



ASCERTAINING THE MANNER OF DEATH IN CASE OF BODIES RETRIEVED FROM WATER: A CROSS SECTIONAL STUDY

Forensic Medicine

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ABSTRACT

Background: Determination manner of death in drowning is very difficult task and needs meticulous review of history of case, circumstantial evidences and follow up of police investigations. In this study we have carried out as much as possible efforts to collect the history from relatives, eye witness, investigation reports from police officer and some important evidence while doing post-mortem examination.

Methodology: The present study was carried out in Department of Forensic Medicine and Toxicology of this tertiary care hospital and apex institute serving for the need of central Indian population. The study includes the bodies retrieved from water sources brought for post mortem examination during the period of December 2013 to October 2015.

Result: Among the total cases studied, 43.18% died from accidental fall in water, in which 45.60% were male and 37.26% were female. 39.20% committed suicide by drowning in which 36.80% cases were male and 45.10% were female, and 2.85% died due to homicidal drowning in which 0.80% were male and 7.84% were female. In 26 cases (14.77%) manner of death cannot be determined in which 16.80% were male and 9.80% were female.

KEYWORDS

Accidental drowning, suicidal drowning, Homicidal drowning, manner of death.

Introduction

Manner of death is defined as Manner of death refers to the way (or design/fashion) in which the cause of death comes into being. Manner of death is classified into natural and unnatural. The unnatural deaths may be accidental, suicidal or homicidal in nature.^{1,2}

In case of death of a victim found in water there are a number of possibilities of the bodies found in water, such as the victim may have committed suicide by jumping into the water, he may have fallen into the water accidentally, he may have been sitting around the water source and may have immediately died due to some natural disease before falling into the water, he may have died suddenly due to some natural disease or exhaustion inside the water, he may have died from injury before being thrown into the water or may have died due to injury inside the water.³ The autopsy surgeon should take the assistance of eye witnesses and police history,⁴ but should not rely completely on them, because their opinions may change from time to time.

World Health Organization (WHO) described, drowning as a serious and neglected public health problem, because near about 42 people every hour and 372441 people every year die from drowning in the world. WHO also stated that 0.7% or more than 500,000 deaths every year are due to unintentional drowning. Some cases of fatal drowning are not classified according to the codes of the International Classification of Disease (ICD), such as, drowning that occurs as a result of floods, tsunamis, and boating accidents. So this number underestimates the real figures⁵

Homicidal drowning accounts for two-tenths (0.2%) of all U.S. killings. Amongst the homicidal drowning, most cases are children drowned by their parents, or wives drowned by their husbands in a bathtub. According to Federal Bureau of Investigation (FBI) data United States had recorded 907 homicidal drowning deaths over the course of 21 years, of these 416 (45%) were victims below the age of eight years, followed by the college students aged between 18-24 years which contributed to 117 (12%) cases.⁶

Rate of drowning death is 82 cases per day in India.⁷ National Crime Records Bureau (NCRB) data 2014 stated that, out of 316828 cases of unnatural deaths, 29903 cases (9.4%) died due to drowning in which 23166 cases (77.47%) were male, 6736 cases (22.52%) were females and 1 case (0.0033%) was transgender; this was the second most common cause of unnatural death after road traffic accidents (53.4%). Amongst the total number of drowning deaths, near about 11884 cases (39.74%) died due to accidental fall in water, 255 cases (0.85%) died by boating accidents, 7426 cases (5.6%) died by committing suicides

and 17764 cases (59.40%) died by other means.⁸

Result:

Table 1: Age and Gender distribution of drowning deaths.

Age (In Years)	Male		Female		Total	
	Cases	%	Cases	%	Cases	%
0-10	3	2.40	7	13.73	10	5.68
11-20	13	10.40	5	9.80	18	10.23
21-30	38	30.40	11	21.57	49	27.84
31-40	32	25.60	8	15.69	40	22.73
41-50	24	19.20	9	17.65	33	18.75
51-60	6	4.80	7	13.72	13	7.39
61-70	6	4.80	3	5.88	9	5.11
>70	3	2.40	1	1.96	4	2.27
Total	125	100 (71.02)	51	100	176	100

Out of total 176 cases, 72.02% of the victims were male and 28.98% were female. The male: female ratio was 2.45:1. Thus, the male predominance was seen in drowning deaths. The drowning deaths were commonly seen in age groups of 21-30 years found in 27.84% cases followed by 31-40 years in 22.73% cases and 41-50 years in 18.75% cases. Predominance of male is seen in all age groups except below 10 years (13.73%) and between 50-70 years of age. The range of age group included in the study for male was from minimum 2 years to maximum 85 Years and for female minimum 3 Day fetus to maximum 84 years.

Table 2: Distribution of drowning death as per manner of death.

Manner of death	Male		Female		Total	
	Cases	%	Cases	%	Cases	%
Accident	57	45.60	19	37.26	76	43.18
Suicide	46	36.80	23	45.10	69	39.20
Homicide	1	0.80	4	7.84	5	2.85
Undetermined	21	16.80	5	9.80	26	14.77
Total	125	100	51	100	176	100

Among the total cases studied, 43.18% died from accidental fall in water, in which 45.60% were male and 37.26% were female. 39.20% committed suicide by drowning in which 36.80% were male and 45.10% were female, and 2.85% died due to homicidal drowning in which 0.80% were male and 7.84% were female. In 14.77% cases (16.80% male and 9.80% female) manner of death cannot be determined. Male preponderance seen in accidental drowning deaths (45.60%) and female preponderance seen in suicidal (45.10%) and homicidal (7.84%) drowning deaths.

Discussion:

Out of total 176 cases, 72.02% of the victims were male and 28.98% were female. The male: female ratio was 2.45:1. Thus, the male predominance was seen in drowning deaths. The drowning deaths were commonly seen in age groups of 21-30 years found in 27.84% cases followed by 31- 40 years in 22.73% cases and 41-50 years in 18.75% cases. Predominance of male is seen in all age groups except below 10 years (13.73%) and between 50-70 years of age.

These findings are consistent with that of Auer A.⁹ (1990), Quan L. et al¹⁰ (2003), Shetty B.S.K. et al¹¹ (2007), Pathak A. et al¹² (2009) and Anary S. et al¹³ (2010). The probable reason behind preponderance of 21-30 years age group in drowning is carelessness and adventurous nature usually seen in youngsters while swimming or doing recreational activities in or around water source leading to accidental deaths. This is followed by the age group of 31-40 years in which most of the deaths were suicidal; it may be due to familial and financial problems arising in life and their inability to deal with them.

In the present study, 43.18% died from accidental fall in water, 39.20% committed suicide by drowning and 2.85% died due to homicidal drowning. In 14.77% manner of death cannot be determined. Male preponderance seen in accidental drowning deaths (45.60%) and female preponderance seen in suicidal (45.09%) and homicidal (7.84%) cases of drowning deaths. This finding is consistent with Azmak D.¹⁴ (2006), Shetty B.S.K. et al¹¹ (2007), Kanchan T. et al¹⁵ (2007), Murkey P. et al¹⁶ (2008), Shekhezadi A. et al¹⁷ (2009), Dogan K. et al¹⁸ (2010), Anary S. et al¹⁹ (2010), Rubio L. et al²⁰ (2014), Ranga Rao G. et al²¹ (2014) and Gupta S. et al²² (2008) who noted accidental drowning as the commonest manner followed by suicidal and homicidal drowning.

Shetty M.²³ (2005) in his study found that 74% male and 26% female died of committing suicides, 81% male and 19% female died of accidental drowning, and 0.28% cases died of homicidal drowning. Shetty B.S.K. et al¹¹ (2007) reported that 42% cases died by committing suicides in which 74% were males and 26% females. Accidental drowning was found in 54.06% cases in which 82% were male and 18% were females. 5 cases died of homicidal drowning in which 2 were male and 3 were female.

Summary and conclusions:

As per manner of death, 43.18% victims died from accidental fall in water, 39.20% victims committed suicide by drowning and 2.85% died due to homicidal drowning. Male preponderance seen in accidental drowning deaths (45.60%) and female preponderance seen in suicidal (45.10%) and homicidal (7.84%) drowning deaths. Thus Accidental drowning is the commonest manner of death followed by suicidal and homicidal drowning.

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