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PREVALENCE OF EXHUMATION IN DISTRICT FAISALABAD;
A LOCAL EXPERIENCE

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ABSTRACT: Exhumation is a procedure conducted by authorities in which a body or its remains are retrieved from the ground or wherever they were buried either lawfully or in an illegal manner. Exhumation is considered a legal procedure which is carried out when foul play is suspected after death and it is necessary to find out the cause of death. **Objectives:** To determine the prevalence of exhumation in District Faisalabad along with identifying the factors hampering the results to establish cause of death. **Study Design:** Descriptive, observational, retrospective study. **Setting:** Department of Forensic Medicine & Toxicology, Faisalabad Medical University, Faisalabad. **Period:** Six years from January 2011 to December 2016. **Methods:** The data of exhumations conducted in the Faisalabad district, was collected on a study proforma with the permission of relevant authorities. **Results:** Total 87 cases of exhumation were studied with a frequency of 14.5 exhumations per year. Male to female ratio of 2:0.9 was found with 69% males and 31% females. 78.16% cases belong to rural areas and 18.39% cases are from urban areas. Commonest age group was 20-29 year with (27.5%) cases. Cause of death was determined only in 18.39 % cases. In majority of cases (44.82%) time lapse between death & exhumation was 1-3 months. Allegations made for conduction of exhumation was poisoning in majority of cases (35.63%). **Conclusion:** Time lapse between burial & exhumation, advance stage of putrefaction, improper allegations &lack of proper documentation leads to failure in achieving the objective of exhumation.

Key words: Autopsy, Cause of Death, Exhumation, Prevalence.

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INTRODUCTION

Exhumation is disinterment or retrieval of a corpse or its remains either coffined or un-coffined after its burial which was done either as a lawful inhumation according to customs of society or in a surreptitious way to conceal the crime.[1] Derived from a Latin word, exhumation means “From the ground”. “Ex means out of, Humus means ground and Exhume means to bring into light” after burial.[2,3] The disinterment is carried out by the authorized personnel under the permission of law of land. According to the Geneva Convention 1949 relatives of the deceased deserve to “know the fate of their deceased relative”.[4]

Exhumation can be performed in context of criminal as well as civil cases with some specific objectives like:

Cause of death: to confirm the cause of death and verify manner and circumstances of death when any foul play is suspected.[2]

Second Autopsy: in case where primary autopsy report is challenged in any civil or criminal case.[2]

Identification: to establish the individuality of the deceased for any civil or criminal matter after burial. It can also be done in mass murder cases where international agencies conduct exhumation for identification.[2]

Civil legal issues: for insurance claims and civil legal disputes of negligence after road, industrial or other accidents.[1,5]

Academic projects: to study disease patterns and nutritional status in populations.[1]

Graveyard shifting: where all the parts of

graveyard are moved for development of ground or permanent burials are required.[1,2]

In some countries like India where most of the communities cremate the dead bodies, exhumation is not so common and the data is inadequate,[6] as burning causes major tissue loss that it limits the analysis of remains.[7]

However in Pakistan exhumation is not infrequent because majority of population bury their dead under the ground so there is possibility of obtaining positive findings after exhumation. Furthermore, autopsy is considered a taboo and disregard to the deceased which subsequently leads to exhumation in suspicious foul play cases.[8] In the suspicious cases next of kin of the deceased can request legal authorities i.e DCO, session judge[9] through local police for the conduction of exhumation. A team of authorized personnel includes squad of area police, duty magistrate and nominated medical examiner/board which conduct all the proceedings of exhumation.[9]

Regarding exhumation, small number of studies has been conducted in Pakistan in the province of Sindh & Khyber Pakhtunkhwa but very few have been done in Punjab.Therefore the present study is aimed to analyze the prevalence of exhumation in District Faisalabad.

METHODS

It is a descriptive, observational, retrospective analysis of 87 of medico legal exhumations carried out in the District Faisalabad by the Casualty Medical Officers (CMOs) of the medical board constituted by the Medical Superintendent of the respective hospital during a period of six years starting from January 2011 to December 2016. All exhumations belonging to urban and rural areas, males and females of district Faisalabad are included in this study. The data was collected from the complete autopsy reports generated at the end of exhumation procedure. Data of different variables like age, gender, time between death & exhumation, cause of death, stage of putrefaction and allegation at the time of exhumation was collected. The data was analyzed using Statistical Package for the Social Science (SPSS) version 19.

RESULTS

Data of all 87 cases of exhumation showed that number of exhumations in year 2011 was more than any other year as shown in Figure-1. This includes a total of 20 cases (22.9%) in 2011, out of which 17 (85%) were males and 3 (15%) were females. It is also noticed that the exhumations of males are done more frequently than the females as shown in Figure-2.

Out of total 87 cases of exhumation, the gender of 60 (68.9%) was male out of which 45 belong to rural and 12 from urban areas. 27 (31%) females were exhumed, out of which 23 were from rural while only 4 were from urban areas.

According to age group, number of cases from 2011 to 2016 is shown below in Table-I with maximum exhumations (27.5%) are done in the age bracket of 20-29 years. While least number of exhumations (6.8% each) are present at two extreme of age groups i.e. 1-9 years & >60 years.

In majority (44.82%) of these exhumation cases, the time elapsed between death & exhumation was 1-3 months while in only 12.64% of cases more than 12 months have been passed since burial as shown in Table-II.

Facial identification was possible only in 3.45% cases of exhumation, which were performed within the first six months of burial. On the other hand, soft tissue identification was not possible in any case.

Cause of death was determined in 18.39% cases while in 78.16% cases it was otherwise (Figure-3).

Stage of putrefaction at the time of exhumation was not mentioned in 58 (66.66%) cases while in rest of 29 (33.33%) cases maggot infestation (13.79%) & skeletonization (11.49%) was dominantly found as shown in Table-III.

Figure-4 depicts that In majority of cases, allegations made at time of applying for exhumation included poisoning (35.63%), firearm

injuries (9.19%) and strangulation (4.59%). While 27 cases (31.03%) remained undetermined.

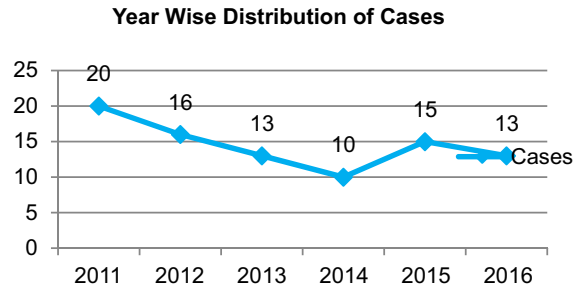

Figure-1. Year wise distribution of exhumation cases (2011-2016)

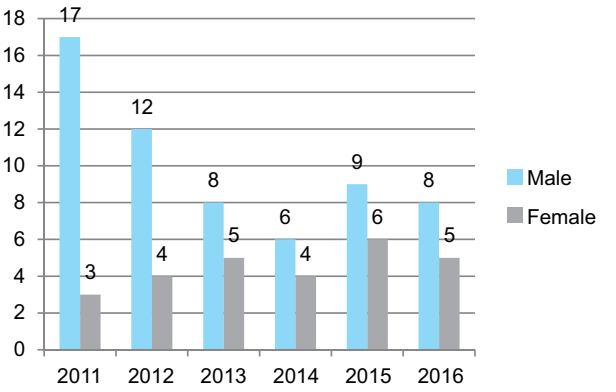

Figure-2. Gender wise distribution of exhumation cases (2011-2016)

Year		2011	2012	2013	2014	2015	2016	Total
Age Group	1-9	0	0	1	2	1	2	6
	10-19	3	4	1	2	1	1	12
	20-29	7	3	3	2	4	5	24
	30-39	2	5	3	0	3	1	14
	40-49	4	2	3	1	3	2	15
	50-59	3	0	1	0	2	1	7
	>60	1	1	1	3	0	0	6
	N/A	0	1	0	0	1	1	3
	Total	20	16	13	10	15	13	87

Table-I. Year wise number of cases according to age group (2011-2016)

Time Interval	Cases	Percentage
1-3 Months	39	44.82%
4-6 Months	25	28.73%
7-12 Months	12	13.79%
> 12 Months	11	12.64%
Total Cases	87	100%

Table-II. Time duration between death & exhumation (2011-2016)

Putrefactive Changes	Number of Cases	Percentage %
Color changes	1	1.15
Maggot infestation	12	13.79
Skeletonization	10	11.49
Adipocere	0	0
Mummification	2	2.29
Maggot+ Skeletonization	3	3.45
Maggot + Mummification	1	1.15
Not mentioned	58	66.66
Total Cases	87	100

Table-III. Stage of putrefaction of exhumation cases (2011-2016)

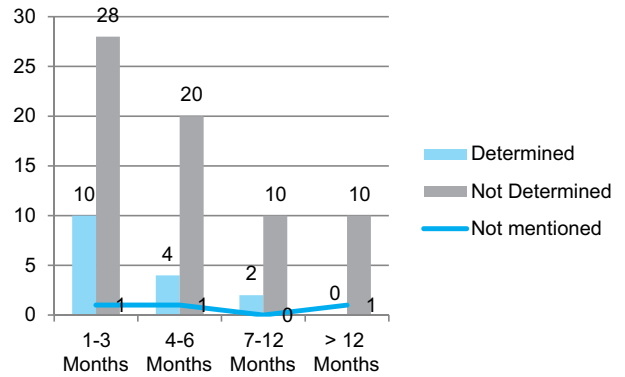

Figure-3. Determination of cause of death of exhumation cases (2011-2016)

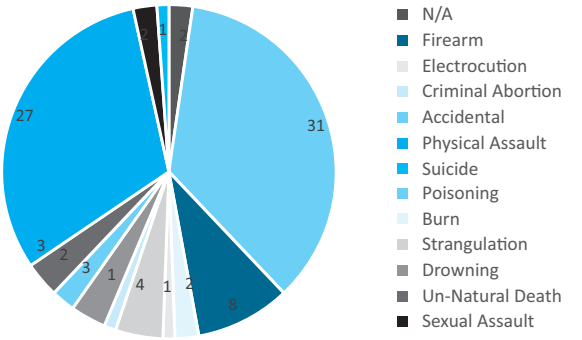

Figure-4. Allegation at the time of applying exhumation (2011-2016)

DISCUSSION

Our study comprised total 87 cases of exhumation during a period of 6 years at District Faisalabad with a frequency of 14.5 exhumations per year. Internationally, retrospective studies regarding exhumation have also been conducted. In such a study from Munster, Germany by B. Karger et al. included 155 cases of exhumation in 35 years with frequency of 4.42 exhumations per year.[10] Similar results were found in study conducted in Turkey.[11] Likewise, a study of 8 cases over a period of 6years done by Celia Kremer & Anny Sauvageau in Province of Quebec, Canada showed a frequency of only 1.33 exhumations per year.[12] The reason behind the less number of exhumations internationally is high rates of conduction of autopsies resulting in lower rates of exhumations.[11,12]

While in India, the frequency of exhumation in Hyderabad,[3] Nagpur,[6] Vijayapur District,[13] is quite less as compared to our study. This is due to the fact that majority of population comprises of Hindu community who cremate their dead.[3,6,13]

A study of 101 exhumations in Karachi, a cosmopolitan city of Pakistan, showed near to similar results as our study (13.4 exhumations/ year).[4] Whereas in contrast, a study conducted in the province of Khyber Pakhtunkhwa, Pakistan showed the frequency of 3.9 exhumations per year.[8] Thus we can see variations in frequency of exhumations worldwide as well as in different regions of Pakistan. The regions of Pakistan where frequency of exhumations is less than District Faisalabad are those where certain religious or ethnic group of people refuse to allow autopsies and exhumations on their dead as they consider it religiously prohibited or/& disregard to the deceased.[4,8]

Out of 87 cases of exhumation 78.16% belong to rural areas and 18.39% cases are from urban areas. This interpretation is comparable to studies from Hyderabad[14] and Interior Sindh,[15] highlighted by A. Qazi et al. & Kanwal Kumar et al. respectively. On the other hand, a study conducted by Zahid et al.[8] in Khyber Pakhtunkhwa didn't reveal any major difference.[8] These results further support the idea that there is more public awareness regarding medico-legal formalitiesin Punjab & Sindh as compared to KPK, Baluchistan & Tribal areas where these medico legal issues are mostly resolved through "Jirga system" which is an inherent and constitutive pillar of their society.[16,17]

Regarding gender distribution, present study demonstrates maleto female ratio of 2:0.9 with about 69% males and 31% females. These results are consistent with data obtained from Canada,[12] Germany,[5] Turkey[11] and India,[3,6,13] which also report male dominance. Our results are also in accord with studies reported from different regions of Pakistan proving male supremacy.[14,15,18] It can thus be suggested that as males are always on the move in the society and also more intrusive in nature than females, so there is a tendency to fall in criminal activities and ravage, giving rise to suspicion of homicide after death.

Literature shows that exhumations are more common in certain age groups. It is observed in our study that maximum cases (27.5%) belonged to age group of 20-29 year. Our results are consistent with previous results by Humayun et al., A. Qazi et al. & Farhat et al.[2,14,4] Corresponding to our study, age group of 21-30 years was found to be the commonest with maximum number of exhumations in India.[7] This outcome is contrary to that of Celia Kremer & Anny Sauvageau who found that maximum exhumations were done in the age group of 45-50 in Canada.[12] This discrepancy could be attributed to the dilemma of our society where lack of education and low literacy rate is leading to negative activities among youth. Other contributory factors could be poverty and unemployment which raise the chance of depression and suicidal intentions. Another possible explanation for this is that as the young age group is high spirited and sensitive, emotional issues may make them infirm & they might tend to react in a negative way leading to suicidal & homicidal instances.

Contrary to our expectations, cause of death could only be determined in 18.39 % cases while rest of the cases (78.16%) remained undetermined in the present study. This finding is contrary to previous studies done in Germany[5,10] Canada,[12] India,[6] & Pakistan,[2,4,8,14,15] which have been successful in determining the cause of death in more than 65% of cases. This raises the question to identify limitations of exhumation in Faisalabad district which led to low rate of success in determining the cause of death which is an important consideration. Some of the limitations mentioned in the literature are state of body at the time of burial, environmental condition of soil & grave and temperature of the region where burial was performed.[1,9]

CONCLUSIONS

In our point of view, the observed decrease in determining the cause of death could be mainly because of two reasons. Firstly, in more than 66% cases data regarding the state of body is not mentioned. So it could be argued that probably proper documentation of findings was not done at the time of exhumation. Secondly, the majority of the remaining cases, in our study, were found to be in the state of advance putrefaction which led to difficulty in finding the cause of death.[9,19] This result may be due to fact that as there is no time limit for requisition of performance of an exhumation in Pakistan,[20] so several exhumations are conducted even a long time after burial which decrease the chances of attaining successin finding cause of death.

Another limitation in our study is use of a vague term “Na Haq Qatal” (Causeless murder) while documenting allegations for conduction of exhumations which hampers in achieving objectives of exhumation.

RECOMMENDATIONS

- Before conduction of an exhumation, expert opinion should be taken for that particular case about its utility keeping in view the possibility of advance putrefaction.[18] In this way unnecessary use of time and resources can be avoided.[9]
- Authorities should entertain only those cases where a sound reason/allegation for exhumation is present.
- Public awareness should be raised for attainment of death certificate before burial especially in suspicious cases.[11]
- Training workshops for newly recruited doctors & staff should be arranged to enhance their dexterous competence regarding conduction & documentation of exhumation.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Shirza Nadeem	Principal investigator involved in literature review, Scientific writing, Proof reading and final approval.	
2	Humera Parveen	Co-Investigator involved in data collection, Results interpretaion & Data analysis.	
3	Almas Fatima Awan	Co-Investigator involved in Literature review & Scientific writing.