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Pattern Of Death In Unknown Bodies Brought At Mortuary Of Tertiary Hospital & Comparison With Previous Year Study Of Same Center

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Abstract

The examination of unknown/ unidentified deceased consistently presents a challenge in all medical facilities while doing in post-mortem investigations. It may be attributed to a multitude of factors, including disinterested law enforcement personnel, inadequate documentation of the case's historical context, and the occurrence of partial or complete decomposition of the bodies. Determination of the cause of death in these unidentified bodies are challenges the expertise of forensic professionals, as postmortem examinations often yield limited or inconclusive findings. It is also observed that unfortunately, much desired interest is not shown by investigating officer as well as forensic experts for this type of cases, unless and until there is suspicion of foul play or any obvious prima facie evidence suggestive of homicidal manner of death. ADR report, police inquest, Punchnaama provided by the police is playing important role in it which are very important documents. This study was done to establish the parameters to study the cause of death in unknown deceased as well as the aim of present study is to obtain a profile of unknown dead bodies with reference to their age, sex, percentage of bodies that remain unidentified, cause and manner of death and to identify the place from where maximum numbers of dead bodies are brought and compare it with previous year study conducted at same institute. It was observed that out of one years of study in 2020 unclaimed body were 7.64 % but in 2021 unclaimed bodies were increased and it were 11.68 % of total post-mortem, most cases were in the 21-30 and 41 to 50 years age group, with male predominance seen. Respiratory illness was the cause of most of the natural deaths which was given after receival of FSL and Histopathology reports. After study and comparison with the data it is suggested that there is urgent need to form a separate portal or app for unidentified death registration at National level and the site should be easily visible, available and user friendly. This is important that reversal use of Aadhar by use of finger impression may helpful for identification of unknown deceased by preparing the data, which was already given in previous year study also.

Keywords: Law enforcement personnel; Unidentified; Decomposed; Respiratory illness

Introduction

Identification is the determination of the individuality of a person based on certain physical characteristics, i.e. exact fixation of personality.[1] It establishes the individuality of a person. Identification data includes the sex, age, external peculiarities which was known as identification marks such as malformations, scars, tattoo marks, wounds; anthropometric measurements, fingerprints, teeth. In depth data can be identified by DNA profiling, bone analysis and such other methods.[2,3] Identity should be established in both alive and the dead.[4] This isn't a complicated process though it is financial heavily costing for the meticulous data preservation. But after death, the Investigating officer or the Forensic Expert may be

unable to identify the unknown body because of improper/inadequate history, destruction, decomposition, mutilated body[5-7] due to that forensic experts should consider the scrutiny of such various parameters to confirm the pattern of death.[8] Geographical surroundings, condition of body with detailed knowledge of unidentified body post-mortem is important while incorporate with these cases. In the urban areas, such bodies are not hidden from the human eye mostly and thus brought promptly to the Forensic Expert. However, in rural areas, this may not be the case. The bodies may be left to decompose or may be mutilated by animals.[9] Such kind of bodies when brought for post-mortem pose a challenge for the experts.

Aims And Objectives:

1. To estimate the number of dead bodies which remain unidentified during/after autopsy.
2. To estimate the cause of death in these unknown/unclaimed bodies.
3. To estimate predisposing socio-economic and other factors contributing to disease and subsequent death.
4. In case of unknown/unclaimed dead bodies, identification of the area/situations from which the deceased is brought.
5. To analyse the 'certified cause of death' given by physicians in unknown/unclaimed bodies.
6. Compare the all data with previous year study of same institute.

Materials And Methodology: A descriptive study was conducted at Government Medical College and MBS Hospital, Kota for a study period of 12 months (1st January 2021 to 31st December 2021).

Inclusion Criteria:-

1. Cases of unknown/unclaimed bodies brought for post mortem to the Forensic Medicine and Toxicology Department of this hospital during the study period.

Exclusion Criteria :-

1. Bodies which were identified later during the autopsy.

Method: In cases brought for post mortem, ADR report, Inquest, Punchnaama and other documents provided by the police were scrutinized thoroughly. In case of the admitted patients, hospital records, investigations and autopsy findings were noted. Cause of the death was studied. Confidentiality was strictly maintained. Bodies brought for autopsy were treated with utmost dignity, findings carefully documented. Statistical Analysis: The data was calculated using MS Excel 2013 software. The percentages were calculated and translated into a graphical format. It also compares with the previous year study data which already published.

Observations: Out of the 1056 bodies brought to the hospital as well as the mortuary in the study period, the number of unidentified cases were 117(11.08 %). Out of the unidentified cases, males comprised of 110 in number, 6 were females and 1 was unknown, owing to the fact that all 1 body of foetus without reaching 4 months of IUL. It is also seen that some body parts also included but meticulous observation revealed the gender.

The age-wise distribution of the cases was peculiar. The maximum number of cases 48 were from the age group 21-30 years, followed by number of cases (22) each in the age group of 21-30 & 41-50 years; 8 cases in age group of more than 60 years , 5 cases in the age group of IUL for it Hasse's rules included, zero case in the age group of 11-20 years and 3 case in the age group 0-10 years.

The highest number of cases were brought in the month of June (15.38%) followed by the month of July (13.68%), than 11.97% in April and 11.11% in the November & May.

Autopsy was performed in all cases. The cause of death was formulated after autopsy. In all cases Sample for DNA collected, in 50 cases samples preserved for FSL and histopathology. Without any sample collection on the basis of pm findings cause of death lung disease was given in 33 cases and after receival FSL and Histopathology reports is also observed that most of the deceased died due to lung disease, 10 deceased died due to head injury and due to polytrauma and 7 bodies having drowning. There was 1 non-viable foetus and 1 was dead born.

The bodies were analysed during the autopsy and a thorough examination of the system suspected in the cause of the death was carried out. Efforts were made by the forensic experts to establish the identity of the

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individual. In order to do that, DNA was taken in all cases. Maximum bodies recovered from the city, only 11 bodies are from village area.

Discussion: The aim of our study was to study the pattern of unknown bodies with accuracy reliability and compare it with study done at previous year at same institute with same criteria. Only 7.6% were unidentified body in 2020 but in 2021 it is 11.08 % both years it seems to be small figure but it is not. Due to COVID restriction in 2020 number of unknown cases may go down. It is with great difficulty and a sense of responsibility that an autopsy surgeon has to deal with the unidentified bodies' autopsies. When we extrapolated on a large scale, it puts a great stress on the resources of the nation including burden on investigating authority, mortuary and on forensic experts. It is mentioned that almost all the cases that were brought dead had their Inquest (Panchanama) done after 72 hours as per circular of Rajasthan government. In most of the PHC and CHC there is deficiency of cold storage so most of the time body immediately sent to nearest higher centre where cold storage is present. However, communication via telephone was carried out in such cases, to ease the burden of the process. These formalities are the cause of the delay which can be mitigated by a national level web-based interactive tracking application of the unknown bodies by various agencies as well as an intersectoral co-ordination between the law enforcement agencies and the Forensic Medicine department, it is suggested that after taking into consideration last year study the procedure not update but a Standard operative procedure also released by the local superintendent of police that all unknown body autopsy should be done by the medical board request and videography should be followed. This SOP increased the burden of investigation also consuming the time of autopsy procedure. Maximum number of deaths occurred in age 31 to 40, previous year study sachin et al [27] observed that it was maximum in same group, because this group is the important pillars of the development of the society, which used to be in burden to provide wealth to his families, it is not similar to most of the studies specifically study done at Kolkata by Chattopadhyay et al.[13] 90.59% of the cases brought were from the urban areas almost same result was observed in previous year study Sachin et al[27], portraying the socio-economic imbalance even in the urban setting. As we know these days it is in mind of society that work for earning easily available in urban area comparison to rural so most of the worker shifted to cities most of the time they live alone and send the wealth to respective families. The gender distribution of the unknown bodies is similar to most of the studies, more than 92% of the bodies consisted of the male cohort. This pattern is similar to the pattern observed in a study made in Chandigarh by Kumar A, et al.[14] and previous year study[27]. 15.38 % cases were registered in the month of June in and in previous year study 17.14 % cases were in month of July, giving an estimate of the unsymmetrical autopsy load on the department. Lung disease was the cause of death in almost 70 % of the cases followed by polytrauma in previous year study same lung disease caused maximum death 71% followed by Head Injury in 15.50% of the recorded cases. Not Similar results were recorded in a study conducted at Chandigarh by Kumar A et al.[14]Unnatural deaths may have several factors involved, like vehicular or rail accidents, drowning, burns, poisoning, violent fights, body run over by cars or trains, etc.[10,15-22] These cases often involve the beggars and labourers and the destitute of the streets. Due to poor nutrition and environmental condition till time India is having tuberculosis more prevalently. The personal belongings of the bodies play an essential role in establishing the identity of the individual. It can be helpful even in cases where long-distance relatives establish the identity of the individual after a long time. Thus, the data collected by the forensic expert was a cumulative effort of the autopsy and the belongings as well as the visible identification data. Investigation by police are the pillars of the identification process it is observed that when identification achieved most of time case may solved easily. DNA sample has been taken in all case , long bone or blood on FTA card taken for same in this year study and previous year study samples for identification taken in all cases which is the need. They are helpful in cases when relatives came after the crimination of bodies. Viscera was acquired from 50(42.74%) and histopathology sample taken in 48(41.02%) cases. Previous year study viscera was taken in 33.80% cases and histopathology sample was taken in 28.17% cases[27]. It may be due to that in previous year study sachin et al[27] clear cut findings of lung disease was seen. The autopsy fulfils the

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demands to answer the questions which form the aims and objectives of the study. The cause of death, age-distribution, gender distribution, studied by examination and assessment of the individual during the autopsy and the reports of the samples sent for histopathological and chemical analysis assessed compared with previous year study. The Autopsy Protocol was followed.[23] Shortfalls of the study include possible observer bias, arising from the inter-observer variation between different autopsy experts analysing bodies over the period of the study.[24]

Conclusion: The present study has established the pattern of death in unknown bodies brought at the tertiary health centre in the 12-month study period. Most of the cases were in the month of June. Male predominance is seen. Respiratory disorders were the most common cause of death while polytrauma is next. The technical formalities are the cause of the delay which can be mitigated by a web-based interactive tracking application of the unknown bodies by various agencies as well as an intersectoral co-ordination between the law enforcement agencies and the Forensic Medicine Department. Some of the patterns are same and some are not same as compared to previous year study.

Suggestions: Newer techniques for the autopsy, preservation of the viscera, bone dating to find the time since death, a dedicated section in the Microbiology department for the bacteriological analysis of the specimens should be set up and DNA of each and every specimen should be collected so that the identification is confirmed even after the destruction of the body. A visual record of the autopsy should be documented for future reference. This can be done by a photography of the autopsy.[25] As we know in India Aadhaar card is having details of address, age, name, residence and it is cross matched with OTP as well as fingerprint and eye scan. If a reverse use is allowed by the government the fingerprint match with data of Aadhar can helpful for identification. [26] the study suggest an urgent need for creation of a national missing person database as well as DNA database to add the identification of unidentified / unclaimed / unknown persons and bodies. All suggestions are almost same which was give by previous years study.[27]

Ethical Clearance: Institutional Ethical Committee clearance was obtained before beginning the study.

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TABLE NO 1

YEAR	TOTAL	UNCLAIMED AND UNKNOWN BODIES
2020	929	71 (7.64%)
2021	1056	117 (11.08%)

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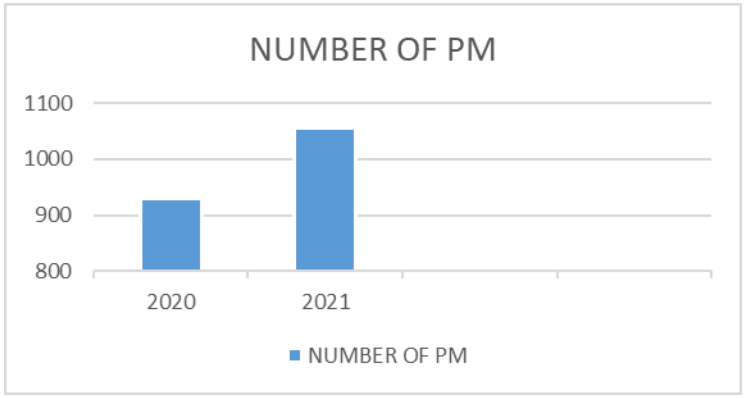

TABLE NO 2nd

AGE WISE DISTRIBUTION	2020	%	2021	%	TOTAL
IUL	6	8.57	5	4.27	
0-10 YEARS	2	2.85	3	2.56	
11-20	0	0	0	0	
21-30	9	12.86	22	18.80	
31-40	22	30	48	41.03	
41-50	14	20	22	18.80	
51-60	7	10	4	3.42	
MORE THAN 60	5	7.14	8	6.84	
UNKNWON AGE	3	2.86	5	4.27	
Total	71	100	117	100	

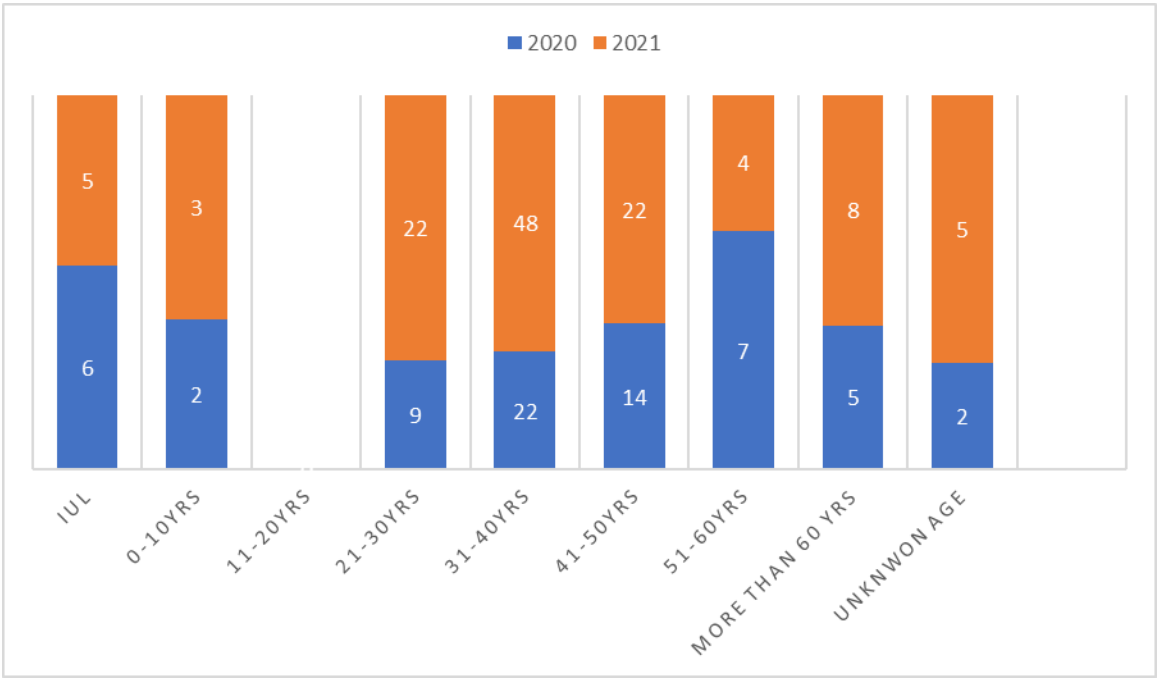

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TABLE NO 3

MONTH WISE DISTRIBUTION	2020	%	2021	%
JANUARY	6	8.58	10	8.55
FEBRUARY	4	5.71	7	5.98
MARCH	3	4.28	3	2.56
APRIL	1	1.42	14	11.97
May	1	1.42	13	11.11
JUNE	11	15.71	18	15.38
JULY	12	17.14	16	13.68
AUGUST	8	11.43	6	5.12
SEPTEMBER	9	12.85	5	4.27
OCTOBER	10	14.28	8	6.83
NOVEMBER	4	5.71	13	11.11
DECEMBER	3	2.86	4	3.41
Total	71	100	117	100

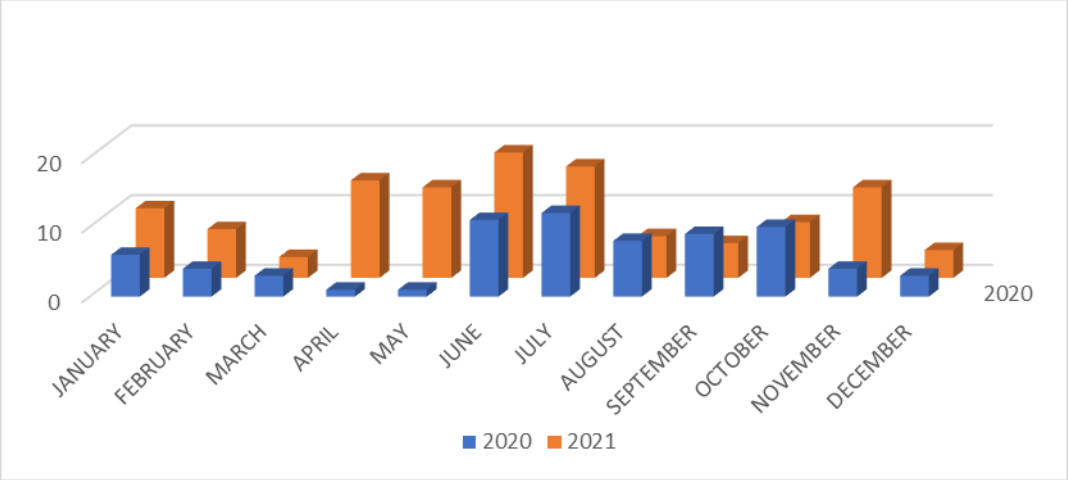

TABLE 4

CAUSE OF DEATH	NO OF CASES 2020	%	No of cases2021	%
LUNG DISEASE	6	8.45	33	28.20
LIVER DISEASE	2	2.82	2	1.71
OTHER NATURAL	3	4.23	7	5.99

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DISEASE				
POLYTRAUMA	9	12.67	10	8.55
HEAD INJURY	11	15.50	10	8.55
Drowning	10	14.08	1	0.85
OR	24(lung disease commonest)	33.80	50	42.74
NON VIABILITY	2	2.82	1	0.85
Dead born	1	1.40	1	0.85
Hanging	2	2.82	0	0
Strangulation	1	1.40	0	0
Not able to elicit	0	0	2	1.71
Total	71	100	117	100

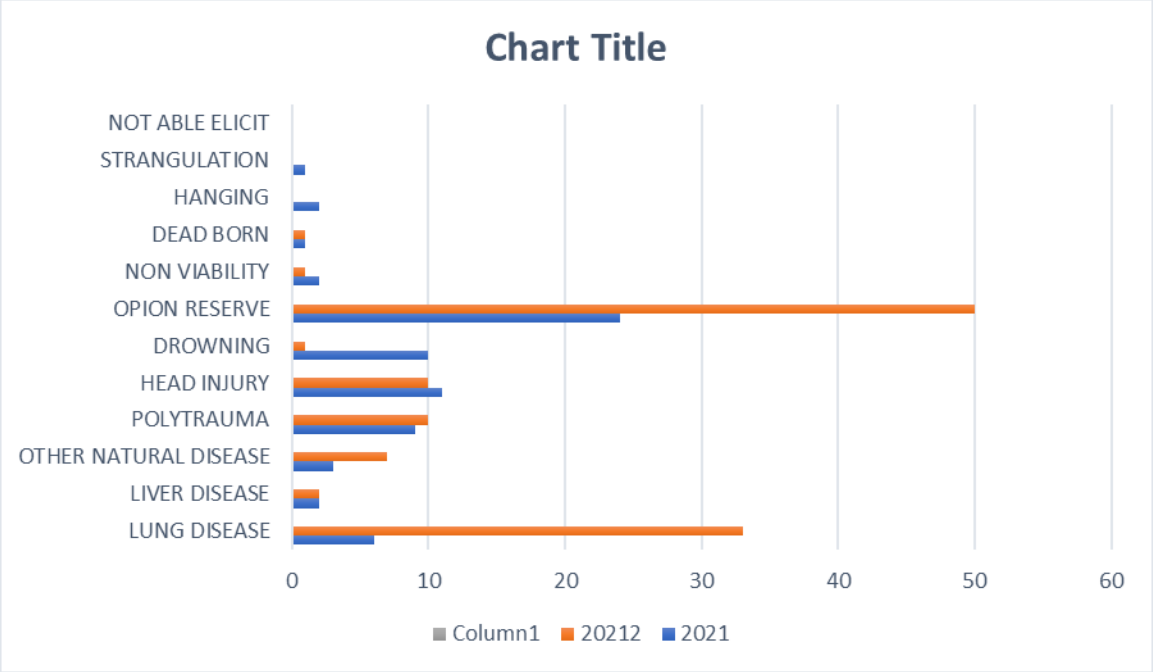

TABLE 5

SAMPLE COLLECTED	No of cases 2020	%	No of cases	%
VISCERA	24	33.80	50	42.74
DNA	71	100	117	100
HISTOPATHOLOGY	20	28.17	48	41.02

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TABLE NO 6

ADMISSION	No of cases 2020	%	No of cases	2021
BD	68	97.14	109	93.16
WITHIN 2 DAYS OF ADMISSION	1	1.42	4	3.42
MORE THAN 2 DAYS OF ADMISSION	1	1.42	4	3.42
Total	70	100	117	100

Table no 7

Religion	No of cases 2020	%	No of cases 2021	%
Hindu	60	84.50	97	82.90
Muslim	2	2.82	12	10.26
Unable to elicit	9	12.67	8	6.84
Other	71	100	117	100

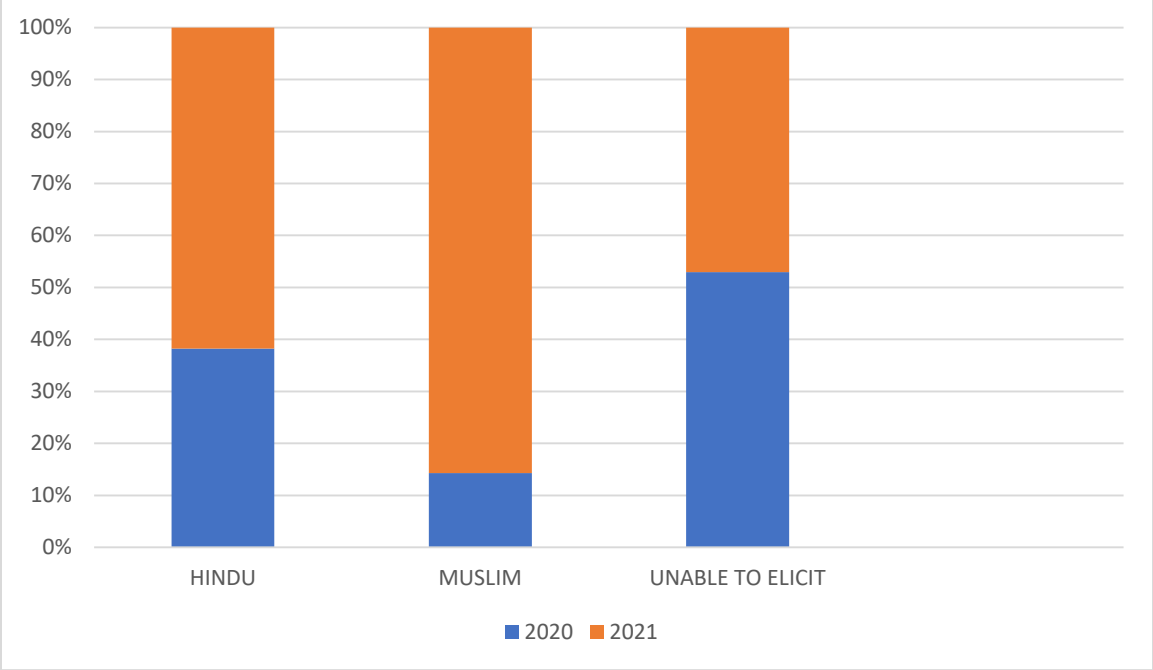

Table no 8

Police station	No cases	%	No of cases	%

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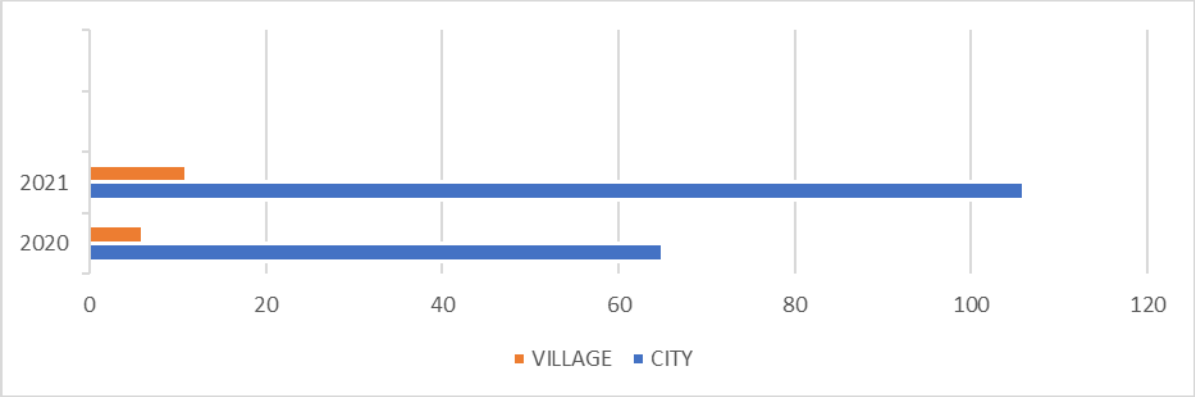
City	65	91.54	106	90.59
Village	6	8.46	11	9.41
Total	71	100	117	100



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