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Effect of Humor on Nutrition Intake Children and Adolescent in 'Mabarrot' Dormitory Yogyakarta Indonesia

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Abstract:
Background: One of the causes of nutritional problems among children and adolescents is stress experience. Stress can cause a person to lose their appetite that leads to reduced food intake. Using humor as a stress reliever is an emotional coping mechanism that can be done to mitigate some of negative emotional reactions. Humor can be used as a tool in the prevention and treatment of stress-related diseases through increasing food intake.
Objective: The purpose of this study was to determine the effect of humor therapy to increase food intake of study participants in 'Mabarrot' dormitory.
Material and method: Data collection was performed using a 24-hour food recall questionnaire at three different times: following a humor therapy, one day after the humor therapy, and two days after the therapy. The study participants were given the regular daily meals. Data was analyzed using non-parametric Wilcox on test.
Results: Food intakes for daily meals increased among children and adolescent with sense of humor ($p<0.05$). However, among boys there was no increased in food intakes. Meanwhile, among the girls with sense of humor, food intakes increased significantly ($p<0.05$). For those groups with medium and high sense of humors, there was an increased in food intakes significantly ($p<0.05$).
Conclusion: There is an impact of humor therapy in increasing food intakes among children and adolescents in 'Mabarrot' dormitory.

Keywords: *Humor, therapy, intake, nutrition*

1. Introduction

Decreased appetite may be caused or accompanied by chronic diseases, vitamin deficiencies, poor eating habits, and stress and psychiatric disorders [1]. Psychiatric disorder is one of the causes of nutritional problems. They found that people with stress experiences tend to have a negative emotional state that causes them to lose their appetite which then affects their food intake. Increased number of stressors contributes to increasing levels of stress among children and adolescents [2].

Stress can worsen into a depression when it is not properly handled. Previous study has found that coping with the stress is an effort to control the emotional pressure [3]. In particular, laughter has been found to be a key to achieving a balance emotional health because laughter has the ability to relax muscles, relieve pain, fight infection, reduce swelling, and make someone feel better [4].

In the Oxford English Dictionary, humor is defined as "that quality of action, speech, or writing which excites amusement; oddity, jocularity, facetiousness, comicality, fun" [5]. Humor involves cognitive, emotional, behavioral, psychophysiological and social aspects [6]. Humor can refer to a stimulus such as a comedy film, a mental process such as perception, or a response such as laughter and exhilaration. Indeed, laughter is the most common behavioral expression of a humorous experience [7]. Humor and laughter are typically associated with a pleasant emotional feeling [8].

Humor has been shown to increase lung capacity, strengthen abdominal muscles, and increase immunoglobulin A, which is one of the major antibodies produced by the immune system [9, 10]. Humor causes reductions in cortisol, growth hormones, and epinephrine [11]. Following laughter or other humorous encounters, natural killer cell activity, immunoglobulin G and immunoglobulin M levels increase for as long as 12 hours [11,12], and these evaluations bring about beneficial health outcomes. The use of humor consistently results in improvements in pain thresholds [13].

Humor also leads to the release of endorphins in the brain, which help to control pain [14]. In a laboratory study of pain tolerance using cold presser stimulation, participants in the humor group had a significant increase in pain tolerance as compared to the other group [15]. Pain management together with humor was found to be more effective than pain

management alone [16]. Qualitative findings have also supported the effectiveness of humor in patient care [17, 18]. Humor can speed up the healing process of a disease by using the power of smiles and laughter [4].

The previous study examined the effectiveness of a humor therapy program in relieving chronic pain, enhancing happiness and life satisfaction, and reducing loneliness among older persons with chronic pain. Upon completion of the humor therapy program, there were significant decreases in pain and perception of loneliness, and significant increases in happiness and life satisfaction for the experimental group, but not for the control group. The use of humor therapy appears to be an effective nonpharmacological intervention. Nurses and other healthcare professionals could incorporate humor in caring for their patients [19].

Humor therapy is not only affordable, but also accessible to all human beings and therefore, using such therapy could reduce the cost of disease treatment such as for increasing appetite or food intake. However, there have not been many studies that have looked at the association between humor therapy and increased food intake. Therefore, the aim of this study is to determine the effect of humor therapy on food intake among foster children and adolescents in 'Mabarrot' dormitory.

2. Material and Methods

This study is a quasi-experimental study with the one-group pretest-posttest design. There is no control group and all study participants were measured together. Study participants were grouped by age, sex, and sense of humor. To determine nutrient intake before treatment, food recall (2 x 24 hours) was conducted. Study participants were given humor therapy by watching parody group. This group has a relevance as there is boy band that has attained a huge popularity among children and teenagers currently in Indonesia. After watching the parody, study participants then consumed their meals. Following the humor therapy, 2 x 24 food recalls were conducted, at a time of therapy and two days after the humor therapy. To determine the extent to which the study participants are receptive to the humor therapy, we used Multi-Dimensional Sense of Humor Scale Questionnaire by Thorson and Powell[20]. Furthermore, we used a 4 x 24-hour food recall assessment form by Comstock to estimate the weight of real food waste by measuring its percentage[4]. Data was analyzed using non-parametric Wilcoxon test because the distribution of the data was not normal.

3. Results

Table 1 showed nutrition intakes of energy, protein, carbohydrate and fat before and at treatment base on group of age, gender and sense of humor. Intakes of energy and fat increase significantly following humor therapy among children and adolescents ($p<0.05$).

Table 2 showed energy intakes after 2 days treatment. Even after two days following humor therapy, intakes of energy increased significantly ($p<0.05$).

4. Discussion

The present study demonstrated the therapeutic effects of humor therapy on nutrition intake children and adolescent in MABARROT dormitory Yogyakarta Indonesia. The result show there is increased nutrition intake of respondence after at treatment and after one days. This result proved that humor is effective to increase appetite.

Using a Wilcoxon test, we found that a humor therapy can significantly increase food intake among children and adolescents ($p < 0.05$). This increased in food intake can be caused by a person's preference for food [21]. In addition, another study has shown that food preferences affect intakes of macro-and micronutrients among children and adolescents which then affect their needs of these nutrients [22]. In this study, we showed that intakes of different nutrients increased varily based on the study participants' eating preferences.

There was an effect of sex as such that there was a difference on food intake between boys and girls. The increased in food intake following the humor therapy was only found among the girls ($p< 0.05$). There was no effect of humor therapy on food intake among boys ($p > 0.05$). Previous study has shown that adolescent females tend to be more sensitive to stress environment than their male counterparts. Even though the sources of stress among adolescents tend to be similar between adolescent males and females, the burden of stress has different impacts on them [23]. This may be the underlying reason by which a humor therapy has more influence on food intake among adolescent females than males. Even after 2 days of the humor therapy, it still affected food intake among adolescent females. Increasing the quality of the standardized meals alone will not necessarily affect food intake. It has previously shown that the consumption of vegetables and fruits on a group of men and women is influenced by various factors, such as economic capacity, availability and knowledge about the benefits of eating vegetables and fruits have great influence on consumption patterns and behavior [24]. By using the standardized meals, we eliminate other variables that could potentially affect food intake other than humor therapy.

Based on Wilcoxon test results, we showed that humor can significantly increase nutrition intake in a high-sense of humor and moderate-sense of humor groups ($p <0.05$). According to Kelly [25], the biggest advantage of having a great sense of humor is its effect on health. Humor has indirect effects on stress levels. As with food intake assessment using the Comstock's 24-hour recall, humor therapy can affect the mood or depression experienced by the study participants in which case the impact of food intake increased. In addition, there was no effect on standardized meal intakes following humor therapy among the group with normal and high sense of humor. In study by Deni[26], there is a relationship between level of education, nutrition knowledge, attitudes towards food, snacking habits, and physical activity on the fulfillment of specific nutrient

requirements. In this study we also showed that the selection towards certain types of foods by the study participants affected food preferences which led to differences in intakes of specific nutrients.

5. Conclusion

From the research that has been done, humor therapy still showed an effect in increasing the amount of daily food intake and standardized meals even on the second day after the administration of the therapy. Humor therapy had an effect even after two days of therapy on the daily diet. However, there was no effect of humor therapy on intakes of standardized food after two days of therapy. The conclusion of this research is that humor therapy can increase food intake among children and adolescents in 'Mabarrot' dormitory.

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7. Potential conflict of interest

None

8. References

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