Grace Peterson Nursing Research Colloquium

Aug 23rd, 12:00 AM - 11:00 PM

Effect of Promoting Psychosocial Resilience in Adolescents with Diabetes: An Integrative Literature Review

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The Effect of Promoting Psychosocial Resilience in Diabetic Adolescents

An Integrative Review of Literature

Background
Since 2011, the incidence of Type 2 Diabetes Mellitus (TTDM) has risen 732% among American adolescents aged 7 to 17. In 2017, diabetes accounted for $90 billion in reduced work productivity. Annually, diabetics spend $237 billion in direct medical costs – more than double that of non-diabetic Americans spending on healthcare. One in every five American children (under the age of 19) were obese in 2018 – triple the number of obese children since 1970. Currently, diabetes is the 7th leading cause of death in America, shortening the lifespan by nearly 10 years.

Diabetes mellitus is a chronic, pro-inflammatory disease that progressively damages beta cells in the pancreas rendering it incapable of producing appropriate amounts of insulin. Several modifiable conditions precipitate the symptoms that result in the alterations of glucose metabolism. Those conditions include unhealthy food choices, sedentary lifestyle and psychosocial stressors. Obesity, however, is the leading modifiable risk factor accelerating the progression of TTDM.

Both childhood obesity and diabetes increase the risk of physiological health threats including hypertension, dyslipidemia, cardiovascular disease, orthopedic problems and sleep apnea. To compound these issues, obese and diabetic adolescents are more vulnerable to developing other negative psychosocial health threats such as body image issues, anxiety, depression, behavioral problems and experiencing bullying and fear in school. They also report a lower self-esteem than their non-obese/diabetic counterparts. Teaching this population how to cope with and mitigate physical and psychosocial stressors can improve their health status and health-related quality of life (HRQOL).

Purpose Statement
This literature review will provide insight into the health promotion effects of fostering psychosocial resilience to diabetic adolescents aged 7 to 17 with the goal of reducing the associated physical and psychosocial morbidity and mortality associated with adolescent diabetes.

Research Questions:
1. Does psychosocial resilience have an effect on the health-related quality of life of adolescent patients with chronic diseases such as Type 2 Diabetes?
2. How can nurses inculcate psychosocial resilience into patient education targeted at this adolescence with TTDM?

Conceptual Framework

Dr. Adler’s psycho-neuro-immunological theory relates immune system and neurological responses with psychological factors – postulating that psychological states augment the development and exacerbation of pro-inflammatory diseases such as diabetes.

Methods
A search was conducted using PubMed, Cumulative Index to Nursing and Health Literature (CINAHL), Ovid Medline, ProQuest and Cochrane. Key word combinations used: adolescence, diabetes, psychoneuroimmunology, patient education, psychosocial resilience and nursing.

Inclusion criteria:
Only articles of the nursing or medicine disciplines spanning from 2010 to 2019 were used. The articles must have focused on how diabetes affects adolescents and/or how the psychoneuroimmunology theory applies to chronic pro-inflammatory illnesses.

Exclusion criteria:
Articles researching the psychoneuroimmunology theory with no connection to a chronic pro-inflammatory disease (such as mental health) or referring only to Type 1 diabetes, were excluded.

Results & Discussion
Obesity in adolescents correlated with higher incidences of disordered eating behaviors (emotional eating and loss of control over eating); body image issues; negative psychosocial outcomes; emotional and behavioral problems; lowered self-esteem and depressive symptoms. Behavioral disorders are a direct result of “mutual interactions between self-esteem, health-related quality of life, general psychopathology, weight issues and eating problems. There is consistent evidence that obese adolescents report poorer HRQOL and lower self-esteem than their normal weight contemporaries.

Depression increases the risk of diabetes by 37-60%, adverse childhood experiences (neglect and abuse) by 32% and those with diabetes have a 25-33% increased risk of developing major depression. "Comorbid depression in diabetes has been associated with suboptimal glycemic control and non-adherence to treatment regimens such as diet, medications and exercise. Other behavioral factors (hostility and angry temperament) raise fasting glucose, insulin resistance and cause chronic dysregulation of the stress hormone cortisol. Prolonged dysregulation of cortisol elicits further disruption of the biological systems including neurotransmitter, neuroendocrine and metabolic pathways. Chronic disturbances in any of these pathways activates the release of inflammatory cytokines; promoting pro-inflammatory diseases, illness and continued psychological stress.

These behavioral and biological pathways are more interrelated than once thought. Further research in psychoneuroimmunology is needed to fully understand how these processes promote damage and disease progression.

Nursing Practice Implications
Resilience to psychosocial stressors has a positive impact on increasing the HRQOL in adolescent patients with chronic diseases such as diabetes and obesity. Nurses can promote psychosocial resilience by:
1. Using traditional therapeutic interventions (collaboration with certified diabetes educators, support groups, counseling and therapy)
2. Using complimentary interventions (relaxation therapy, yoga/TaiChi, other alternative exercise therapies)