

The Effect of Aromatherapy on Anxiety in Diabetic Patients –A Review

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Abstract

Introduction: Diabetes is one of the most common diseases of human societies that occurs as a result of relative or absolute lack of insulin or its dysfunction and the metabolism of carbohydrates, proteins, and fats are disordered. Given the abovementioned disagreement, the prevalence of anxiety in diabetic patients, and the necessity of non-drug treatment, it was attempted to conduct a review study to determine the effect of aromatherapy on diabetic patients' anxiety.

Method: The present study was conducted by searching Persian and English databases such as Magiran, SID, Google scholars, and Science Direct Pub Med by using key words such as aromatherapy, diabetes, and anxiety. Various studies were found on the diabetic patients' anxiety as well as aromatherapy and its effect on reducing patients' anxiety.

Result: The prevalence of mental disorders, anxiety in particular, is higher in diabetic patients than ordinary people, and there is a mutual relationship between diabetes and anxiety. Diabetic patients are exposed to anxiety for different reasons. As many as 45% of type 1 diabetic patients avoid regular insulin injection for the fear of needle. The anxiety arising from injection is the first psychological barrier for following the daily injection of insulin in diabetic patients.

Conclusion: Aromatherapy can be conducted with the abovementioned plants for reducing diabetic patients' anxiety. However, it is recommended to conduct further researches to study the effect of aromatherapy with different extracts on diabetic patients' anxiety.

Keywords: aromatherapy, anxiety, diabetic

INTRODUCTION:

Diabetes is one of the most common diseases of human societies that occurs as a result of relative or absolute lack of insulin or its dysfunction and the metabolism of carbohydrates, proteins, and fats are disordered (1, 2). Type 1 and 2 diabetes are two common types of diabetes calling for long-term management (3). This disease is one of the most important problems of the world's health, such that World Health Organization refers to it as 'the silent epidemic' (3). According to the last statistics of Iranian Diabetes Society, 5.5 million people suffer from diabetes in Iran (4). The mental characteristics are among the factors that are closely related to physical diseases and they are not to be ignored. Some special groups such as diabetic patients are more vulnerable to such disorders (5). The prevalence of mental disorders is increasing in developing countries. Iran is one of the developing countries whose people are involved with such disorders, anxiety in particular. Diabetes is one of the most common chronic diseases disrupting the regular flow of life and is likely to bring about serious complications (6). As one of the most common manifestations of the mental disorders or daily stresses, anxiety results in a significant drop in the individuals' performance (7). The intensity of anxiety in the patients is likely to develop to a debilitating aspect and make the patient feel an impending death (8). Patients suffering from diabetes are exposed to anxiety owing to a variety of factors including changes in dietary patterns, overdependence on drugs, numerous short-term and long-term complications of the disease, and the high costs of the disease (9). The incidence rate of anxiety and depression in diabetic patients is twice as that of healthy individuals (3).

Insulin injection and sampling to determine blood levels are among the factors bringing about much fear and anxiety among diabetic patients especially children. Some studies have reported the prevalence of diabetic children's anxiety and fear of insulin injection as high as 7-15% (10). Stress and anxiety disrupt blood glucose control in most of the diabetic patients (11). Anxiety has been confirmed in various studies and it has been observed that there is a mutual relationship between diabetes and anxiety (12, 13, and 14). Drug therapy of anxiety should be definitely taken into account as the last step; since most of these anxieties are not to be considered as a disease, and given the complications of drug therapy, its efficiency is commonly questioned (15). Using complementary therapies are now increasing for the nursing cares provided by medical centers since they are less risky, economical, and easy, and they have limited complications as well. One of the methods of complementary and alternative therapy is aromatherapy. Rawliog and Mirabio states that using aromatherapy helps the skilled nurses to provide better cares for the patients (16). Aromatherapy means sniffing fresh, pleasant, and relaxing smell and it has a dual use. In other words, after smelling a special smell, an olfactory message is sent to brain through the nervous system. The special smell and the individual's feeling is saved in brain, and it brings about chemical messengers such as adrenaline and endorphin and affects the automatic nervous system (pulse, breathing ...). Moreover, these special aromas affect the physiological system through penetrating the blood flow and immunity system. Generally speaking, this method brings about not only psychological but also physical treatment and helps the patient recover through

affecting both body and mind (17). Numerous studies have indicated the effect of aromatherapy on patients' reduced anxiety (18, 19). However, other studies that deny the effects of aromatherapy on patients' anxiety (20, 21). Given the abovementioned disagreement, the prevalence of anxiety in diabetic patients, and the necessity of non-drug treatment, it was attempted to conduct a review study to determine the effect of aromatherapy on diabetic patients' anxiety.

MATERIALS AND METHODS

The present study was conducted by searching Persian and English databases such as Magiran, SID, Google scholars, and Science Direct Pub Med by using key words such as aromatherapy, diabetes, and anxiety. Various studies were found on the diabetic patients' anxiety as well as aromatherapy and its effect on reducing patients' anxiety. However, no studies were found on the effect of aromatherapy on diabetic patients' anxiety. At first, a large number of studies was found from the databases, and then the studies less related to the present study were excluded. In the present study, it was attempted to use those studies that were more related to aromatherapy and its effect on diabetic patients' anxiety.

FINDINGS

The prevalence of mental disorders, anxiety in particular, is higher in diabetic patients than ordinary people, and there is a mutual relationship between diabetes and anxiety (22). Diabetic patients are exposed to anxiety for different reasons (9). As many as 45% of type 1 diabetic patients avoid regular insulin injection for the fear of needle. The anxiety arising from injection is the first psychological barrier for following the daily injection of insulin in diabetic patients. Reducing the number of blood glucose tests taken and reducing the number of insulin injection will bring about poor blood glucose control as well as irreparable complications such as kidney failure and visual disorders (10). Anxiety is among the significant psychological variables affecting diabetic patients. The prevalence of anxiety in renal patients suffering from diabetes is higher than that of renal patients without diabetes (5). Through affecting insulin-resistant hormones, anxiety and stress directly affect patients' blood glucose control. Moreover, anxiety and stress affect the treatment of diabetes through disrupting the dietary habits as well as physical and everyday activities, taking drugs, developing suicidal thoughts, reducing mobility, increasing social isolation, and other related complications (23). Furthermore, anxiety is among the factors that are closely related to pain, and pain is one of the factors bringing about anxiety in patients (24). Since diabetic patients experience pain as a result of frequent insulin injection and sampling for blood glucose tests taken, they are more likely to suffer from anxiety (11, 12, 13). Various methods have been offered to treat anxiety. These methods include taking anti-anxiety drugs that are not without complications or applying non-drug or non-invasive methods that are economical and are known as complementary treatments. One of the complementary treatments is aromatherapy.

Aromatherapy is the second most frequently used complementary treatment adopted by nurses. The anti-anxiety effects of aromatherapy have not been clearly confirmed. It is believed that the smell of the aroma activates the nervous cells and this stimulates the limbic system (25). One of the aromatic herbal oils commonly used in aromatherapy is lavender that has anti-anxiety effects. The studies have indicated that numerous researches have studied aromatherapy with lavender essential oil as a non-invasive nursing intervention. Using lavender essential oil has resulted in improved anxiety among patients undergoing angiography, stenting, hemodialysis, dentistry, and general operations; the aromatherapy results in reduced anxiety through reducing cortisol concentration and cardiac parameters such as blood pressure and pulse. In a systemic research conducted to study the effects of aromatherapy on anxiety, no complications were found in the studies applying aromatherapy (27). Yet, there are other studies that deny the effect of lavender on patients' anxiety, and no correlation was found between anxiety and aromatherapy through lavender (28). Moreover, other studies have confirmed the effects of sniffing orange essential oil on patients' reduced anxiety. However, no complications were found in patients applying orange essential oil (16, 29). Furthermore, there are other studies that deny the effect of orange essential oil on patients' reduced anxiety, and no significant relationship was found between using orange essential oil and reduced anxiety (30).

DISCUSSION AND CONCLUSION

With respect to the management of the disease and necessity of self-management, diabetes, as a chronic disease, is regarded as one of the most complicated diseases. As long as the psychological factors of diabetic patients are not solved, none of the modern tools will be effective for diabetes management. If accompanied by anxiety and stress, diabetes is one of the diseases whose complications can increase and these psychological disorders can bring about undesirable changes in the prognosis of diabetes (5). Given the studies reviewed, anxiety is considered as the most common and important psychological disorder. Numerous studies have concluded that diabetic patients frequently complain about anxiety; a significant correlation was found between anxiety and diabetes. Like other chronic diseases, diabetes is followed by high mortality rate as well as serious personal, familial, and financial problems. Complications such as blood glucose increase and decrease, dietary and sports limitations, frequent insulin injection, musculoskeletal complication, physical disabilities, sexual disorder, lack of confidence, changes in the self-image of one's body, and vascular problems can be so severe that bring about psychological disorders such as depression and anxiety in these patients. Besides the negative physical effects, anxiety arising from diabetes have negative mental effects as well. One of the most significant effects of anxiety is depression. Moreover, through reducing the individual's concentration and disrupting the individual's decision-making performance, anxiety is likely to disrupt the

therapeutic relationship between the therapist and the patient and reduce the effect of psychological interventions (11, 12, and 13). The average anxiety score of patients in different studies indicate that most of the diabetic patients suffer from a moderate anxiety. There is a significant relationship between anxiety and prevalence of complications arising from diabetes, and diabetic patients involved with the complications of their own disease stated that they suffer from anxiety in some way (22). Nowadays, using traditional medicine and aromatherapy, as one of its subsets, has developed all over the world. Aromatherapy refers to using volatile oils or aromas extracted from aromatic plants for medical purposes. Aromatherapy is now used to reduce patients' anxiety, pain, and fatigue (25). Lavender is one of the aromas that is widely used and its effects for reducing patients' anxiety has been confirmed. Some studies have indicated that lavender is likely to have effects similar to those of benzodiazepines; it can increase gamma-aminobutyric acid and as a result work as a sedative (25). Moreover, lavender extract will improve patients sleep. Since sleeping disorders are likely to bring about intensification of anxiety and anxiety causes sleeping disorder and reduced sleep quality, aromatherapy with lavender is likely to reduce patients' anxiety through improving their quality of sleep (31). Various studies have confirmed the effect of aromatherapy on reduced anxiety and stress in patients undergoing coronary angiography, burn patients, pregnant women, patients undergoing hemodialysis, and patients suffering from myocardial infraction (32, 33, and 34). Aromatherapy is known as an easy, cheap, and economical method lacking complications, and it results in patients' quick recovery and reduced anxiety and pain during the medical procedures. Lavender extract results in patients' quick recovery after a myocardial infraction. Lavender aromatherapy with geranium extract reduces women's anxiety during delivery (35, 36). Most of the studies have confirmed the effect of aromatherapy lavender on reducing anxiety, heartbeat, and blood pressure in patients undergoing hemodialysis and students before their final exam (17, 37, 38, and 39). However, other studies denied the effect of lavender extract in reducing patients' anxiety and did not find any significant relationship between anxiety and aromatherapy with lavender (40, 41). Another essential oil used in aromatherapy for reducing patients' anxiety is orange essential oil. Various studies indicate that orange essential oil brings about reduced overt and covert anxiety in patients and its antianxiety effects have been widely confirmed (16, 29). There is also a study that denies the effect of aromatherapy with orange essential oil and did not find a significant relationship between anxiety and aromatherapy with orange essential oil (30). Moreover, aromas such as chamomile and sweet orange have also turned out to be effective for reducing students' stress before the first venipuncture experience (42). The findings of the present study indicate that diabetic patients suffer from anxiety and stress for a variety of reasons including the fear of insulin injection. The aromatherapy of anxiety is followed by numerous complications and prescribing drugs calls for doctor's permission. Moreover, the effect of

aromatherapy has been confirmed for reducing anxiety in different patients including hemodialysis patients, pregnant women, and even healthy individuals, and no complications have been reported for aromatherapy. Among the aromas that are effective for reducing patients' anxiety, one can refer to the aromas of lavender, orange, chamomile, and geranium. Thus, aromatherapy can be conducted with the abovementioned plants for reducing diabetic patients' anxiety. However, it is recommended to conduct further researches to study the effect of aromatherapy with different extracts on diabetic patients' anxiety.

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