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Abstract

Background: Efforts to increase the coverage of exclusive breastfeeding require extraordinary innovation supported by many parties, such as community leaders, including Housewives Peer Group activist living as a neighborhood of lactating mothers. The aim of this study was to analyze the effect of a short course on the knowledge and practice of Housewives Peer Group activists as assistance to lactating mothers in providing exclusive breastfeeding. **Methods:** The method of the research was pre and post-test of quasi-experimental. The population was Housewives Peer Group activists in the working area of Tlogosari Wetan Community Health Center, Semarang City. Samples were chosen using purposive random sampling to 37 Housewives Peer Group activists. The intervention given was a short course which should be attended by the group, and the post-test was assessed 1 month after conducting the pre-test. **Results:** The results of the Wilcoxon Match Paired test showed differences in knowledge ($P < 0.05$) and practice ($P < 0.05$) of the Housewives Peer Group activists before and after attending a short course regarding exclusive breastfeeding and lactation management. At the end of the study, the knowledge and practice of the Housewives Peer

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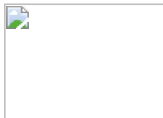
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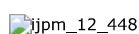
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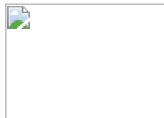
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Review Article

Role of Vitamin A Supplementation in Prevention and Control of Coronavirus Disease-19: A Narrative Review

Abstract

Coronavirus disease-19 (COVID-19) caused by SARS-CoV-2 is a novel viral infectious disease, which broke out in the end of winter season 2019 in China and soon became a pandemic. Characteristically there was severe local and systemic immune-inflammatory response to the virus, damaging the respiratory system and other organ systems. The morbidity and mortality caused by the disease are producing tremendous impact on health. The understanding about pathogenesis and manifestations of the disease was obscure. To date, no classic treatment or preventive measure was available for COVID-19 other than symptomatic and supportive care or few drugs under trial. A possibility exists that maintaining vitamin A adequate levels can protect the affected respiratory mucosa, increase antimicrobial activity, produce better antibody response, and have antiinflammatory effects, thereby promoting repair and healing as well. It has been discussed in the review that by various mechanisms, immune regulation through vitamin A supplementation is beneficial to boost immunity in the current outbreak situation when the population is susceptible to the disease. There is a high possibility that vitamin A supplementation to cases as well as population at risk of COVID-19 has a key role in prevention and control. Hence, it is believed that along with other therapeutic and preventive measures, maintaining vitamin A sufficiency during and prior to the development of active disease may act as an adjuvant in population at risk and cases to prevent and control COVID-19.

Keywords: Antiinflammatory, COVID-19, immunomodulation, SARS-CoV-2, vitamin A supplementation

Introduction

Coronavirus disease-19 (COVID-19) is a novel viral disease and World Health Organization (WHO) has declared it a public health emergency of international concern.^[1] The disease is contagious and, in affected individuals, has the risk of spreading rapidly from upper to lower respiratory tract, and has high morbidity and mortality.^[1]

There was an urgent need to take appropriate preventive and control measures for the emerging disease. Also not much was known about the natural history of the novel viral disease.

Animal studies have shown that low levels of vitamin A are likely to increase the susceptibility to COVID-19 as in case of other infections including acute respiratory infections.^[2-5] In an experiment conducted in 35-day-old hamsters, the findings

had shown that vitamin A deprivation decreased the replication of basal cells and mucous cells in tracheal epithelium, which showed minimal morphologic change with the manifold reduction of the mitotic rates.^[2] Similarly, findings of the experiments conducted in rats had shown that vitamin A was important for the maintenance and functional integrity of mucus-secreting goblet cells in the small intestine.^[4] Moreover, in view of the findings of a review article published in 2018, vitamin A supplementation in its deficiency state has been shown to improve immune response in infectious diseases.^[6]

Vitamin A also has a role in host defense and has been suggested to have potential importance in the prevention of respiratory tract infections by regulating and promoting local and systemic immune responses.^[6] Thus, the immune-regulatory mechanisms with adequate vitamin A required extensive review of available literature. In this article, we attempted to explore different

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Review Article

The Effect of Zinc Supplementation on Circulating Levels of Brain-Derived Neurotrophic Factor (BDNF): A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Abstract

Background: There are randomized controlled trials (RCTs) about the zinc supplementation effect on circulating levels of brain-derived neurotrophic factor (BDNF). However, the findings of these studies are inconsistent. The purpose of this systematic review and meta-analysis was to determine the zinc supplementation effect on BDNF and zinc levels in published RCTs. **Methods:** We searched PubMed/Medline, Cochrane, Scopus, ISI Web of Science, EMBASE, "Clinicaltrials.gov", "Cochrane Register of Controlled Trials", "IRCT" and also key journals up to 2019. RCTs with two intervention (zinc) and control (placebo) groups that evaluated zinc supplementation efficacy on BDNF levels were included. Study heterogeneity was assessed, and then, meta-analysis was performed using the fixed-effects model. **Results:** Four studies were included in the present secondary analysis. Compared with placebo, zinc supplementation significantly enhanced circulating levels of BDNF [(SMD): 0.31, 95% confidence interval (CI): (0.22, 0.61)] and zinc [(SMD): 0.88, 95% CI: (0.54, 1.22)] with no considerable heterogeneity among the studies [($Q = 3.46$; $P = 0.32$; $I^2\% = 13.4$); ($Q = 2.01$; $P = 0.37$; $I^2\% = 0.5$), respectively]. **Conclusions:** Our results propose that zinc supplementation can increase the circulating levels of BDNF and zinc. This study was registered at PROSPERO as CRD42020149513.

Keywords: Brain-derived neurotrophic factor; meta-analysis; randomized controlled trial, systematic review, zinc

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Introduction

Neurodegenerative diseases (NDs) are a major concern in a quickly aging world.^[1,2] Increasing evidence suggests that the change in BDNF expression, peripheral levels and signaling can be involved in NDs pathogenesis.^[3,4]

BDNF is a member of the neurotrophin family.^[5] It plays a critical role in neuron survival, such as dorsal root ganglion subpopulation,^[6] central serotonergic (5-HT) neurons function,^[7] reducing hippocampus neuroinflammation^[8], increased synaptic transmission^[9] and neurogenesis.^[10,11] According to the rat model of stroke, BDNF can alleviate local inflammation by reducing proinflammatory cytokine and also enhancing anti-inflammatory cytokine.^[12]

Decreased BDNF expression has been reported in Alzheimer's disease (AD),^[13]

Parkinson's disease (PD),^[14] dementias,^[15] multiple sclerosis (MS)^[16] and amyotrophic lateral sclerosis (ALS).^[17] Several conditions, including antidepressant medications^[18] and anthocyanin supplementation^[19] can increase the BDNF gene expression. Its blood concentration can also be enhanced by environmental factors such as exercise,^[20] omega-3 fatty acids,^[21] resveratrol^[22] and zinc supplementation.^[23]

Zinc is the second most abundant trace element in the brain.^[24] In addition to its anti-inflammatory and antioxidant properties,^[25,26] it can affect BDNF expression and activity.^[27] Recently, RCTs have been performed to designate the zinc supplement efficacy on BDNF levels (serum or plasma). However, in these RCTs, the impact of zinc supplementation on BDNF levels was inconsistent and uncertain. So, this meta-analysis was conducted to evaluate the zinc supplement effect on circulating levels of BDNF in adults.

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Original Article

Impact of Skip Generation Family Structure on Diabetes Mellitus Treatment Outcomes at a Primary Care Unit in Khon Kaen Province

Abstract

Background: Self-care is an essential component of diabetes mellitus (DM) treatment and often depends heavily on family support. In skip generation families, children's grandparents are their primary caretakers, many of whom have chronic diseases such as DM. The objective of this study was to determine the proportion of DM patients receiving treatment at a primary care unit in Khon Kaen Province in the skip generation families and the effects of this family structure on clinical indicators of treatment outcomes. **Methods:** This was a prospective descriptive study in DM patients who visited a primary care unit in Khon Kaen Province from July to October 2019. Patients were asked to fill out a questionnaire interviewed, and demographic and clinical data were analyzed. **Results:** This study included 202 participants. We found that 11.4% of patients were in skip generation families, 91.3% of whom were elderly. We found no statistically significant association between family structure and either self-care practices or clinical indicators of treatment outcomes. **Conclusions:** Neither clinical indicators of treatment outcomes nor self-care practices differed between DM patients in skip generation families and those with other family structures. However, additional studies should be conducted to examine other possible factors, such as the age of the grandchildren of whom patients are the primary caretakers.

Keywords: Diabetes mellitus, family characteristics, primary care

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Introduction

Diabetes mellitus (DM) is global public health problem,^[1] with the number of patients increasing around the world. It was estimated that in the year 2019, there will be approximately 463 million people with diabetes mellitus aged 20–79 years, most of whom are elderly.^[2] Complications from DM can lead to premature death, and these elderly patients are especially vulnerable,^[3] making lifestyle modifications and medication to control blood sugar levels in this population especially important.^[4]

Caring of the patients with DM, which is chronic disease, consist of many components including patients care team and the patients themselves.^[5] Self-care, a key component to blood sugar control in DM patients,^[6,7] depends on many factors such as awareness of the disease and the patient's life context (consisting of family, work, and social support). Previous studies have found that the family members of DM patients influence their self-care practices^[8] and that having adequate family support

is associated with better diet control and exercise habits in these patients.^[9] At present, family structure varies greatly from household to household in Thailand, partly due to changing lifestyles and economic needs. Common families structures in Thailand include nuclear, extended, and skip generation families. Because economic development in Thailand has been concentrated in large cities, rural-to-urban labor migration is a common practice, often leaving children and the elderly at home. This leads to many children being raised by their grandparents, especially in the relatively poor regions of the north and northeast.^[10]

The elderly is often ill-suited to be the primary caretakers of young children due to health deterioration and underlying disease. However, economic hardship and the resulting labor migration make this the most feasible option for many families.^[11] Because of this, many of these elderly family members are "left behind" with chronic illness, negatively impacting their health.^[12-14] Nowadays, there is no study evaluating the association between the family patterns and treatment outcomes

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Original Article

Predictors of Breast Cancer Screening behavior in Women aged 20-69 Referred to Public Health Centers: A Cross-Sectional Study in Isfahan Province

Abstract

Background: Breast cancer is the most common cancer in women. Delay in the diagnosis of breast cancer is a major challenge that can lead to disease progression. Identifying the predictors of breast cancer screening behavior is necessary to promote early detection of breast cancer. This study aims to investigate the predictors of breast cancer screening behavior in women aged 20–69 referred to public health centers. **Methods:** This cross-sectional study was conducted on 17255 women aged 20–69 years old in Isfahan Province referred to Public Health Centers by the multi-stage random sampling method. data were collected based on the paper forms of women's care aged 20–69 at public health centers, Isfahan, Iran, in 2012. Using STATA 14, logistic regression was employed to explore predictors of breast cancer screening behavior at a 5% significance level. **Results:** The mean age of women was 36.75 ± 10.46 . About 6006 (34.8%) of women had a history of breast self-examination, and among women aged over 40 years, 17.7% reported ever having a mammogram. The most important factors influencing breast self-examination were age 40–49 (OR = 1.18; 95% CI: 1.06–1.33), history of hormone consumption (OR = 1.23; 95% CI: 1.15–1.33), family history of breast cancer in first-degree relatives (OR = 14.22; 95% CI: 9.83–20.57). The most important factors influencing mammography were hormone consumption (OR = 1.26; 95% CI: 1.05–1.51), and family history of breast cancer in first-degree relatives (OR = 32.55; 95% CI: 20.08–52.70). **Conclusions:** Our findings indicated that the performance of breast self-examination and mammography was low. The frequency of BC screening behavior was higher among women with BC risk factors. The results revealed the need for health authorities to pay attention to education in BC detection methods.

Keywords: Breast neoplasms, Iran, mammography, self-examination

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Introduction

Breast cancer (BC) is the most common cancer in women around the world.^[1] Around 2.1 million new cases of BC occur worldwide each year. In 2018, it was estimated that 627,000 women died of BC.^[2] BC is the most common cancer among Iranian women with an incidence of 33.8 per 100,000 women.^[3] In comparison to other countries, BC in Iran is usually diagnosed in its advanced stage, which is why it is the third leading cause of death among Iranian women.^[4]

Delay in the diagnosis and treatment of BC is a major challenge that can lead to disease progression and develops mortality and also reduces the survival rate of patients; so, timely diagnosis of the disease is an

important factor to prevent the mortality of BC.^[5] BC screening is one of the best methods to decrease mortality through early diagnosis of disease.^[6] There have been different methods recommended for BC screening, including mammography, Clinical Breast Exam (CBE), and Breast Self-Exam (BSE).^[2]

Mammography is essential to achieve the highest level of success in screening, as 35–50% of the cases of BC have been diagnosed by mammography.^[7] Nevertheless, in developing countries, BC is not identified in the early stage and 19–25% of the mortality of BC is due to the lack of mammography usage.^[8] BSE is another type of screening method. Even though BSE is not solely adequate for the early detection of BC, it is still one of the most available methods in developing

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Unit Kerja : Kota Semarang.

Dengan ini menyatakan penelitian tersebut telah memenuhi persyaratan etik dan setuju untuk dilaksanakan dengan memperhatikan prinsip-prinsip yang dinyatakan dalam Pedoman Nasional Etik Penelitian Kesehatan (PNEPK) Departemen Kesehatan RI 2007.

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