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Screening for Psychiatric Problems in the Orofacial Trauma Setting

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Summary

Following facial trauma, a subset of patients will develop mental health problems, particularly posttraumatic stress disorder (PTSD) and major depression. Early identification of patients who may be at risk for these disorders can facilitate referral for further psychiatric evaluation and possible treatment. Brief, easy-to-use screening tools are available to assist in the process of recognizing these individuals. This chapter provides a review of some of the most commonly-used short screeners for PTSD and major depression. Incorporating information gleaned from these self-administered screeners into the routine evaluation of facial trauma patients will help to address the mental health needs associated with orofacial injury.

Introduction

Persons who sustain orofacial trauma not only require restoration of physical anatomy and functional status but also may have need for trauma-related psychiatric services. In particular, survivors of orofacial trauma are at elevated risk of posttraumatic stress disorder (PTSD) (Bisson, Shepherd, & Dhutia, 1997; Glynn et al., 2003; Lento et al. 2004; Roccia, Dell'Acqua, Angelini, & Berrone, 2005; Wong et al., 2007) as well as major depressive disorder (Gironda, Der-Martirosian, Belin, Black, & Atchison, 2009; Hull et al., 2003; Roccia, Dell'Acqua, Angelini, Berrone, 2005). Fortunately, efficacious treatments for both conditions are available (Anderson et al., 2008; Foa, Friedman, & Keane, 2004; Malhi et al., 2009; Stein, Ipser, & Seedat, 2006) Kuyken, Dalgleish, & Holden, 2007). Given the frequency with which PTSD and major depression may develop in facial injury survivors, front-line providers of services to orofacial trauma patients must be able to recognize and screen for these psychiatric disorders.

What is PTSD?

PTSD is a psychiatric disorder that may follow from exposure to a traumatic life event. An event is regarded as traumatic if it involves either actual or threatened death or serious injury. To qualify as traumatic, the event must also trigger intense fear, helplessness, or horror during or immediately after it takes place. PTSD is characterized by three clusters of symptoms: (a) persistent and intrusive distressing recollections of the event (e.g., nightmares, flashbacks), (b) avoidance of reminders of the event (e.g., efforts to avoid thoughts or places associated with the trauma) or numbing of general responsivenesss (e.g., a manifest loss of interest in previously pleasurable activities), and (c) persistent symptoms of hyperarousal (e.g., hypervigilance, difficulty falling asleep) (American Psychiatric Association, 1994). Symptoms must last for more than one month and cause either clinically significant distress or impairment in functioning to meet diagnostic criteria for PTSD. Many individuals experience transient psychological distress in the immediate aftermath of trauma exposure. This distress is typically self-limited with spontaneous recovery occurring within

several days or a few weeks. Thus, PTSD can be distinguished from more transient reactions to stress by reference to symptom duration.

How Common is PTSD?

PTSD is a relatively common psychiatric condition, with a lifetime prevalence of approximately 8% in the general population (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kessler et al., 2005). The disorder occurs quite frequently in trauma settings, with studies suggesting an incidence of approximately 20% in the months immediately following hospitalization for the treatment of traumatic physical injury (Marshall, Miles, & Stewart, in press; Zatzick et al., 2007).

Screening for PTSD

Although a definitive diagnosis of PTSD requires a clinical interview, screening tools exist to assist orofacial trauma care providers in identifying patients who might benefit from referral for a more detailed psychiatric evaluation. Various screening instruments have been developed that assess the severity and/or frequency of the DSM-IV symptoms of PTSD (for a review, see Brewin, 2005). Among the most commonly-used instruments are the PTSD Symptom Checklist (Weathers et al., 1993), the Posttraumatic Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997), the revised version of the Impact of Events (Weiss & Marmar, 1997), and the Davidson Trauma Scale (Davidson et al., 1997). For example, the PTSD Symptom Checklist assesses for the presence of all 17 symptoms of PTSD. Items are phrased in the form of statements and respondents indicate the extent to which they have been bothered by each symptom in the past week (Weathers et al., 1993).

Although completion of these screeners is substantially less burdensome than administration of a diagnostic interview, each screener contains a minimum of seventeen items corresponding to the seventeen symptoms of PTSD. Thus, even these relatively brief tools may be may be insufficiently short for use in busy clinical care settings. To satisfy the need for a concise screening tool to identify patients with possible PTSD, several short screeners have been developed. One such screener, the four-item Startle, Physiological arousal, Anger, and Numbness (SPAN) instrument (Meltzer-Brody, Churchill, & Davidson, 1999), was derived from the Davidson Trauma Scale. To complete the SPAN, respondents are asked to identify the trauma that was most disturbing and to assess the degree to which each of the four symptoms has distressed them over the past week. The symptoms that comprise the SPAN are those that best distinguish a sample of patients with PTSD from a comparison sample of persons without PTSD. Responses are provided with respect to a 5-point scale ranging from 0 = "Not at all" to 4 = "Extremely distressing"). Scores of 5 or more are indicative of possible PTSD.

The SPAN was initially validated using a sample of 243 persons exposed to various types of trauma (e.g., combat, natural disaster) who had been diagnosed with PTSD via a clinical interview (Meltzer-Brody et al., 1999). In the validation sample, the SPAN had a sensitivity of 0.84 (i.e., the proportion of all cases that were detected) and a specificity of 0.91 (i.e., the proportion of all negative cases that were detected) in the original sample of heterogeneous trauma survivors. In a subsequent validation subsample, a cut score of five or more points resulted in a sensitivity of 0.77 and a specificity of 0.82. Further research attests to the utility of the SPAN as a brief PTSD screener in various traumatized populations (e.g., Melzer-Brody et al., 2004; Yeager, Magruder, Knapp, Nicholas, & Frueh, 2007).

A second short PTSD screening tool was adapted from an instrument originally developed to screen for lifetime PTSD in community samples (Breslau, Peterson, Kessler, & Schultz, 1999). As adapted by Kimerling et al. (2006), this screener consists of 7 PTSD symptoms

with respondents indicating whether or not each symptom had been experienced in the preceding month. The screener was validated using a sample of 134 medical outpatients. A cut point of 4 or more symptoms had a sensitivity of .85 and a specificity of .84 for identifying persons with PTSD in a primary care setting.

A third PTSD screener, the Primary Care PTSD (PC-PTSD), was developed expressly for use in primary care (Prins et al., 2004). Consisting of items assessing four PTSD symptoms, this instrument was initially developed using data from 188 patients in primary care. To complete the screener, respondents indicate whether or not they have experienced each symptom in the past month. Endorsement of 3 or more symptoms of the PC-PTSD is suggestive of PTSD. A cut-point greater than or equal to three has a sensitivity of 0.78 and a specificity of 0.87 relative to a structured diagnostic interview. Subsequent research has shown that the PC-PTSD performs well as a screener in various settings (e.g., Bliese et al., 2008; Kimerling, Trafton, & Nguyen, 2006; Reger, Gahm, Swanson, & Duma, 2009).

The SPAN, the instrument developed by Kimerling et al. (2006), and the PC-PTSD can be administered as a brief interview. Moreover, each is suitable for self-administration for most patients. As determined using software available on Microsoft Word, the SPAN is capable of being read by individuals with a 6^{th} grade education, whereas the PC-PTSD requires an 8^{th} grade reading level (Flesch-Kincaid, 1975). Self-administration of the screener developed by Kimerling et al. (2006) requires an estimated 10^{th} grade reading level. Thus, the latter screener is perhaps less useful than the others as a self-administered tool.

Concluding Remarks

PTSD is common in survivors of orofacial trauma. Although definitive determination of the presence of PTSD requires a time-intensive diagnostic interview, brief and easily-administered screening instruments can aid in the identification of patients who may benefit from referral for further evaluation and possible treatment. Given that PTSD requires the presence of symptoms for a period of at least 30 days, a one-month follow-up wound check visit would be an ideal time to screen for the presence of PTSD. The SPAN (Meltzer-Brody, Churchill, & Davidson, 1999), the instrument developed by Kimerling et al. (2006), and the PC-PTSD (Prins et al., 2004) all possess desirable features as screening tools. The evidence attesting to the utility of these instruments is good, although additional research is needed. In particular, no studies have examined the validity of these PTSD screeners against diagnostic interviews in the trauma center context.

What is Major Depression?

Major depressive disorder is a psychiatric condition anchored by depressed mood and loss of interest or pleasure. At least five of the following symptoms must have been present for a two-week period accompanied by either depressed mood or loss of interest: depressed mood, loss of interest or pleasure, appetite disturbance, sleep disturbance, psychomotor agitation or retardation, fatigue, feelings of worthlessness, or excessive guilt, difficulty concentrating, and recurrent thoughts of death (American Psychiatric Association, 1994). Symptoms must cause either clinically significant distress or impairment in functioning to meet diagnostic criteria for major depression.

How Common is Major Depression?

Major depressive disorder is widespread in the general population, with a lifetime prevalence of nearly 17% (Kessler et al., 2005). The disorder is increasingly recognized as common in the aftermath of physical trauma (Blanchard, Buckley, Hickling, & Taylor, 1998; Islam, Ahmed, Walton, Dinan, & Hoffman, 2009; Shalev et al., 1998). For example,

in a study of 212 general trauma patients, Shalev et al. (1998) reported that 19% met DSM-IV diagnostic criteria for major depression at one-month post-injury, whereas 14% were diagnosable at 4-months post-trauma (Shalev et al., 1998).

Screening for Major Depression

Numerous screening instruments have been developed to assess for major depression. Some of the most widely-known instruments include the Center for Epidemiological Studies—Depression Scale (Radloff, 1977), the Zung Self-Rating Depression Scale (Zung, 1965), and the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Beck, Steer, Ball, & Ranieri, 1996). For example, the Zung Depression Scale consists of 20 symptoms phrased as statements (e.g., I feel down-hearted and blue) with respondents indicating the extent to which each symptom has been experienced in the past several days. Responses are provided on a 4-point scale ranging from "a little of the time" to "most of the time" (Zung, 1965).

Because even these short depression screeners often contain 20 or more items, administration in busy treatment settings can be burdensome for staff and respondents. For this reason, considerable attention has been devoted to the development of even shorter depression screener tools for use in clinical contexts. The Patient Health Questionnaire (PHQ-9) has attracted considerable attention as a depression screener (Kroenke, Spitzer, & Williams, 2001). This instrument was developed for use in primary care settings and consists of nine items. Phrased as statements, each item is answered with respect to the past 2 weeks. Respondents indicate the extent to which each symptom bothered them on a 4-point scale with response options consisting of "0 = not at all", 1 = several days, 2 = more than half the days", and 3 = "nearly every day". Major depression is suggested if respondents endorse 5 or more of the nine symptoms as having been present more than half of the days in the past two weeks. A more lenient threshold may also be used as indicative of a milder episode of depression. In either instance, individuals who receive screening scores exceeding the relevant cut-point may benefit from referral for further evaluation.

In the original validation research conducted with approximately 6,000 patients in 8 primary care and 7 obstetrics-gynecology clinics, the PHQ-9 was found to have a sensitivity of .88 and a specificity of .88 for major depressive disorder (Kroenke et al., 2001). Subsequent investigations of the PHQ-9 have demonstrated that the instrument possesses utility as a depression screener in various contexts and settings (Bombardier, Richards, Krause, Tulsky, & Tate, 2004; Chen, Huang, Chang, & Chung, 2006; Fann et al., 2005; Hansson, Chotai, Nordstöm, & Bodlund, 2009; Martin, Rief, Klaiberg, & Braehler, 2006; Pinto-Meza, Serrano-Blanco, Peñarrubia, Blanco, & Haro, 2005; Reuland et al., 2009; Williams et al., 2005; Wittkampf et al., 2009). For example, in a sample of 440 primary care patients, Wittkampf et al. (2009) reported that the PHQ-9 performed well as a screener for major depression as assessed by a structured clinical interview.

The PHQ-9 is intended for self-administration, and the instrument appears readable by persons with a 7^{th} grade education (Flesch-Kincaid, 1975), as determined using software available on Microsoft Word.

Concluding Remarks

Major depressive disorder is relative common in survivors of orofacial trauma. Although a complete diagnostic interview is required to make a definitive diagnosis of major depression, brief screening instruments are available to assist in identifying patients who may benefit from referral for psychiatric evaluation. Of these instruments, the PHQ-9 is rapidly becoming the most widely-used depression screener. Evidence attests to the validity

of the PHQ-9, although additional research is needed to assess its validity for use as a screener in the orofacial trauma context.

References

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 1994.
- Anderson IM, Ferrier IN, Baldwin RC, Cowen PJ, Howard L, Lewis G, Matthews K, McAllister-Williams RH, Peveler RC, Scott J, Tylee A. Evidence-based guidelines for treating depressive disorders with antidepressants: A revision of the 2000 British Association for Psychopharmacology guidelines. Journal of Psychopharmacology 2008;22:343–396. [PubMed: 18413657]
- Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. Archives of General Psychiatry 1961;4:561–571. [PubMed: 13688369]
- Beck AT, Steer RA, Ball R, Ranieri W. Comparison of Beck Depression Inventories -IA and -II in psychiatric outpatients. Journal of Personality Assessment 1996;67:588–597. [PubMed: 8991972]
- Bisson JI, Shepherd JP, Dhutia M. Psychological sequelae of facial trauma. Journal of Trauma 1997;43:496–500. [PubMed: 9314314]
- Blanchard EB, Buckley TC, Hickling EJ, Taylor AE. Posttraumatic stress disorder and comorbid major depression: Is the correlation an illusion? Journal of Anxiety Disorders 1998;12:21–37. [PubMed: 9549607]
- Bombardier CH, Richards JS, Krause JS, Tulsky D, Tate DG. Symptoms of major depression in people with spinal cord injury: Implications for screening. Archives of Physical Medicine & Rehabilitation 2004;85:1749–1756. [PubMed: 15520969]
- Brewin CR. Systematic review of screening instruments for adults at risk of PTSD. Journal of Traumatic Stress 2005;18:53–62. [PubMed: 16281196]
- Bliese PD, Wright KM, Adler AB, Cabrera O, Castro CA, Hoge CW. Validating the Primary Care Posttraumatic Stress Disorder Screen and the Posttraumatic Stress Disorder Checklist with soldiers returning from combat. Journal of Consulting and Clinical Psychology 2008;76:272–281. [PubMed: 18377123]
- Breslau N, Peterson EL, Kessler RC, Schultz LR. Short screening scale for DSM-IV posttraumatic stress disorder. American Journal of Psychiatry 1999;156:908–911. [PubMed: 10360131]
- Chen TM, Huang FY, Chang C, Chung H. Using the PHQ-9 for depression screening and treatment monitoring for Chinese Americans in primary care. Psychiatric Services 2006;57:976–981. [PubMed: 16816282]
- Davidson JRT, Book SW, Colket JT, Tupler LA, Roth S, David D, Hertzberg M, Mellman T, Beckham JC, Smith R, Davison RM, Katz R, Feldman M. Assessment of a new self-rating scale for post-traumatic stress disorder. Psychological Medicine 1997;27:153–160. [PubMed: 9122295]
- Glynn SM, Asarnow JR, Asarnow R, Shetty V, Elliot-Brown K, Black E, Belin TR. The development of acute post-traumatic stress disorder after orofacial injury: A prospective study in a large urban hospital. Journal of Oral & Maxillofacial Surgery 2003;61:785–792. [PubMed: 12856251]
- Islam S, Ahmed M, Walton GM, Dinan TG, Hoffman GR. The association between depression and anxiety disorders following facial trauma A comparative study. Injury. 2009 August 17;
- Lento J, Glynn S, Shetty V, Asarnow J, Wang J, Belin TR. Psychologic functioning and needs of indigent patients with facial injury: A prospective controlled study. Journal of Oral & Maxillofacial Surgery 2004;62:925–932. [PubMed: 15278855]
- Roccia F, Dell'Acqua A, Angelini G, Berrone S. Maxillofacial trauma and psychiatric sequelae: Post-traumatic stress disorder. Journal of Craniofacial Surgery 2005;16:355–360. [PubMed: 15915097]
- Gironda MW, Der-Martirosian C, Belin TR, Black EE, Atchison KA. Predictors of depressive symptoms following mandibular fracture repair. Oral & Maxillofacial Surgery 2009;67:328–334.
- Hull AM, Lowe T, Devlin M, Finlay P, Koppel D, Stewart AM. Psychological consequences of maxillofacial trauma: A preliminary study. British Journal of Oral & Maxillofacial Surgery 2003;41:317–322.

Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. Archives of General Psychiatry 1995;52:1048–1060. [PubMed: 7492257]

- Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and ageof-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Archives of General Psychiatry 2005;62:593–602. [PubMed: 15939837]
- Kimerling R, Trafton JA, Nguyen B. Validation of a brief screen for post-traumatic stress disorder with substance use disorder patients. Addictive Behaviors 2006;31:2074–2079. [PubMed: 16574331]
- Kimerling R, Ouimette P, Prins A, Nisco P, Lawler C, Cronkite R, Moos RH. Utility of a short screening scale for DSM-IV PTSD in primary care. Journal of General Internal Medicine 2006;21:65–67. [PubMed: 16423126]
- Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. Journal of General Internal Medicine 2001;16:606–613. [PubMed: 11556941]
- Fann JR, Bombardier CH, Dikmen S, Esselman P, Warms CA, Pelzer E, Rau H, Temkin N. Validity of the Patient Health Questionnaire-9 in assessing depression following traumatic brain injury. Journal of Head Trauma Rehabilitation 2005;20:501–511. [PubMed: 16304487]
- Foa EB, Cashman L, Jaycox L, Perry K. The validation of a self-report measure of posttraumatic stress disorder: The Posttraumatic Diagnostic Scale. Psychological Assessment 1997;9:445–451.
- Foa, EB.; Friedman, MJ.; Keane, TM. Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies. New York, New York: Guildford; 2004.
- Hansson M, Chotai J, Nordstöm A, Bodlund O. Comparison of two self-rating scales to detect depression: HADS and PHQ-9. British Journal of General Practice 2009;59:283–288. [PubMed: 19341543]
- Kincaid, JP.; Fishburne, RP., Jr; Rogers, RL.; Chissom, BS. Derivation of new readability formulas (Automated Readability Index, Fog Count and Flesch Reading Ease Formula) for Navy enlisted personnel, Research Branch Report 8-75. Millington, TN: Naval Technical Training, U. S. Naval Air Station, Memphis, TN; 1975.
- Kuyken W, Dalgleish T, Holden ER. Advances in cognitive-behavioural therapy for unipolar depression. Canadian Journal of Psychiatry 2007;52:5–13.
- Malhi GS, Adams D, Porter R, Wignall A, Lampe L, O'Connor N, Paton M, Newton LA, Walter G, Taylor A, Berk M, Mulder RT. Clinical practice recommendations for depression. Acta Psychiatrica Scandinavica (Supplement) 2009;439:8–26.
- Marshall GN, Miles JNV, Stewart SH. Anxiety sensitivity and PTSD symptom severity are reciprocally related: Evidence from a longitudinal study of physical trauma survivors. Journal of Abnormal Psychology. In press.
- Martin A, Rief W, Klaiberg A, Braehler E. Validity of the Brief Patient Health Questionnaire Mood Scale (PHQ-9) in the general population. General Hospital Psychiatry 2006;28:71–77. [PubMed: 16377369]
- Meltzer-Brody S, Churchill E, Davidson JR. Derivation of the SPAN, a brief diagnostic screening test for posttraumatic stress disorder. Psychiatry Research 1999;88:63–70. [PubMed: 10641587]
- Meltzer-Brody S, Hartmann K, Miller WC, Scott J, Garrett J, Davidson J. A brief screening instrument to detect posttraumatic stress disorder in outpatient gynecology. Obstetrics & Gynecology 2004;104:770–776. [PubMed: 15458900]
- Pinto-Meza A, Serrano-Blanco A, Peñarrubia MT, Blanco E, Haro JM. Assessing depression in primary care with the PHQ-9: Can it be carried out over the telephone? Journal of General Internal Medicine 2005;20:738–742. [PubMed: 16050884]
- Prins A, Ouimet P, Kimerling R, Cameron RP, Hugelshofe DS, Shaw-Hegwer J, Thrailkill A, Gusman FD, Sheikh JF. The primary care PTSD screen (PC-PTSD): Development and operating characteristics. Primary Care Psychiatry 2004;9:9–14.
- Radloff LS. The CES-D Scale: A self-report depression scale for research in the general population. Applied Psychological Measurement 1977;1:385–401.

Reger MA, Gahm GA, Swanson RD, Duma SJ. Association between number of deployments to Iraq and mental health screening outcomes in US army soldiers. Journal of Clinical Psychiatry 2009;70:1266–1272. [PubMed: 19689917]

- Reuland DS, Cherrington A, Watkins GS, Bradford DW, Blanco RA, Gaynes BN. Diagnostic accuracy of Spanish language depression-screening instruments. Annals of Family Medicine 2009;7:455–462. [PubMed: 19752474]
- Shalev AY, Freedman S, Peri T, Brandes D, Sahar T, Orr SP, Pitman RK. Prospective study of posttraumatic stress disorder and depression following trauma. American Journal of Psychiatry 1998;155:630–637. [PubMed: 9585714]
- Stein DJ, Ipser JC, Seedat S. Pharmacotherapy for post traumatic stress disorder (PTSD). Cochrane Database of Systematic Reviews. 2006;(1)
- Weathers, FW.; Litz, BT.; Herman, DS.; Huska, J.; Keane, TM. The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility. Ninth annual meeting of the International Society for Traumatic Stress Studies; San Antonio, TX. 1993 [Accessed December 1, 2009]. http://www.pdhealth.mil/library/downloads/PCL_sychometrics.doc
- Weiss, DS.; Marmar, CR. The Impact of Event Scale Revised. In: Wilson, JP.; Keane, TM., editors. Assessing psychological trauma and PTSD. New York: Guilford Press; 1997. p. 399-411.
- Williams LS, Brizendine EJ, Plue L, Bakas T, Tu W, Hendrie H, Kroenke K. Performance of the PHQ-9 as a screening tool for depression after stroke. Stroke 2005;36:635–638. [PubMed: 15677576]
- Wittkampf K, van Ravesteijn H, Baas K, van de Hoogen H, Schene A, Bindels P, Lucassen P, van de Lisdonk E, van Weert H. The accuracy of Patient Health Questionnaire-9 in detecting depression and measuring depression severity in high-risk groups in primary care. General Hospital Psychiatry 2009;31:451–459. [PubMed: 19703639]
- Yeager DE, Magruder KM, Knapp RG, Nicholas JS, Frueh C. Performance characteristics of the Posttraumatic Stress Disorder Checklist and SPAN in Veterans Affairs primary care settings. General Hospital Psychiatry 2007;29:294–301. [PubMed: 17591505]
- Zatzick DF, Rivara FP, Nathens AB, Jurkovich GJ, Wang J, Fan MY, Russo J, Salkever DS, Mackenzie EJ. A nationwide US study of post-traumatic stress after hospitalization for physical injury. Psychological Medicine 2007;37:1469–1480. [PubMed: 17559704]
- Zung WW. A self-rating depression scale. Archives of General Psychiatry 1965;12:63–70. [PubMed: 14221692]