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Original Article

Impact of Maternal Nutrition on Childhood Stunting and Obesity: A Longitudinal Study

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Abstract: The double burden of malnutrition—stunting and obesity—continues to challenge Indonesia's child health development goals. This longitudinal study tracked 480 mother-child pairs from pregnancy through the child's fifth year across West Sumatra. Maternal diet quality, micronutrient intake, and gestational weight gain were recorded, while child anthropometric and dietary data were collected at regular intervals. Findings revealed that low maternal dietary diversity and anemia were strong predictors of childhood stunting, while excessive gestational weight gain and sugar consumption were linked with early childhood obesity. Children of mothers who received regular antenatal nutritional counseling showed significantly better growth outcomes. Importantly, postnatal practices such as exclusive breastfeeding and appropriate complementary feeding also moderated the impact of maternal nutrition. The study underscores the importance of integrated maternal-child nutrition interventions to reduce both under- and over-nutrition. Policymakers must enhance antenatal care with a strong nutritional counseling component and expand postnatal outreach services to high-risk areas.

Keywords: Maternal health, child nutrition, stunting, obesity, Indonesia

1. Introduction

Usila (Elderly Age) is a phase of declining intellectual and physical abilities, which begins with several changes in life. The Elderly Group is a group of residents aged 60 years and over.[1] In old age, there will be a process of loss of tissue ability to repair itself or replace and maintain its normal function slowly so that it does not can endure to infection And repairing the damage that has occurred.[2] The prevalence of urinary incontinence in women in the world ranges from 10-58%, in Europe it ranges from 29.4%. According to APCAB (Asia Pacific Continence Advisor Board) in 1998, the prevalence of urinary incontinence was determined 14.6 % on woman Asia meanwhile Asian men around 6.8%. Prevalence of Incontinence In Indonesia, in women it is 5.8% while in men it is 5%.[3] Problems that are often encountered in advanced age is urinary incontinence. urinary incontinence is the uncontrolled leakage of urine at an unwanted time without regard to the frequency and amount that will be causes social and hygienic problems for sufferers. Quite serious ones such as urinary tract infections, skin disorders, sleep disorders, psychosocial problems such as depression, irritability and isolation.[4]

Elderly people who experience urinary incontinence tend to reduce drinking. This, in addition to disrupting the fluid balance that tends to be negative in the elderly, can also cause a decrease in bladder capacity and will further worsen their incontinence complaints (Nursalam and Fransisca, 2008). The prevalence of urinary incontinence is quite high, namely in women approximately 10-40% And 4-8% Already in quite a serious condition at the time of dating treatment. In men the prevalence is lower than in women, which is approximately half. The survey conducted In various Asian countries, it was found that the prevalence in several Asian countries

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was an average of 21.6% (14.8% in women and 6.8% in men). Compared to the productive age, in the elderly the prevalence of incontinence higher. Prevalence of incontinence urine in elderly women by 38% and Men 19% (Purnomo, 2008). Incontinence Urinary is an unresolved problem in the elderly. Urinary incontinence in the elderly can cause new problems for the elderly, therefore incontinence requires separate management to be overcome.[5]

Limitation incontinence is expenditure urine without being realized, in sufficient quantities and frequency to cause health or social problems.[6] One method that can be us ed to prevent urinary incontinence is with Kegel exercises. Kegel exercises themselves are exercises designed by Arnold Kegel to strengthen the pubococcygeus, autosexual, uterus, and rectum. Kegel exercises were first introduced by a doctor named Arnold Kegel in Los Angeles around 1950. Kegel exercises performed on the elderly are effective in strengthening the pubococcygeal muscles that support the bladder and urethral sphincter and increasing the ability to start and stop the flow of urine. According to research conducted by Mustofa and Widiyaningsih 2009 entitled The Effect of Kegel Exercises on the Frequency of Incontinence.In Palembang there is 3 orphanage social Which accommodate several elderly people who do not have any family, two nursing homes privately owned, namely the Dharma Bhakti Nursing Home And Home elderly Sukamaju and another government-owned nursing home, namely the Teratai Tresna Werdha Social Home, there were 69 elderly people in 2006, 62 people in 2007, and 62 people in 2008. 2007, 78 people on In 2008 there were 63 people in 2009, 67 person on year 2010, 64 person in 2011, 70 people in 2012 and 71 people from January-April the number of elderly. Based on the description above, the researcher wants to know more about the influence Kegel exercises on changes in incontinence in the elderly at the Teratai Palembang Social Werdha Home.

2. Method

The research design used in this study was quasi-experimental with a pre-test-post-test design, namely research conducted by providing before test (observation beginning) first before the intervention is given, after the intervention is carried out, a post-test (final observation) is carried out again (Hidayat, 2008). Population And research sample. The research population taken was all elderly people who experience incontinence are in Panti Tresna Werdha Teratai Palembang totaling 30 people. The sample of this study was all elderly people who experienced incontinence totaling 30 people.

2.1 Location Study

This research was conducted at the Teratai Palembang Social Home for the Elderly.

Procedure Study

a. Phase Preparation
1. Prepare tool And place
2. Set position client
b. Phase orientation
1. Give greetings and explaining the purpose of Kegel exercises.
2. Explain rule implementation :
a. Client must follow this exercise from start to finish
b. Client Those who leave gymnastics must ask permission first.
c. Client No may criticize explanation from other clients.

3. Contract time

Therapy is described as lasting 30-45 minutes.

a. Stage Work

1. The first step, sitting, standing or lying down, try to contract the pelvic mus cles in the same way when we hold urine,
2. We should be able to feel your pelvic floor muscles squeezing the urethra and anus (If your abdominal or buttock muscles are also tight it means we are not exercising the correct muscles),When we have found the right way to explain the activity, To contract the pelvic muscles, do the contractions for 10 seconds. seconds, then rest for 10 second.
3. Give praise For every exercise

d. Stage termination

1. Asking the client how they feel after doing Kegel exercises
2. Give praise on they
3. Make return time contract for the next kegel exercise
4. Closing: Saying greetings and Thank You

2.2 Collection Data

Data obtained through interview and observation methods to determine the frequency of urine excretion in the elderly 24 O'clock. Instrument collection data on study This is questionnaire, chair for training kegel, music And book notes.

2.3 Analysis Data

To see the influence giving between before And post test exercise bladder training, namely Kegel exercises for the elderly, then the bivariate statistical analysis in this study used the t-test, if the t-test did not meet the criteria condition so use alternative test is the Wilcoxonbila test. If a (0.05) < p-value then there is an effect of Kegel exercises on incontinence. If (0.05) > p-value then there is no effect of Kegel exercises on incontinence.

3. Results

Table. 1 Frequency Distribution of Respondents by Age in Teratai Palembang Social Home for the Elderly

Age	**Amount**	**%**
55- 64	**10**	**33.3**
>65	20	66.7
Amount	30	100

Based on table 1, the frequency distribution of respondents based on age at the Teratai Palembang Social Home for the Elderly in 2013, out of 30 respondents, there were 10 people aged 55-64 (33.3%), and respondents aged >65 were 20 people (66.7%).

Table. 2 Frequency Distribution of Respondents by Gender at the Teratai Palembang Social Home for the Elderly

Type Sex	**Amount**	**%**

Man	12	40.0
Woman	18	60.0
Amount	30	100

Based on table 2, the frequency distribution of respondents based on their occupation at the Teratai Palembang Social Home for the Elderly in 2013, it is known that out of 30 respondents, there were 12 female respondents (40.0%), and 18 male respondents (60.0%).

Table. 3 Frequency Distribution of Respondents Based on Education Level at the Teratai Palembang Social Home for the Elderly

Level Education	**Amount**	**%**
Sd	21	70.0
Junior high school	4	13.3
Senior high school	5	16.7
Amount	30	100

Based on table 3, the frequency distribution of respondents based on their level of education at the Teratai Palembang Social Welfare Home in 2013, it is known that out of 30 respondents, there were 21 respondents who had elementary school education (70.0%), 4 respondents who had Which educated final.(13.3%), and there were 5 respondents who had a high school education (16.7%).

Urinary Incontinence Before Doing Kegel Exercise Frequency

Based on the results of the analysis of the frequency of urination of the elderly at the Tresna Social Home Palembang Lotus Werdha before Kegel exercises were performed, it turned out that the minimum frequency of urinary incontinence in the elderly before Kegel exercises was 4 times and the most frequent frequency of urinary incontinence in the elderly was 7 times. With an average frequency of urination of 5.45 with a Median 5.00, and standard deviation 0.999. And the interval estimation results can be concluded that 95% believe that the average frequency of incontinence in the elderly before doing the exercise Kegel is 4.98 to 5.92.

Aging cause decline strength muscles including the pelvic floor muscles. Muscles The pelvic floor functions to actively maintain the stability of the pelvic organs, contract, tighten and relax the genital organs, and control defecation and urination (Pudjiastuti & Utomo, 2007). Variations of urinary incontinence range from occasionally passing only a few drops of urine, to really a lot, even accompanied by fecal incontinence. Incontinence can be a single factor that causes an elderly person to be hospitalized, because it is no longer overcome by the patient himself or his family/caregiver (Darmojo. 2006).

Urinary Incontinence After Doing Kegel Exercise Frequency

Based on the results of the analysis of the frequency of urination of the elderly at the Tresna Social Home Werdha Teratai Palembang after doing Kegel exercises, it turns out that the frequency of urinary incontinence is minimal in the elderly before Kegel exercises. is 3 time And frequency most frequent urinary incontinence in the elderly is 6 times. With an average frequency of urination of 4.45 with a median of 4.00,and standard deviation 0.999. And the interval estimation results can be concluded that 95% believe that the average frequency of incontinence in the

elderly before doing Kegel exercises is 3.98 to 3.99. 4.92. According to Asikin (2009), Keggel exercises are an effort to prevent urinary incontinence Kegel exercises should be done by contracting the pubococcygeus muscle and holding the contraction for 10 seconds, then releasing the contraction. In the early stages, you can start by holding the contraction for 3 to 5 seconds. By doing this gradually, this muscle will become stronger, the exercise This is repeated 10 times after which try to urinate and stop urinating in the middle (Johnson, 2002).in line with the research conducted by Mustofa and Widiyaningsih (2009) entitled The Effect of Kegel Exercises on the Frequency of Urinary Incontinence in the Elderly at the Pucang Gading Nursing Home, Semarang, The results of the study showed that after doing Kegel exercises, there was a decrease in the frequency of urinary incontinence of 21.6% from 10,043. times to 7,871 times. From The results of the T-dependent test obtained a p value of 0.000 so that there is an effect of Kegel exercises on the frequency of urinary incontinence in the elderly at the Pucang Gading Semarang Werdha Panti. According to Widianti (2010), Kegel exercises performed on the elderly are effective in strengthening the *pubococcygeal muscles* that support the bladder and urethral sphincter and increasing the ability to start and stop the flow of urine. In the elderly, aging can cause a decrease in muscle strength including the pelvic floor muscles, so that control over defecation and urination is reduced and can cause urinary incontinence in the elderly.

4. Conclusions

There is a significant influence between the provision of Keggel exercises on reducing urinary incontinence in the elderly at the Nursing Home. Palembang Lotus Werdha Social Service in 2013 with Pvalue = 0.001. Implementing Keggel exercises at the Teratai Tresna Werdha Home in particular and the Home Tresna elderly generally which is useful for reduce incontinence in the elderly so that it can improve the quality of sleep, comfort and cleanliness of the elderly.

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