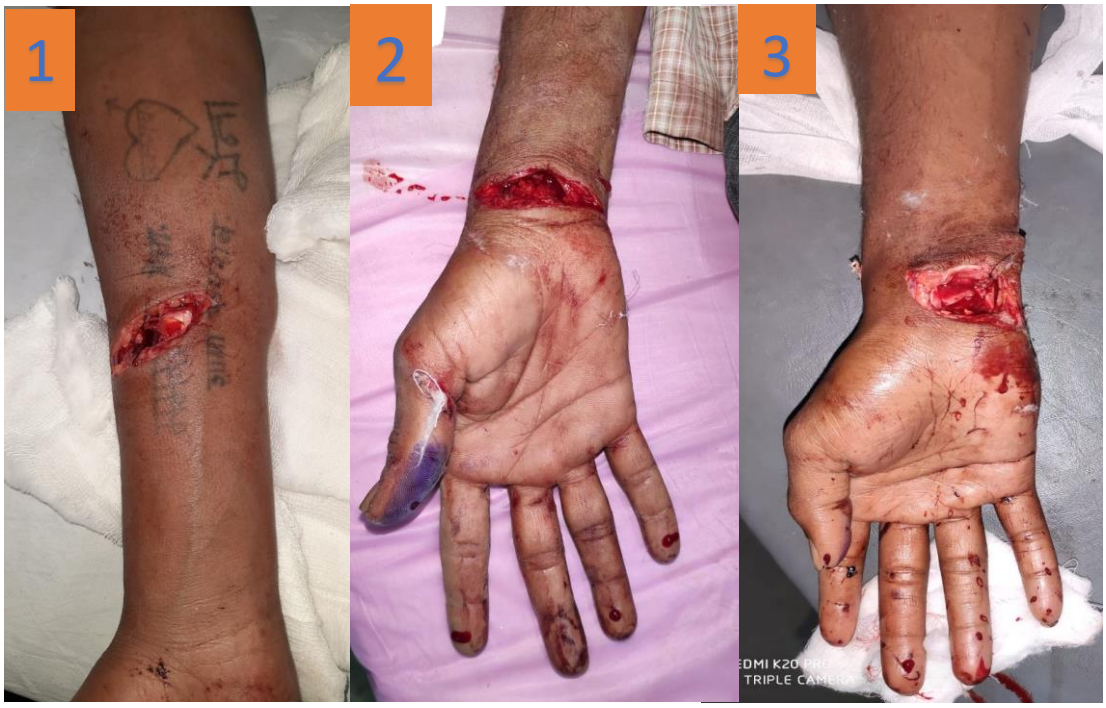

Figure 1 :- Show different suicidal cuts that came to our emergency department

Case 3:- The third patient was 54 year old man, an immigrant labour who had cut his wrist with a stationary blade on 12th May 2020 was the sole earner of a family of five. Because of the lock down he had lost his job as a daily wage earner. Loss of earning and inability to go back to his family, inadvertently led him to carry out self-harm act. He had sustained a middle depth cut injury with damage to his radial side structure including the FCR tendon, FDS of index finger, radial nerve and artery (Figure 1,2). He was counselled by the mental health department after his repair.

Case 4:- Next case which came to our emergency department on 23rd May 2020 was 24 year male who was a known case of Borderline Personality Disorder and had history of previous multiple attempts of self-harm as evidenced by hesitant marks on both his forearms (Figure 2). This time there was middle depth wound on the left forearm in zone V with injury FDS muscle bellies of I, middle, ring finger and little finger, FCU and ulnar artery. Patient was already on Fluoxetine. Following repair patient was transferred to psychiatry ward for further management.

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Figure 2:- Showing a case with a deep cut over the forearm Zone V-VI

Case 5:- The fifth case of suicidal harm came to our emergency department on 28th May 2020 was a 45 year old female mother. In view of the lock down, she had lost her job as a garment shop sales person. As per patients history she was stressed about the family which drove her to commit the act of self-harm in the heat of moment. She had middle depth sharp glass cut injury with cut superficial tendons of the her left zone V wrist along with radial artery. She was started on treatment for anxiety stress disorder. Repair was done and discharged with advise regarding regular follow up.

Case 6:- The next suicidal case was 28 year old unmarried man who came on 10th June with history wrist cut by glass. His parents were tested positive and were admitted for COVID treatment. Even though he himself was COVID negative, In a state of depression and feeling of hopelessness he cut his hand with glass and thus sustaining a deep cut over this left zone V forearm with damage to the FDS muscles, Median nerve, Ulnar nerve, radial and ulnar vessels and the deeper FDP muscles (Figure 3). Patient was operated and kept in observation in the psychiatry till his mental state stabilised.

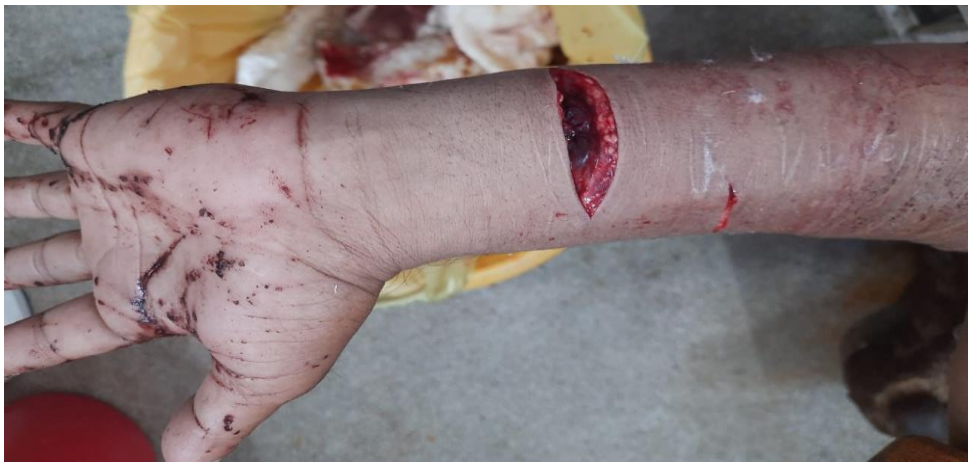

Figure 3:- Showing the case of Borderline Personality disorder with previous attempts at suicidal attempts as evidenced by multiple hesitant marks

Case 7:- This patient was a known case of hernia who wanted to get operated. As per his history he may have come in contact with a potentially positive patient and heard that now he may not get operated ever. This event sparked tension and restlessness which made him cut his forearm on 20th June 2020 with scissors and sustaining middle depth cut to his left forearm with injury to both i.e. ulnar and radial vessels and superficial tendons. Counselling was done, patients COVID testing was done which came out to be negative and was refereed to general surgery after repair and discharge from our side. Patient was also started on anti-anxiety medication.

Case 8:- The last case of the lock down period that came on 26th June 2020, was another 30 year old male who cut his right wrist with glass as he had lost his job and couldn't make ends meet for him and family of four (Figure 1,3). He had middle depth injury with injury to his ulnar side structures. Patient was counselled. He underwent repair and referred to the mental health department for further counselling and treatment.

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TABLE 3:- Details of the patient presenting with suicidal attempts during the lock down phase in the months of April, May and June.		
Suicidal Cases with Self Harm		
Total Suicidal Cases		8
Age Group range		24-54 years
Reason for Suicide	Directly related to COVID	2
	Indirectly relation to COVID	4
	Not related to COVID	2
Suicides related with COVID cases		
Previous Psychiatric History		0
Previous Self Harm Attempts		0
Of the COVID related causes previous attempts of self harm		0
Depth of Injury in COVID related cases	Surface	0
	Superficial	1
	Middle	4
	Deep	1

4. DISCUSSION

More than the growing concern in general public regarding the spread of infection from suspected COVID-19 positive individuals the economic fallout and constraint has created a stress full situation in the Indian community especially in the lower socioeconomic strata. While the health measures are directed in limiting the growing number of cases of COVID-19 and are being successful, the economic measures taken by the authorities may not be as effective in the population. Also, Excessive apprehension regarding spread of infection can lead to acute stress, anxiety, especially in the vulnerable populations. The COVID pandemic has been purported to significantly impact the mental health states all over the world [4].

The National centre for Suicide Research and Prevention of Mental Ill-health (NASP) has enumerated possible potential risk factors such as isolation, unemployment, economic loss due to lockdown, affection of family members et cetera. These may precipitate self-harm behaviours during this pandemic crisis [5].

As seen in the our study in case 6 and 7, coming in contact with COVID patients or a near & dear one getting COVID positive has provoked a self harm tendency in an already scared population. The fear is because of the rampant spread of misinformation through social community and mouth to mouth rumours. This phenomenon has been annotated "Misinfodemics" – an outspread of a particular disease, accelerated by viral erroneous information. This appeals to peoples fear especially coming from relatives or someone known to them [6]. The fact that a certain relative getting COVID positive leading to turning down a marriage in Case 1 displays fear of the disease because of wrong information leading to stigmatisation of the affected families. The reason for self harm in Case 6 and 7 may also be purported to lack of proper guidance on part of the medical fraternity. Yes, considering the status quo, the medical fraternity whatever speciality may it be, is also under [7] thus may lack the personal touch and the necessary empathy towards the patient. Doctors may not be giving enough time to the patient discussing a disease, it consequences if any. Thus leading the patient to fall back on social media and internet.

"The stigma faced by population groups that find themselves at the heart

of an epidemic, can sometimes be more damaging than the virus itself."

-Hadley Stewart

Misinfodemics to a certain extent buds from news and media. According to Euronews [8] media to a certain extent has amplified the COVID pandemic out of proportion. Domination of the news cycle, media attention in prime and use of

appalling language affects the minds of general population. Rather than creating awareness it roots fear in the minds. This begins the vicious cycle of precarious and baseless information doing rounds on the social media.

A Lancet study revealed a relation that the unemployment worldwide wound increase from 4.936% to 5.644% which would be associated with 9750 suicides per year [9]. Statistics in India reveal that around 136 million jobs are at risk as fallout of the corona pandemic [10]. According to study by Verma and Mishra [11] regarding demographics of mental illnesses in the Indian population they found that one fourth of their participants shows depression and a just bit more than that showed anxiety disorders. Depression was related with the employed status of the patient. In our study group cases 3,5 and 8 are also examples of the same situation. Unemployment and financial insecurity provide strong impetus for a person to take rash decisions. These are accelerated by a similar fearful scenario in every neighbouring household, lack of emotional support and proper guidance.

Another observation in our study was that none of the COVID related suicidal attempts had any previous of self harm or suicidal tendency. There were no hesitation marks on either forearm in these patients. We can thus concur that these cases were truly new cases the cause of which is the ongoing pandemic. There was a predominance of the radial vessel involvement in our study subjects. As per the exhaustive study by Kisch et al [2] that the radial artery is the most commonly affected vessel in suicidal cuts. Thus this serves as a contributing evidence that these were real and primary attempts for suicide. Also the high prevalence of deep cuts which included middle and deep depth wounds (Figures 1 and 2) in our case subjects which included injury to the vessels shows the seriousness in intent of suicidal attempt. A study by Cho and Choi [12] have shown the severity of wound is associated with a true sense of suicidal intent thus supporting the fact that the consequences faced by these cases were severe enough to drive them to this act. Paradoxically, a concept of "Antisuicide" has also been described [13]. It is said that cutting oneself is an attempt to bring oneself back to reality from a state of undead reality. Considering the prevailing circumstances of the COVID pandemic this may be less likely as the COVID problem is a real problem and its fall out are affecting people not just health wise but also economically and socially. In either scenario, self-injury is not acceptable.

What we have seen here is just a tip of the iceberg. In this study we have only focussed on a specific anatomical part of the body involved in self harm. The ways and methods of self-harm are enumerable like burns and poisons among many. As per WHO, twenty suicide attempts accompany a single suicide in a population [14]. Thus this a far greater problem that actually meets the eye for which steps need to be taken at the earliest.

In a tertiary care centre like ours where the patient load especially the emergency cases is high, patient empathy and talking with the patient takes a back seat. More focus is put on fast track treatment and discharge of the patient to decrease patient load on the system. This is but expected from the doctors working in emergency departments who face a dual load of managing primary problem of the patient along with an ever changing COVID paraphernalia. Considering that COVID is here to stay, a rapid change in system is the need of the hour. With the online health provision system gaining fame and acceptance in these times, online providers of assessment need to be established at every centre. In low income states a direct one on one counselling centres, information centres need to be established [15]. These centres have already been established but access to the vulnerable masses is still deficient. The initiative of the *Arogya Setu* app on a persons mobile phone is very dynamic move in detecting cases and self-protection. But it fails to provide the one on one counselling that is much needed for the vulnerable population. On the contrary it creates a feeling of pariah for a person detected COVID positive and an impetus to resort to self-harm manoeuvres. Sometimes because of the attitude of the health care providers the patient may not seek mental health problems in fear facing ridicule. Thus awareness in the health care providers also needs to be created to keep such problems in mind while talking to the patients and their relatives.

In conclusion, the statistics of suicidal attempt by any means will increase as more and more population succumbs to the socio economic repercussions. A aggressive awareness amongst the population specifically related to mental health is required, in not just among the general masses, but also the health care providers to tackle this insidious elephant in the room.

The small sample size is a significant limitation of our study, as were limited by the cases that were referred to us. Thus projection to a larger population may cause data to be quite varied from actual statistics or the ground reality. Being a surgical department not much focus was done on the treatment and follow up of such cases, as the patients after surgery were managed by the Mental health department of our hospital.

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