Awareness and perception of an Indian dental professional in context to the process and their role in disaster victim identification as a taskmaster

Pooja Chakraborty[1], Astha Pandey[1], Srikant Natarajan[2], Samarika Dahal[3]

[1] School of Forensic Science, National Forensic Science University, Gujarat, India. [2] Department of Oral Pathology & Microbiology, Manipal College of Dental Sciences, Mangalore, Manipal Academy of Higher Education, India. [3] Department of Oral Pathology & Forensic Dentistry, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal.

Corresponding author:
dr.samarika@gmail.com

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ABSTRACT
Forensic odontology is a young area in India. However, it has been used as an integral component in a various medicolegal cases in India. However, the involvement of a dentist in mass disasters still needs to be well recognized. The role of the dentists in any unforeseen circumstances is to contribute as an adjunct hand in Disaster Victim Identification (DVI) which is in an emergent stage in India. This study aimed to assess an Indian dental professional's knowledge and awareness of their role in DVI. A pre-tested, self-administered anonymous questionnaire consisting of 6 open-ended and 14 close-ended questions was mailed to the participants. A total of 441 responses were recorded. The study indicated adequate knowledge and awareness among dental practitioners. Conversely, only a handful of people had first-hand autopsy experience. Thus, to supplement the skills needed to work at ground zero, it is recommended to develop hands-on training programs for dentists in each state of India. Also, creating a pool of experts in each state of India can strengthen the task force.

INTRODUCTION
What hope is there for the living if we no longer treat the dead with dignity? [1] The most devastating outcome of the disaster is the loss of human lives, which mandates human identification.[2] Human Identification is a herculean task involving inter-agency and intra-agency coordination. Depending on the type of disaster, the protocol may vary, as each country has a variable capacity and disaster management plan to combat disasters depending upon the scale and type of disaster.[3] Of the various key personnel involved in the disaster, dentists are the most underestimated, whose knowledge and skills implicated during an operation can be game-changing.[4]

Teeth, being one of the hardest structures of the body, can resist a wide range of taphonomic changes and retain their integrity. Teeth, like bones, take a longer time to perish; they are often the only evidence to be found in mass graves. The postmortem (PM) analysis of teeth can reveal a lot of information that can help in reconstructing the past, identification of the victim given that there is some antemortem (AM) data present, the dental profiling of the remains, and much more. The result of dental profiling is only sometimes conclusive, but with support from other anthropological parameters, it can help identify or exclude.[5]

Various studies around the globe have stressed the inclusion of forensic odontology at the graduation level itself. Quite similar is the case with India, where formal forensic odontology (FO) training still needs to be improved. Only a handful of universities offer Master of Science (M.Sc) course in the subject and other reputed institution provides them.[6] Certificate courses, fellowships, and Post Graduate Diploma in the subject, but the biggest irony is none of the courses are recognized by the Dental Council of India (DCI). As long as there is a deficiency of proper guidelines and setup for propagating the knowledge of the subject, this lacuna will continue. Including forensic odontology as a part of a dental subject will enhance knowledge about the field early in the career. Also, highlight the significant contribution of a forensic dentist in human identification during Disaster Victim Identification (DVI) operation.[7] Thus, this research paper assesses the knowledge and awareness of Indian dental professionals in context to their role in DVI in India.

MATERIAL AND METHODS

Study setting
The study was performed at the National Forensic Sciences University, Gandhinagar, with additional support from Google Forms.

Sample Collection
A digital survey form was designed using Google Forms (Google Inc.). It consisted of 6 open-ended questions and 14 closed-ended questions. The open-ended questions were designed to document the basic information of the participants. The closed-ended questions assessed knowledge about the various components of the disaster. The participants' consent was obtained through Google Forms itself. The survey form was sent to 873 general dentists and dental students in their 3rd and 4th years through emails. The students of the 1st and 2nd academic years were excluded due to their lack of clinical exposure, and only dentists working in India were considered for the study.

RESULTS

A total of 441 responses were recorded, prior closing the form from dentists all over India.
In the first section, the demographic details of the participants were recorded. The study comprised a mixed group of dentists and students from various backgrounds, of whom 63.9% were associated with academic institutions, 28.1% with private practice, and 7.9% with hospitals.
Among them, 50.8% of the participants had experience spanning less than 3 years, 13.4% had the experience of 4-6 years and 35.8% had experience spanning more than 6 years. Of all the participants, 12.5% had an association with the mortuary/forensic medicine department, of which 7.5% had less than 3 years of association, and 4.5% had more than 3 years of association. 88% had no experience working in the mortuary or forensic medicine department. The study showed that only 3% had worked with the DVI team, and 87% did not have first-hand experience with human identification (Table 1).

Table 1. Demographic details of the participants enrolled in the study

	Categories	Total N (%)	Group		Chi-square	p-value
			Dentist N	Student N		
Years of experience in dentistry	0-3 years	224 (50.8)	90 (55.9)	134 (47.9)	5.904	0.05
	4-6 years	59 (13.4)	25 (15.5)	34 (12.1)		
	More than 6 years	158 (35.8)	46 (28.6)	112 (40)		
Association with the forensic medicine department or the autopsy center	No	386 (87.5)	151 (93.8)	235 (83.9)	9.104	**0.003**
	Yes	55 (12.5)	10 (6.2)	45 (16.1)		
Years of experience working with forensic medicine department or autopsy center	0-3 years	33 (7.5)	11 (6.8)	22 (7.9)	4.453	0.108
	More than 3 years	20 (4.5)	3 (1.9)	17 (6.1)		
	No experience	388 (88)	147 (91.3)	241 (86.1)		
Have you worked for the DVI team apart from that of India?	No	427 (96.8)	153 (95)	274 (97.9)	2.656	0.103
	Yes	14 (3.2)	8 (5)	6 (2.1)		

The second section assessed the knowledge about the disaster. The participants chose natural (89.3%), manmade (78.9%), techno-industrial (60.5%), and 18.6% others as different types of disasters (Table 2). Out of these, other categories showed significant p- value (p=0.006). The third section assessed the events categorized as DVI. The participants chose earthquake (78.2%), flood (70.1%), murder (23.4%), air crash (71.2%), bushfire (58.7%), death due to infectious diseases (21.1%) and, 18.1% others as the various events categorized as DVI for human identification. Among the multiple variables, earthquakes, floods, murder, air crashes, and others showed significant p values (Table 3).

Table 2. Distribution of response for the types of disaster

Types of disaster	Categories	Total N (%)	Group		Chi-square	p-value
			Dentist N (%)	Student N (%)		
Natural	No	47 (10.7)	23 (14.3)	24 (8.6)	3.506	0.061
	Yes	394 (89.3)	138 (85.7)	256 (91.4)		
Manmade	No	93 (21.1)	42 (26.1)	51 (18.2)	3.807	0.051
	Yes	348 (78.9)	119 (73.9)	229 (81.8)		
Techno Industrial	No	174 (39.5)	69 (42.9)	105 (37.5)	1.228	0.268
	Yes	267 (60.5)	92 (57.1)	175 (62.5)		
Others	No	358 (81.4)	121(75.6)	237 (84.6)	7.675	**0.006**
	Yes	82 (18.6)	39 (24.4)	43 (15.4)		

Table 3. Distribution of events categorized as DVI by the participants

Types of disaster	Categories	Total N (%)	Group		Chi-square	p- value
			Dentist N (%)	Student N (%)		
Earthquake	No	96 (21.8)	46 (28.6)	50 (17.9)	6.891	**0.009**
	Yes	345 (78.2)	115 (71.4)	230 (82.1)		
Flood	No	132 (29.9)	62 (38.5)	70 (25)	8.895	**0.003**
	Yes	309 (70.1)	99 (61.5)	210 (75)		
Murder	No	338 (76.6)	113 (70.2)	225 (80.4)	5.907	**0.015**
	Yes	103 (23.4)	48 (29.8)	55 (19.6)		
Air crashes	No	127 (28.8)	57 (35.4)	70 (25)	5.396	**0.02**
	Yes	314 (71.2)	104 (64.6)	210 (75)		
Bushfire	No	182 (41.3)	74 (46)	108 (38.6)	2.304	0.129
	Yes	259 (58.7)	87 (54)	172 (61.4)		
Death due to infectious diseases	No	348 (78.9)	122 (75.8)	226 (80.7)	1.498	0.221
	Yes	93 (21.1)	39 (24.2)	54 (19.3)		
Others	No	361 (81.9)	121 (75.2)	240 (85.7)	7.675	**0.006**
	Yes	80 (18.1)	40 (24.8)	40 (14.3)		

The fourth section assessed the knowledge about the human identification process. The different phases of the DVI process were identified as AM (69.6%), PM (85.7%), reconciliation (34.5%), debriefing (19.5%), and 12% as others (p=0.006) (Table 4).

The fifth section accessed the colour of the Interpol forms. The dentists chose yellow, (61.5%) white (16.8%), pink (12%), and blue (9.8%) as the colour of the AM Interpol forms. Similarly, the dentists chose yellow (20.9%), white (21.5%), pink (44.2%), and blue (13.4%) as the colour of the PM Interpol forms (Table 5).

Table 4. Events categorized as DVI for human identification

| Knowledge of various phases of DVI | Categories | N (%) | Group | | Chi-square | p- value |
			Dentist N (%)	Student N (%)		
Antemortem	No	134 (30.4)	56 (34.8)	78 (27.9)	2.318	0.128
	Yes	307 (69.6)	105 (65.2)	202 (72.1)		
Postmortem	No	63 (14.3)	29 (18)	34 (12.1)	2.876	0.09
	Yes	378 (85.7)	132 (82)	246 (87.9)		
Reconciliation	No	289 (65.5)	99 (61.5)	190 (67.9)	1.834	0.176
	Yes	152 (34.5)	62 (38.5)	90 (32.1)		
Debriefing	No	355 (80.5)	128 (79.5)	227 (81.1)	0.16	0.689
	Yes	86 (19.5)	33 (20.5)	53 (18.9)		
Others	No	388 (88)	134 (83.2)	254 (90.7)	7.675	**0.006**
	Yes	53 (12)	27 (16.8)	26 (9.3)		

Table 5. Assessment of colour of Interpol forms

| Color of the Interpol forms | Categories | N (%) | Group | | Chi-square | p-value |
			Dentist N (%)	Student N (%)		
Colour of AM forms	Yellow	271 (61.5)	96 (59.6)	175 (62.5)	3.657	0.301
	White	74 (16.8)	32 (19.9)	42 (15)		
	Pink	53 (12)	15 (9.3)	38 (13.6)		
	Blue	43 (9.8)	18 (11.2)	25 (8.9)		
Colour of PM forms	Yellow	92 (20.9)	38 (23.6)	54 (19.3)	3.077	0.38
	White	95 (21.5)	39 (24.2)	56 (20)		
	Pink	195 (44.2)	64 (39.8)	131 (46.8)		
	Blue	59 (13.4)	20 (12.4)	39 (13.9)		

The sixth section assessed the knowledge of AM phase. The dentists chose photographs (76.6%), dental cast (73.2 %), dental records (81%) radiographs (71.7%) and 15.5% as potential AM data (Table 6).

The seventh section assessed the dental professional's perception of AM data collection during DVI operations. The participants responded as police (5.4%), family members (20.9%), AM data collection team

members (17.9%), national society (1.4%) and, forensic dentists (54.4%) as a potential candidates for antemortem data collection (Table 7).

Table 6. Assessment of potential antemortem data

Types of AM data	Categories	N (%)	Group		Chi-square	p-value
			Dentist N (%)	Student N (%)		
Photograph	No	103 (23.4)	48 (29.8)	55 (19.6)	5.907	**0.015**
	Yes	338 (76.6)	113 (70.2)	225 (80.4)		
Dental cast	No	118 (26.8)	52 (32.3)	66 (23.6)	3.972	**0.046**
	Yes	323 (73.2)	109 (67.7)	214 (76.4)		
Dental Records	No	84 (19)	38 (23.6)	46 (16.4)	3.412	0.065
	Yes	357 (81)	123 (76.4)	234 (83.6)		
Radiograph	No	125 (28.3)	56 (34.8)	69 (24.6)	5.175	**0.023**
	Yes	316 (71.7)	105 (65.2)	211 (75.4)		
Others	No	372 (84.5)	129 (80.6)	243 (86.8)	7.675	**0.006**
	Yes	68 (15.5)	31 (19.4)	37 (13.2)		

Table 7. Assessment of potential candidate for antemortem data collection

Categories	N (%)	Group		Chi-square	p-value
		Dentist N (%)	Student N (%)		
The police	24 (5.4)	6 (3.7)	18 (6.4)	1,589	0,811
Family	92 (20.9)	33 (20.5)	59 (21.1)		
Antemortem data collection team member	79 (17.9)	30 (18.6)	49 (17.5)		
National society	6 (1.4)	2 (1.2)	4 (1.4)		
Forensic dentist	240 (54.4)	90 (55.9)	150 (53.6)		

The eighth section assessed the idea of the postmortem phase. The participants responded with 1 dentist (20.2 %), 2 dentists (57 %), 3 dentists (15.6%) and 4 dentists (6.8%) as the minimum no of dentists required for postmortem, dental examination (Table 8).

The ninth set of questions assessed the perception of various instruments needed for PM dental examination. The participants choose scalpel (57.6%), mouth mirror (77.1%), tweezer (69 6%), explorer (71.2%), probe (66.4%), jaw openers (78.8%), and others (20.4%) as the dental instruments that can be used for PM dental examination (Table 9).

The tenth section assessed the perception of the primary identifier. The participants chose fingerprints (88%), teeth (91.4%), DNA (89.1%), clothes (57.1%), tattoos (59%), the implant (68.9%), and others (21.8%) as the tools that can be used in human identification (Table 10).

The eleventh section assessed the perception of traits of teeth that can be used in identification. The participants chose shape of teeth (78.2%), crowns (71%),restorations (67.8%), midline diastema (55.6%), retainers (50.8%), caries (40.1%), and others (19%) as traits of teeth that

can be used in identification (Table 11).
The twelfth section assessed the perception of one point of agreement in human identification. Here, 17.9% strongly agreed, 29.5% agreed, 29.3% had a neutral response and 19.7% disagreed. In comparison, 3.6% strongly disagreed with the statement that one point of agreement is enough to identify a person during the reconciliation phase (Table 12).

The thirteen questions assessed the perception of likelihood of Post Traumatic Disorder (PTD) in individuals with first-hand experience in the management of the dead. Here, 12.5% strongly agreed, 26.8% agreed, 37.9% were neutral, 18.6% disagreed, 4.3% strongly disagreed with the statement of likelihood of PTD in forensic dentist after first-hand experience in DVI operations (Table 13).

Table 8. Assessment of minimum number of dentists required for postmortem dental examination

Minimum number of dentists	N (%)	Group		Chi-square	p- value
		Dentist N (%)	Student N (%)		
1	89 (20.2)	29 (18)	60 (21.4)	1.352	0.717
2	253 (57.4)	98 (60.9)	155 (55.4)		
3	69 (15.6)	24 (14.9)	45 (16.1)		
4	30 (6.8)	10 (6.2)	20 (7.1)		

Table 9. Perception of instruments needed for postmortem dental examination

Types of instruments	Categories	N (%)	Group		Chi-square	p-value
			Dentist N (%)	Student N (%)		
Scalpel	No	187 (42.4)	84 (52.2)	103 (36.8)	9.911	**0.002**
	Yes	254 (57.6)	77 (47.8)	177 (63.2)		
Mouth mirror	No	101 (22.9)	43 (26.7)	58 (20.7)	2.08	**0.149**
	Yes	340 (77.1)	118 (73.3)	222 (79.3)		
Tweezer	No	134 (30.4)	50 (31.1)	84 (30)	0.054	**0.816**
	Yes	307 (69.6)	111 (68.9)	196 (70)		
Explorer	No	127 (28.8)	47 (29.2)	80 (28.6)	0.019	**0.89**
	Yes	314 (71.2)	114 (70.8)	200 (71.4)		
Probe	No	148 (33.6)	61 (37.9)	87 (31.2)	2.056	**0.152**
	Yes	292 (33.6)	100 (62.1)	192 (68.8)		
Jaw opener	No	97 (22)	36 (22.4)	61 (21.8)	0.02	**0.888**
	Yes	344 (78)	125 (77.6)	219 (78.2)		
Others	No	351 (79.6)	126 (78.3)	225 (80.4)	7.675	**0.006**
	Yes	90 (20.4)	35 (21.7)	55 (19.6)		

Table 10. Distribution of answers for primary identifier

	Categories	N (%)	Group		Chi-square	p-value
			Dentist N (%)	Student N (%)		
Fingerprints	No	53 (12)	26 (16.1)	27 (9.6)	4.092	**0.043**
	Yes	388 (88)	135 (83.9)	253 (90.4)		
Teeth	No	38 (8.6)	21 (13)	17 (6.1)	6.31	**0.012**
	Yes	403 (91.4)	140 (87)	263 (93.9)		
DNA	No	48 (10.9)	23 (14.3)	25 (8.9)	3.025	0.082
	Yes	393 (89.1)	138 (85.7)	255 (91.1)		
Clothes	No	189 (42.9)	86 (53.4)	103 (36.8)	11.544	**0.001**
	Yes	252 (57.1)	75 (46.6)	177 (63.2)		
Tattoo	No	181 (41)	77 (47.8)	104 (37.1)	4.821	**0.028**
	Yes	260 (59)	84 (52.2)	176 (62.9)		
Implant	No	137 (31.1)	59 (36.6)	78 (27.9)	3.687	0.055
	Yes	304 (68.9)	102 (63.4)	202 (72.1)		
Others	No	345 (78.2)	126 (78.3)	219 (78.2)	7.675	**0.006**
	Yes	96 (21.8)	35 (21.7)	61 (21.8)		

Table 11. Perception of traits of teeth that can be used in identification

Traits for identification	Categories	N (%)	Group		Chi- square	p- value
			Dentist N (%)	Student N (%)		
Restoration	No	142 (32.2)	58 (36)	84 (30)	1.7	0.192
	Yes	299 (67.8)	103 (64)	196 (70)		
Midline diastema	No	196 (44.4)	74 (46)	122 (43.6)	0.237	0.627
	Yes	245 (55.6)	87 (54)	158 (56.4)		
Crowns	No	128 (29)	57 (35.4)	71 (25.4)	5.008	**0.025**
	Yes	313 (71)	104 (64.6)	209 (74.6)		
Retainers	No	217 (49.2)	88 (54.7)	129 (46.1)	3.016	0.082
	Yes	224 (50.8)	73 (45.3)	151 (53.9)		
Shape	No	96 (21.8)	43 (26.7)	53 (18.9)	3.633	0.057
	Yes	345 (78.2)	118 (73.3)	227 (81.1)		
Caries	No	264 (59.9)	99 (61.5)	165 (58.9)	0.279	0.597
	Yes	177 (40.1)	62 (38.5)	115 (41.1)		
Others	No	357 (81)	125 (77.6)	232 (82.9)	7.675	**0.006**
	Yes	84 (19)	36 (22.4)	48 (17.1)		

Table 12. Perception of one point of agreement in human identification during reconciliation phase

Categories	N (%)	Group		Chi- square	p- value
		Dentist N (%)	Student N (%)		
Strongly agree	79 (17.9)	28 (17.4)	51 (18.2)	7.821	0.098
Agree	130 (29.5)	50 (31.1)	80 (28.6)		
Neutral	129 (29.3)	56 (34.8)	73 (26.1)		
Disagree	87 (19.7)	22 (13.7)	65 (23.2)		
Strongly disagree	16 (3.6)	5 (3.1)	11 (3.9)		

Table 13. Distribution of perception of Post Traumatic Disorder (PTD)

Categories	N (%)	Group		Chi-square	p-value
		Dentist N (%)	Student N (%)		
Strongly agree	55 (12.5)	14 (8.7)	41 (14.6)	4.834	0.305
Agree	118 (26.8)	47 (29.2)	71 (25.4)		
Neutral	167 (37.9)	62 (38.5)	105 (37.5)		
Disagree	82 (18.6)	33 (20.5)	49 (17.5)		
Strongly disagree	19 (4.3)	5 (3.1)	14 (5)		

DISCUSSION

The position of forensic odontologist as DVI operation manager or member is still in its early stages in India. Thus, to incorporate FO as an integral member in DVI operations in India, there needs to be robust planning and preparedness at the policy level in each state in India. The present study was conducted to initiate the process and develop a protocol based on the findings. The study aimed to assess the knowledge and awareness of DVI among Indian dentists.

FO is a very new discipline of dentistry in India, with a lot of room for growth. The DCI has included it in the Bachelor of Dental Surgery (BDS) curriculum. FO is not currently taught as a separate subject in the DCI curriculum. Still, it has been related to two other branches: oral medicine and radiology and oral and maxillofacial pathology.[8] FO is likely to become a separate dental field in India, much as it has in the western world.[9] One of the reasons why many dentists in India are not linked with a forensic medicine department or autopsy facility is that forensic medicine still needs to be recognized as a distinct speciality. It is, however, trending in the right direction, as more people opt for fellowship and training in FO.

The participants were well aware of all the types of disasters. A slew of disasters in recent years has hit India. [10] As a result, the participants were well-versed on the subject. In our study, the earthquake was a major concern for the mass casualty incident, in contrast to the Yemini population, were the participants mostly chose violence due to armed conflicts and terrorism. In their study, only 8.5% of people were concerned about earthquakes. A significant number of participants in our study were not concerned about the infectious diseases. This was in contrast to the Yemeni population based studies, which reported epidemics (36.6%) as anticipated national disaster in Yemen. In the present study, the participants were more concerned about transport accidents such as air crashes which was in contrast to Yemeni population (2.2%). It may be due to Yemen's country context of internal conflict and complex emergencies, which elicited different responses than the present study. [11-13]

In our study, there was a varied response to the phases of the DVI. Most were aware of the PM phase compared to the other phases. It may be because most of the community associates forensics with PM examination. In this field, some form of training or prior experience working with the DVI unit is needed to acknowledge different phases. These findings are consistent with the fact that the majority of survey participants had no previous experience working in the mortuary or DVI operations, which coincides with the study done by Rathod et al.[14]

The dentists had a poor understanding of the AM and PM Interpol forms' colours. The results reflected the participants' lack of training: if they had been trained or exposed to DVI courses, the AM and PM form colour answers would have been more unanimous. Although more than half of the dentists chose yellow as the colour of the AM forms, only a few dentists were aware of the colour of the PM forms, so it's doubtful whether the participants were genuinely aware of it or ticked it by chance.

Although most studies conclude that dentists are unaware of the AM dental data. [15] The present study showed that the participants were quite aware of the various types of AM dental data. The majority of the participants chose all the types of AM data, which is contrary to the studies done by Yasar et al.[16] where the participants chose treated teeth (74.7%), radiographs (57.4%), photographs (22.7%) and models (12.3%) respectively as valuable AM records. However, in the study done by Zikir and Mânica, [17] participants chose dental charts (48%) as the most commonly used AM dental data during human identification operation. In the present study, the participants showed a lack of knowledge about the potential member who could collect AM dental information. Thus, during a natural calamity in India, many errors and mismanagement during AM data collection by the agencies and National Disaster Management Authorities (NDMA) could be anticipated. The task force members recruited for DVI operations may be subjected to disorientation if not trained ahead of DVI operations. This scenario may be explained by the fact that the curriculum in India does not include practical work and hands-on training in DVI, similar to Turkey. [18,19]

In the present study, more than half of the participants chose 2 dentists as the minimum number required for the PM dental examination. The experts also suggest the combination of 3 forensic dentist or 2 forensic dentist along 1 dental hygienist, with sufficient knowledge in forensics as a prerequisite for dental examination. [20] In our study, the dentists, were well aware of the instruments needed for the PM dental examination. Because it was a closed question, it was outside the scope of the study to determine whether the dentists were aware of the science behind the selections, or if it was because of similar instruments seen in crime dramas.

The majority of the participants chose teeth as the primary identifier. It could be because the participants were dentists, who are usually well sensitized to the forensic value of teeth.

The majority of the dentists in our study were aware of the dental traits that could be used in human identification. A good number of participants also chose dental anomalies, such as shape of the teeth, midline diastema, as valuable tool in human identification. This was in contrast to Jayakumar and Mânica, [21] studies which demonstrated alarmingly poor charting of dental anomalies by the dentists in south India . The difference in the response could be attributed to small sample size, including a few states of south India. However, the present study had a large sample size that included all of India, which increased the likelihood of incorporating more dentists. Although dental anomalies have been reported to be utilized in human identification [22,23] only a few dentists chart them in their dental practice. [21] A dentist must be aware of the forensic value of dental anomalies, as each minute detail recorded in dental charts can aid in identification. [24-25]

In the present study the participants had a varied response regarding utilization of one concordance in human identification. It may be due to the fact that there is no clear cut demarcation and depends on case to case. According to a study, 1–12 concordant was regarded as an acceptable standard and gave better outcomes, however, the authors conclude the article by advising the specialist to treat each case individually. If the evidence is strong enough, a single concordant may be enough to prove a case, while numerous weak pieces of evidence may be combined to produce a different result. [26]

In the present study, the participants had a varied response regarding the perception of post-traumatic disorder in individuals with first-hand experience in the management of the dead. For all the members of the DVI operation after completion of each process: It is advisable for psychosocial support both during and after completing challenging tasks. Compared to the general population, these workers probably have more robust psychological defences against extreme stress, but they are also being exposed to it more and more. Thus, it's mandatory to incorporate mental health balance mechanisms in mass fatality management plans. [27]

Only a few places in India have accepted dental team members as part of their usual mortuary responsibilities. Human identification could be more systematic if the National Disaster Management Authority took the initiative to hire a dentist for DVI operations. The results of this study show that general dentists are highly aware of the importance of FO in DVI. It is possible to sensitize more dentists by incorporating training and awareness programs into undergraduate courses. Given the uncertainty of the future of natural calamities, the country should develop a policy that includes a pair of dentists in all DVI operations as part of its disaster preparedness plan.

The scope and potential of an FO have been underestimated over time, resulting in insufficient examinations, misdiagnosis, loss of crucial evidence, incorrect perceptions, and incorrect conclusions. In India, including a forensic odontologist on the DVI team or even constituting a DVI team in the first place is a high priority when it comes to planning for the management of the dead.

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