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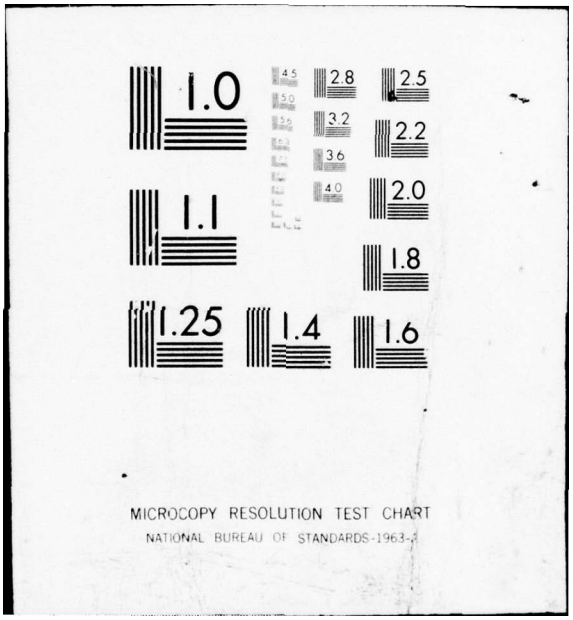
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This epidemiological study of accidental dentofacial injuries to US Army personnel was conducted to determine the frequency and distribution patterns of accidental dentofacial injuries to soldiers. Administratively, it was anticipated that this data would permit identification of high-risk groups and would suggest feasible preventive measures. This nine month study was conducted on 16 Army posts with a combined population at risk of 210,500 soldiers; a standardized data collection form was completed by the dental corps officer treating the injury case and then was mailed to a central collection site for analysis. The data from this dentofacial injury study clearly

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20 reveal that differential risks exist for various military subpopulations. While the overall U.S. Army accidental dentofacial injury rate was 37.7 cases/10,000/yr., this rate varied greatly for specific subgroups with high-risk factors including young males, lower enlisted ranks, recent recruits, and combat training posts. The primary specific causes of these injuries were fistfights (nearly 30%), sports (over 20%), and vehicles (about 15%).

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AN EPIDEMIOLOGICAL SURVEY OF ACCIDENTAL DENTOFACIAL INJURIES AMONG U.S. ARMY PERSONNEL

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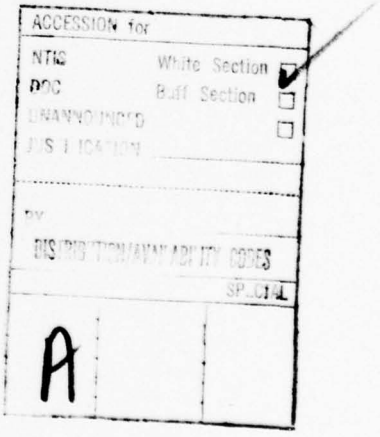
Abstract:

An Epidemiological Survey of Accidental Dentofacial Injuries Among U.S. Army Personnel

This epidemiological study of accidental dentofacial injuries to U.S. Army personnel was conducted to determine the frequency and distribution patterns of accidental dentofacial injuries to soldiers. Administratively, it was anticipated that this data would permit identification of high-risk groups and would suggest feasible preventive measures. This nine month study was conducted on 16 Army posts with a combined population at risk of 210,500 soldiers; a standardized data collection form was completed by the dental corps officer treating the injury case and then was mailed to a central collection site for analysis. The data from this dentofacial injury study clearly reveal that differential risks exist for various military subpopulations. While the overall U.S. Army accidental dentofacial injury rate was 37.7 cases/10,000/yr., this rate varied greatly for specific subgroups with high-risk factors including young males, lower enlisted ranks, recent recruits, and combat training posts. The primary specific causes of these injuries were fistfights (nearly 30%), sports (over 20%), and vehicles (about 15%).



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Introduction

The scientific study of accidental injury is subject to the influence of, and therefore parallels the development of, health research in general. Thus as health researchers attempt to achieve a balance between knowledge about the prevention of disease and the traditionally emphasized knowledge on the treatment of disease, the study of accidental injury is also reflecting this broadening of research interest. The magnitude of this injury problem and its impact on society is clearly illustrated by the observation that while heart disease and cancer have received a great deal of public and scientific attention in recent years, a recent survey found that far more hospital beds in the United States were occupied by accident victims than either of these two well-publicized diseases. (26)

The precise contribution of facial injuries to the overall accidental injury problem is not known; however, estimates of the relative contribution of accidental facial injuries have ranged from a low of 22.5% in a general study of accidents due to all causes (12) up to highs of 66% to 81% in automobile accident studies. (5,14)

Recently, there has been an increasing awareness that epidemiological monitoring systems would be necessary to provide the data required for broad analysis, specific problem-solving, and administrative action related to accidental injuries and their prevention. (4,8,23) The U.S. Army Dental Corps as one of the largest oral health care providers in the world has a vested-interest in disease prevention which has led to the support of several research projects related to dentofacial accidents, the resulting trauma, and the required treatment procedures and costs. (19) The interest of the U.S. Army Dental Corps in this area

has unquestionably been intensified as a result of several recent publications which have identified characteristics commonly associated with soldiers (e.g. young males, action-oriented people, and risk takers) as being high-risk factors.[3,6,21] Previous research on accidents in the Armed Forces found that the motor vehicle was the leading cause of nonbattle-injury admissions for each of the three branches of service (comprising about 15% of U.S. Army hospital nonbattle-injury admissions) followed by sports-related injuries and finally machinery and tool-related injuries.[15]

A review of the dental literature indicates that only limited information is available concerning the incidence, cause, severity and prevention of accidental injuries to the teeth, jaws, and adjacent oro-facial hard and soft tissues. Most of the available papers either are reports of accidental injuries occurring among children or are concerned mainly with the treatment of these injuries.[9,10,17,18,24]

A recently reported pilot epidemiological study on accidental injuries to the teeth and jaws, by virtue of its research design which focused on the direct causes of the injuries, was limited in its investigation of high-risk characteristics (again finding that teenage males were a high-risk group).[16]

The goal of this epidemiological investigation of accidental dentofacial injuries among active duty U.S. Army personnel was to provide the Army and the Dental Corps with information concerning the causes of accidental dentofacial injuries which occur among Army personnel, and the relationships between the personal characteristics of Army personnel and the occurrence of accidental dentofacial injuries. The information obtained would help to identify individuals or groups of military personnel who are prone to accidental dentofacial injuries. Based upon the

information obtained in the study, it was hoped that measures designed to prevent or reduce the incidence of accidental dentofacial injuries among U.S. Army personnel could be developed.

Methods and Materials

A monitoring system for the reporting of accidental dentofacial injuries among active duty U.S. Army personnel was established in September, 1975. Sixteen Army posts with a military population of 210,500 were selected to provide a cross section of primary post missions. The authors personally visited each participating post in August, 1975, to meet with dental corps officers who had been designated as post project officers to explain the project and to distribute adequate numbers of standardized data collection forms. The post project officers were responsible (1) for briefing all the dental corps officers about the project, (2) for disseminating the standardized data collection forms to all the post dental clinics, and (3) for monthly mailing of all completed standardized data forms to the central collection site, the U.S. Army Institute of Dental Research at the Walter Reed Army Medical Center, where the data was coded and transferred to computer cards. All data collected through May, 1976, are included in the nine month report.

The standardized data collection form gathered pertinent facts within two broad areas: (1) demographic information on the victim and (2) facts about the history of the accident. The demographic data section was a structured questionnaire format that ascertained the sex, age, educational level, military rank, length of time in service, and length of time in present duty assignment for the victim.

The history of the accident data was obtained through the use of both structured and unstructured formats. The structured format asked about the date, time, and location of accident in addition to possible causes (e.g., vehicular, weapon related, sports related, etc.). For each possible cause a series of questions probed for specifics about the exact nature of the cause (e.g., type of vehicle) as well as for possible preventive aspects (e.g., use of chest and lap belts). Following this structured format, the history of accident section had an unstructured question which asked for a brief description of how the injury occurred. This section either served as confirmation of the previous structured question or, more importantly, served to classify those types of accidents which had not been identified by the structured questions.

For the purposes of this investigation accidental dentofacial injuries included all injuries to the teeth, jaws, intraoral soft tissues, perioral soft tissues, and facial bones which occurred as a result of an accident (as opposed to a pathological process), and which were diagnosed and/or treated by U.S. Army dentists.

Results

Results: History of Accident and Demographic Data on Victim

A total of 596 dentofacial injury cases were reported during the nine month period yielding a projected overall accidental dentofacial injury rate of 37.7 persons/10,000/yr. Although a 12 month study was originally planned, the reporting system of this study was greatly disrupted by duty reassignments and post transfers during the summer months; therefore, it was felt that projections based on nine month data would be the most accurate representation of the results. Adjusted accidental

dentofacial injury rates for the 16 participating posts are given in Table 1. Two of the combat arms posts (Ft. Knox and Ft. Sill) and all of the basic training posts had dentofacial accident rates which exceeded the overall Army dentofacial injury rate.

Analysis also revealed that female soldiers were significantly less likely to sustain a dentofacial injury than would be expected based upon their standing strength numbers. Whereas female soldiers comprised 5.7% of the active duty personnel, they accounted for only 3.2% of the injuries reported. This was a statistically significant difference as tested by a chi-square test ($X^2 = 7.02$, df = 1).

The cumulative frequency for the age distribution of dentofacial injury victims is shown in Figure 1. As demonstrated, over 50% of the cases involved soldiers who were 17-20 years old with a marked flattening of the cumulative frequency distribution curve occurring after age 24. When consideration is given to length of time in service, the overall results show that 57.0% of all the dentofacial injuries occurred in the first year of military service, 10.8% in the second year, 14.8% in the third year, and only 17.4% for those with four or more years of service. The distribution of cases by military ranks is given in Figure 2. The enlisted soldiers comprised 96.1% of all the reported injuries with the lower ranks among enlisted personnel (E-1 through E-4) comprising 83.2% of the cases. Figure 3 shows the observed incidence rates for dentofacial injuries as compared to the expected rates (i.e., if the injuries had occurred randomly according to the proportion of the total military strength of the rank). This analysis shows that the observed injury rate for the lower ranked enlisted personnel range from three times the expected rate (for E-1) to two times the expected rate (for E-2), while the reverse pattern holds for the upper enlisted ranks (E-5 to E-9) and officers.

There was no significant difference in injury rate by day of the week (X^2 = 6.18, df = 6) nor by the date of the month (X^2 = 37.43, df = 30) nor in dates around pay periods (X^2 = 21.56, df = 20). However, for hour of the day (X^2 = 95.83, df = 3) there were statistically significant differences in the injury occurrence rate. The pattern of injuries by month of the year revealed that the peak reporting months were September and October with December representing the lowest reporting month. The results of the time of the day and distribution of injuries analysis is illustrated in Figure 4 and reveals that the injury rate increased as the day progressed.

Physical location of the accident data indicated that of all accidents reported 42.0% occurred on duty, 75.8% on post, 60.3% in duty area, and 63.5% occurred outdoors. Further analysis revealed that for injuries sustained on duty over 96% of them occurred on post and that even for the off duty accidents the majority (63%) still occurred on post.

Results: Cause of Injury

The primary causes of the injuries reported are shown in Figure 5; fistfights (29.8%), sports (22.3%), and vehicles (13.9%) were the three leading specific causes. Miscellaneous injuries (20.8%) included all those injuries which were due primarily to a misaction on the part of the victim which did not allow categorization into one of the previously created categories (e.g., fell down, walking into doors, horseplay, falling down stairs, blacking-out, etc.).

A detailed breakdown of the dentofacial injuries caused by sports revealed that most injuries were sustained while playing football (50.7%) followed by basketball (21.0%) and that 56.7% of all sports related injuries occurred during formal military sports programs. For all the

134 sports-related dentofacial injuries, mouthguards were only available in 9 cases (6.5%) and were in use in only 5 cases (3.6%).

Of the vehicle-related accidents, the majority involved cars (53.5%) followed by trucks, jeeps, motorcycles, and track vehicles (e.g., tanks and other artillery vehicles) which each contributed about 10%. The category of other vehicle type (e.g., aircraft, submarine, and bicycles, etc.) accounted for another 8% of the vehicle related injuries. For accidents involving cars (N = 41), lap belts were available 70.7% of the time but were in use only 27.6% of the time they were available; chest belts, in car accidents, were available 36.6% of the time but were in use only 6.7% of the time they were available.

Weapon-related dentofacial injuries accounted for 7.0% of all injuries reported. Of these 42 injuries, 81.0% involved rifles and 90.5% were government-owned weapons. The dentofacial injuries caused by other pieces of equipment (5.9%) included such diverse hazards as footlockers, broomsticks, and even nickels. For injuries caused by other equipment, frequency of use (catagorized as daily; several times a week, several times a month, and several times a year or less) was not a factor ($X^2 = 2.5$, df = 3).

When the cause-specific injury rates are compared for the various types of posts, several facts emerge. As shown in Figure 6, basic training posts have higher rates for five of the six specific causes than any of the other types of posts (except vehicle caused injuries on the MP training posts). In general, the cause-specific injury rates for combat support, combat service support, and headquarter type posts were the lowest.

Weapon-related injuries were 7 to 10 times as frequent on basic training posts as on other types of posts; on basic training posts,

fistfights caused dentofacial injuries three times more frequently than on combat arms posts and at least six times more frequently than all the other types of posts. Dentofacial injuries due to miscellaneous causes (e.g., falling out of bed, falling down stairs, blacking out, etc.) were most common on basic training and MP training posts.

Analysis of age in relation to the cause of the dentofacial injuries revealed different patterns for the various age groups which were statistically significant ($X^2 = 53.17$, df = 20) as shown in Figure 7. Whereas fistfights and miscellaneous injuries (i.e., injuries due to misaction on the part of the victim) predominate in the youngest age group, a trend can be seen that results in sports and vehicle related injuries comprising the majority of dentofacial injuries among the oldest age group.

There were no statistically significant differences noted when the specific causes were separated into the days of the week. However, when level of formal education was considered for each of the six specific cause categories the results revealed that the less educated sustained most of their dentofacial injuries in fistfights while the more educated sustained their dentofacial injuries as a result of sports and vehicle related accidents.

When the six specific causes are analyzed by length of time in military service, it is observed that 64.0% of all fistfight injuries, 88.1% of weapon injuries, 68.6% of injuries due to other equipment, and 65.3% of injuries due to miscellaneous misactions of the soldier occur during the first year of military service whereas only 20.1% of the Army is comprised of soldiers in their first year of military service.

The time of day that the various cause-specific injuries occurred is shown in Figure 8 and reveals that over 60% of the fistfights occurred between 1701 and 2400 hours, over 78% of sports injuries occurred between 1200 and 2400 hours, over 75% of weapon injuries occurred between 0701 and 1700 hours, while vehicles and miscellaneous injuries were more evenly distributed throughout the entire 24 hour period.

Table 2 shows whether the soldier was on duty or off duty at the time of the dentofacial injury for each cause-specific type of injury. Fistfights and vehicular accidents were predominately off duty occurrences (both over 70% off duty) while sports related accidents were slightly less so (nearly 60% off duty). On the other hand, over 90% of the weapon related injuries and nearly 70% of injuries caused by other pieces of equipment occurred while the soldiers were on duty. Those injuries caused by miscellaneous misaction of the victims were equally divided between on and off duty situations.

Further analysis of the injuries due to fistfights showed that the majority of these injuries (53.2%) occurred on post, off duty, with equal division between indoor and outdoor incidents. Similar analysis for the sports related accidents revealed that of the nearly 90% of these injuries that occurred on post, 40.8% of these occurred while the soldier was on duty. On the other hand, nearly two-thirds of all vehicular accidents resulting in dentofacial injuries were off post, off duty incidents. Beyond the fact that nearly 90% of weapon-related injuries occurred on post, nearly 85% of all weapon-related injuries occurred when the soldier was outdoors, on duty while on post.

Discussion

The overall dentofacial accidental injury rate for active duty U.S. Army personnel of 37.7/10,000/yr. is supported as being a reasonable figure based on similar studies in related research areas. A recent publication

cited the results of a national health survey in the United States which showed that accidental injury rates due to falls ranged between 34/10,000/yr. in low income groups to 24/10,000/yr. in high income groups.[20] The sole in-depth report on injury due to all causes in a different military population documented an accidental head and neck injury rate of 68/10,000/yr.;[12] while this rate is about 80% higher than the findings of the present study, two factors can be readily identified which account for this increased rate: (1) this higher rate was for all head and neck injuries (not just dentofacial) and (2) the study population was exclusively composed of the highest risk-groups (young males in their first six months of military duty).

The agent for all 596 dentofacial injuries reported in this survey was mechanical energy, i.e., a transfer of kinetic force to the injury site; there were no chemical, electrical, thermal, or radiation-caused dentofacial injuries reported. This finding is in keeping both with theoretical expectations[1] as well as the results of a study of all types of injuries in a different military population which found that over 85% of all the injuries were caused by mechanical energy.[12] The transmittors, or vehicles, of this mechanical energy for discussion purposes will be considered to be those previously discussed categories of causes of injuries, i.e., fistfights, sports, vehicles, weapons, other equipment, and miscellaneous actions.

Evaluation of host factors such as age, sex, rank, length of time in service, and years of formal education reveals strong associations between these host characteristics and dentofacial injury rates. However, the potential for these associations to lead directly to effective and feasible preventive measures is extremely limited and highly unlikely. Rather, the significance of these associations between host characteristics

and dentofacial injury rates lies in their ability to define the high-risk individuals within the military system and thus indirectly affect the injury rate by suggesting a target population for preventive campaigns. The data clearly identifies young male enlisted soldiers as the most likely to sustain a dentofacial injury regardless whether raw frequency data (e.g., Fig. 1, Fig. 2, or Table 1) or expected vs. observed frequencies ratios (e.g., Fig. 3) are used to assess these characteristics. In addition to earlier-cited references, several other research projects have found similar relationships between these variables. [22,25]

Thus, while host factors can serve to delineate the high-risk group, it remains for the data concerning the transmittors of the mechanical energy to provide suggested preventive actions. Since the miscellaneous classification of dentofacial injuries can be considered to represent a "background level of injuries" which are not amenable to preventive programs on an institutional level, they will be omitted from the following discussion of interceptive and preventive actions that the U.S. Army could institute to reduce the incidence of dentofacial injuries.

The data in Fig. 5 shows that sports-related and vehicle-related accidents accounted for 46% of the dentofacial injuries if miscellaneous injuries are omitted; similarly, if miscellaneous injuries are omitted, fistfights alone account for over 37% of dentofacial injuries. With similar calculations, the catagories of weapon and other equipment each only account for less than 9% of the reported cases. Because of the low frequency of dentofacial injury cases in these latter two catagories and the lack of any systematic pattern of injury reported for these two causes (e.g. no one type of weapon repeatedly involved) and a lack of association with suspected associated variables (e.g., frequency of use of equipment), the likelihood of developing institutional level suggestions

for the prevention of weapon-related and other equipment-related dentofacial injuries is extremely remote. Previous surveys on causes of injuries, while not focusing specifically on dentofacial injuries, have also shown automobile accidents, sports accidents, and falls to be the most common causes of injuries in general.[7,12]

Beyond the fact that the single most commonly cited cause for dentofacial injuries amongst all soldiers was fistfights, among the high-risk groups of soldiers the role of fistfights was even more dominant as a cited cause.

Specifically, fistfights accounted for nearly 50% of all dentofacial injuries to 17-20 year olds when miscellaneous injuries are omitted (see Fig. 7) and also accounted for three to six times the dentofacial injury rate for soldiers on basic training posts than on all other types of posts (see Fig. 6). Short of arriving at the seemingly paradoxical general conclusion that soldiers should not fight, a closer inspection of the nature of these fights may permit -- if not better control of this cause -- a more complete understanding of this cause. Specifically, data collected on where and when the injury occurrred reveals that 75% of all fistfights occurred off duty (see Table 2) and that over 60% of all fistfights which resulted in a reported case occurred after 1700 hours. In short, fistfights primarily occurred in the evening when the soldiers were off duty. Clearly, any administrative action by commanders of troops which would discourage fistfights and brawls would directly reduce the incidence of dentofacial injuries since it would simultaneously affect both the leading specific cause and the highest risk group.

The two remaining specific causes of dentofacial injuries, sports and vehicles, are perhaps the most amenable to an Army-wide preventive program. While these two catagories combined did not equal the percent

of dentofacial injuries caused by fistfights alone for the 17-20 year olds, sports-related dentofacial injuries were the leading cause for all other age groups with vehicle-induced dentofacial injuries being the second-leading cause for soldiers over 25 years of age. Specific preventive recommendations to lower the sports-related dentofacial injury incidence rate suggested by the data would focus on a campaign both to increase the availability of mouthguards (which were available in only 6.5% of sports related cases) and to promote or enforce their use in official military sports programs (they were in use only 3.6% of the sports related cases).

Previous researchers have documented the same low usage of mouthguards amongst sports-related dentofacial accident victims.[16] Experts in the field have recommended that although elimination of all accidental injuries is highly unlikely, efforts at reduction of incidence rates is a proper goal and that the more passive the preventive action regarding positive initiating action by the individual, the greater the effectiveness.[2,11,23,24] An institutional requirement by the U.S. Army that mouthguards be worn in contact sports would meet this recommendation.

Another specific preventive program recommendation which can be made based on this data concerns the vehicle-related dentofacial injuries. While the actual number of vehicle-related cases was low (this may well represent underreporting since vehicle victims may have been hospitalized for major medical injuries with the dental repairs deferred), the pattern of findings regarding the use of lapbelts and chestbelts is perhaps the most disturbing aspect of this data. The facts that lapbelts were in use in cases involving an automobile crash only 27.6% of the time and that chestbelts were in use 6.7% of the time they were available are

dismal records. A previous investigation into causes of accidental dentofacial injuries had remarkably similar findings in that 73% of the victims said no seatbelts were available and the remaining 27% of victims were not using the available seatbelts.[12] The ability of these safety restraints to reduce the number of injuries, especially those of the facial structures, has been well-documented.[13] Given the extremely high cost to both the individual and the military of serious injuries sustained in automobile accidents, the data from this dentofacial study suggests that an Army-wide campaign to promote, if not require, the use of lap and chestbelts would be appropriate.

Conclusions

This epidemiological study of accidental dentofacial injuries to U.S. Army personnel was conducted to determine the frequency and distribution patterns of accidental dentofacial injuries to soldiers. Administratively, it was anticipated that this data would permit identification of high-risk groups and would suggest feasible preventive measures. This nine-month study was conducted on 16 Army posts with a combined population at risk of 210,500 soldiers; a standardized data collection form was completed by the dental corps officer treating the injury case and then was mailed to a central collection site for analysis.

The data from this dentofacial injury study clearly reveal that differential risks exist for various military subpopulations. Regardless of whether the level of organization of the dentofacial injury cases was on a broad administrative level (e.g., primary post mission) or on individual demographic characteristics (e.g., age, sex, rank, etc.) differential risks of injury were observed.

The major findings of this study were:

1. that the overall U.S. Army accidental dentofacial injury rate among active duty personnel was 37.7 cases/10,000/yr.;
2. that dentofacial injury rates for specific Army posts varied greatly depending upon the primary mission of the post, with basic training posts having three to five times the dentofacial injury rates of most other types of posts;
3. that young male enlisted soldiers were the highest risk group with over 80% of all dentofacial injuries occurring in the lowest four enlisted ranks;
4. that the primary specific causes of the reported dentofacial injuries were fistfights (nearly 30%), sports (over 20%), and vehicles (about 15%) followed by weapons and other equipment (each contributing about 5%); and,
5. that the incidence of accidental dentofacial injuries for each specific cause increased as the day progressed (except for weapon injuries which peaked during morning duty hours).

Based on the data from this study, two specific preventive programs and one general suggestion were recommended for Army-wide adoption. Although fistfights were the overall leading cause of dentofacial injuries and were overwhelmingly the leading cause amongst the highest risk group of soldiers, given the difficulty of controlling these incidents (75% were off-duty fights), the strongest feasible recommendation is that troop commanders employ appropriate administrative actions to discourage these non-productive incidents.

It was also recommended that a reduction in sports-related dentofacial injuries would definitely be achieved if the availability of and enforced use of mouthguards became a definite policy for military contact sports. Finally, the data suggests that the abysmally low usage of lap belts and chestbelts accounted for most of the vehicle-related dentofacial

injuries and that an Army policy requiring the use of these safety aids would have tremendous benefits not only to the total health of the individual but also to the military as an employer and health provider.

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Table 1. List of the selected U.S. Army posts, their primary mission designation, their post type, their populations, and their annual dentofacial injury rate.

Combat Arms Posts	Population	Adjusted Dentofacial Injury Rate per 10,000/yr.
Ft. Knox, KY - Armor	22,500	66.4
Ft. Sill, OK - Artillery	19,000	39.3
Ft. Benning, GA - Infantry	19,100	14.7
Ft. Bragg, NC - Airborne	44,000	35.7
Combat Support Posts		
Ft. Belvoir, VA - Engineer	7,400	12.6
Ft. Eustis, VA - Transportation	8,700	26.0
Aberdeen Proving Ground, MD - Ordinance	8,200	6.5
Combat Service Support Posts		
Ft. Ben Harrison, IN - Finance & A.G.	4,500	23.7
Ft. Lee, VA - Quartermaster	10,600	18.9
Ft. Sam Houston, TX - Medical	11,600	10.3
Basic Training Posts		
Ft. Dix, NJ - Male	12,000	80.0
Ft. Polk, LA - Male	15,000	98.7
Ft. McClellan, AL - MP & Female	5,000	42.7
Headquarter Posts		
Ft. Meade, MD	12,800	15.6
Ft. Myer, VA	3,000	4.4
Aviation Posts		
Ft. Rucker, AL	7,100	24.4
	Total 210,500	37.7 Overall

Figure 1. Cumulative frequency of age distribution of dentofacial injury victims amongst active duty U.S. Army personnel

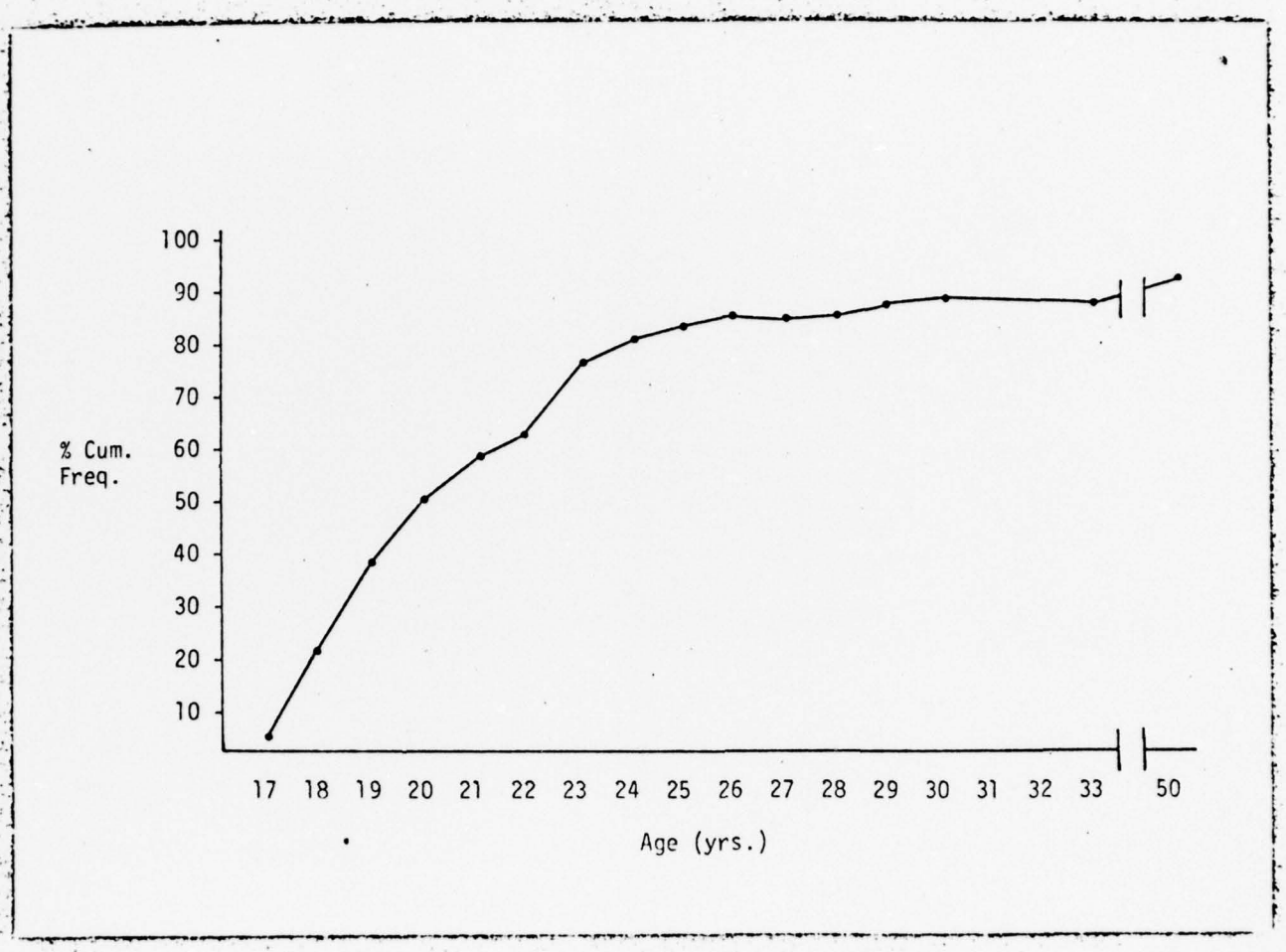
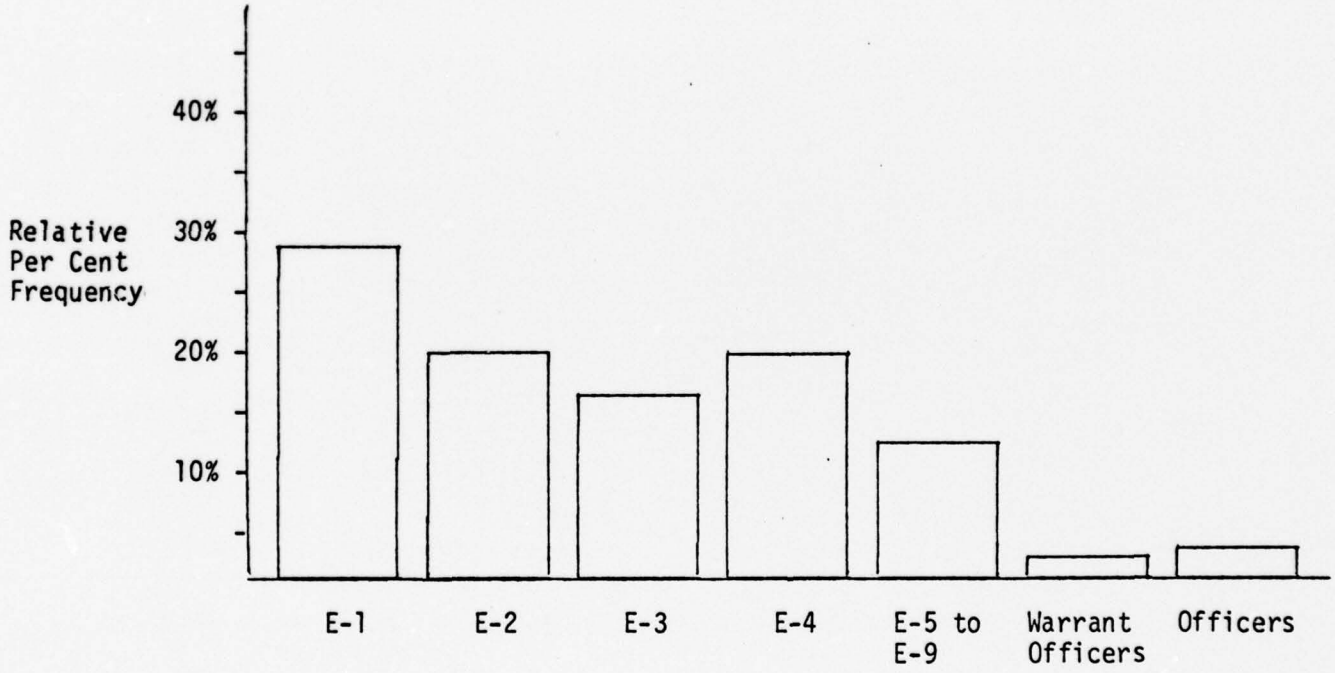

100
90
80
70
60
50
40
30
20
10
% Cum.
Freq.
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 50
Age (yrs.)

Figure 2. Distribution of dentofacial injury cases by military rank.



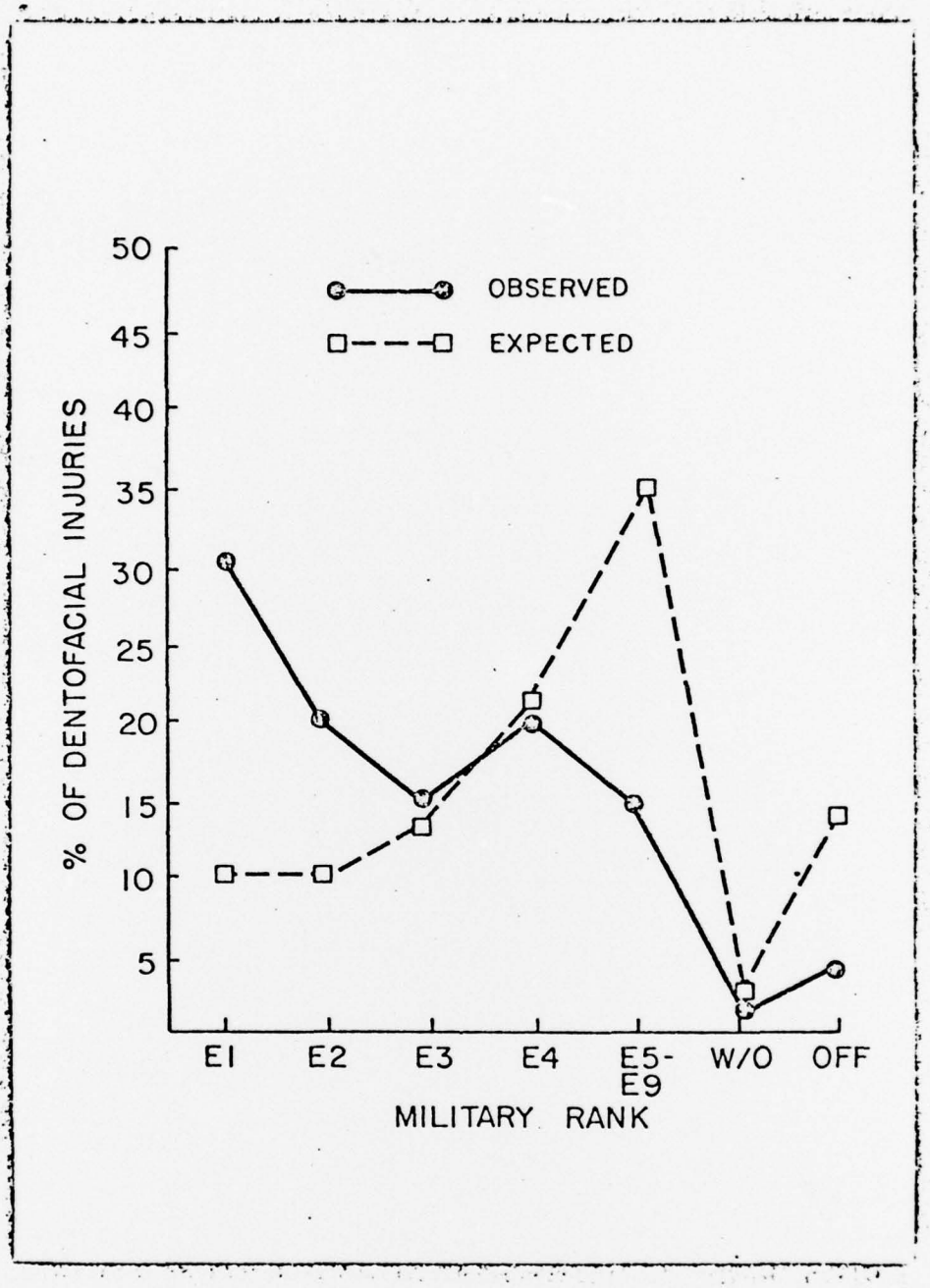


Figure 3. Percent of dentofacial injuries by military rank: observed vs. expected.

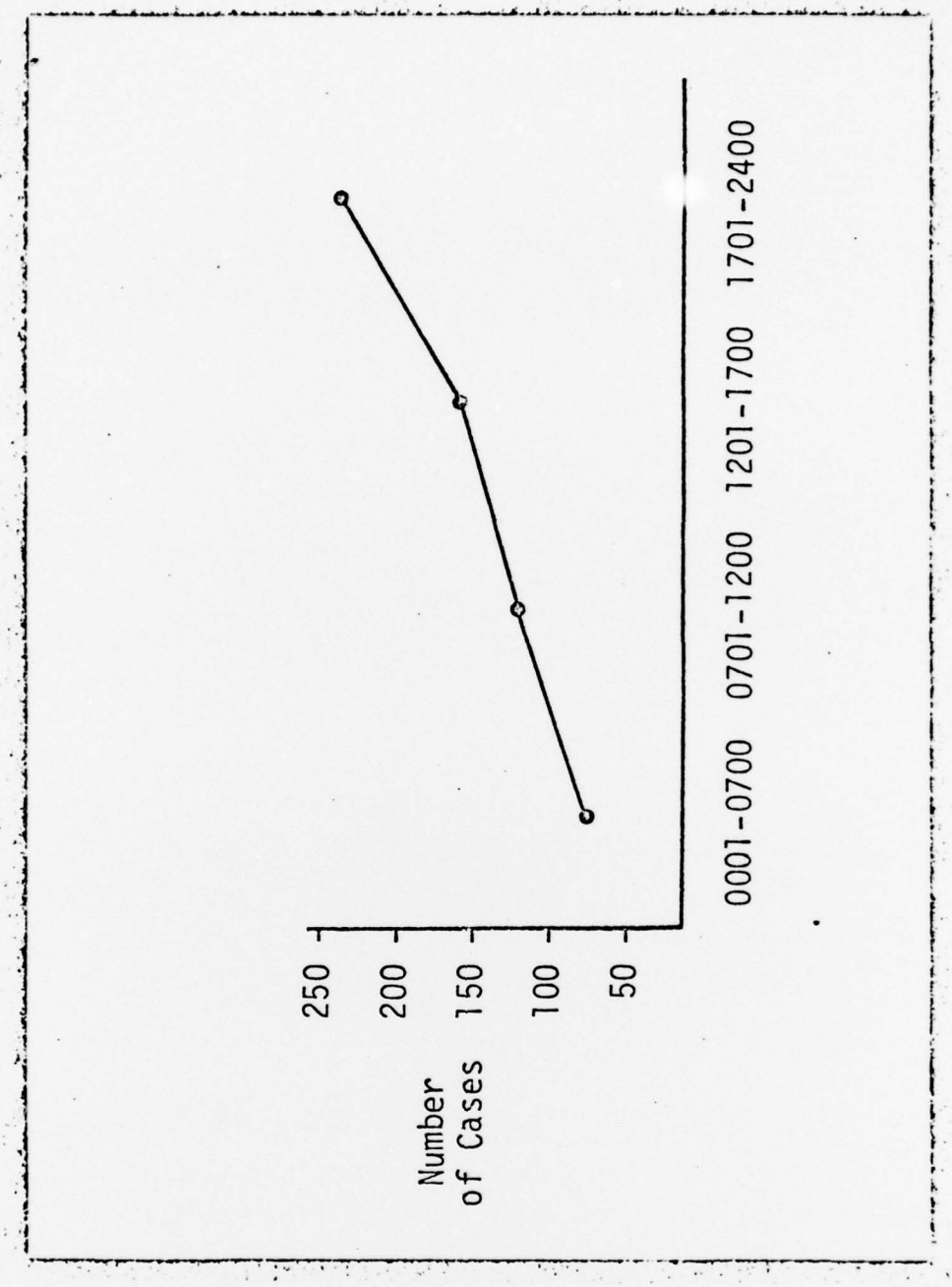


Figure 4. Distribution of dentofacial injuries by time of the day.

Figure 5. Primary causes of dentofacial injuries reported.

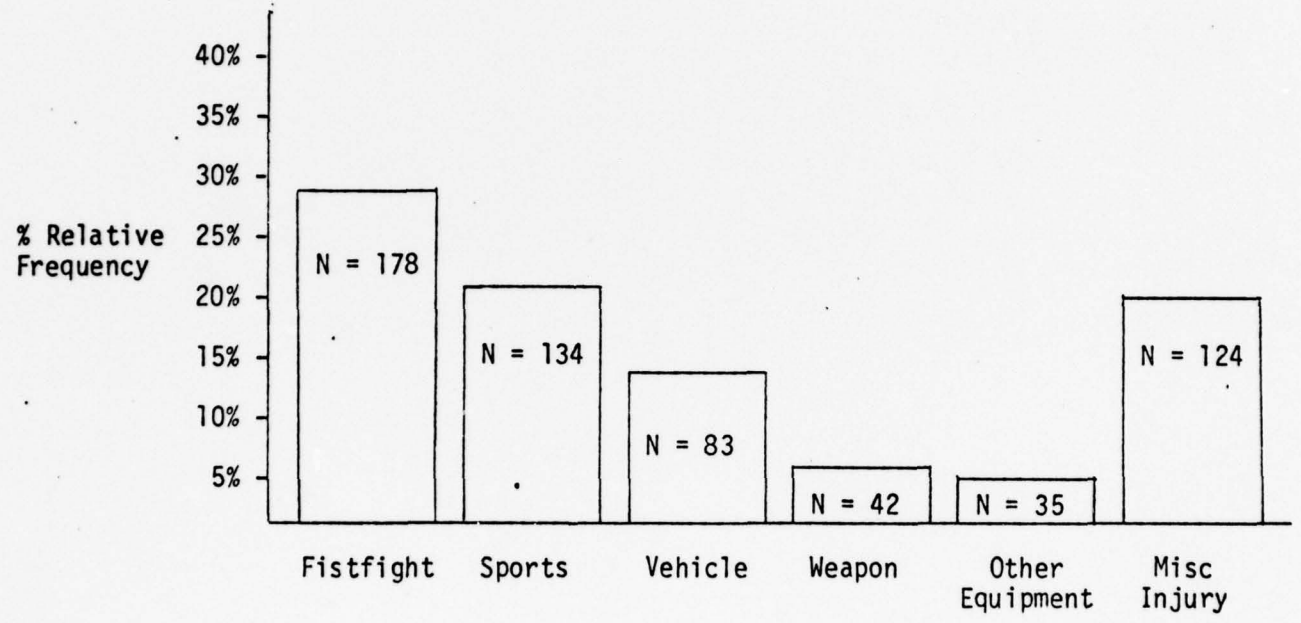
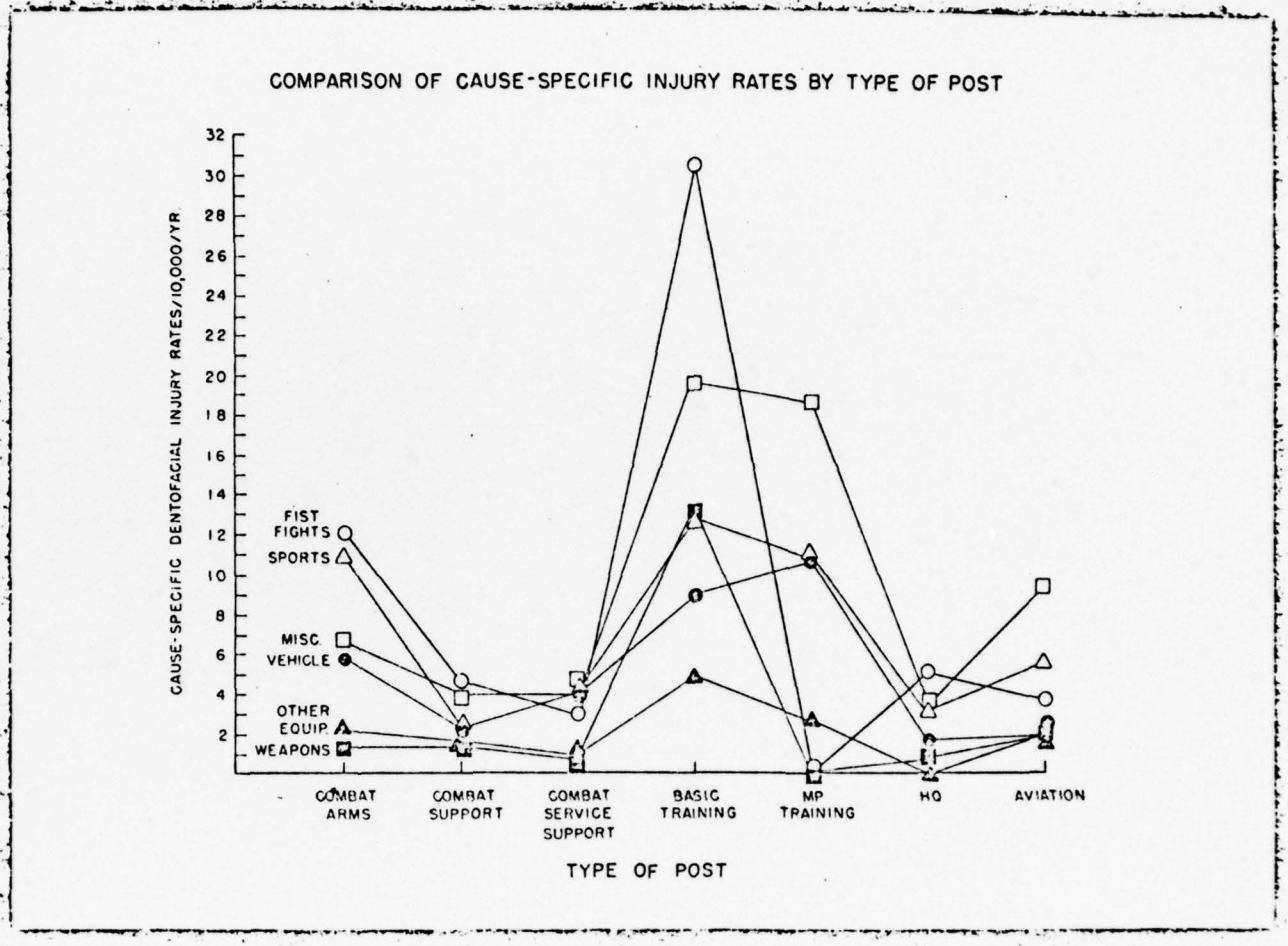


Figure 6. Comparisons of cause-specific injury rates by type of post.


COMPARISON OF CAUSE-SPECIFIC INJURY RATES BY TYPE OF POST
CAUSE-SPECIFIC DENTOFACIAL INJURY RATES/10,000/YR
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
FIST FIGHTS
SPORTS
MISC. VEHICLE
OTHER EQUIP.
WEAPONS
COMBAT ARMS
COMBAT SUPPORT
COMBAT SERVICE SUPPORT
BASIC TRAINING
MP TRAINING
HQ
AVIATION
TYPE OF POST

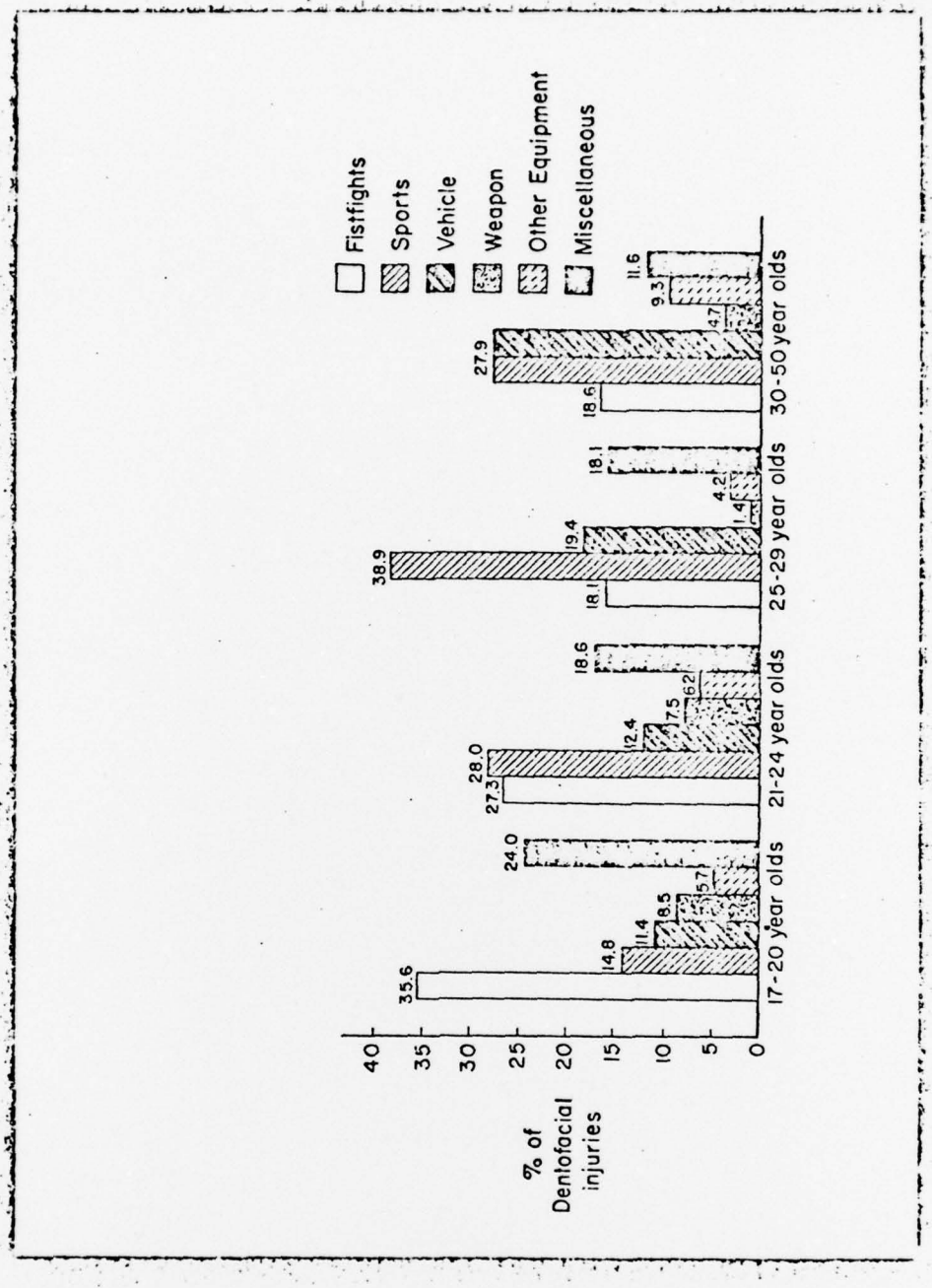


Figure 7. Distribution of cause-specific dentofacial injuries by age group.

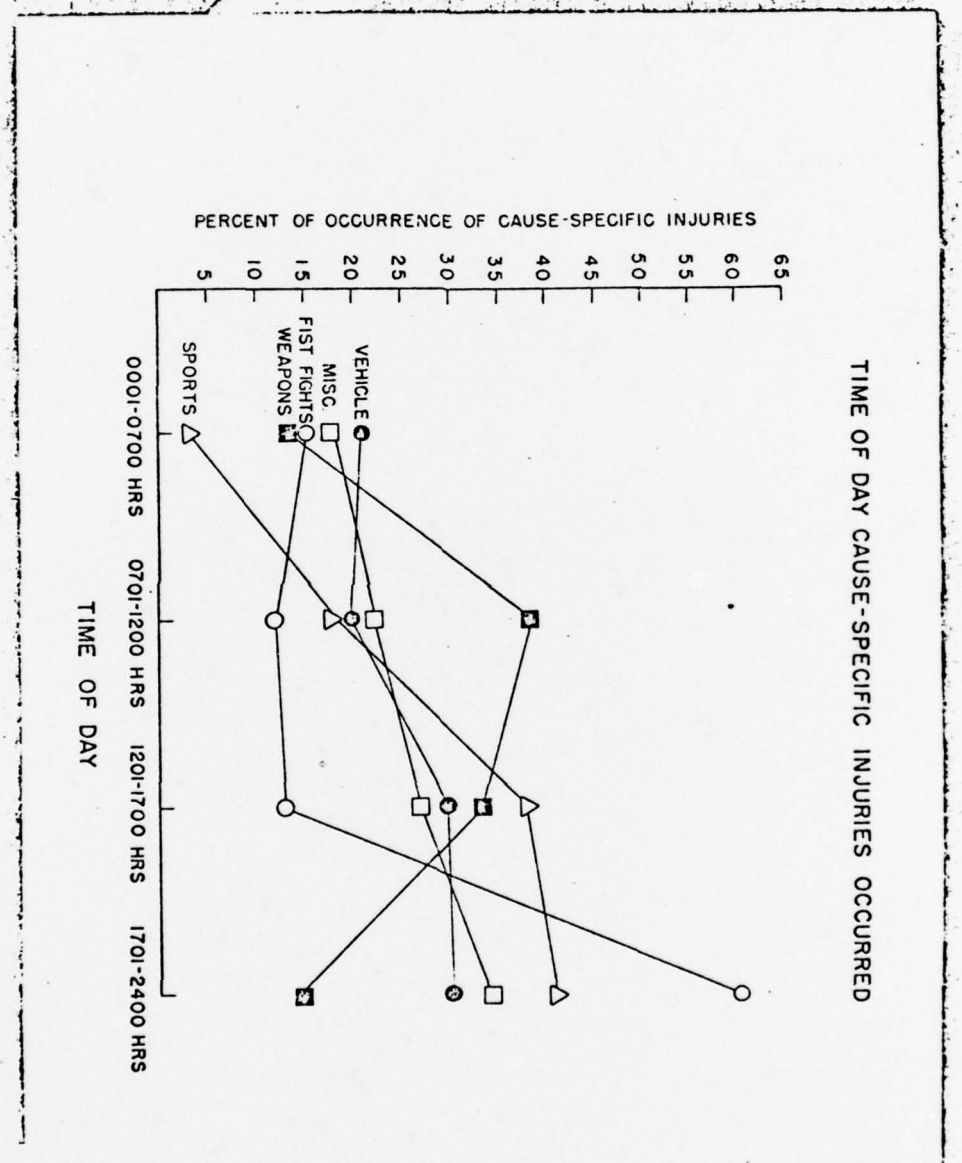


Figure 8. Time of day cause-specific injuries occurred.

Table 2. Duty location of the cause-specific injuries

	% On Duty	% Off Duty
Fistfights	25.3	74.7
Sports	40.5	59.5
Vehicle	28.2	71.8
Weapon	90.2	9.8
Other Equipment	68.6	31.4
Miscellaneous	50.8	49.2
	42.0	58.0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