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## Survivors of Violence-Related Facial Injury: Psychiatric Needs and Barriers to Mental Health Care

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### Abstract

**Objective**—This study examined mental health needs, receptivity to psychosocial aftercare, and barriers to care among survivors of violence-related facial injuries.

**Methods**—Face-to-face interviews were conducted with 25 consecutively treated individuals at a hospital-based specialty outpatient clinic one month after a violence-related facial injury. To participate in the study, patients had to screen positive for an alcohol abuse disorder (AUD), major depression, or posttraumatic stress disorder (PTSD). Participants were questioned about receptivity to an aftercare program and perceived barriers to care.

**Results**—Of those screened for study eligibility (N = 62), a substantial proportion met probable criteria for AUD (31%); PTSD (34%); and major depression (35%). Among those completing the core interview (N = 25), 80% met probable criteria for two or more psychiatric disorders. The majority (84%) expressed interest in psychosocial aftercare. However, barriers such as cost, insufficient information about counseling and obtaining services, transportation and preferences for self-reliance were commonly endorsed.

**Conclusions**—Survivors of violence-related facial injuries have substantial mental health needs and appear receptive to psychosocial aftercare. However, significant treatment barriers must be addressed. Findings underscore the value of a collaborative care model for treating violence-related facial trauma patients seeking care in specialty outpatient oral and maxillofacial clinics.

### Keywords

Trauma; Facial Injury; PTSD; Alcohol Use Disorder; Barriers

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According to a recent Surgeon General Report [1], craniofacial injuries account for 20 million annual visits to emergency room (ER) departments. Although both accidents and interpersonal violence are major causes of facial injury, accumulating evidence suggests that the latter is the larger contributing factor within urban settings [2,3].

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There is increasing awareness that individuals who sustain facial injury due to interpersonal violence not only require restoration of physical anatomy and functional status but also psychosocial care. Research implicates psychosocial factors as both antecedents and consequences of facial injury. Studies indicate that alcohol consumption may contribute to violence related facial injury [4]. Moreover, alcohol abuse can complicate recovery from injury [5]. An emerging body of research also indicates that violence-related facial injury survivors may be at increased risk for posttraumatic stress disorder (PTSD) [6,7,8]. A smaller number of studies show that major depression may also be a significant sequelae of facial injury [9, 10].

Finally, facial injuries can impair basic functions (e.g., eating, speech, vision) and result in observable permanent disfigurement. The face, with its visibility and uniquely individualized features, substantially defines individuals' perceptions of self-image and identity. Consequently, adjustment to facial injury and disfigurement may pose unique challenges [6, 11].

The aforementioned studies all point to the potential utility of an integrated care framework that attends to the psychosocial as well as physical health needs of facial injury survivors. Although awareness of the need for such programs in general trauma settings has grown in recent years [12], this issue has attracted relatively less attention for oral and maxillofacial outpatient specialty clinics in hospital settings. Yet, some have posited that increased openness and motivation toward behavioral change may occur during the immediate period following a facial injury [13,14]. Ensuring the availability of psychosocial services following a facial injury through integrative care efforts may increase access and utilization of services.

However, key gaps in the literature must be filled to lay the foundation for designing and implementing such programs. First, additional research is required to examine, more precisely, the psychiatric treatment needs of persons who sustain facial injuries due to interpersonal violence. In particular, most research on survivors of facial trauma has focused on individual psychiatric factors without addressing the extent to which multiple co-existing psychiatric problems may require attention [5]. It is unclear whether facial injury patients who do not require extended inpatient care, but receive outpatient treatment from specialty oral and maxillofacial outpatient services, present with similar psychiatric comorbid conditions as found in general trauma populations. The latter issue is important insofar as the presence of multiple comorbid psychiatric conditions, as well as different patterns of comorbidity, may require special intervention strategies [15,16,17]. For example, research suggests that co-occurring substance abuse and PTSD may require specially tailored interventions [17].

Research must also examine the receptivity of facial injury survivors with psychosocial needs to receiving mental health services. Findings from survivors of violence-related physical injury requiring hospitalization and treatment in a general trauma service suggest that only a small proportion of individuals with documented treatment needs actually seek mental health services [18]. Substantial barriers to accessing care may exist for survivors of facial injury, and the success of integrated care efforts hinge on identifying and addressing these obstacles.

To examine these issues, we interviewed a consecutive series of patients receiving treatment for facial injuries from an Oral and Maxillofacial Surgery Outpatient Service associated with a large Level I trauma facility. The specific goals of the study were threefold: (1) to determine the extent to which individuals receiving outpatient specialty care for violence-related facial injuries met screening criteria, either alone or in combination, for alcohol use disorder (AUD), PTSD, and major depression; (2) to assess receptivity to psychiatric aftercare among individuals with probable mental health needs; and (3) to evaluate patient-perceived barriers to receiving aftercare services for mental health needs.

## Method

### Participant recruitment and characteristics

All participants had sought outpatient medical treatment for violence-related orofacial injuries (i.e., mandible fractures) from the Oral and Maxillofacial Surgery service at the Los Angeles County/University of Southern California (LAC+USC) Medical Center. Participants were recruited between January and November 2005. The LAC+USC Medical Center is a large, inner-city, publicly funded hospital serving the predominantly minority population of East Los Angeles. All injuries resulted from physical battery without use of additional weapons.

Potential participants were invited to complete a short interviewer-administered screening interview while awaiting their one-month follow-up visit. Individuals were eligible for entry into the study concerning receptivity and perceived barriers to mental health service utilization if they had at least one mandible fracture and met screening criteria for PTSD, major depression, or AUD as defined below. Prospective participants were excluded if they were currently incarcerated or were unable to give informed consent. Written informed consent was obtained from participants. Study approval was obtained from the institutional review boards at LAC+USC Medical Center, the University of California at Los Angeles, and the RAND Corporation.

In total, 83 consecutively returning patients were approached to determine study eligibility. Seventy five percent completed the screener ( $N = 62$ ). Of these, 50% ( $N = 31$ ) met eligibility criteria. Eighty-one percent ( $N = 25$ ) of those eligible consented to participate in a semi-structured interview. All participants were injured in acts of community violence. Participant sociodemographic characteristics are shown in Table 1.

### Interviewers and Procedures

Data were obtained via face-to-face interviews. The interview team was composed of 4 bilingual lay interviewers. Interviewers received extensive training before conducting interviews as well as active supervision throughout data collection. The screening interview was fully structured and took approximately 10 minutes to complete. The core interview, which contained semi-structured and fully structured portions, took 45–60 minutes to complete. The latter interview covered a range of topics in addition to those providing the basis for the present analyses. For the current purposes, only data obtained during the fully structured portion of the core interview were analyzed.

### Translation Procedures

Both the screener and the core interview were translated and back-translated following recommended procedures [19]. First, a single translator translated the English instrument into Spanish. The Spanish version of the instrument was then back-translated into English by a second person. A third translator then assisted the two original translators in reconciling discrepancies and arriving at a final translation.

### Measures

**PTSD symptoms**—To screen for possible PTSD, we used a short-form screener based on the PTSD Symptom Checklist [20]. The PTSD Checklist is keyed to the DSM-IV diagnostic criteria for PTSD [21]. The short-form of this widely used and well-validated scale [22,23] was developed using best subset regression to identify physical trauma survivors at risk for PTSD [24]. The short-form consists of 6 statements. Participants were asked to indicate the extent to which they had been bothered by each symptom in the past two weeks, using a 5-point scale ranging from 1 (“not at all”) to 5 (“extremely”). Consistent with the scoring of the PTSD Symptom Checklist [20], scores of 18 or more were treated as suggesting possible PTSD.

For participants who screened into the study ( $N = 25$ ), descriptive statistics were as follows:  $M = 22.32$ ,  $SD = 6.54$ .

**Depressive symptoms**—To screen for possible major depressive disorder, we used the Patient Health Questionnaire-9 (PHQ-9) [25]. The PHQ-9 was developed expressly for use in medical settings and consists of items that map directly onto the DSM-IV diagnostic criteria for major depressive disorder [21]. The PHQ-9 has been shown to be a reliable and valid depression screener in various patient populations [26,27] as well as the general public [28]. The PHQ-9 consists of 9 statements reflecting various symptoms of depression. Participants were asked to indicate the extent to which they had been bothered by each symptom over the past two weeks, using a 4-point scale ranging from 0 (“not at all”) to 3 (“nearly every day”). Following recommended scoring procedures [25], participants with values of 7 or more were regarded as meeting screening criteria for major depression. For participants who screened into the study ( $N = 25$ ), descriptive statistics were as follows:  $M = 11.68$ ,  $SD = 5.91$ .

**Alcohol problems**—To screen for potentially problematic alcohol use, we administered the Rapid Alcohol Problems Screen (RAPS4) [29]. This 4-item screener has been shown to perform well in identifying problem drinkers relative to other available screeners [30], and appears particularly useful in identifying problem drinkers in ethnic minority individuals seeking emergency medical and primary care services. The RAPS-4 consists of 4 items—each answered on a yes/no response scale—measuring signs of problem alcohol use. Following the recommended scoring algorithm [29], persons who positively endorsed one or more items were identified as being at risk for problematic alcohol use. For participants who screened into the study ( $N = 25$ ), descriptive statistics were as follows:  $M = 1.36$ ,  $SD = 1.29$ .

**Receptivity to psychosocial aftercare**—To assess participant interest in an aftercare program specifically designed to address reported mental health problems, a single question was asked: “how interested would you be in a program designed to help patients who were injured in the face with their anxiety, depression, and alcohol problems?” Responses were provided on a 3-point scale ranging from 1 (“very interested”) to 3 (“not at all interested”). For participants who screened into the study ( $N = 25$ ), descriptive statistics were as follows:  $M = 1.68$ ,  $SD = 1.29$ .

**Barriers to participation in aftercare**—To measure barriers to participation in psychosocial aftercare, we used a checklist modeled after commonly used instruments [31, 32]. The instrument contained 20 items tapping various barriers including financial concerns, lack of knowledge, acceptability, and perceived effectiveness. Items were phrased as statements, and responses were provided on a 4-point scale ranging from 1 (“strongly disagree”) to 4 (“strongly agree”). For the current purposes, we examined the proportion of respondents who either “agreed” or “strongly agreed” that a given barrier might impede aftercare program attendance. Participants who screened into the study ( $N = 25$ ), endorsed approximately seven barriers:  $M = 7.14$ ,  $SD = 3.89$ .

## Data Analysis

To determine the extent to which consecutively treated patients with facial injury met screening criteria for any of the three psychiatric disorders (i.e., AUD, PTSD, or depression), we calculated the proportion of recruited patients who met screening criterion for each condition. Of individuals who met screening criteria for any single disorder, we also determined the percentage who met criteria for each condition. For those who met screening criteria, we calculated the proportion of individuals who expressed interest in participating in a psychosocial aftercare program for assistance with mental health problems. Finally, for persons

expressing interest in psychosocial aftercare, we determined the proportion who endorsed each barrier.

## Results

Of consecutively screened persons ( $N = 62$ ), 31% met screening criteria for probable AUD; 34% met screening criteria for probable PTSD; and 35% met screening criteria for probable major depression. For those who screened positive for one or more disorders and consented to participate in the study ( $N = 25$ ), 68% met diagnostic criteria for probable AUD; 72% met diagnostic criteria for probable PTSD, and 76% met diagnostic criteria for probable major depression. With respect to psychiatric comorbidity, 80% met diagnostic criteria for two or more psychiatric conditions (see Table 1).

Of participants who met screening criteria for one of the disorders, the majority indicated interest in psychosocial aftercare. Specifically, 48% ( $N = 12$ ) expressed “great interest” and 36% ( $N = 9$ ) indicated “moderate interest” in psychosocial aftercare. Sixteen percent ( $N = 4$ ) expressed “no interest” in psychosocial aftercare. Only 2 persons reported currently seeing a mental health professional, and both had been receiving care prior to their facial injury.

For participants interested in psychosocial aftercare, endorsement rates for specific barriers ranged from 10% to 81% (see Table 2). Lack of knowledge about where to find a program and financial cost were the two most frequently endorsed barriers by those interested in mental health aftercare. Other commonly endorsed barriers included insufficient information about counseling, transportation, and competing responsibilities. Barriers endorsed by 30–50% of the participants included concern about self-reliance, not wanting to address mental health problems, believing that no help is needed, and believing that solving mental health problems is not a priority. Infrequently endorsed barriers (i.e., endorsed by fewer than 20%) included the perception that family members would not be supportive of efforts to seek mental health help, worry about racial or ethnic discrimination, worry about what others would think, and concern about childcare.

## Discussion

This study examined the mental health needs of individuals receiving medical treatment for violence-related facial injury from a hospital-based outpatient specialty clinic. As part of this investigation, we also assessed receptivity to mental health services to meet these needs as well as perceived barriers to accessing care. Consistent with studies of hospitalized general trauma patients [18,33], a substantial proportion of participants met screening criteria for PTSD (34%), major depression (35%), or AUD (31%), during an interview conducted one month post-injury. Further, of those who met screening criteria for at least one disorder, marked psychiatric comorbidity was found. In particular, 80% met criteria for a probable diagnosis of at least two psychiatric disorders. These findings highlight the substantial and complex mental health needs of facial trauma patients, and indicate that survivors of physical trauma not requiring inpatient treatment can nonetheless have significant need for mental health care.

With respect to interest in aftercare, the vast majority of participants expressed receptivity. These findings appear consistent with those of another recent study in which a substantial proportion of facial injury patients receiving treatment from an urban hospital emergency service expressed a willingness to change behaviors that may have been linked to their injury [2]. This seeming openness to mental health treatment may be attributable to the unique visibility of injury-caused facial disfigurement [14]. Whether or not persons with facial injury are especially disposed to be receptive to mental health treatment relative to trauma survivors with other types of injuries requires additional study. At the very least, however, these results

suggest that the initial weeks following facial injury—during the period in which aftercare services for physical injury are still being provided—may be an opportune time to orchestrate mental health services for persons in need [12,34].

These findings also suggest, however, that mere expression of interest in treatment is not likely to translate into service seeking. In this context, it is notable that despite high levels of expressed interest, no participants actually reported beginning mental health treatment following their injuries. One implication of this observation is that efforts to develop and implement psychosocial interventions for facial injury survivors must focus not only on recognizing service need but also on taking active steps to capitalize on the initial motivation of injury survivors. A critical step in harnessing this interest must involve assisting trauma survivors in overcoming perceived and structural barriers to mental health service use.

The majority of participants in this study reported at least one barrier to mental health service utilization. Moreover, on average, seven barriers were endorsed. Barriers were of various types. Of persons expressing interest in psychosocial aftercare, over 80% reported not knowing where to find services and over 70% cited cost as barriers to mental health care. These findings are similar to those of other studies of individuals with mental health disorders [35,36]. Other barriers related to access (e.g., transportation) and knowledge (e.g., insufficient information about counseling) also figured prominently. In contrast, social stigma and perceived discrimination were the least commonly endorsed barriers. The low endorsement of social stigma as a barrier may bode well for service utilization.

With regard to specific barriers to care, it appears that the most commonly reported barriers to care may be amenable to collaborative care efforts. Models of collaborative care are beginning to be developed and a recent review outlines some successful collaborative care practices [37]. Collaborative care delivers integrated services for patients with chronic medical and psychiatric problems through a team of medical, mental health, and support specialists. Collaborative interventions are designed to dynamically meet the individualized needs of the patient (including financial, social, legal, and health related concerns), while providing evidence-based treatments that lead to improved clinical outcomes.

Thus, collaborative care programs may be able to address commonly endorsed barriers such as lack of knowledge about treatment and where to find care during the immediate aftercare phase following injury. Similarly, collaborative care can assist injury patients in identifying resources that can help defray the cost of services and provide assistance with transportation to treatment. Other barriers may be responsive to brief psychoeducational counseling [37] or techniques aimed at eliciting motivation to change [38]. For example, even participants who expressed receptivity to psychosocial treatment endorsed barriers suggestive of some underlying uncertainty about seeking mental health services (e.g., believing that they should deal with the problem themselves). The preference to solve emotional problems on one's own may be particularly salient among members of the Latino community [39], but may also be malleable.

Preliminary evidence suggests that stepped collaborative care may be an effective means of both engaging patients in needed mental health care and delivering evidence based psychiatric care in trauma care settings [12]. Collaborative care models may be particularly well-suited to capitalizing on the substantial degree of interest in psychosocial aftercare expressed by this study's facial injury patients. Moreover, collaborative care can play an integral role in removing treatment barriers, which if left unaddressed can further demoralize trauma patients. A substantial majority of facial injury patients expressed significant barriers to care; research is needed to determine the viability of this promising aftercare model in facilitating access to psychosocial treatment.



In considering these findings, it is important to be mindful of certain shortcomings of this research. This study relied on a small sample recruited from a single site, thus raising issues about potential generalizability to other facial injury populations. Similarly, although the sociodemographic characteristics of this sample were broadly consistent with general trauma patients recruited from this medical center for violence-related injuries [18], additional research is needed to examine the generalizability of findings to general trauma patients. Moreover, this study was intended to document the psychiatric treatment needs of facial trauma patients but is silent as to whether specific conditions predated or developed subsequent to the facial injury. Finally, to the extent that reliance on screening instruments instead of diagnostic interviews alters the pool of individuals perceived as needing treatment, additional research may be warranted.

## Conclusions

Our findings underscore the substantial mental health need of individuals affected by violence-related facial injuries who are treated in outpatient specialty settings. These data also indicate that a substantial proportion of individuals may be more receptive to receiving mental health treatment than might have been expected or previously believed. Although significant barriers to care were acknowledged even by those expressing interest in mental health care, findings suggest that a collaborative care model has the potential to capitalize on this early interest and address some of the major reported barriers (e.g., cost, insufficient knowledge, lack of perceived need for services). Meeting the complex psychosocial needs presented by facial trauma survivors will pose challenges. This research maps out important issues to be faced in addressing these needs.

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**Table 1**

Participant Characteristics at Time of Injury (N = 25)

| Characteristic                 | N or Mean | % or $\pm$ SD |
|--------------------------------|-----------|---------------|
| Age                            | 29.32     | 9.29          |
| Male                           | 22        | 88            |
| Race/Ethnicity                 |           |               |
| Hispanic                       | 13        | 52            |
| African-American/Black         | 8         | 32            |
| Caucasian                      | 3         | 12            |
| Native American                | 1         | 4             |
| Marital Status                 |           |               |
| Single/Never Married           | 19        | 76            |
| Married                        | 5         | 20            |
| Divorced/Separated             | 1         | 4             |
| Employment                     |           |               |
| Full-Time                      | 9         | 36            |
| Part-Time                      | 4         | 16            |
| Unemployed                     | 11        | 44            |
| Student                        | 1         | 4             |
| Probable Mental Health Need    |           |               |
| Alcohol Use Disorder           | 17        | 68            |
| Posttraumatic Stress Disorder  | 18        | 72            |
| Major Depression               | 19        | 76            |
| Psychiatric Comorbidity        |           |               |
| Met criteria for 2 disorders   | 8         | 32            |
| Met criteria for all disorders | 12        | 48            |

**Table 2**

## Barriers to Care for Patients Interested in Aftercare (N = 21)

| Barriers to Care (Abbreviated Item Content)                | N  | %  |
|--|----|----|
| You don't know where to find a program.                    | 17 | 81 |
| You are worried about cost.                                | 15 | 71 |
| Attendance would interfere with other responsibilities.    | 13 | 62 |
| You don't have enough information about counseling.        | 12 | 57 |
| Worried about transportation.                              | 12 | 57 |
| You think it's important to deal with problems by oneself. | 11 | 52 |
| You don't want to deal with these problems.                | 8  | 38 |
| You think you don't need any help.                         | 8  | 38 |
| Solving these problems is not a priority.                  | 7  | 33 |
| You think the program would take too much time.            | 6  | 29 |
| You don't think counseling works.                          | 5  | 24 |
| You are embarrassed to discuss these problems.             | 5  | 24 |
| You would lose pay from work.                              | 5  | 24 |
| You are worried about paperwork involved.                  | 5  | 24 |
| You think these problems cannot be helped.                 | 4  | 19 |
| Your family would not support attendance.                  | 4  | 19 |
| Worried that no one would speak your language.             | 4  | 19 |
| Worried about childcare.                                   | 4  | 19 |
| Counselors would discriminate because of race/ethnicity.   | 3  | 14 |
| You are concerned about what others would think.           | 2  | 10 |