



Study of Demographic and Clinical Profile of Injuries Related to “Kite Flying” Celebration in Urban India

Bhavesh Jarwani¹, Mehul Gajjar², Urjita Modi², Rajvi Patel³, Rohan Parekh³, Sanket Nandani³

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Author’s Affiliation:

¹Associate professor; ²Assistant professor; ³Resident, Emergency Medicine, Smt. NHLMMC, Ahmedabad

Correspondence

Dr. Bhavesh Jarwani
bhaveshjarwani@hotmail.com

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ABSTRACT

Introduction: Kites were first introduced by the Chinese more than three thousand years ago, but in places like India, Pakistan and Afghanistan, Kite flying is celebrated in unique way. People enjoy cutting down others kites and there is an instinct to catch the threads of the “Cut-Kite” and rejoice the gain. In this study conducted at a tertiary care emergency medicine department to understand demographic profile and injuries related in such a festive celebration, occurring in one urban area, to spread awareness and reduce such incidence.

Methodology: This cross-sectional descriptive study was conducted using preformatted form in consecutive two year.

Results: Among 83 cases we studied, 81% were male. 65% were in the age group of 11-40. 70% incidences took place in noon and evening hours. 68.67 % presented in 108 ambulance services, 43 % presented with fall from height (terraces), 34 % had road traffic accidents because of strings and festival related excitement. Maximum had fall from 1 storey buildings. 56% received Out Patient based treatment. Among the admitted patients 15% had head injury, 2 cut throat, 9.7% had fractures and 1 had to undergo laparotomy, 2 died eventually during the hospital stay because of grievous injuries.

Conclusion: This study re-emphasizes the importance of spreading awareness and increasing the care, particularly of children during such an enjoyable festival.

Keywords: Injury, Kite flying, Urban, festival

INTRODUCTION

Kites were first introduced by the Chinese more than three thousand years ago¹ and were flown to bring good luck, they are flown throughout the world to enjoy leisure pass time, but in places like India, Pakistan and Afghanistan², Kite flying is celebrated in unique way. People try hard to get the kites of other cut down and cheer on achieving this.

It is also an instinct to catch the threads of the “Cut-Kite” and rejoice the gain². The common name of kite in Pakistan and India is —“Patang”. Different kinds of kites are made with tissue type paper and bamboo. In some parts of India, it is a celebration two days, but kids start flying kites months before. However, in this excitement, many lose control and seemingly harmless festivals turn into epidemic of accidental injuries.

“MakarSankranti” is the day when the glorious Sun-God begins to ascend and enter into the Northern Hemisphere (Sanskrit: “Uttarayaan”). In Gujarat, the kite fes-

tival is strongly embedded in local culture and cuts across religious differences.

To fly the kite, a special string, coated with combination of ground glass and water soluble glue is used which is called “Manja”. “Manja” sharply cuts the skin and underlying structures when comes in contact³.

While a few articles narrate the spectrum of kite-flying celebration related injuries, this article attempts to give the complete picture of such demographics and injuries overview.

MATERIAL AND METHODS

Study Design- cross sectional observatory study conducted at the Emergency department of a tertiary care hospital. Data of all cases of kite flying related injuries admitted were collected in preformatted form. Study population, patients visiting in trauma centre, V.S. general hospital. This study was done in a tertiary care hospital with attached trauma centre, which caters the ur-

ban population. The study was conducted during the period of two year from 1st December 2016 to 31st January 2018.

Inclusion criteria: All patients presented to Emergency Department and consented were enrolled in this study.

Statistical method: Data was entered into Microsoft Excel 10.0 and analysed using EPI2k.

RESULTS

During the study period number of cases studied where 83. There were more than 233 injuries during the same period. However, in many cases the forms were not properly filled up, or the patients denied consent. Hence the data represent a small but significant chunk of the group.

Table 1: Age wise distribution of the cases (n=83)

Age group (yrs)	Cases (%)
<10	17 (20.48)
11-20	21 (25.3)
21-30	18 (21.69)
31-40	15 (18.07)
41-50	5 (6.02)
51-60	4 (4.82)
61-70	2 (2.41)
>70	1 (1.2)

Table 2: Various indicator for study participants

Indicator	Cases (n=83) (%)
Time of Incident	
Night time (00 to 6 am)	1 (1.2)
6 am to 12 pm	17 (20.48)
12 pm to 6 pm	42 (50.6)
6 pm to 12 am	23 (27.71)
Height from where injuries took place (n=37)	
Fall on Ground*	14 (19.28)
Fall from 1 storey building	12 (20.48)
Fall from 2 storey building	9 (10.84)
Fall from 3 storey building	2 (2.41)
Mechanism of Injury	
RTA	26 (34.22)
Fall	34 (40.96)
Falls because of string	3 (3.61)
string injuries	20 (22.89)
Mode of transport to the hospital	
EMRI (108) ambulance services	57 (68.67)
private ambulance	5 (5.82)
Auto Rickshaw	15 (18.07)
Other	6 (7.23)
Admission from emergency dept	
ENT	2 (2.44)
Admitted in Nuero surgical ward	13 (15.85)
Ortho	10 (12.76)
Surgery	1 (1.22)
OPD based treatment	56 (68.29)

* Fall on Ground* because of push(due to brawl) or toppling (not from height)

Of 83 cases, that were finally included in this study, 67 (80.72%) were male and rest 16(19.28%) were female and male to female ratio was 1:4.19.

Maximum patients were in the age group of 11-20 (n=21, 25.30%) and 21-30 years of age group (n=18, 21.3%). However, significant numbers were in age-group of < 10 years (n=17, 20.48%), that shows heightened excitement and at the same time casualness among this age group (Table 1). One person of age more than 70 years suggests no one is spared during the festival celebration here.

Looking to the time of incitement (Table 2), Maximum patients were during noon hours, when the excitement is at the peak followed by evening, 27.1% in the evening from 6 pm to 12 am, however among these maximum were in the time period of evening 6 pm to 8 pm suggesting the day ends with the highest excitement.

Among the falls from height it was interesting to find that 2 victims had no walls on the terrace (Table 2). And rest had walled terrace. Among the falls from terrace, max had falls from 1 storeyed building (n=17, 20.48%), 9 (10.84%) had fallen from 2 storeyed building, and 2(2.41%) had fallen from 3 storeyed buildings

Among injuries fall from the height (n=34, 40.96%) followed by Road traffic accidents (n=22, 34.22%) were the commonest mode injuries related to the fest. However injuries due to string itself (n=19, 22.89%) and fall due to string (n=3, 3.61%) were also conspicuous (Table 2).

Maximum cases (n=57, 68.67%) arrived in EMRI (108) services that shows the mature and trusted pre-hospital care provided by 108 (EMRI)

Of the victims, 56(68.29%) had mild cut, bruises and lacerations and they were treated on "Out Patient" basis. 13 (15.85%) were admitted in neurosurgical care, among these 2 had EDH, 1 had contusion and 4 had fractures skull or facial bones. 2 had cut throat neck injuries. Among these seriously injured patients, 2 had died. 20 were admitted for indoor treatment.

Among orthopaedics cases 12 had fractures and 3 had strain if we include both upper limb and lower limb injuries. One patient required blood transfusion and one required multiple transfusions, 3 victims had DL spine injuries. 1 had pneumothorax and 1 had hemoperitoneum

DISCUSSION

Celebration of kite flying takes place during the festival of "MakarSankranti-Uttarayan" in the states of Gujarat and Rajasthan in India and during the Basant festival in Peshawar, Pakistan^{1,2}.

Injuries during kite flying commonly sustained either by kite-flyers, kite-runners (to catch the cut kites), riders of two wheelers and among the pedestrians. Injuries related to flying kites can be indirect like falls from height during kite flying to direct injuries by this "Manja"¹.

Of 83 cases we studied, 67 (80.72%) were male and rest 16(19.28%) were female. This shows male dominance

and male preference of celebrating with more vigour and heightened excitement.

Maximum patients were in the age group of 11-20 (n=21, 25.30%) and 21-30 years of age group (n=18, 21.3%). However, we had significant cases among children less than 10 years of age. This number is very high compared to other studies conducted in India⁴. This shows children in urban Ahmedabad need to be take care of very seriously during this festival.

Maximum incidences occurred in afternoon and evening period, showing the peak of excitement during this time period and parents should particularly take care during this period.

Fall from the height (n=34, 40.96%), Road traffic accidents (n=22, 34.22%) were the commonest mode of injuries and amongst them string was one of the common culprit. The same observation was found in other studies^{5, 6}. Hence to spread of awareness among the enthusiastic is very important during this festival.

In this study we tried to find the cause of falls in urban area and to our surprise, we found that 2 victims had history of fall from the terrace having no walls. This underlies the importance of awareness among public of such mishaps. However incidences of fall were noted from 1, 2 and 3 storeyed buildings irrespective of terrace wall. There were incidences of fall-down on the ground due to toppling and brawls among the children were also noted. This suggests to be cautious and calm is only remedy here.

Maximum cases (n=57, 68.67%) arrived in "108 Ambulance" services that shows the mature and trusted pre-hospital care provided by "108" and their service is vital during such celebration.

13 (15.85%) were admitted in neurosurgical care, among these 2 had EDH, 1 had contusion and 4 had fractures skull or facial bones. This was consistent with other studies^{7, 8, 9}.

Among bone and soft tissue related injuries, 12 had long bone fractures and 3 had strain only. Same observation is seen other studies as well^{10,11}. 2 victims had cut throat neck injuries. Other studies had significant cut throat injuries^{12, 13}; may be cause of the protective gear two wheels apply now day in Gujarat particularly, where this study is conducted.

2 had died. 20, 3 had DL spine injuries and 1 and pneumothorax and 1 head hemoperiteneum. Few case reports and studies also suggests such incidences during such festival across countries^{13, 14}.

Kite string injuries are not only fatal to humans but birds too. Every year in the month of January during the "MakarSankranti" festival a lot of birds like pigeons, crows etc. including these endangered vultures are injured or have suffered serious injuries to life and wing.

CONCLUSION

This study show that still in urban India, people are celebrating this festival casually, like flying kites care-

lessly on terraces without proper wall. Kids run with unwary enthusiasm and hence parent needs to be more vigilant. This study strongly suggests the authorities should run awareness programs well before the festive mood sets in.

LIMITATION OF THE STUDY

Small number of cases studied and single urban centre study are the main limitation.

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