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Health Education and Therapeutic Group Therapy Pregnant Women as a Prevention of Stunting Risk Factors

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Abstract

Early intervention during pregnancy can prevent stunting. Pregnant women can prevent stunting by addressing risk factors such as nutrition during pregnancy, infection during pregnancy, and depression during pregnancy. This study was designed to identify the effect of health education and therapeutic group therapy on preventing stunting risk factors. Method: The research design was quasi-experimental with a control group. The groups in this study were divided into two groups, the offline group, consisting of two groups: the intervention group that received offline health education and the group that received offline health education and therapeutic group therapy. The online group consisted of three groups, the intervention group that received online health education, the group that received online health education and therapeutic group therapy, and the control group that refused to receive health education and therapeutic group therapy interventions but was sent leaflets on improving development in pregnant women. The study was conducted offline and online. The sample consisted of 157 pregnant women and husbands, 64 women and husbands offline, and 93 women and husbands online. The instruments in this study were questionnaires consisting of demographic data of pregnant women and husbands, nutritional data during pregnancy (upper arm circumference (LiLA) and haemoglobin, depression during pregnancy with the EPDS questionnaire, Data analysis used univariate and bivariate frequency distribution, central tendency, and paired t-test. The results showed that upper arm circumference (LiLA) and Hb did not show significant differences between the intervention and control groups. Health education and offline therapeutic group therapy significantly decreased the risk factors for stunting and depression during pregnancy. Health education and therapeutic group therapy are recommended to be carried out in health service settings, both offline and online, as a form of mental health services for pregnant women in preventing risk factors for stunting.

Keywords: *Depression during Pregnancy; Health Education; Nutrition during Pregnancy; Stunting; Therapeutic Group Therapy*

Background

Stunting, defined as a height-for-age measurement that is more than two standard deviations below the World Health Organization's (WHO) reference median, remains a critical global public health issue affecting millions of children, particularly in developing nations (World Health Organization, 2018). In Indonesia, the prevalence of stunting has been reported to be notably high. The prevalence of stunting 30.8% in 2018 (Kementerian Kesehatan, 2018). Data indicates that figures can reach as high as 38.8% in certain regions, particularly in West Java (Sirait & Suryanegara, 2021). A nationwide survey highlighted a prevalence of 27.7% in 2019, with subsequent reports showing slight improvements but still above the WHO threshold of 20% (Sukmawati, 2023). The situation in Indonesia is mirrored in several Southeast Asian countries, where stunting prevalence can reach over 30% in rural areas, indicating a pressing need for targeted interventions (Dwiretnoastuti, 2023). Stunting is a problem around the world; the stunting rate in Indonesia is higher than the world average, and in Indonesia, it is still unstable in terms of stunting reduction.

Stunting can be prevented from the beginning of life during pregnancy. Stunting prevention is carried out by addressing the risk factors for stunting in pregnant women, namely nutrition during pregnancy, infection during pregnancy, and depression during pregnancy (Ashaba et al., 2015; Upadhyay et al., 2016). Nutrition during pregnancy is related to infection during pregnancy. Children whose mothers did not receive adequate food during pregnancy are considerably more likely to experience stunting, with odds reported at approximately 2.69 times higher than those who did (Gudeta et al., 2023). The critical importance of maternal nutritional status, not just before but also during pregnancy, for the proper growth of the fetus and subsequent child development (Hailu et al., 2020; Titaley et al., 2019). The risk factor for stunting in pregnant women is nutrition during pregnancy, which is related to infection and causes the fetus to be born at risk of LBW, which is prone to stunting.

These factors contribute to increased chances of adverse birth outcomes, such as low birth weight, which is associated with higher stunting rates later in childhood (Nafisah & Astuti, 2023; Simbolon, Jumiyati, Ningsih, & Riastuti, 2021). Young mothers may also exhibit poorer dietary practices and have limited access to healthcare, compounding the risks of stunting (Mediani, 2020; Purwandari, Adnani, & Astutik, 2021). An additional factor is the impact of repeated pregnancies; young mothers may experience a "dual-developmental crisis," where their own nutritional needs are not adequately met, leading to deficits in fetal nutrition (Maravilla, Betts, Adair, & Alati, 2020). Efforts to prevent stunting that focus on nutrition and infection include providing good nutritious food, consuming 90 Fe tablets for pregnant women, monitoring maternal health, and providing health education related to nutrition and stunting.

Prevention of depression during pregnancy can be done in several ways, namely by providing family social support, especially from husbands, education related to depression, psychoeducation, mindfulness meditation, classes during pregnancy, interpersonal therapy, cognitive behavioral therapy (CBT), environmental support, and group support, which has been carried out in many

related studies the effectiveness of such interventions (Kubo et al., 2021; Li et al., 2022). Psychosocial interventions can prevent depression in pregnant women.

Nursing interventions, such as health education, can effectively prevent stunting risk factors. Health education is effective in increasing pregnant women's knowledge about preventing stunting risk factors such as anemia related to nutrition during pregnancy and low birth weight. Therapeutic group therapy is group therapy that can solve problems by sharing experiences with each other and helping each other prevent or solve problems. The focus of therapeutic group therapy is the relationship within the group, group interaction, and conditions of the same age (Townsend & Morgan, 2017).

This research was conducted at the Banjarbaru Selatan and Cempaka Public Health Centers, Banjarbaru City, South Kalimantan Province. South Kalimantan is the province with the second highest stunting rate in Indonesia, in 2018, the average proportion of stunting in South Kalimantan was higher than in Indonesia. The nutritional status in South Kalimantan is at 30.8%, where there are 13.3% of very undernourished toddlers and 18.2% of undernourished toddlers (Kementerian Kesehatan, 2018). The nutritional status rate that can cause stunting in South Kalimantan Province is still high and is a concern because it is above the Indonesian average. The nutritional status rate, which can lead to stunting in South Kalimantan Province, is still high and is a concern because it is above the Indonesian average.

The results of a preliminary study at the Banjarbaru Selatan Health Center found that the number of pregnant women was 623. Hemoglobin (Hb) data found that 187 pregnant women had mild and moderate anemia. The results of the preliminary study found 759 pregnant women at the Cempaka Health Center; there were 254 pregnant women who did not come for antenatal care (ANC). The Hb data showed that 63 pregnant women had mild anemia and 18 had moderate anemia. The results of the preliminary study found that 3 out of 8 pregnant women experienced depression as measured by the Edinburgh Postpartum Depression scale (EPDS). In Banjarbaru City, especially at the Banjarbaru Selatan Health Center and the Cempaka Health Center, there are risk factors for stunting, such as pregnant women who do not perform ANC; pregnant women who experience mild to moderate anemia, and 3 out of 8 pregnant women who experience depression. Based on the explanation above, it is important to identify pregnant women who have risk factors for stunting (mothers with mild to moderate anemia who do not attend ANC and depression during pregnancy).

Methods

Ethical approval for this study was obtained from Universitas Indonesia. The researcher has conducted an ethical test, as evidenced by the issuance of a Certificate of Passing the Ethics Review with Number: SK-36/UN2.F12.D1.2.1/ETIK.FIK.2020. The expert validity test guarantees the validity of the contents of the modules, workbooks, and evaluation books used as a guideline in research by issuing a Certificate of Passing Expert Validity, and a competency test that guarantees the ability of researchers to take action, namely health education and group therapy for pregnant women, as evidenced by the issuance of a Certificate of Passing the Competency Test.

The research design used was a quasi-experimental pretest-posttest with a control group. The group in this study was divided into two groups, namely the

offline group, which consisted of two groups: the intervention group that received health education offline and the group that received health education and therapeutic group therapy offline. The online group consisted of 3 groups: the intervention group that received online health education, the group that received online health education and therapeutic group therapy, and the control group that refused to receive health education interventions and therapeutic group therapy but was sent leaflets to increase maternal development. The inclusion criteria for this study are as follows: 1) Pregnant women and husbands who can participate in health education and/or therapy for pregnant women. 2). Can communicate well. Can read and write. 3). Have a smartphone or laptop that is used for online. 4). Have an internet connection that is used for online. 5). Willing to participate in the study by signing an informed consent.

The offline research used the cluster sampling technique with a total of 68 pregnant women and their husbands, and the online research used a purposive sampling technique with a total of 94 pregnant women and their husbands. Before the intervention was carried out, a pre-test was carried out, and the respondent was given an intervention. Health education intervention consisting of 1 educational meeting, health education intervention and therapeutic group therapy consisting of 6 educational meeting. After being given the intervention, the respondents underwent a post-test. After random selection, the study was conducted at Banjarbaru Selatan Community Health Center and Cempaka Community Health Center, South Kalimantan, Indonesia,.

This study used four types of questionnaires as data collection tools. The questionnaires used included a demographic data questionnaire, an EPDS questionnaire for depression in pregnant women, a husband's support questionnaire to measure husband's support during pregnancy, an adaptation questionnaire for pregnant women, a health education module, and a therapeutic group therapy module for pregnant women. Nutritional data during pregnancy was obtained by researchers through secondary data from Puskesmas and the results of pregnant women having their pregnancies checked at health facilities for the group that was given offline intervention. Nutritional data during pregnancy in the group that was given an online intervention was obtained by researchers from an online form that had been filled out by pregnant women and their husbands.

The intervention group received health education and therapeutic group therapy for pregnant women in collaboration with their husbands. This group attended five sessions with 60 minutes per session of therapeutic group therapy in 5 meetings, where the groups that were carried out online and offline would get 7 days to do independent development skills training before the next session meeting. The online and offline groups received the same intervention. The intervention group received health education offline and online for 60 minutes in 1 meeting and received four materials, namely about stunting, nutrition during pregnancy, depression during pregnancy, and husband's support. The control group was not given health education intervention and therapeutic group therapy for pregnant women because pregnant women and their husbands refused to receive intervention but received an online leaflet on improving development in pregnant women to assess risk factors for stunting in pregnant women: nutrition during pregnancy, depression during pregnancy, adaptability of pregnant women and husband's support.

The first to third sessions are adaptation sessions for pregnant women in trimesters 1-3: biological, emotional-psychological, and social. Researchers discussed the developmental tasks of pregnant women, the biological, emotional-psychological, and social changes felt by pregnant women in the first trimester, and ways of adaptation to the biological, emotional-psychological, and social changes in pregnant women in the first to third trimesters. The fourth session is the stimulation of fetal development. Researchers discussed stimulation of fetal development, namely social stimulation in a non-verbal, verbal, and spiritual manner. The fifth session discussed the benefits of the exercises that had been done and the motivation to continue doing the exercises, while also discussing the exercises that had not been done.

Univariate analysis uses the characteristics of the respondents to identify risk factors for stunting in pregnant women before and after the intervention using the frequency distribution and central tendency. Bivariate data analysis was carried out on two variables, namely health education measures and therapeutic group therapy on the risk factors for stunting in pregnant women, to determine the effect of groups receiving offline and online interventions using a pair t-test.

Results

The results of this study describe the characteristics of pregnant women and their husbands, risk factors for stunting before and after intervention, differences in risk factors for stunting in the health education and health education and therapeutic group therapy, differences in risk factors for stunting in groups that receive offline and online interventions, descriptions of adaptability pregnant women and husband's support before and after the intervention, differences in the adaptability of pregnant women and husband's support in the health education and health education and therapeutic group therapy, differences in the adaptation of pregnant women and husband's support in the group that received offline and online interventions, the relationship between stunting risk factors and the adaptability of pregnant women and husband's support, the relationship between stunting risk factors and the characteristics of pregnant women and their husbands and the relationship between the adaptability of pregnant women and husband's support.

Table 1. Characteristics of Pregnant Women and Their Husband (n=157)

Characteristics	Group	n	Mean	SD	p-value
Age of Pregnant Mother	Health education offline	33	30,15	6,08	
	Health education + Therapeutic Group Therapy offline	31	26,97	5,93	
	Health education online	26	27,08	3,88	0,010
	Health education + Therapeutic Group Therapy online	26	27,38	4,13	
	Control	41	27,27	4,43	
Total		157	27,8	5,10	
Number of Pregnancies	Health education offline	33	2	0,97	0,205

Characteristics	Group	n	Mean	SD	p-value
	Health education + Therapeutic Group Therapy offline	31	2	1,15	
	Health education online	26	1,62	0,70	
	Health education + Therapeutic Group Therapy online	26	1,81	1,10	
	Control	41	1,68	1,01	
Total		157	1,82	1	
Husband's Age	Health education offline	33	33,24	6,68	
	Health education + Therapeutic Group Therapy offline	31	31,13	78,1	
	Health education online	26	28,85	3,51	0,002
	Health education + Therapeutic Group Therapy online	26	29,73	5,68	
	Control	41	30,22	5,35	
Total		157	30,73	6,13	
Socio-economic	Health education offline	33	4226515,15	3325152,37	0,001
	Health education + Therapeutic Group Therapy offline	31	1985483,87	996259,13	
	Health education online	26	6411538,46	5236283,18	
	Health education + Therapeutic Group Therapy online	26	8015384,62	11908406,86	
	Control	41	7948780,49	8220739,68	
Total		157	5745382,17	7239700,81	

Characteristics	n=157						p-value
	Health education offline n (%)	Health education + Therapeutic Group Therapy offline n (%)	Health education online n (%)	Health education + Therapeutic Group Therapy online n (%)	Control n (%)	n (%)	
Pregnant Mother's Education							
Elementary School	3 (9,1)	7 (22,6)	0 (0)	0 (0)	1 (2,4)	11 (7)	0,000
Middle School	7 (21,1)	9 (29)	0 (0)	0 (0)	1 (2,4)	17 (10,8)	
High School	13 (39,4)	11 (35,5)	4 (15,4)	6 (23,1)	8 (19,5)	42 (26,8)	
College	10 (30,3)	4 (12,9)	22 (84,6)	20 (76,9)	31 (75,6)	87 (55,4)	
Total	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	
Husband's Education							
Elementary School	5 (15,2)	11 (35,5)	0 (0)	0 (0)	0 (0)	16 (10,2)	0,000
Middle School	5 (15,2)	4 (12,9)	0 (0)	3 (0)	1 (2,4)	13 (8,3)	
High School	10	13	13	6	13	55	

Characteristics	n=157						
	Health education offline n (%)	Health education + Therapeutic Group Therapy offline n (%)	Health education online n (%)	Health education + Therapeutic Group Therapy online n (%)	Control n (%)	n (%)	p-value
	(30,3)	(41,9)	(50)	(11,5)	(31,7)	(35)	
College	13 (39,4)	3 (9,7)	13 (50)	17 (65,4)	27 (65,9)	73 (46,5)	
Total	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	
Pregnant Women's Jobs							
not working	5 (15,2)	11 (35,5)	0 (0)	0 (0)	0 (0)	16 (10,2)	0,000
working	5 (15,2)	4 (12,9)	0 (0)	3 (0)	1 (2,4)	13 (8,3)	
Total	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	
Husband's Job							
Working	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	1
Total	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	
Gestational Age							
Trimester 1	5 (15,2)	5 (16,1)	6 (23,1)	7 (26,9)	11 (26,8)	34 (21,7)	
Trimester 2	15 (45,5)	15 (48,4)	12 (46,2)	11 (42,3)	18 (43,9)	71 (45,2)	0,999
Trimester 3	13 (39,4)	11 (35,5)	8 (30,8)	8 (30,8)	12 (29,3)	52 (33,1)	
Total	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	
Pregnancy Plan							
Unplanned	15 (45,5)	12 (38,7)	9 (34,6)	6 (23,1)	15 (36,6)	57 (36,3)	
Planned	18 (54,5)	19 (61,3)	17 (65,4)	20 (76,9)	26 (63,4)	100 (63,7)	0,003
Total	33 (100)	31 (100)	26 (100)	26 (100)	41 (100)	157 (100)	

The results of the analysis of the characteristics of pregnant women and their husbands found that the average age of pregnant women was 27.8 years, the average number of pregnancies was 1.82 times, the average age of husbands in this study was 30.73 years, the average socioeconomic level in this study was Rp. 5745382.17, the highest education of pregnant women is at tertiary institutions with 87 (55.4%) pregnant women, most pregnant women are not working, namely 90 (57.3%) pregnant women, and the most gestational age is in the first trimester II with a total of 71 (45.2%) pregnant women in the second trimester with a total of 71 (45.2%) pregnant women in the second trimester with 71 (45.2%) pregnant women in the third trimest The number of pregnancies, husband's occupation, and gestational age are equivalent data. The age of pregnant women, husbands ages, socio-economic status, education of pregnant women and husbands, work of pregnant women, and plans for pregnancy include unequal data.

Table 2. Changes in Stunting Risk Factors, after Obtaining Intervention Offline and Online and in the Control Group (n=157)

Variable	Group	Mean Before	Mean After	p-value
Upper Arm Circumference (LiLa)	Health education offline	25,86	26,26	0,034
	Health education + Therapeutic Group Therapy offline	25,87	26,72	0,000
	Health education online	25,07	25,13	0,478
	Health education + Therapeutic Group Therapy online	25,61	25,77	0,157
	Control	25,73	25,66	0,042
Hemoglobin (Hb)	Health education offline	11,43	11,78	0,242
	Health education + Therapeutic Group Therapy offline	11,76	12,14	0,124
	Health education online	12,08	11,72	0,066
	Health education + Therapeutic Group Therapy online	12,08	12,00	0,317
	Control	11,52	11,58	0,596
Depression During Pregnancy	Health education offline	9,39	7,39	0,001
	Health education + Therapeutic Group Therapy offline	12,32	8,13	0,001
	Health education online	8,77	7,23	0,018
	Health education + Therapeutic Group Therapy online	8,85	6,69	0,038
	Control	9,61	8,97	0,068

Table 2 shows that the average LiLa in the offline intervention group increased significantly. The average Hb in the offline intervention group increased, while in the online and control groups it decreased. The average level of depression during pregnancy decreased in all groups.

Table 3. Categorical Data on Changes in Risk Factors for Stunting Depression During Pregnancy After Getting Intervention and in the Control Group (n=157)

Category	**Health education offline**		**Health education + Therapeutic Group Therapy offline**		**Health education *online***		**Health education + Therapeutic Group Therapy online**		**Control Group**	
	Pre n (%)	Post n (%)	Pre n (%)	Post n (%)	Pre n (%)	Post n (%)	Pre n (%)	Post n (%)	Pre n (%)	Post n (%)
Depression	14 (42,4)	6 (18,2)	23 (74,2)	3 (9,7)	10 (38,5)	5 (19,2)	14 (53,8)	2 (7,7)	18 (43,9)	25 (61)
Not Depression	19 (57,6)	27 (81,8)	8 (25,8)	28 (90,3)	16 (61,5)	20 (80,8)	12 (46,2)	24 (92,3)	23 (56,3)	16 (39)
Total	33 (100%)		31 (100%)		26 (100%)		26 (100%)		41 (100%)	

Depression during pregnancy showed a significant difference between the intervention group and the control group. The risk factor for stunting, depression during pregnancy, decreased significantly after being given health education and offline therapeutic group therapy, with a p-value of 0.0001 of 4.19 (13.4%), from 12.32 (41.1%) for those included in the depression category to 8.13 (27.1%) for those included in the non-depressed category. The number of pregnant women experiencing depression decreased from 23 pregnant women (74.2%) to 3 pregnant women (9.7%). The risk factor for stunting, namely depression during pregnancy

after being given online health education, decreased significantly with a p-value = 0.018 of 1.54 (5.1%) from 8.77 (29.2%) who were included in the non-depressed category to 7.23 (24.1%) were included in the non-depressed category. The number of pregnant women experiencing depression decreased from 10 pregnant women (38.5%) to 5 pregnant women (19.2%).

Depression during pregnancy after being given health education and online therapeutic group therapy decreased significantly with a p-value of 0.018 of 2.16 (7.2%) from 8.85 (29.5%) who were included in the non-depressed category to 6.69 (22.3%) which is included in the category of not depressed. The number of pregnant women experiencing depression decreased from 14 pregnant women (53.8%) to 2 pregnant women (7.7%). The average risk factor for stunting, namely depression during pregnancy, in the control group decreased but not significantly with a p-value of 0.068 of 0.64 (2.13%) from 9.61 (32%) which was included in the non-depressed category to 8,97 (29.9%). The number of pregnant women experiencing depression increased from 18 pregnant women (43.9%) to 25 pregnant women (61%).

Discussion

The health education that has been given to the research is about nutrition during pregnancy and stunting. After receiving health education, pregnant women reassess their understanding and motivation to adhere to balance nutrition during pregnancy. Pregnant women do independent exercise for 95 and 31 days in the health education group and for 15 and 16 days in the group that receives health education and therapeutic group therapy for pregnant women so that the LiLa and Hb results remain in the normal category or there is an increase in LiLa and Hb results, which prevents pregnant women from experiencing malnutrition and prevents the risk of stunting in children in the future.

These results are consistent with research results: community-based health education related to the fulfillment of iron and folic acid supplementation in pregnant women increases pregnant women's knowledge and positive attitudes and reduces the risk of malnutrition in mothers who are at risk of causing infant death or low birth weight babies (LBW) (Kamau et al., 2019). The results of other studies state that health education about nutrition and iron-rich food-based diet plans is significantly associated with increased hemoglobin levels, increased food intake, and nutritional knowledge about anemia and iron-rich foods in pregnant women (Dev Ram et al., 2019). Health education interventions use the health belief model with training material on the importance of health behavior during pregnancy; physical activity and nutrition during pregnancy are effective for nutrition management during pregnancy (Shahnazi et al., 2019). Health education interventions are effective in maintaining and improving nutrition during pregnancy so as to prevent infant mortality or LBW and the associated risk of stunting in pregnant women.

Behavior that has never been done before can be formed by providing reinforcement at each stage of the behavior so that it gets closer to ideal or healthy behavior (Kołomańska-Bogucka et al., 2019). This is an advantage of adding therapeutic group therapy, where in the implementation of therapeutic group therapy in each session there is always reinforcement of the achievements or

exercises that have been carried out so that pregnant women and their husbands get motivation to continue independent practice until it becomes habitual behavior.

From the results of the presentation and explanation above, it can be concluded that the increase in LiLa and Hb after receiving the intervention occurred because the interventions that had been given were health education and therapeutic group therapy for pregnant women, but nutritional outcomes during pregnancy must be maintained and improved in order to achieve optimal results. Therapeutic group therapy for pregnant women offline and online needs to be added or improved, especially in sessions 1–3, so that pregnant women can adapt biologically, psychologically, and socially so that the fulfillment of nutrition during pregnancy can be optimal. Pregnant women and their husbands are always given motivation and positive reinforcement when they successfully carry out independent exercises, and they are evaluated to determine which exercises pregnant women and their husbands have problems implementing. Optimal results can be obtained by increasing the duration of independent practice so that pregnant women and their husbands become accustomed to the behavior that has been trained. Mental health specialist nurses can carry out intervention packages, namely therapeutic group therapy and health education for pregnant women and their husbands, while practicing in an effort to improve nutrition during pregnancy and prevent stunting.

The highest average nutritional value during LiLa's pregnancy was in the group that received health education and offline therapeutic group therapy. The group that received health education and offline therapeutic group therapy had the highest average value of nutrition during pregnancy Hb. The group that was given the offline intervention scored higher than the group that was given the online intervention.

This is consistent with research showing that traditionally, face-to-face nutrition education interventions have been effective in increasing and enhancing nutrition knowledge (Soliman et al., 2019). Face-to-face interventions are delivered in individual or group settings, which provide for personal interaction between intervention providers and participants or groups of participants, but face-to-face methods have major limitations in terms of reaching individuals who have time constraints or live in different geographic locations (Soliman et al., 2019; Tsegaye et al., 2022). Offline interventions have a better effect than online interventions, but offline interventions have limitations, namely that they cannot reach as widely as online interventions.

Online intervention methods provide increased accessibility, cost-effectiveness, and time flexibility compared to offline methods (Chen et al., 2020; Guney-Coskun et al., 2023). The limitations of online intervention methods are the lack of activity during online interventions, the risk of bias due to reliance on self-reported data, the failure to maintain intervention results, and the limitations of uneven internet services. Online interventions are influenced by the length of time of the intervention, tracking systems related to compliance with interventions, objective and validated measurements, the use of interesting media, regular interactions between intervention providers and intervention recipients, active intervention recipients, and a longer duration of the intervention than face-to-face, i.e., more than 3 months (Murimi et al., 2019; Olzenak et al., 2020; Yarımkaya et al., 2020). Online interventions can be used at this time because they have

advantages, but still pay attention to the things that influence them so that they can be used and achieve the expected results.

The results of an online intervention study on dietary sugar consumption among mothers of young children, especially those with higher education, showed a significant increase in their understanding of dietary sugar with a significant completion rate of 62.1% in the intervention group, indicating that tailored online nutrition education can effectively reach and inform audiences (Chen et al., 2020). Online nutrition education resulted in increased nutritional knowledge and healthier food choices among overweight adolescents, who showed a significant increase in their understanding of nutritional concepts post-intervention (Risti et al., 2021).

The impact of depression during pregnancy if there is no preventive intervention and reduction of depression pregnant women who experience depression are associated with premature births and have poor nutrition in the fetus (Sundari et al., 2019; Szarpak et al., 2020). Depression during pregnancy is significantly associated with impaired physical growth in children (Ayed et al., 2020; Beyene et al., 2021; Rotheram-Fuller et al., 2018). Intervention packages for depression during pregnancy that include health education are effective in preventing depression in pregnancy (Boran et al., 2023; Zhao et al., 2021).

From the results of the presentation and explanation above, it can be concluded that depression during pregnancy after receiving the intervention has decreased, although there are still pregnant women who experience depression during pregnancy. The decrease in depression is because pregnant women have knowledge related to depression prevention, have good husband support, know how to adapt to changes during pregnancy, and have a support group for pregnant women to share experiences after getting therapeutic group therapy. Therapeutic group therapy for pregnant women offline and online can be increased by deepening Sessions 1–3 so that pregnant women can adapt to biological, psychological, and social changes so as to prevent depression during pregnancy. Additional frequency, independent practice time, and efforts to increase the motivation of pregnant women are needed so that pregnant women have support during pregnancy and more time for independent practice so that pregnant women can adapt to changes during pregnancy. Generalist nurses can conduct health education regarding the prevention of depression during pregnancy, and specialist nurses can conduct therapeutic group therapy for pregnant women as an effort to prevent depression during pregnancy and the risk of stunting in pregnant women.

The results of the presentation and explanation above, it can be concluded that offline health education and group therapy have better results in preventing stunting risk, especially in reducing depression during pregnancy. Online therapeutic group therapy can be considered because it has benefits that can reach a wider range of intervention participants and has high accessibility, but still pays attention to the level of active group participation, the duration of the intervention, and additional methods, namely adding learning videos so that pregnant women can understand better, and requires further research with the same intervention, different interventions, or combined interventions to add evidence to the research results.

Conclusions

An overview of risk factors for nutritional stunting during pregnancy in the normal category and depression during pregnancy in the non-depressed category. When offline health education was provided to pregnant women, the risk factors

for stunting increased significantly, hemoglobin (Hb) levels increased but not significantly, and depression during pregnancy decreased significantly. The risk factors for stunting in pregnant women associated with nutrition during Lila's pregnancy increased but not significantly; Hb decreased but not significantly; and depression during pregnancy decreased significantly when providing online health education. The risk factors for stunting in pregnant women during Lila's pregnancy increased significantly, Hb increased but not significantly, and depression during pregnancy decreased significantly when providing health education and offline therapeutic group therapy.

The risk factors for stunting in pregnant women associated with nutrition during Lila's pregnancy increased but not significantly; Hb decreased but not significantly; and depression during pregnancy decreased significantly with the provision of online health education and group therapy. There was no significant difference in the effect between the group that received the intervention and the control group on changes in risk factors for nutritional stunting during pregnancy. There was a significant difference in the effect between the group that received the intervention and the control group on changes in the risk factors for stunting depression during pregnancy.

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