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## Case Study

# Traumatic hypovolemic shock: Eminence depression Study in patients

## Abstract

A clinical syndrome of inadequate tissue perfusion, shock results in a decreased supply of oxygen and nutrients to cells. The body responds initially by activating numerous compensatory mechanisms to improve cellular perfusion. If these fails, shock leads to widespread cellular necrosis, multiple organ dysfunction and failure, and death. Although there are various types of shock, including hypovolemic, cardiogenic, neurogenic, anaphylactic, and septic, the final common pathway in all types of shock is impaired cellular metabolism. Traumatic hypovolemic shock related to Depression Scale (SDS) was designed as a short simple way of quantifying the severity of depression with psychological and physiological & psychological symptoms. SDS is not only a reliable test for clinical and research use but it is also easy to apply in various samples. In this majority of thing that who suffering with hypovolemic shock their eminence depression is higher reading on scale. That shows severe heart blockade on human being. This measure is considered both valid and reliable in various clinical and community settings and also has shown acceptable reliability in people.

## Introduction

Uncompensated shock occurs when compensatory mechanisms start to fail and can no longer maintain adequate cardiac output, causing hypotension. Because a decrease in systolic BP doesn't occur until at least 20% of blood volume is lost, it's important to note that hypotension is a late sign. Irreversible shock is often associated with losses of more than 25% of total blood volume. Unchecked, shock leads to cellular ischemia and subsequent acidosis, cellular necrosis, and organ failure that can't be resolved, even if cardiac output increases. Once cellular breakdown and acidosis reach critical levels, reperfusion may lead to reperfusion injury, during which oxygen-free radicals overwhelm cellular activity and cause neutrophil infiltration, microvascular damage, and impairment of the microcirculation.

You recognize that an alteration in level of consciousness (LOC), tachypnea, tachycardia, peripheral vascular changes, and oliguria are signs of shock. The drop in BP is an ominous sign that shock is progressing. As always, your nursing assessment starts with the ABCs (assess and support airway, breathing, and circulation) followed by determining the patient's pertinent medical history and the mechanism of traumatic injury. When a patient is still adequately compensating for the fluid loss, this history may provide the first clue to the injury's real extent and nature. Also perform a complete head-to-toe assessment to determine locations of pain, ecchymoses, or distension that could point to occult bleeding.

Clinical diagnosis of depression requires substantial time and cost. For many research efforts, depression-screening questionnaires are an appropriate substitute. For this review, we define depression-screening scales as standardized instruments designed to assess the presence and/or severity of self-reported depressive symptoms in each population. There are several advantages to using screening scales. For epidemiologic studies, screening scales provide an efficient means of determining the incidence and prevalence of depression in a community or population. They provide consistent measurement criteria across samples and time, and they have wide-reaching ability. Screening instruments may be self-administered by paper and pencil or through a personal or telephone interview. Little has been done to investigate whether the BSI suffers from cultural biases. One study compared its use among Asians, according to it, the level of acculturation influenced the reporting of distress. We also are unaware of any adaptations for vision or hearing impairments or test of differences by mode. The BSI requires substantial additional methodologic testing for use in disability outcomes research.

## Case Study

Back to our patient... As the team begins assessment, you note that he's becoming increasingly confused. His abdomen is markedly distended and tender to light palpation. Despite receiving 100% oxygen via a nonrebreather mask, he remains

tachypneic. After placing him on a cardiac monitor, you see sinus tachycardia at 120 bpm. An indwelling urinary catheter is inserted with minimal initial output. His BP is now 90/70. You realize that your patient is now decompensating. An adequate assessment includes evaluation of the chest, abdomen, and pelvis. Evaluation of the abdomen is conducted initially through a focused assessment sonography for trauma (FAST) scan, which can identify pericardial fluid in the chest as well as intraperitoneal fluid in the abdomen. If the patient is hemodynamically stable, then a CT scan is indicated for more definitive evaluation of any injuries. Long-bone fractures such as femur fractures can also cause signify hypovolemia, so prepare to obtain extremity films as appropriate. A central venous pressure reading of less than 4 mm Hg. Serum lactate and arterial base deficits are considered proxies for oxygen debt. Serum lactate levels that remain high signal that the body is attempting to produce energy through anaerobic metabolism. Base deficit is considered a surrogate marker of metabolic acidosis. Patients with a signify can't arterial base deficit are more likely to die from the oxygen debt and poor metabolic state.<sup>2</sup> Normalization of both lactate levels and base deficit are considered resuscitation endpoints for determining the degree of oxygen debt and the patient's response to resuscitation. These are more signify can't indicators than normotension.<sup>6</sup> Many current efforts are leading to more direct measurements of cellular perfusion, such as measuring gastric pH or oxygenation in the tissues (StO<sub>2</sub>). Via infrared spectrometry, StO<sub>2</sub> noninvasively measures hemoglobin oxygen saturation in subcutaneous tissue or skeletal muscles.<sup>7</sup> Be aware of special considerations for certain age groups and patient populations. For example, pediatric patients may not exhibit classic signs and symptoms of hypovolemic shock before loss of more than 25% blood volume.<sup>3</sup> Because compensatory mechanisms in a child are particularly robust, BP may be maintained until about 30% of blood volume has been lost. These other patient groups may also have atypical signs and symptoms:

- Older adults may not exhibit classic signs due to inadequate physiologic reserves and an inability to initiate compensatory mechanisms—for example, because of reduced alpha-1 adrenergic receptor responsiveness in older adults.
- Patients on beta-adrenergic antagonists may not be able to initiate the expected tachycardia response.
- Pregnant patients may be able to lose up to 1500 mL of blood without a change in BP, secondary to alterations in blood volume and hemodynamics related to pregnancy. During the third trimester of pregnancy, compression of the vena cava can reduce venous return to the heart. Placing these patients on their left side or manual displacement of the uterus to the left can dramatically increase cardiac output.

We have reviewed measures used to screen for depression for disability outcomes research. Table 1 summarizes the 2 primary instruments reviewed here. Screening measures of depression and other psychological disorders are generally easy to administer and score and have been used extensively in previous research, even among groups of people with disabilities or chronic illness. Almost all have low respondent burden and good face validity, thereby contributing to a high participation rate for most studies. However, several troublesome issues exist with the application of these tools. One issue is the use of

imprecise language. A diagnosis of depression cannot be made solely from the results of any of the reviewed instruments, even though most use the word depression in their title. For example, as Elliott and Frank<sup>8</sup> have noted, few of the self-report scales of “depression” include instructions about time parameters necessary to make a diagnosis of depression according to accepted nomologic criteria. These instruments are also subject to a number of other biases, including transient life stress and/or drug or alcohol use<sup>8,114</sup> prohibiting a reliable diagnosis. Elliott and Frank<sup>8</sup> recommend the terms “distress” and “depressive behavior” when referring to the construct being measured. A related problem with these measures is their potential lack of specificity. A few studies examining the discriminant validity of these measures indicate that they may not be able to discriminate between symptoms of depression and anxiety<sup>37</sup> or other forms of psychological disturbance.<sup>104</sup> More research into the discriminant validity of these instruments, especially for use among people with disabilities or chronic illness, is needed. Similarly, interpretation of scores among the measures that include items reflecting somatic/neurogenerative symptoms is difficult. Many impairments or chronic illnesses cause fatigue, disruption in sleep cycle, changes in appetite and weight, energy levels, and mobility; all of which are identified criteria for depression. Simply removing these items from a scale may remove clear indicators of depression. For example, Clay et al<sup>115</sup> found that, among people with SCI, psychomotor disturbance, appetite change, and sleep disturbance were important contributors to an accurate diagnosis of major depressive disorder. The use of these measures in a clinical setting poses little problem because clinical interviews can clarify the source and contribution of “depressive” symptoms prior to making a diagnosis. There is no clear solution to this problem for research in which a clinical interview is not feasible. In such situations, there exists the potential for these measures to be biased toward overinclusion of depressive symptoms (see Elliott and Frank<sup>8</sup> and Tannen et al<sup>114</sup> for further discussion), and caution will be needed when interpreting results. For research that requires an accurate diagnosis of depression or other disorder, these measures are excellent screening tools on which a diagnostic interview can be substantiated.

### Statistical analysis

Statistical analysis SPSS was employed for the analysis of data obtained. Reliability of the Self-Rating Depression Scale (SDS) was revealed using Cronbach's alpha method. Descriptive statistics were used for the variables as appropriate. For detecting association between level of depression with academic, financial and medicine usage factors, chi-square test of independence was executed. Gamma statistic was obtained to measure strength of such association. To determine which items, have more influence on creating depression, factor analysis was run with Promax rotation and those with Eigen values more than 5.0 were selected. Items showing factor loadings of at least 0.20 were chosen for new latent variables. The naming of the factors was done based on variables with highest loadings and common characteristics. P values less than 0.45 were significant.

**Table 1:** Academic factors relating to status of depression in traumatic hypovolemic shock patients.

Variable		Depression T.H.			P- value	Gamma	P (Gamma)
		Normal	Mild	Moderate			
Gender	Female	115(46.37 %)	111(44.76 %)	22(8.87 %)	0.917	-0.018	0.847
	Male	73(46.79 %)	71(45.51 %)	12(7.69 %)			
Use of medicine for mood change	Frequently	06(18.18 %)	25(75.76 %)	02(6.06 %)	0.002	0.443	0.001
	Regularly	03(30.00 %)	05(50.00 %)	2(20.00 %)			
Frequency of use of Depression medicine	Once a Day	06(31.58 %)	10(52.63 %)	3(15.79 %)	0.457	0.244	0.427
	Twice Day	00(0.00 %)	05(71.43 %)	2(28.57 %)			
	Thrice a day	01(33.33 %)	02(66.67 %)	0(0.00 %)			
Duration of use of medicine	3 months	03(15.79 %)	13(68.42 %)	3(15.79 %)	0.509	-0.081	0.74
	6 months	01(16.67 %)	03(50.00 %)	2(33.33 %)			
	1 year	00(0.00 %)	06(100.00 %)	0(0.00 %)			
	> 1 year	03(27.27 %)	06(54.55 %)	2(18.18 %)			
Seek doctor's advice	Never	68(43.87 %)	68(43.87 %)	19(12.2 %)	0.019	0.091	0.436
	Frequently	24(31.58 %)	46(60.53 %)	6(7.89 %)			
	Regularly	4(100.00 %)	00(0.00 %)	0(0.00 %)			
Effect of use of Depression	Better	14(38.89 %)	16(44.44 %)	6(16.67 %)	0.02	0.495	0.018
	Same	00(0.00 %)	12(92.31 %)	1(7.69 %)			
	Reverse	00(0.00 %)	04(80.00 %)	1(20.00 %)			

Several challenges are present in screening people with disability. One is that most screening instruments contain both affective and somatic items. Overlapping indicators of physical impairment and symptoms of depression may complicate the assessment among people with disability.<sup>8</sup> For example, symptoms of multiple sclerosis such as fatigue, insomnia, and diminished ability to work are also symptoms of depression. Thus, depression may be overestimated in traumatic patients. Another problem is the potential difficulties of administering the questionnaire to people with disability. For example, some people with disability may not be able to answer questions by telephone while others may have difficulty completing a written questionnaire. Yet another challenge is the lack of data on depression for disability groups. This presents the difficulty of comparing people with disability with the general population and determining reliability of the questionnaire

### Limitations of the study

The sample in this study was randomly selected only from hospitals and the findings cannot be generalized to all. This is only a preliminary report and requires further longitudinal, more accurate investigations. A future study may be required to examine the factors related to the genetic and environment variables.

### Conclusion

The findings of this study can guide administrators, counselors, private agencies to understand the traumatic patients during their studies and also in their field work. Some intervention programs such as stress management, time management, study techniques and coping skills workshop should be planned for the targeted groups with mild to moderate problems.

Further evaluation of the traumatic patients of these

measures among people with severe condition should be foremost among researchers. The field of outcomes research is hampered by lack of information about the reliability and generalizability of most of these measures among people with various impairing conditions. Co-administering the screening tools with diagnostic measures and/or structured clinical interviews would yield valuable information about their reliability in determining the presence and, possibly, the severity of depression. Furthermore, normative data generated from people with various impairing conditions or from differing levels of severity of a single condition may facilitate development of impairment specific cutoff and/or severity scores. In these mainly traumatic patients with depression condition very high and non-treatable way and that should maintain minimum requirement of the medicines and their reliability. For example, people with high-level depression may score higher than those with shock condition with the same level of dysphoria because of differences in neurologic or physiologic impairment. Alternatively, screening tools could be modified to accommodate specific impairing conditions that might affect scores. However, such modifications would make cross-population comparisons difficult, if not impossible. In the future, depression screening instruments will continue to be examined and modified to improve their applicability for disability outcomes research.

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