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Suicide rate in the dental profession: Fact or myth and coping strategies

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Commentary

Suicide rate in the dental profession: Fact or myth and coping strategies

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ABSTRACT

This article summarizes relevant scientific data on the alleged high suicide rate among dentists as compared to other health care professions. Potential contributing risk factors for the dental profession are identified. In addition, a brief review is provided for major depressive disorder, a contributor to increased suicide, along with its symptoms, underlying theory, drug treatment and coping skills to combat this disorder.

Key words: Dental suicide rate, dentist, major depressive disorder, suicide

Introduction

Do dentists have the highest suicide rate among health care professionals? Are they at a higher risk of suicide? To more fully understand this topic, it is necessary to address several issues which include: the reporting of suicides, the statistics of suicide, the myth of suicide prone dentists and risk factors and symptoms.

Suicide Rates in Dentists

Suicides tend to be under reported due to the stigma of shame and religious implications.[1] Further, suicide classified according to professions is complicated by suicides being reported as accidental death. Additionally, many states do not list the occupation of the deceased. From a statistical point of view, there is the problem of small numbers. Dentists represent only a small fraction of the total population and only a small portion die in a given year; of that number, only a small fraction die from suicide. Consequently, people draw conclusions on very limited samples. For example, one Midwestern state reported occupation on the death certificate-defined as the occupation the person did most of their life. In a 16 year period from 1989 to 2004, there were 244,628 total deaths.[2] There were 3002 suicides or 1.2% of the total deaths were suicides. Of the 244,628 deaths, 222 were dentists of which four committed suicide. Based on the above, about 1.8% of dentists who died had committed suicide. It would be disingenuous and misleading to conclude, therefore, that 50% more dentists committed suicide than the overall population. Statistically, this would be a sweeping and inaccurate generalization. The national suicide rate is 1.3% of total deaths.[3]

The myth surrounding the suicide rate of dentists can be traced back to studies that lack the correct scientific weighting for demographics.[4] Alexander, in a 2001 article, traces the beginnings of the myth to the 1920's when both the lay public and professional media repeatedly portrayed dentists as being suicide prone. In addition, over the years both the medical and dental professions have been referenced as groups of health care providers that are at a high risk of committing suicide.[1] These assertions have been repeated and apparently accepted without sufficient supporting data. In the 1960's claims based on statistical evidence that dentists committed suicide at a higher rate than other health care providers began to appear in the literature.[1]

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However, it was not until the mid-1970's that the earlier studies were scrutinized. A study conducted by the American Dental Association showed that data from 31 states did not support the conclusion that dentists committed suicide at higher rates than the general population.[5] Many studies on the suicide rate of health care providers and dentists have been published since the 1975 ADA study.[6-10] It is not the intent of this paper to provide an in-depth review of all those studies. Please consult Alexander's article for a thorough review.[1] Alexander does an excellent job of reviewing all studies that explore suicide rates within the dental profession. As Alexander concludes, there is no consistent statistical evidence available to prove that dentists are suicide prone; in fact, most reliable data suggest the opposite.[1]

Risk Factors for Dentists

Some risk factors are general in nature and apply to the total population. Risk factors such as gender (males commit suicide at a rate four times that of females), age (people over age of 65 have suicide rates 50% higher than the normal population), race (whites are twice as likely to commit suicides as non-whites), marital status (married least likely to commit suicide), availability of lethal means, mental health, and adverse life events/ major stressors apply to the general U.S. population.[3]

Stressors for Dentists

There can be stressors unique to professions. Stressors in dentistry can include managing a solo practice, missed appointments, patient dissatisfaction with treatment, insurance problems, encroachment and regulations of governmental agencies and the lack of quiet time such as not having breaks from one's work.[1,3,11]

If we combine risk factors with stressors, we begin to build a profile that is useful to compare to symptoms that may be evidenced in an individual. Table 1 highlights the most noteworthy symptoms for depression.[12-14] At high risk for suicide are people with multiple risk factors. However, depression is one risk factor that stands out. Psychological postmortem case studies reveal that more than 90% of suicides have depression or other diagnosable mental illness or substance abuse disorder.[3,14-16] Most suicidal people are depressed.[3,13,15] Individuals are at a very high risk to harm themselves if they: displays symptoms of depression, have multiple risk factors, live in a stressful environment, and have weak social support systems (friends, family or activities) to assist in managing symptoms.[15,16]

Table 1: Symptoms of depression (adapted from American Association of Suicidology)[12]

Depressed mood most of the day; feeling sad
Signif cant loss of interest or pleasure in activities
Signif cant body weight loss or weight gain; decrease or increase in appetite
Diff culty sleeping or sleeping too much
Agitation; or slowing down of thoughts and reduction of physical movements
Fatigue or loss of energy
Feeling of worthlessness
Poor concentration or having diff culties making decisions
Thinking/talking about death or suicide
Can't see a way out
Can't think clearly
Can't see possibility of change
Can't see themselves as worthwhile
Can't seem to get control

As a group, dentists may also tend toward perfectionistic tendencies which make for precise restorations but lead to disappointments in life and practice when dealing with imperfect people.

Silverman identified physicians (male and female) at a high risk for suicide if they were white males 45 years or older.[10] Fifty years of older if females that were divorced, separated, single or having marital discord and have any or all of the following risk factors: depression, alcohol or drug abuse, workaholic, excessive risk taking, chronic pain or debilitating illness, change in professional status and access to legal medication and access to firearms.

Alexander identified the early signs of suicidal ideation including alcohol and or substance abuse or addiction, adverse changes in behavior, signs of depression, recent adverse life event, loss of confidence and working longer hours with decreased productivity, decrease interest in anything outside the office, postponing vacations, excess interest in prestige and power, atypical aggressiveness and hostility, vigorous denial and rationalization, new lack of organization and use of expressions like ending it all.[1] If someone you know fits the behaviors described talk to them, offer to listen and if need be offer to go with them to get help.

Types of Depression

There are several different types of depression.[13-16] Briefly, depression caused by external factors such as death of a loved one or unemployment, is known as exogenous or reactive depression. This type of depression is self-limiting. Usually, it does not require drug treatment and responds well to counseling.[17] The second major type of depression is known as

primary, endogenous, unipolar or major depressive disorder (MDD), which is more serious and requires pharmacotherapy and/or psychotherapy. This type of disorder may not be associated with any specific cause and originates from within the individual. A serious consequence of MDD is an increased risk of suicide.[18]

Symptoms of Depression

Symptoms of depression may not be limited to one episode and may return without an appropriate treatment plan.[14,15] According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), a major depressive episode consists of five or more of the symptoms presented in Table 1, occurring most days for a period for at least two weeks.[18]

Theory of Depression

Several theories have been proposed to explain the cause of endogenous depression, with major focus on putative neurotransmitters. It is not the intent of this article to review all the theories. However, the classic monoamine theory/biogenic amine hypothesis of affective disorders proposes that depression results from a deficit of the neurotransmitter serotonin, norepinephrine, or both at central synaptic sites.[19-21] Drugs that increase the level of serotonin or norepinephrine in the brain are effective in the treatment of mental depression.[14,21]

Drug Treatment

Figure 1 illustrates the synthesis of the neurotransmitter, serotonin and its storage in vesicle to prevent metabolism by monoamine oxidase enzyme inside the neuron. Upon the arrival of an action potential, serotonin is released from the neuron and stimulates post-synaptic serotonergic receptors to mediate its pharmacological effects. Its action is mainly terminated by reuptake back to presynaptic neurons.[21,22] Drugs employed in the treatment of endogenous depression are presented in Table 2.

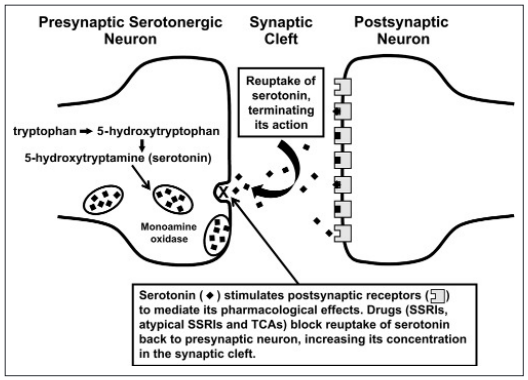

Figure 1: This figure illustrates the synthesis of the neurotransmitter, serotonin, the storage of serotonin in storage vesicles, its release from the neuron into the synaptic site and activation of postsynaptic receptors, its re-uptake back to nerve ending and the re-uptake blockade by specific serotonin re-uptake inhibitors (SSRIs), atypical SSRIs and tricyclic antidepressants

Mechanism of Drug Action

Specific serotonin reuptake inhibitors (SSRIs) are a group of drugs that selectively block the reuptake of serotonin back into the serotonergic nerve endings, thus increasing its concentration at the synaptic cleft to stimulate the post-synaptic receptors.[20-22] The increased serotonergic activity in the cerebral cortical and limbic areas of the brain accounts for the antidepressant effects. The atypical SSRI antidepressant drugs inhibit the reuptake of serotonin similar to SSRI, but have additional action on other neurotransmitters, while the tricyclic antidepressants (TCA) block the re-uptake of both serotonin and norepinephrine into serotonergic and noradrenergic neuron nerve endings to alleviate the symptoms of depression.[22-24] By inhibiting the enzyme that metabolizes norepinephrine and serotonin, the monoamine oxidase inhibitors (MAO-I) increase the concentrations of both neurotransmitters in the brain.[21]

Table 2: Representative antidepressant drugs[21]

Drug names	Usual therapeutic dosage per day
Specific serotonin re-uptake inhibitors	
Citalopram (Celexa®)	20 mg to 60 mg
Escitalopram (Lexapro®)	10 mg to 30 mg
Fluoxetine (Prozac®)	20 mg to 60 mg
Fluvoxamine (Luvox®)	100 mg to 300 mg
Paroxetine (Paxil®)	20 mg to 60 mg
Sertraline (Zoloft®)	50 mg to 200 mg
Atypical specif c serotonin re-uptake inhibitors	
Bupropion (Wellbutrin®)	200 mg to 450 mg
Desvenlafaxine (Pristiq®)	50 mg to 200 mg
Duloxetine (Cymbalta®)	4 mg to 120 mg
Mirtazapine (Remeron®)	15 mg to 45 mg
Nefazodone (Serzone®)	300 mg to 500 mg
Trazodone (Desyrel®)	150 mg to 300 mg
Venlafaxine (Effexor®)	75 mg to 375 mg
Tricyclic Antidepressants	
Amitriptyline (Elavil®)	150 mg to 300 mg
Desipramine (Pertofrane®)	150 mg to 300 mg
Doxepin (Sinequan®)	150 mg to 300 mg
Imipramine (Tofranil®)	150 mg to 300 mg
Nortriptyline (Aventyl®)	50 mg to 150 mg
Monamine oxidase inhibitors	
Phenelzine (Nardil®)	45 mg to 90 mg
Selegiline (Eldepryl®)	20 mg to 50 mg
Tranylcypromine (Parnate®)	30 mg to 60 mg

It is important to realize that the pharmacological actions of these drugs occur within a few hours, but the full improvement of antidepressant effect may take at least two weeks to develop. Therefore, antidepressants may exert other pharmacological actions that are not yet completely understood. Potential mechanisms of action may include down-regulation of presynaptic inhibitory receptors leading to increased release of neurotransmitter and/or enhanced sensitivity of postsynaptic receptors leading to increased therapeutic response.[20-22]

Side Effects

The SSRIs have fewer and less severe adverse effects than the TCAs and MAO-Is.[21,24] Thus, they are considered the first-line drugs in drug treatment. Side effects may include headache, dry mouth, bruxism, sweating, anxiety, agitation, gastrointestinal discomfort (nausea, vomiting, and diarrhea), fatigue, sleep disturbance, potential drug-drug interactions due to hepatic enzyme inhibition and sexual dysfunction. Due to blockade of muscarinic and alpha-adrenergic receptors, additional adverse effects include blurred vision, xerostomia, urinary retention, orthostatic hypotension, reflex tachycardia, sedation, weight gain and sexual dysfunction.[21-24]

Precaution

Antidepressants should be used cautiously in both children and teens. It has been reported pediatric patients may become more suicidal as a result of drug therapy.[20,25] As mentioned earlier, suicidal tendencies are associated with depression. Therefore, all patients should be monitored for worsening depression and suicidal thinking during initiation of drug treatment or the drug dose is adjusted. Furthermore, patients are encouraged to engage in social and/or physical activities that can generate more emotional support.

Other Treatment and Coping Skills

Other psychotherapies are available as sole treatment or adjunctive to drug treatment. Interpersonal psychotherapy, based on assumption that interpersonal factors may contribute to psychological problems like depression[26] and cognitive-behavioral therapy which is helping a person learn to reorganize negative patterns of thought, evaluate their validity and replace them with healthier ways of thinking therapy have been used and have been suggested to be as effective as pharmacotherapy in patients with mild to moderate depression.[26,27] Medication is effective in eliminating symptoms of depression, while counseling provides coping skill in dealing with day-to-day problems and can also prevent release.

Table 3: Stress coping steps

Take care of yourself. Get regular exercise and eat healthy at regular intervals
Do not try to f x others
Avoid self-medication and abusing alcohol, drugs, caffeine, nicotine and food
Practice positive self-talks, praise yourself and accept praise
Be exible-take time off to enjoy life
Set and follow realistic goals that leave time for breaks and time-off
Keep a sense of humor
Have a mission statement for your life
Let people know what you want
Always be grateful
We all have faith in something. If your faith is in God expand that relationship
When life becomes diff cult seek help

Suicide is a Preventable Tragedy

We have discussed risk factors and some treatment options. While risk factors cannot be readily managed, awareness accompanied with prevention goes a long way in coping with stress which, in turn, can often be the trigger that leads to depression. Table 3 lists a number of steps that can manage stress successfully.[3]

Learn the danger signs of a potential suicide. Most suicides occur with warning signs. Learn the warning signs [Table 1] of someone at risk and take the warning signs seriously. Be willing to listen and probe with questions. Do not be afraid to ask if someone is thinking about suicide. Be active in helping the individual get treatment. Most people thinking about suicide feel alone and do not think the pain will stop. Show interest in them and help them get help. The National Institute on Mental Health and the National Alliance on Mental Illness both have excellent and informative web sites for understanding mental illness and for helping those coping with it.[28,29]

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