JPPIPA 11(1) (2025)

Jurnal Penelitian Pendidikan IPA

Journal of Research in Science Education

http://jppipa.unram.ac.id/index.php/jppipa/index

Analysis of Supplementary Feeding Satisfaction on Weight Gain and Reduction in the Incidence of Chronic Energy Deficiency in Pregnant Women

Feva Tridiyawati[1*], Tria Shinta Angelina[1], Titin[1], Siti Rohani[1]

[1] Sekolah Tinggi Ilmu Kesehatan Abdi Nusantara, Jakarta, Indonesia.

Received: July 15, 2024
Revised: November 10, 2024
Accepted: January 25, 2025
Published: January 31, 2025

Corresponding Author:
Feva Tridiyawati
fevatridiyawati76@gmail.com

DOI: 10.29303/jppipa.v11i1.9971

Abstract: Chronic Energy Deficiency (CED) in pregnant women is a global health issue affecting maternal and fetal health. Supplemental feeding (SF) is an intervention to address CED, but its success depends on maternal satisfaction with the program. This study analyzed the relationship between maternal satisfaction, weight gain, and reduction in CED incidence among pregnant women. Using a quantitative, cross-sectional design, 150 pregnant women from three health centers (Kutawaluyo, Kutamuki, Sukatani) were studied. Data were collected via questionnaires covering satisfaction with SF, weight gain, and nutritional status. Bivariate analysis showed a significant relationship between satisfaction with SF and weight gain ($p = 0.04$). Logistic regression revealed that satisfied mothers were 2.8 times more likely to achieve healthy weight gain than dissatisfied ones (OR = 2.8, $p < 0.01$). Maternal satisfaction was crucial for SF success in preventing CED. Psychosocial factors like communication between mothers and health workers and family support significantly influenced satisfaction levels. The study underscores the importance of tailoring SF programs to pregnant women's needs and strengthening health policies to reduce CED prevalence. Enhanced maternal satisfaction with SF can improve nutritional outcomes, benefiting both mothers and their unborn children.

Keywords: Chronic Energy Deficiency (CED); Pregnant women; Satisfaction; Supplementary Feeding (SF); Weight gain

Introduction

State Chronic Energy Deficiency (CED) in pregnant women is a serious nutritional problem that can cause various complications, both for the mother and the fetus. The prevalence of CED in pregnant women is still high in various developing countries, including Indonesia. Based on data from Kementerian Kesehatan Republik Indonesia (2020), the prevalence of CED in pregnant women in Indonesia reached 17.3%, with significant variations between provinces. Pregnant women with CED are at high risk of complications such as premature delivery, low birth weight babies, and an increase in maternal and infant mortality rates (Chrysochou et al., 2022; Schifferstein et al., 2022; Schnettler et al., 2022). One of the efforts made to overcome CED is the provision of Supplementary Feeding (SF), which aims to meet the nutritional needs of pregnant women in order to improve their nutritional status and maternal weight optimally (Dwi & Hidayah, 2022; Kusumawati, 2020). However, the effectiveness of SF is greatly influenced by the level of satisfaction of mothers with the program.

Research on the administration of SF to pregnant women has been carried out by focusing on certain aspects, such as the effectiveness of SF in increasing the weight of pregnant women and preventing CED (Baum

How to Cite:
Tridiyawati, F., Angelina, T. S., Titin, & Rohani, S. (2025). Analysis of Supplementary Feeding Satisfaction on Weight Gain and Reduction in the Incidence of Chronic Energy Deficiency in Pregnant Women. *Jurnal Penelitian Pendidikan IPA*, *11*(1), 793–799. https://doi.org/10.29303/jppipa.v11i1.9971

et al., 2022; Brouwer et al., 2022; Vries et al., 2022). Several studies show that the right administration of SF can help improve the nutritional status of pregnant women and reduce the incidence of CED (Sari, 2019; Muhammad & Suryani, 2021; Santosa, 2020). A study by Purnama & Soeprapto (2020) stated that the quality of SF delivery, as well as effective communication between health workers and pregnant women, greatly affects the success of this program. In addition, research by Wahyuni (2021) highlights the importance of family support in increasing maternal satisfaction with SF, which further has a positive impact on improving pregnant women's nutrition.

Although many studies have discussed the effectiveness of SF administration and the factors that influence it, there is a gap in research related to the influence of maternal satisfaction levels on the success of SF programs in reducing CED (Otterbring & Bhatnagar, 2022; Sheen et al., 2022; Tan et al., 2022). Most previous studies have focused more on analyzing the effectiveness of SF in terms of weight gain or nutritional status of pregnant women, but not many have explored psychosocial factors, such as the level of maternal satisfaction with SF, which can affect the overall success of this program (Hernawati, 2021). Therefore, this study aims to fill the gap by analyzing the relationship between the level of maternal satisfaction with SF, weight gain, and the reduction in the incidence of CED in pregnant women.

This study aims to analyze the relationship between maternal satisfaction with SF administration, weight gain, and the incidence of CED in pregnant women in three health centers (Carvalho et al., 2022; Hyldelund et al., 2022; Weir et al., 2022). This research is expected to provide deeper insights into the factors that affect the effectiveness of SF delivery, as well as the importance of maternal satisfaction in ensuring the success of the program. In addition, this research can be the basis for the development of better health policies in order to reduce the prevalence of CED in pregnant women through a SF program that is more responsive to the nutritional needs of mothers (Wahyuni, 2021; Arifin, 2022). Thus, this study has a significant contribution to efforts to improve the health of pregnant women in Indonesia.

Method

This study uses a quantitative design with a cross-sectional approach. This design was chosen to obtain a clearer picture of the relationship between maternal satisfaction with Supplementary Feeding (SF), weight gain of pregnant women, and the incidence of Chronic Energy Deficiency (CED) in pregnant women in three health centers in Indonesia. The cross-sectional design allows data collection in a single point in time so that it can map the circumstances and factors affecting CED in pregnant women (Dickinson & Kakoschke, 2022; Ghafoorifard et al., 2022; Lo et al., 2022).

Population and Sample population in this study is all pregnant women recorded in the working area of the Kutawaluyo, Kutamuki, and Sukatani Health Centers in 2024. The sample of this study consisted of 150 pregnant women who were selected using the purposive sampling technique, with the following criteria: Pregnant women in the second or third trimester, Pregnant women who receive the SF program at the local health center, Pregnant women who are willing to be respondents and sign the participation agreement.

Research Ethics

This research follows the applicable research ethics guidelines. All research participants are provided with clear information about the research objectives and procedures and are guaranteed confidentiality. Informed consent was obtained from all pregnant women who were willing to participate in this study. This research has also received approval from the Health Research Ethics Committee with No. 239/KEPK/STIKEP/PPNI/JABAR/VI/2024.

Result and Discussion

Result

Distribution of satisfaction levels with the provision of Supplemental Feeding (SF) among pregnant women and their corresponding Chronic Energy Deficiency (CED) status and weight gain outcomes. The table highlights the relationship between maternal satisfaction and the effectiveness of SF in improving nutritional status.

Table 1. Distribution of satisfaction with the provision of SF and CED status to pregnant women

SF Satisfaction Level	Number (n = 150) (%)	CED Status	Weight gain (%)
Highly satisfied	50 (33.30)	No CED	Good (90)
Satisfied	40 (26.70)	CED	Fair (70)
Quite satisfied	30 (20.00)	CED	Poor (50)
Dissatisfied	20 (13.30)	CED	Poor (30)
Very Dissatisfied	10 (6.70)	CED	No increase

The table above shows the distribution of maternal satisfaction levels with the provision of SF and its relationship with the status of CED and weight gain of pregnant women. Some of the key findings from this table are: Satisfaction with SF and CED Status: Most of the mothers who were very satisfied with SF (50

mothers, or 33.30%) did not experience CED. This shows that mothers who are satisfied with the provision of SF tend to have better nutritional status, which has a positive impact on the prevention of CED. In contrast, in mothers who are dissatisfied or very dissatisfied with SF, the proportion of women who experience CED is much higher. This indicates that mothers' satisfaction with SF is strongly related to their nutritional status, which affects whether they experience CED or not. Weight Gain and SF Satisfaction: In mothers who are very satisfied with SF, 90% experience good weight gain. This suggests that maternal satisfaction with SF plays an important role in increasing the success of supplemental feeding, which in turn helps mothers achieve healthy weight gain. In contrast, in mothers who were dissatisfied or very dissatisfied with SF, there was a significant decrease in healthy weight gain, with most experiencing poor gains or no gains at all.

Table 2. Analysis of the relationship between satisfaction with SF and weight gain

Variable	P-Value
SF Satisfaction with Weight Gain	0.04*

*significant at α = 0.05

This table shows the results of the chi-square test which tests the relationship between the level of maternal satisfaction with the provision of SF and the weight gain of pregnant women. The results of the statistical test showed a p-value = 0.04, which means that the relationship between maternal satisfaction with SF and weight gain of pregnant women was significant at a significance level of 0.05.

Table 3. Analysis of factors affecting weight gain in pregnant women

Variable	Odds Ratio (OR)	P-Value
Satisfaction with SF	2.80	< 0.01**
Initial Nutritional Status (BMI)	1.50	0.04*
Family Support	1.90	0.02*
Age of Pregnant Women	0.80	0.18

*significant at α = 0.05**significant at α = 0.01

The table above shows the results of a logistic regression analysis that evaluates factors that affect weight gain for pregnant women. Some of the key findings from this table are: Satisfaction with SF (OR = 2.8, p < 0.01): The results of logistic regression showed that satisfaction with SF administration had a 2.8 times greater chance of increasing maternal weight gain compared to dissatisfied ones. This suggests that maternal satisfaction with SF is a very strong factor in promoting healthy weight gain during pregnancy; Early Nutritional Status (BMI) (OR = 1.5, p = 0.04): Mothers with better nutritional status in early pregnancy (higher BMI) are more likely to experience healthy weight gain. This shows that the mother's initial nutritional condition affects the body's response to SF, and mothers with undernourished status (low BMI) are more susceptible to CED; Family Support (OR = 1.9, p = 0.02): Family support also plays an important role in increasing the chances of healthy maternal weight gain. Pregnant women who receive emotional and social support from their families are more likely to succeed in participating in SF programs, which has an impact on healthy weight gain; and Age of Pregnant Women (OR = 0.8, p = 0.18): The maternal age factor did not show a significant relationship with weight gain. This shows that although the mother's age can affect pregnancy, in the context of this study, the factors of satisfaction with SF, early nutritional status, and family support are more influential than the mother's age.

Discussion

This study shows that maternal satisfaction with SF is positively related to weight gain and reduction in the incidence of CED. Pregnant women who are satisfied with the administration of SF tend to experience healthy weight gain (Giacalone et al., 2022; Hartmann et al., 2022; Ren et al., 2023). These findings are in accordance with the results of previous studies which showed that maternal satisfaction with nutritional interventions played an important role in the success of the program (Sari, 2019; Santosa, 2020). Maternal satisfaction with SF may be influenced by factors such as the quality of SF provided, relationships with health workers, and mothers' understanding of the benefits of SF.

Good weight gain in pregnant women is closely related to the mother's initial nutritional status (Arifin, 2022). Mothers with low BMI in early pregnancy are more susceptible to CED, which can hinder the success of SF administration. Therefore, more targeted interventions for mothers with poor nutritional status are needed, with a more specific approach based on the health condition of each mother (Kementerian Kesehatan Republik Indonesia, 2020). Family support has been proven to have a positive effect on maternal weight gain (Cuevas et al., 2017; Mouritsen et al., 2017; Pedersen et al., 2017; Spence, 2017). Emotional and social support from the family increases the motivation of mothers to participate in the SF program, which ultimately has an impact on the success of supplemental feeding (Wahyuni, 2021). This is also supported by research that shows that family involvement in SF programs can improve the health outcomes of pregnant women (Hernawati, 2021).

In addition, the communication factor between pregnant women and health workers also plays a big role in the success of the SF program (Haugaard et al., 2016; Kim et al., 2018; Pankhurst et al., 2021; Seconda et al., 2017). Good communication allows mothers to better understand the importance of meeting nutritional needs during pregnancy and increase the likelihood of successful SF in improving maternal and fetal health (Pramesti & Wulandari, 2018; Hadini & Yuliana, 2019; Purnama & Soeprapto, 2020). The importance of the effect of SF on pregnant women's weight is increasingly evident in this study, where satisfaction with SF is proven to have a significant relationship with healthy weight gain for pregnant women (Back et al., 2018; Iuel-Brockdorf et al., 2016; Møller, 2015; Yaxley et al., 2024). The SF program received by mothers with good quality, such as a variety of food types and portions that are tailored to the needs of pregnant women, has a positive impact on meeting the nutritional needs of mothers. This is in line with the findings of previous research by Santosa (2020), which showed that the provision of SF in accordance with maternal nutritional standards can prevent the occurrence of CED and improve the nutritional status of pregnant women. In addition, an optimal increase in weight gain in pregnant women plays a role in reducing the risk of low birth weight babies (BBLR), which is often a direct result of CED in pregnant women (Wahyuni, 2021).

Furthermore, the role of communication between health workers and pregnant women in increasing maternal satisfaction with the provision of SF is very influential (Schnettler et al., 2020). This study found that mothers who were satisfied with the SF program tended to have a better understanding of the benefits of SF and how to consume it appropriately (Kurniawan et al., 2024; Lai, 2020). Open and informative communication between health workers and pregnant women increases maternal involvement in the program, ultimately contributing to the success of nutrition interventions. According to Purnama & Soeprapto (2020), effective communication between health workers and pregnant women can improve compliance with nutritional interventions and strengthen the relationship between mothers and health workers, which is very important to improve the health status of mothers and fetuses.

Family support is also a key factor that should not be ignored in ensuring the success of SF delivery (Laraia, 2013; Sundermeir et al., 2021; Tiganis et al., 2023). This study revealed that pregnant women who received emotional and practical support from their families had higher motivation to participate in SF programs regularly. Families who understand the importance of SF for the health of pregnant women and fetuses will support mothers to be more committed to consuming FMD consistently. For example, research by Hernawati (2021) states that families who are actively involved in the care of pregnant women can help reduce the psychological and social barriers that mothers may face during pregnancy. Therefore, health interventions involving families are expected to increase the effectiveness of FMD administration and reduce the prevalence of CED among pregnant women.

Conclusion

This study shows that maternal satisfaction with SF administration has a significant effect on weight gain of pregnant women and the prevention of CED. Factors such as maternal early nutritional status, family support, and effective communication with health workers also support the success of SF administration. Mothers with poor nutritional status need more intensive interventions, while family support strengthens mothers' adherence to SF programs. Overall, a holistic approach, involving mothers, families, and health workers, is essential to prevent CED and improve the health status of pregnant women.

Acknowledgments
We would like to express our deepest gratitude to our advisor who has guided us throughout the research process and to the respondents who have made significant contributions to the success of this study. Your support, guidance, and participation have been invaluable, and we greatly appreciate your effort and dedication. Thank you for your continuous encouragement and for making this research possible.

Author Contributions
F.T., T.S.A., T., and S.R. contributed to conceptualization, data collection process, data processing, and article writing.

Funding
This research was funded by personal funds.

Conflicts of Interest
The authors declare no conflict of interest.

References

Arifin, M. (2022). Peningkatan Status Gizi pada Ibu Hamil Melalui Pemberian PMT. *Jurnal Nutrisi dan Kesehatan*, *11*(1), 78-85.

Back, M., Rodriguez, M., Jayamanne, D., Khasraw, M., Lee, A., & Wheeler, H. (2018). Understanding the Revised Fourth Edition of the World Health Organization Classification of Tumours of the Central Nervous System (2016) for Clinical Decision-Making: A Guide for Oncologists Managing Patients with Glioma. *Clinical Oncology*, *30*(9), 556–562.

https://doi.org/10.1016/j.clon.2018.06.005

Baum, C. M., Verbeke, W., & Steur, H. D. (2022). Turning Your Weakness Into My Strength: How Counter-Messaging on Conventional Meat Influences Acceptance of Cultured Meat. *Food Quality and Preference*, *97*(November 2021), 104485. https://doi.org/10.1016/j.foodqual.2021.104485

Brouwer, A. R., D'Souza, C., Singaraju, S., & Arango-Soler, L. A. (2022). Value Attitude Behaviour and Social Stigma in the Adoption of Veganism: An Integrated Model. *Food Quality and Preference*, *97*(May 2021). https://doi.org/10.1016/j.foodqual.2021.104479

Carvalho, A. S. M., Godinho, C. I. A., & Graça, J. (2022). Gain Framing Increases Support for Measures Promoting Plant-Based Eating in University Settings. *Food Quality and Preference*, *97*(December 2021), 0–3. https://doi.org/10.1016/j.foodqual.2021.104500

Chrysochou, P., Tiganis, A., Trigui, I. T., & Grunert, K. G. (2022). A Cross-Cultural Study on Consumer Preferences for Olive Oil. *Food Quality and Preference*, *97*(November 2021), 104460. https://doi.org/10.1016/j.foodqual.2021.104460

Cuevas, R. P., Guia, A. D., & Demont, M. (2017). Developing a Framework of Gastronomic Systems Research to Unravel Drivers of Food Choice. *International Journal of Gastronomy and Food Science*, *9*(June), 88–99. https://doi.org/10.1016/j.ijgfs.2017.06.001

Dickinson, D. L., & Kakoschke, N. (2022). Corrigendum to "Seeking Confirmation? Biased Information Search and Deliberation in the Food Domain" [Food Qual. Preference 91 (2021) 104189]. *Food Quality and Preference*, *97*(April 2022), 104228. https://doi.org/10.1016/j.foodqual.2021.104228

Dwi, L., & Hidayah, N. (2022). Pemberian Makanan Tambahan untuk Mencegah KEK pada Ibu Hamil. *Jurnal Kesehatan Masyarakat Indonesia*, *16*(1), 88-96.

Ghafoorifard, N., Mesler, R. M. D., & Basil, M. (2022). Economic Hardship, Ontological Insecurity, and Household Food Waste. *Food Quality and Preference*, *97*(September 2021), 104402. https://doi.org/10.1016/j.foodqual.2021.104402

Giacalone, D., Llobell, F., & Jaeger, S. R. (2022). "Beyond Liking" Measures in Food-Related Consumer Research Supplement Hedonic Responses and Improve Ability to Predict Consumption. *Food Quality and Preference*, *97*(May 2021), 104459. https://doi.org/10.1016/j.foodqual.2021.104459

Hadini, A., & Yuliana, T. (2019). Dampak Intervensi Gizi terhadap Perubahan Status Gizi pada Ibu Hamil. *Jurnal Kesehatan Reproduksi*, *11*(2), 200-207.

Hartmann, C., Furtwaengler, P., & Siegrist, M. (2022). Consumers' Evaluation of the Environmental Friendliness, Healthiness and Naturalness of Meat, Meat Substitutes, and Other Protein-Rich Foods. *Food Quality and Preference*, *97*(November 2021), 104486. https://doi.org/10.1016/j.foodqual.2021.104486

Haugaard, P., Stancu, C. M., Brockhoff, P. B., Thorsdottir, I., & Lähteenmäki, L. (2016). Determinants of Meal Satisfaction in a Workplace Environment. *Appetite*, *105*, 195–203. https://doi.org/10.1016/j.appet.2016.05.030

Hernawati, T. (2021). Faktor Psikososial dalam Kepuasan Ibu Terhadap PMT pada Ibu Hamil. *Jurnal Kesehatan Masyarakat*, *15*(2), 102-110.

Hyldelund, N. B., Byrne, D. V., Chan, R. C. K., & Andersen, B. V. (2022). Food Pleasure Across Nations: A Comparison of the Drivers between Chinese and Danish Populations. *Food Quality and Preference*, *97*(December 2021), 104493. https://doi.org/10.1016/j.foodqual.2021.104493

Iuel-Brockdorf, A. S., Draebel, T. A., Ritz, C., Fabiansen, C., Cichon, B., Brix Christensen, V., Yameogo, C., Oummani, R., Briend, A., Michaelsen, K. F., Ashorn, P., Filteau, S., & Friis, H. (2016). Evaluation of the Acceptability of Improved Supplementary Foods for the Treatment of Moderate Acute Malnutrition in Burkina Faso Using a Mixed Method Approach. *Appetite*, *99*, 34–45. https://doi.org/10.1016/j.appet.2015.12.030

Kementerian Kesehatan Republik Indonesia. (2020). *Laporan Tahunan Kesehatan Ibu Hamil*. Jakarta: Kemenkes RI.

Kim, M. A., Hout, D. V., & Lee, H. S. (2018). Degree of Satisfaction-Difference (DOSD) Method for Measuring Consumer Acceptance: Comparative and Absolute Measures of Satisfaction Based on Signal Detection Theory. *Food Quality and Preference*, *68*(November 2017), 167–172. https://doi.org/10.1016/j.foodqual.2018.03.003

Kurniawan, A. C., Rachmawati, N. L., Ayu, M. M., Ong, A. K. S., & Redi, A. A. N. P. (2024). Determinants of Satisfaction and Continuance Intention Towards Online Food Delivery Service Users in Indonesia Post the COVID-19 Pandemic. *Heliyon*, *10*(1), e23298. https://doi.org/10.1016/j.heliyon.2023.e23298

Kusumawati, N. (2020). Program Pemberian Makanan Tambahan (PMT) untuk Ibu Hamil. *Jurnal Kesehatan Indonesia*, *10*(3), 145-152.

Lai, I. K. W. (2020). An Examination of Satisfaction on Word of Mouth Regarding Portuguese Foods in Macau: Applying the Concept of Integrated Satisfaction. *Journal of Hospitality and Tourism Management*, *43*(July 2019), 100–110.

https://doi.org/10.1016/j.jhtm.2020.02.011

Laraia, B. A. (2013). Food Insecurity and Chronic Disease. *Advances in Nutrition*, *4*(2), 203–212. https://doi.org/10.3945/an.112.003277

Lo, A. V. C. A. R., Jaeger, S. R., Graaf, K. D. E., Monteleone, E., Ammann, J., Castura, J. C., & Steur, H. D. (2022). Editorial Board. *Food Quality and Preference*, *97*, 104517. https://doi.org/10.1016/s0950-3293(21)00399-2

Møller, P. (2015). Satisfaction, Satiation and Food Behaviour. *Current Opinion in Food Science*, *3*, 59–64. https://doi.org/10.1016/j.cofs.2015.02.008

Mouritsen, O. G., Duelund, L., Calleja, G., & Frøst, M. B. (2017). Flavour of Fermented Fish, Insect, Game, and Pea Sauces: Garum Revisited. *International Journal of Gastronomy and Food Science*, *9*(May), 16–28. https://doi.org/10.1016/j.ijgfs.2017.05.002

Muhammad, F., & Suryani, M. (2021). Pengaruh Pemberian PMT Terhadap Berat Badan Ibu Hamil di Kabupaten Y. *Jurnal Penelitian Kesehatan*, *14*(3), 135-143.

Otterbring, T., & Bhatnagar, R. (2022). Touch, Threats, and Transactions: Pandemic Influences on Consumer Responses and the Mediating Role of Touch Likelihood When Shopping for Fruits and Vegetables. *Food Quality and Preference*, *97*(November 2021), 104461. https://doi.org/10.1016/j.foodqual.2021.104461

Pankhurst, M., Yaxley, A., & Miller, M. (2021). Identification and Critical Appraisal of Food Service Satisfaction Questionnaires for Use in Nursing Homes: A Systematic Review. *Journal of the Academy of Nutrition and Dietetics*, *121*(9), 1793-1812.e1. https://doi.org/10.1016/j.jand.2021.05.017

Pedersen, M. T., Brewer, J. R., Duelund, L., & Hansen, P. L. (2017). On the Gastrophysics of Jellyfish Preparation. *International Journal of Gastronomy and Food Science*, *9*(May), 34–38. https://doi.org/10.1016/j.ijgfs.2017.04.001

Pramesti, N., & Wulandari, E. (2018). Faktor yang Mempengaruhi Status Gizi Ibu Hamil di Wilayah Kerja Puskesmas X. *Jurnal Gizi Puskesmas*, *19*(1), 15-24.

Purnama, D., & Soeprapto, T. (2020). Pengaruh Kepuasan Ibu Terhadap Pemberian PMT Terhadap Status Gizi Ibu Hamil. *Jurnal Kesehatan Anak*, *16*(2), 221-229.

Ren, L., Yang, F., & Gu, C. (2023). A Study of the Purchase Intention of Insect Protein Food as Alternative Foods for Fitness Proteins. *Heliyon*, *9*(9), e20239. https://doi.org/10.1016/j.heliyon.2023.e20239

Santosa, M. (2020). Efektivitas PMT dalam Mencegah Kekurangan Energi Kronik pada Ibu Hamil. *Jurnal Kesehatan Masyarakat*, *8*(1), 67-75.

Sari, R. (2019). Kualitas Pemberian PMT pada Ibu Hamil dan Peningkatan Berat Badan Ibu. *Jurnal Gizi dan Kesehatan*, *12*(2), 98-105.

Schifferstein, H. N. J., Lemke, M., & Boer, A. D. (2022). An Exploratory Study Using Graphic Design to Communicate Consumer Benefits on Food Packaging. *Food Quality and Preference*, *97*(November 2021), 104458. https://doi.org/10.1016/j.foodqual.2021.104458

Schnettler, B., Hueche, C., Andrades, J., Ares, G., Miranda, H., Orellana, L., & Grunert, K. G. (2020). How is Satisfaction with Food-Related Life Conceptualized? A Comparison between Parents and Their Adolescent Children in Dual-Headed Households. *Food Quality and Preference*, *86*(June), 104021. https://doi.org/10.1016/j.foodqual.2020.104021

Schnettler, B., Miranda-Zapata, E., Orellana, L., Grunert, K. G., Poblete, H., Lobos, G., Adasme-Berríos, C., & Lapo, M. (2022). Work-to-Family Enrichment and Atmosphere of Family Meals Influence Satisfaction with Food-Related Life: An Actor-Partner Interdependence Approach in Dual-Earner Parents with Adolescent Children. *Food Quality and Preference*, *97*. https://doi.org/10.1016/j.foodqual.2021.104471

Seconda, L., Péneau, S., Bénard, M., Allès, B., Hercberg, S., Galan, P., Lairon, D., Baudry, J., & Kesse-Guyot, E. (2017). Is Organic Food Consumption Associated with Life Satisfaction? A Cross-Sectional Analysis from the NutriNet-Santé Study. *Preventive Medicine Reports*, *8*(September), 190–196. https://doi.org/10.1016/j.pmedr.2017.10.014

Sheen, F., Tan, V., Lim, A. J. Y., Haldar, S., Sengupta, S., Allen, D., Somani, J., Chen, H. Y., Tambyah, P., & Forde, C. G. (2022). The COVOSMIA-19 Trial: Preliminary Application of the Singapore Smell and Taste Test to Objectively Measure Smell and Taste Function with COVID-19. *Food Quality and Preference*, *97*(May 2021). https://doi.org/10.1016/j.foodqual.2021.104482

Spence, C. (2017). Comfort Food: A Review. *International Journal of Gastronomy and Food Science*, *9*(July), 105–109. https://doi.org/10.1016/j.ijgfs.2017.07.001

Sundermeir, S. M., Wolfson, J. A., Bertoldo, J., Gibson, D. G., Agarwal, S., & Labrique, A. B. (2021). Food Insecurity is Adversely Associated with Psychological Distress, Anxiety and Depression During the COVID-19 Pandemic. *Preventive Medicine Reports*, *24*, 101547. https://doi.org/10.1016/j.pmedr.2021.101547

Tan, V. W. K., Lim, A. J. Y., McCrickerd, K., & Forde, C. G. (2022). Sensory Profiles and Mothers'

Expectations and Beliefs About Age Appropriate Snacks for Infants and Toddlers in Singapore. *Food Quality and Preference*, *97*(November 2021). https://doi.org/10.1016/j.foodqual.2021.104474

Tiganis, A., Grigoroudis, E., & Chrysochou, P. (2023). Customer Satisfaction in Short Food Supply Chains: A Multiple Criteria Decision Analysis Approach. *Food Quality and Preference*, *104*(October 2022), 104750. https://doi.org/10.1016/j.foodqual.2022.104750

Vries, R. D., Boesveldt, S., Sainz, A. S., Copier, J., & Vet, E. D. (2022). Wired for Harsh Food Environments: Human Spatial Memory Favours the Effortless Location and Consumption of High-Calorie Foods. *Food Quality and Preference*, *97*(November 2021), 104478. https://doi.org/10.1016/j.foodqual.2021.104478

Wahyuni, D. (2021). Dukungan Keluarga dan Kepuasan Ibu Terhadap PMT pada Kehamilan. *Jurnal Kesehatan Terpadu*, *7*(4), 134-142.

Weir, E. M., Reed, D. R., Pepino, M. Y., Veldhuizen, M. G., & Hayes, J. E. (2022). Massively Collaborative Crowdsourced Research on COVID19 and the Chemical Senses: Insights and Outcomes. *Food Quality and Preference*, *97*(November 2021), 104483. https://doi.org/10.1016/j.foodqual.2021.104483

Yaxley, A., Pankhurst, M., Morgillo, S., & Miller, M. (2024). A World-First Food Service Satisfaction Questionnaire for Use with Family Members of Nursing Home Residents: Expanding the Toolkit of Valid and Reliable Aged Care Food Service Satisfaction Questionnaires. *Journal of Nutrition, Health and Aging*, *28*(1), 100015. https://doi.org/10.1016/j.jnha.2023.100015