

OPEN ACCESS MACEDONIAN
JOURNAL OF MEDICAL SCIENCES

ea
mjms
Macedonian Journal of
Medical Sciences



Open access Macedonian journal of medical sciences

NLM Title Abbreviation:Open Access Maced J Med Sci

Title(s) :Open access Macedonian journal of medical sciences.

Other Title(s) :OAMJMS

OA Macedonian journal of medical sciences

Continues :Macedonian journal of medical sciences ISSN 1857-5749

Publication Start Year: 2013

Frequency:Quarterly, 2014-

Country of Publication:North Macedonia

Publisher:Skopje, Republic of Macedonia : ID Design Press, [2013]-

Latest Publisher:Skopje, Republic of Macedonia : Scientific Foundation SPIROSKI

Description:1 online resource

Language: English

ISSN:1857-9655 (Electronic)

1857-9655 (Linking)

LCCN: 2016243269

Electronic Links: <https://www.ncbi.nlm.nih.gov/pmc/journals/2987/>

PubMed Central

<http://www.id-press.eu/mjms/index>

Free Electronic Resource

In: PubMed: v3n1, Mar. 2015-v7n24, Dec. 2019

PMC Inactive

Current Indexing Status: Not currently indexed for MEDLINE.

MeSH: Medicine*

Publication Type(s): Periodical

Notes:Volume 1 complete in one issue.

Numbering from content page.

Other ID:(OCoLC)926183782

NLM ID:101662294 [Serial]

Editorial Team

Journal Manager

Dr. Eli Djulejic, Open Access Macedonian Journal of Medical Sciences, Belgrade, Serbia

Editor-in-Chief

[Prof. Dr. Mirko Zhivko Spiroski](#), Scientific Foundation SPIROSKI, Rajko Zhinzifov No 48,
1000 Skopje, Republic of Macedonia

Section Editors (Deputy Editors-in-Chief)

Dimitrov Borislav D, MD. Academic Unit of Primary Care and Population Sciences Faculty of Medicine University of Southampton South Academic Block (Level C) Southampton General Hospital Southampton SO166YD England, UK

Mukaetova-Ladinska Elizabeta, MD, PhD, MRCPsych. Old Age Psychiatry, Newcastle University, United Kingdom

Branislav FilipoviÄ, MD, PhD. University of Belgrade, Faculty of Medicine, Institute of Anatomy â€œNiko Miljanicâ€•

Address: 4/2 Dr Subotica Starijeg, Belgrade, Serbia

Spiroski Igor, MD. University Clinic of Cardiology, Faculty of Medicine, Ss Cyril and Methodius University of Skopje, Skopje, Republic of Macedonia

Stoleski Sasho, MD, PhD. Institute for Occupational Health of Republic of Macedonia - Skopje, WHO Collaborating Center, GA2LEN Collaborating Center, II Makedonska brigada 43, 1000 Skopje, Republic of Macedonia

Hristomanova-Mitkovska Slavica, MD, MSc. Institute for Human Genetics of the Faculty of Medicine in GÃ¼ttingen, Germany

Bogoeva Ksenija, MD, PhD. PHO Prof Bogoev, Skopje, Republic of Macedonia

Stojanovski, Sinisa, MD, PhD.

Layout Editor and Electronic Publishing

MSc, Eng Ivo Spiroski, ID Design 2012, Skopje, Republic of Macedonia

Copyeditor

Sinjore, India

Evidence Based Medicine

Prof. Dr. Katarina Stavric, Children Hospital Skopje, Macedonia, Vodnjanska 17, University "Ss Cyril and Methodius", Skopje, Republic of Macedonia

Editorial Board

DDS, MS, PhD, Associate Professor Nikola Angelov, Director of the Pre-Doctoral Periodontics Clinic, Loma Linda University School of Dentistry, Department of Periodontics. Loma Linda, CA, 92350, United States

Assist. Prof. Dr. Ramush Bejqi, University Clinical Centre of Kosovo, Paediatric Clinic, Albania

Prof. Semra Aevaljuga, Department of Epidemiology and Biostatistics, Faculty of Medicine, Sarajevo, Bosnia and Herzegovina

MD Pei-Yi Chu, Diagnostic and research pathologist, Department of Surgical Pathology, Changhua Christian Hospital, Taiwan. Address: 135 Nan-Shiao Street, Changhua 500-06,, Taiwan, Province of China

MD, PhD Ivo Donkov, Staff Urologist, Lincoln County Hospital, United Kingdom

MD, PhD Andrew J. Dwork, Departments of Pathology and Cell Biology and Psychiatry, College of Physicians and Surgeons of Columbia University; Division of Molecular Imaging and Neuropathology, New York State Psychiatric Institute, Unit 62, 722 West 168th Street, New York, NY 10032, United States

Adriana Galan, Department of Health Programmes and Health Promotion, Institute of Public Health, Bucharest, Romania

Prof. Tania Santos Giani, Estacio de Sa University, in Health Sciences, Brazil

PhD Iva Ivanovska, Harvard Medical School, Department of Genetics, 77 Avenue Louis Pasteur, NRB room 239, Boston, MA 02115, United States

MD, PhD Jerzy Jabłocki, Associate Professor, Division of General Surgery St. Jadwiga of Silesia Hospital, Trzebnica; Head, Subdepartment of Hand Surgery and Replantation St. Jadwiga of Silesia Hospital, Trzebnica; Professor, Department of Public Health, State Higher Professional Medical School, Opole, Poland. 55-100 Trzebnica, ul. Prusicka 53, Poland

MD Mehrdad Jalalian Hosseini, Khorasan-e Razavi Blood Center, Mashhad, Iran, Islamic Republic of

PhD Radka Kaneva, Department of Medical Chemistry and Biochemistry, Medical University - Sofia, Bulgaria

Prof. Dr. Kostandina Leonida Korneti-Pekevaska, Ss Cyril and Methodius University of Skopje, Faculty of Medicine, Skopje, Republic of Macedonia

MD, PhD Branko Malenica, Department of Immunology, Clinical Hospital Center Zagreb, Zagreb University School of Medicine, Zagreb, Croatia

Prof. Dr. Elida Mitevaska, Institute of Histology and Embriology, Faculty of Medicine, Ss Cyril and Methodius University of Skopje, Skopje, Republic of Macedonia

MD, PhD Marija Mostarica-Stojković, Institute of Microbiology and Immunology, University of Belgrade School of Medicine, Belgrade, Serbia

PhD Vesna Nikolova-Krstevski, Harvard Institutes of Medicine, HIM-201, 4 Blackfan Circle, Boston, MA, 02134, United States

Prof. Dr. Nikola Panovski, Institute of Microbiology and Parasitology, Faculty of Medicine, Skopje, Republic of Macedonia

MD, BIDMC Iva Petkovska, Beth Israel Deaconess Medical Center Radiology W CC - 3 330 Brookline Ave. Boston, MA 02215, United States

Prof. Dr. Gordana Petrusavska, Institute of Pathology, Medical Faculty, University of "Ss. Cyril and Methodius" Skopje, Republic of Macedonia

Prof. Enver Roshi, Dean of Faculty of Public Health, Medical University of Tirane, Chief of Epidemiological Observatory, National Institute of Public Health. Address: Rruga e Dibrës, Str. 371, Tirana, Albania

MD, PhD Gorazd B. Rosoklija, Professor at Columbia University and member of the Macedonian Academy of Sciences and Arts, United States

Prof. Dr. Aleksandar Sikole, University Clinic for Nephrology, Faculty of Medicine, Ss Cyril and Methodius University of Skopje, Skopje, Republic of Macedonia

MD, FESC Gianfranco Sinagra, Department of Cardiology, "Ospedali Riuniti" and University of Trieste, Ospedale Cattinara "Strada di Fiume, 447, 34149 Trieste, Italy

MD, PhD Rumén Stefanov, Information Centre for Rare Diseases and Orphan Drugs (ICRDOD), Bulgaria; Department of Social Medicine, Medical University of Plovdiv, Bulgaria

Prof. Dr. Vesna Velikj Stefanovska, Department of Epidemiology and Biostatistics with Medical Informatics, Medical Faculty, UKIM, Skopje, Republic of Macedonia

MD, MBA Milenko Tanasijevic, Director, Clinical Laboratories Division and Clinical Program Development, Pathology Department, Brigham and Women's Hospital, Dana Farber Cancer Institute, Associate Professor of Pathology, Harvard Medical School, United States

MD, FRCPC Kiril Trpkov, Associate Professor, University of Calgary, Department of Pathology and Laboratory Medicine, Calgary Laboratory Services. 7007 14 st, Calgary SW, Canada

MD, PhD Igor Tulevski, Department of Cardiology, Academic Medical Center, Amsterdam, 1100 DD, T 020 707 2930; F 020 707 2931, Netherlands

Past Members of Editorial Team

Prof. Dr Doncho Donev, Institute of Social Medicine, Medical Faculty, Ss Cyril and Methodius University of Skopje, Skopje, Republic of Macedonia

Prof. Dr Olivera Stojceva Taneva, University Clinic of Nephrology, Republic of Macedonia

Prof. Dr Petar Miloshevski, from 2008-2014, Institute of Preclinical and Clinical Pharmacology with Toxicology, Faculty of Medicine, Skopje, Republic of Macedonia

Prof. Dr Sonja Topuzovska, Institute of Medical and Experimental Biochemistry, Faculty of Medicine, Skopje, Republic of Macedonia

Prof. Dr. Aleksandar Dimovski, Institute of Pharmaceutical Chemistry, Faculty of Pharmacy, University "Ss Kiril and Metodij", Skopje, Republic of Macedonia

PhD Mirko Trajkovski, ETH Zurich, Wolfgang-Pauli-Str. 16/HPT D57, 8093 Zurich-CH, Switzerland

PhD Zoran Zdravkovski, Institute of Chemistry, Faculty of Natural Sciences and Mathematics, Ss Cyril and Methodius University of Skopje, Skopje, Republic of Macedonia

Vol. 9 No. G (2021): G - Nursing

Published: 2021-05-11

Public Health Epidemiology

- **Identification and Analysis of Stunting Risk Factors in Children under Three Years of Age in the Area of Kampar Watershed**

Riski Novera Yenita, Thamrin Thamrin, Bintal Amin, Agrina Agrina (Author)
149-157

◦ [PDF](#)

Nursing in Internal Medicine

- **Health Promoting Behaviors and Risk of Cardiovascular Events among Patients with Cardiovascular Diseases**

Anggi Lukman Wicaksana, Erika Maharani, Hsing-Mei Chen (Author)
135-142

◦ [PDF](#)

- **Protecting Families: A Qualitative Study on the Implementation of Protective Measures to Prevent COVID-19 Transmission**

Ni Komang Ari Sawitri, Indah Mei Rahajeng, Luh Putu Eva Yanti, Ida Ayu Agung Novi Jayanti (Author)
34-40

◦ [PDF](#)

- **Buerger Exercise Reduces the Risk of Neuropathy in People with Diabetes Mellitus**

Laily Hidayati, Ika Nur Pratiwi, Zulfayandi Pawanis, Lisa McKenna, Ika Yuni Widyawati (Author)
94-99

◦ [PDF](#)

- **Sleep Quality among Nurses during the First Year of Coronavirus Disease 2019**

Wafa Ibrahim Alharbi, Amani Mahrus, Shadia Elsayed, Albraa B. Alolayan (Author)
128-134

◦ [PDF](#)

- **The Attitudes of Nurses in the Hospital toward Vulnerable People**

Sri Mulyani, Patricia Suti Lasmani, Azam David Saifullah, Afifah Fawadya, Aisyah Iffah, Shania Pramestya (Author)
57-65

◦ [PDF](#)

- **A Simple Way to Reduce the Risk of Being Exposed to COVID-19 Using Instruments for Children**

Hery Sumasto, Subagyo Subagyo, Bambang Hadi Sugito, Hadi Purwanto, Nurwening Tyas Wisnu (Author)
100-104

◦ [PDF](#)

- **Mindfulness Meditation Based on Spiritual Care to Reduce Community Anxiety due to the Impact of Pandemic Coronavirus Disease**

Siti Nur Hasina, Iis Noventi, P.H. Livana, Dodik Hartono (Author)
41-46

◦ [PDF](#)

- **Nurses' Feelings and Perspectives of the COVID-19 Pandemic: A Qualitative Study in a Developing Country**

Restuning Wideasih, Ermiami Ermiami, Etika Emaliyawati, Sri Hendrawati, Raini Diah Susanti, Titin Sutini, Citra Windani Mambang Sari, Murtiningsih Murtiningsih (Author)
71-80

◦ [PDF](#)

- [Effect of Musical Therapy Langgam Jawa on Pre-chemotherapy Anxiety of Cancer Patients](#)
Febriana Sartika Sari, Winda Fitriani, Innez Karunia Mustikasari, Imam Rosyada, Heni Nur Kusumawati, S. Dwi Sulisetyawati, Ika Subekti Wulandari, Rufaida Nur Fitriana, Mellia Silvy Irdianty (Author)
52-56
○ [PDF](#)
 - [Exploring of Self-management Experience among Health Professional Survivors from Coronavirus Disease 2019 in West Nusa Tenggara, Indonesia](#)
Satriya Pranata, Shu-Fang Vivienne Wu, Hendri Purwadi, Dewa Gede Sanjaya Putra, Herlinda Wulandari, Edy Soesanto (Author)
19-27
○ [PDF](#)
 - [Nurse Perceived of Caring Leadership: A Qualitative Descriptive Study](#)
Ni Made Nopita Wati, R. Tri Rahyuning Lestari, Gita Ayuningtyas, Ni Bodro Ardi, I Gede Juanamasta (Author)
88-93
○ [PDF](#)
 - [The Phenomenon of Family Empowerment in Caring for People with Mental Disorders](#)
Heru Santosa, Nurmaini Nurmaini, Elmeida Effendy, Wardiyah Daulay (Author)
124-127
○ [PDF](#)
 - [Description the Importance of Developing a Self-Reliance Instrument for Schizophrenic Patients in the Hospital Setting](#)
Hanik Endang Nihayati, Rizki Fitriyasaki, Rr Dian Tristiana, Yuli Anggraini, Iskandar Iskandar, Hidayat Arifin (Author)
14-18
○ [PDF](#)
 - [Does Online Counseling Reduce Anxiety in Parents of Children with Autism Spectrum Disorders During Coronavirus Disease 2019 Pandemic?](#)
Nur Eni Lestari, Isti Anindya (Author)
66-70
○ [PDF](#)
 - [The Effect of Modified Diabetes Self-management Education and Support on Self-care and Quality of Life among Patients with Diabetic Foot Ulcers in Rural Area of Indonesia](#)
Dedi Damhudi, Nyoman Kertia, Christantie Effendy (Author)
81-87
○ [PDF](#)
 - [Health Education With Audiovisual Media and Relaxation Massage in Lowering Blood Pressure and Improved Sleep Quality for the Elderly](#)
I Wayan Mustika, Ketut Sudiantara, Agus Sri Lestari (Author)
118-123
○ [PDF](#)
- Nursing in Pediatrics
- [Qualitative Analysis of Family-centered Care for Children with Cancer in Palliative Wards: An Evaluation of Needs and Barriers in Resource-limited Settings](#)
Sumarti Endah Purnamaningsih Maria Margaretha, Sri Mulatsih, Christantie Effendy, Hari Kusnanto (Author)
1-7
○ [PDF](#)

Nursing in Gynecology and Obstetrics

- **The Cultural Assessment Model as an Evaluation Indicator for Nutritional Adequacy in Pregnant Women with Pre-eclampsia**

Awatiful Azza, Cipto Susilo (Author)

143-148

○ [PDF](#)

- **The Relationship between Pregnancy-related Anxiety and Maternal-fetal Attachment among Primigravida**

Anjarwati Anjarwati, Endang Koni Suryaningsih (Author)

47-51

○ [PDF](#)

Emergency Nursing

- **Nurse Support on Health Cadre Empowerment and the Influence on the Ability of Women's Mentoring Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome**

Ernawati Ernawati, Nursalam Nursalam, Shimarti Rukmini Devy, Edy Soesanto, Sri Rejeki (Author)

112-117

○ [PDF](#)

- **Maternal Stressful Experience in Giving Birth to Premature Baby in Neonatal Intensive Care Unit Ward**

Andi Fatmawati Syamsu, A. Dwi Bahagia Febriani, Ema Alasiry, Kadek Ayu Erika, Andi Mardiah Tahir, Isharyah Sunarno (Author)

106-111

○ [PDF](#)

Nursing Informatics

- **Croatian Registered Nurses - Perception of Barriers to Research Utilization: A Cross-sectional Study**

Maja Čebihin, Dragica Pavlović, Robert Smolić, Dijana Hnatešen, Nikolina Farčić, Ksenija Marjanović (Author)

28-33

○ [PDF](#)



The Cultural Assessment Model as an Evaluation Indicator for Nutritional Adequacy in Pregnant Women with Pre-eclampsia

Awatiful Azza^{1*} , Cipto Susilo² 

¹Department of Maternity and Child Nursing, Universitas Muhammadiyah Jember, Jember, Indonesia; ²Cardiovascular Department, Universitas Muhammadiyah Jember, Jember, Indonesia

Abstract

Edited by: Mirko Spiroski
Citation: Azza A, Susilo C. The Cultural Assessment Model as an Evaluation Indicator for Nutritional Adequacy in Pregnant Women with Pre-eclampsia. Open-Access Maced J Med Sci. 2021 Oct 07; 9(G):143-148. <https://doi.org/10.3889/oamjms.2021.6627>
Keywords: Cultural assessment model; Nutrition; Pre-eclampsia
***Correspondence:** Awatiful Azza, Department of Maternity and Child Nursing, Universitas Muhammadiyah Jember, Jember, Indonesia. E-mail: awatiful.azza@unmhjember.ac.id
Received: 13-Jun-2021
Revised: 25-Aug-2021
Accepted: 27-Sep-2021
Copyright: © 2021 Awatiful Azza, Cipto Susilo
Funding: This study was supported by University of Muhammadiyah Jember (Research Project number: 142/II.3.AU/LPPM/Research/2020)
Competing Interest: The authors have declared that no competing interest exists
Open Access: This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0)

BACKGROUND: Pre-eclampsia is one of the complications of pregnancy in many communities with low socioeconomic conditions. The lack of intake of quality nutrition can be a precipitating factor in the occurrence of this complication.

AIM: This study aims to find out the nutritional adequacy for pregnant women through the transcultural model assessment using correlational design and a cross-sectional approach in pregnant women at the third trimester.

MATERIALS AND METHODS: The diagnosis of pre-eclampsia was identified through a blood pressure of 140/90 mmHg and proteinuria. There were 222 samples with purposive sampling. The data were obtained through questionnaires and the interview results were used as secondary data. The data were analyzed using the Chi-square test, odds ratio (OR) with confidence intervals (CI) of 95%, and the alpha value of 0.05.

RESULTS: The analysis of the nutritional adequacy with the incidence of pre-eclampsia confirmed that the carbohydrate with OR of 5.250 (OR = 3.545, 95% CI = 2.098, 13.158), folic acid (OR = 16,838, 95% CI = 2.222, 127.64), and vegetable (OR of 4.00, 95% CI = 1.619, 9.885) which are related to the incidence of pre-eclampsia.

CONCLUSION: The fulfillment of the daily nutrition of pregnant women is greatly influenced by the culture and myth developed in society. An assessment using the transcultural model approach can give a lot of information about the influence of culture in pregnant women's daily life.

Introduction

Pregnancy is a physiological condition in the development of a woman's life [1], [2], [3]. Pre-eclampsia is one of the complications in pregnancy that case is likely to increase and at risk of being a major cause of mortality and morbidity in pregnant women and fetuses both in developed and developing countries [4], [5], [6]. Data on the incidence of pre-eclampsia in the developed countries range from 6% to 7% of all pregnancies, while the prevalence in developing countries goes to 16.7% and is estimated to cause approximately 40–60% of maternal deaths [6], [7], [8]. In Indonesia, the incidence of pre-eclampsia is 128.273 cases (20.22%) in 2019 and causes 24% of maternal mortality [9].

Another impact of pre-eclampsia is growth-related disorders, the development of intrauterine growth retardation [8], [10], [11], and intrauterine fetal death [12], [13]. Pre-eclampsia may occur during the antenatal, intrapartum, and postnatal with symptoms of hypertension, protein in the urine (proteinuria), and edema [6], [14], [15]. Although the cause of pre-eclampsia is still unclear, there seem to be some specific factors such as age, nulliparity, body mass index, mother's diet, hypertension, preexisting, history of pre-eclampsia, kidney disease, and diabetes mellitus [4], [16], [17], [18], [19].

Culture has an important role in the nutritional status of pregnant women because of several beliefs [20],[21], [22]. Habits of excessive food consumption for pregnant women, beliefs about dietary restrictions for pregnant women, and values related to health and religion that have been trusted since childhood can be a risk factor for preeclampsia [23], [24], [25].

An assessment model in pregnant women using the cultural model is one of the ways to find out the problems related to nutrition consumed by pregnant women [26], [27]. The transcultural approach is the cultural background oriented, such as values, beliefs, rules of behavior, and lifestyle practices that become the benchmark for thinking and acting [26], [28]. The mother needs social support during pregnancy to trigger her confidence to be well-prepared before having childbirth [29]. This study aims to find out the nutritional adequacy for pregnant women through the transcultural model assessment.

Materials and Methods

This study used a correlational design with a cross-sectional approach in pregnant women at trimester intended

to analyze the Transcultural Model Assessment (Figure 1) as an Indicator of Analysis the Evaluation of Nutritional Adequacy in Pregnant Women with Pre-eclampsia.

Data collection was performed in the unit of outpatient hospital referral for pre-eclampsia cases from June 2019 to June 2020. All pregnant women who came to the unit were the population in this study, the sampling technique was purposive sampling with the inclusion criteria of gestational age more than 28 weeks, with a sample of 222 pregnant women. Assessment of the diagnosis of pre-eclampsia was identified by measuring blood pressure of 140/90 mmHg or higher at least two measurements 4 h apart at gestational age over 20 weeks of gestation and laboratory diagnosis taken from urine showing protein excretion.

The data include primary data and secondary data. The first is obtained directly from pregnant women as a source of data through a questionnaire about eating habits in the past 3 months using the transcultural assessment is an assessment of family daily eating habits based on cultural values and dietary restrictions in families for pregnant women and interviews. The latter was obtained through document study of medical records or visiting cards.

The data analysis was performed using the Chi-square test, odds ratio (OR) with 95% confidence intervals (CI), and the alpha value of 0.05. To complement this study, the researchers presented quantitative data in the table of frequency on the results of culture and habits mapping of food consumption in pregnant women during pregnancy.

Ethical considerations

This study was approved by the Ethics Committee of the Faculty of Health Sciences, Muhammadiyah University of Jember (Number 307/KEPK/FIKES/IX/2020). Respondents were previously informed of the aims and procedures of the study. Furthermore, participation is voluntary with written informed consent obtained.

Results

Characteristics of pregnant women

The characteristics of pregnant women are presented in Table 1.

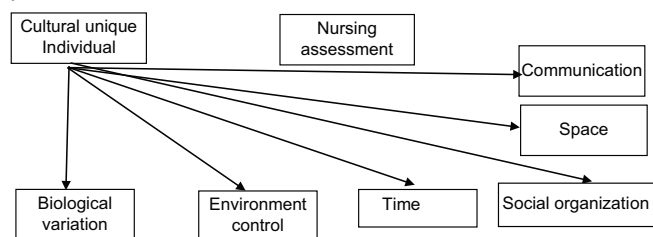


Figure 1. Giger and Davidizar's Transcultural assessment model [30]

Table 1: The characteristics of pregnant women by age, educational background, occupation, household income, religion, ethnicity, and family structure (n = 222)

Variable	Frequency	%
Age		
<20	24	10.8
20–30	98	44.1
>30	100	45
Educational background		
Primary school	95	42.6
Junior high school	60	26.9
Senior high school	55	24.7
Higher education	12	5.4
Occupation		
Housewife	192	86.1
Laborer	21	9.5
Entrepreneur/self-employer	7	3.2
Civil servant	2	9
Household income		
<2 million rupiah	195	87.4
2–3 million rupiah	24	10.8
>3 million rupiah	3	1.4
Religion		
Islam	220	99.1
Christian	2	9
Ethnicity		
Javanese	40	18
Madurese	180	81.1
Other	2	0.9
Family structure		
Core family	82	36.8
Extended family	132	59.5
Joint family (living under one roof with own parents/parents-in-law)	8	3.6
Sub-total	222	100

Characteristics of nutritional adequacy by the cultural assessment

The characteristics of nutritional adequacy in pregnant women by daily nutrition are presented in Table 2.

Analysis of nutritional adequacy and incidence of pre-eclampsia

Analysis of nutritional adequacy and incidence of pre-eclampsia is presented in Table 3.

Based on the analysis of nutritional adequacy with the incidence of pre-eclampsia, the types of food (i.e., carbohydrates with p = 0.00 and the OR 5.250, protein with p = 0.004 (OR = 3.545, 95% CI = 2.098, 13.158), folic acid with p = 0.00 (OR = 16.838, 95% CI = 2.222, 127.64), and vegetable with p = 0.001 (OR of 4.00, 95% CI = 1.619, 9.885) are closely related to the incidence of pre-eclampsia in pregnant women. For those whose daily diet is excess of carbohydrates, there was a chance of pre-eclampsia 5.25 times compared to those whose daily menu is less carbohydrates. Those whose daily menu less was less in folic acid would be at risk of 17.667 times undergoing pre-eclampsia.

The result of beliefs and cultural practices during pregnancy such as the assessment of culture in support of the nutritional adequacy in pregnant women is presented in Table 4 while the assessment of prohibitions/abstinence on daily nutrition during pregnancy is listed in Table 5.

Table 2: Tabulation of frequency on characteristics of nutritional adequacy in pregnant women by daily nutrition (n = 222)

Variable of nutrition	Frequency		Mean	Standard deviation	Kurtosis
	Deficient	Sufficient			
Carbohydrates (rice, potatoes, sweet potatoes, corn)	43	179	1.8063	0.396	0.440
Protein (tofu, tempeh, eggs, fish, meat)	55	167	1.7523	0.432	0.621
Folic acid (sea fish, vitamins)	132	90	1.4054	0.492	-1.866
Fruit (all types of fruit)	10	212	1.9550	0.207	17.67
Milk (fresh milk, yogurt, formula milk)	102	120	1.5405	0.499	-1.991
Vegetables (all types of vegetables)	51	171	1.7703	0.421	-0.329
Calcium (calc)	119	103	1.4640	0.499	-1.997

Table 3: Analysis of nutritional adequacy and incidence of pre-eclampsia (n = 222)

Variable	Not pre-eclampsia	Pre-eclampsia	p-value	OR	CI 95%	
					Lower	Upper
Carbohydrate						
Deficient	11	32	0.00	5.250	2.098	13.158
Sufficient	11	168				
Protein						
Deficient	11	44	0.004	3.545	1.441	8.722
Sufficient	11	156				
Folic acid						
Deficient	21	111	0.00	16.838	2.222	127.64
Sufficient	1	89				
Fruits						
Deficient	10	0	0.00	17.667	10.197	30.607
Sufficient	12	200				
Milk						
Deficient	11	91	0.688	1.198	0.496	2.890
Sufficient	11	109				
Vegetables (all types of vegetables)						
Deficient	11	40	0.001	4.00	1.619	9.885
Sufficient	11	160				
Calcium (calc)						
Deficient	11	108	0.721	0.852	0.353	2.055
Sufficient	11	92				

Discussion

Pregnancy is a period that requires more attention, especially in the fulfillment of the nutritional needs of the mother and the fetus [31], [32]. Therefore, pregnant women require nutritious food to make themselves and their baby safe, especially during the conception period that consists of protein, vitamins, calcium, folic acid, and energy [15].

Table 4: Assessment of culture in support of the nutritional adequacy in pregnant women

Activities	Often	Rarely	Never
I got my pregnancy checked in a dukun	18	150	54
Parents/mother-in-law taught me about nutrition fulfillment during pregnancy	198	24	0
Community leaders taught me good culture for pregnant women	178	40	4
I ate to satiate during my pregnancy	169	37	16
I violated the culture of food consumption habits during my pregnancy	112	12	100
I violated the culture of food consumption habits during my pregnancy	180	40	2
The culture I profess prohibits pregnant women from consuming sea fish and shrimp	127	75	20
My family has important roles in deciding on food consumption during pregnancy	113	78	31
Pregnant women must obey the culture in society	180	22	20
Pregnant women should not consume supplements for blood since it can cause high blood pressure	89	68	65
I consume an alcoholic drink	0	0	222
I have to hold the 7 th month pregnancy salvation	157	60	8
The food I consume must be cooked first	193	27	2
My religion forbids to consume non-halal food	222	0	0
The types of food for eating habits in my family consist of rice, vegetables, and side dishes	222	0	0
I consume foods that contain calcium in my daily menu (e.g. yogurt, milk, cheese)	15	89	118
I consume foods that contain folic acid in my daily menu (e.g. vegetables, broccoli, tomatoes, cereals, avocados)	45	98	78
I avoid consuming food prohibited by my culture during pregnancy	197	14	11

During the period of pregnancy, pregnant women need an extra intake of calories of 300–400 kcal per day [32], [33]. They should consume balanced daily nutrition to prevent them from the excess energy that leads to the risk of obesity during pregnancy [14], [15], [34]. The results of this study indicated that the consumption of daily nutrition containing carbohydrates is associated with the incidence of pre-eclampsia with the p = 0.00 (OR = 3.545, 95% CI = 2.098, 13.158). Consuming nutritious food during pregnancy is needed to get energy and support the growth and development of the fetus in the womb. However, a diet with excess carbohydrates will be at risk for pregnant women.

The need for folic acid in pregnant women, especially a few weeks before and after the beginning of pregnancy, is important for the growth of the fetus, the embryo requires folic acid for the formation of the nervous system and cells [35], [36]. An additional 400 µg of folic acid per day is necessary during the first trimester of pregnancy [24]. The results of this study showed that p = 0.00 (OR = 16.838, 95% CI = 2.222, 127.64) has a close correlation with the consumption of folic acid and the incidence of pre-eclampsia. Those who had a daily

Table 5: Prohibitions/abstinence on food to be obeyed by pregnant women during the pregnancy

Prohibitions/abstinence to consume	Effects believed by pregnant women
Ice	Faster growth (big) when toddler years and gradually become small
Meatball	The baby has a big body
<i>Archidendron pauciflorum</i>	The baby smells bad
Pineapple	Miscarriage
Salted fish	Itching on the mother
<i>Thunnini</i> and <i>Sardina pilchardus</i>	Bleeding
Banana	Womb displacement
Noodles	Womb displacement
Jackfruit	Womb displacement
Fruits with coincide structure	Conjoined (Siamese) twins

Source: Primary data.

menu with less folic acid have a risk of 16,838 times of pre-eclampsia.

According to a research team led by a researcher at Ottawa University, the intake of balance folic acid plays an important role in the development of the placenta [23]. Folic acid has benefits for the formation of endothelial cells, special cells lining the blood vessels throughout the body, and placenta. Other nutrients needed by pregnant women during pregnancy are 60 g of protein per day (more than 10 g than usual intake) [8], [15]. Protein can be obtained from meat, fish, egg white, legumes, tofu, tempeh, etc. [16]. The consumption of 1000 mg calcium per day is required to maintain the growth of bones and teeth, muscle contraction, and nervous system [37]. Vitamin A is beneficial for the maintenance of skin, eye function, and bone growth. Iron (Fe) is necessary for blood formation [38]. Vitamin C is beneficial to facilitate the absorption of Fe by the body, in addition to maintaining the health of teeth and gums [15], [39].

Pregnancy leads to an increase in energy metabolism since it needs energy and other nutrients during pregnancy [40]. The increase in energy and nutrients is required for fetal growth and development, the magnitude of organ content, changes in the composition, and metabolism of the mother's body. Accordingly, the lack of certain nutrients in pregnant women may cause risks and complications in their bodies. Many factors may affect the pattern of consumption for daily nutrition in pregnant women, one of them is cultural practices developed and believed in society [33].

In some regions of Indonesia, cultural practices related to pregnancy are preserved. Many rules and myths about abstinence developed in society and it highly affects pregnant women and their families in preparing for the daily menu [32]. The cultural assessment model is appropriate to be used to find out both the positive and negative effects, thus, it can identify the nutritional problems in the community. The concept of cultural assessment adopts the theory of Giger and Davidhizar transcultural assessment model [41], [42], [43].

Leininger (Tomey and Alligood, 2006) said that culture has vast effects on the lives of a family. This may have effects on the health behaviors of the family that includes the habits of daily living, work, social interactions, and health practices. Beliefs, values, culture, and norms that exist within the family may also affect the health of the family [44].

Conclusion

The fulfillment of daily nutrition in pregnant women is greatly affected by culture and myths developed and believed in society. The assessment

using the transcultural model can give a lot of information about the effects of culture in the daily life of pregnant women.

References

1. Warriner S. Pregnancy and body mass index (BMI). *Oxford Univ Hosp*. 2016;50:1-10.
2. Magee LA, Pels A, Helewa M, Rey E, von Dadelszen P, Canadian Hypertensive Disorders of Pregnancy (HDP) Working Group. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. *Pregnancy Hypertens*. 2014;4(2):105-45. <https://doi.org/10.1016/j.preghy.2014.01.003> PMID:26104418
3. Prasetyo B, Winardi B, Pranadyan R, Erlin H, Damayanti MA, Yusuf M, *et al*. Increasing of early high-risk pregnancy detection with proactive intervention in Bangkalan district, Madura Indonesia. *J Glob Pharm Technol*. 2020;12(6):26-31.
4. Rawlins B, Plotkin M, Rakotavao JP, Getachew A, vaz M, Ricca J, *et al*. Screening and management of pre-eclampsia and eclampsia in antenatal and labor and delivery services: Findings from cross-sectional observation studies in six sub-Saharan African countries. *BMC Pregnancy Childbirth*. 2018;18(1):346. <https://doi.org/10.1186/s12884-018-1972-1> PMID:30139342
5. Karampas GA, Eleftheriades MI, Panoulis KC, Rizou MD, Haliassos AD, Metallinou DK, *et al*. Prediction of pre-eclampsia combining NGAL and other biochemical markers with Doppler in the first and/or second trimester of pregnancy. A pilot study. *Eur J Obstet Gynecol Reprod Biol*. 2016;205:153-7. <https://doi.org/10.1016/j.ejogrb.2016.08.034> PMID:27599094
6. Al-Rubaie ZT, Hudson HM, Jenkins G, Mahmoud I, Ray JG, Askie LM, *et al*. Prediction of pre-eclampsia in nulliparous women using routinely collected maternal characteristics: A model development and validation study. *BMC Pregnancy Childbirth*. 2020;20(1):23. <https://doi.org/10.1186/s12884-019-2712-x> PMID:31906891
7. Amin O, Tasnim N, Naeem S. Prevention of pre-eclampsia with low dose aspirin in primigravida. *Women's Health*. 2020;9(1):28-32. <https://doi.org/10.15406/mojwh.2020.09.00264>
8. Burton GJ, Redman CW, Roberts JM, Moffett A. Pre-eclampsia: Pathophysiology and clinical implications. *BMJ*. 2019;366:1-15. <https://doi.org/10.1136/bmj.l2381>
9. Statistics H. Profil Kesehatan Indonesia 2020, Pusat Data dan Informasi Profil Kesehatan Indonesia. Jakarta: Kementerian Kesehatan; 2020. <https://doi.org/10.6066/jtip.2013.24.2.121>
10. de Souza Rugolo LM, Bentlin MR, Trindade CE. Preeclampsia: Effect on the fetus and newborn. *Neoreviews*. 2011;12(4):e198-206. <https://doi.org/10.1542/neo.12-4-e198>
11. Park HJ, Shim SS, Cha DH. Combined screening for early detection of pre-eclampsia. *Int J Mol Sci*. 2015;16(8):17952-74. <https://doi.org/10.3390/ijms160817952> PMID:26247944
12. El Sayed SL, Desoky MM. Effect of lifestyle alteration of pregnant women with mild preeclampsia on maternal and fetal status. *JOJ Nurse Health Care*. 2019;10(1):1-7.
13. Nooh AM, Abdeldayem HM. Changes in platelet indices during pregnancy as potential markers for prediction of preeclampsia development *Open J Obstet Gynecol*. 2015;5(12):703-12.

- <https://doi.org/10.4236/ojog.2015.512099>
14. Aparicio E, Jardí C, Bedmar C, Pallejà M, Basora J, Arija V, *et al*. Nutrient intake during pregnancy and post-partum: ECLIPSES study. *Nutrients*. 2020;12(5):1325. <https://doi.org/10.3390/nu12051325>
PMid:32392706
 15. Samur G, Akkuş OO, Ede G, Ayaz A, Akyol A, Akkuş M, Danişman N. Nutritional status among women with preeclampsia and healthy pregnant women. *Prog Nutr*. 2016;18(4):360-8.
 16. Mousa A, Naqash A, Lim S. Macronutrient and micronutrient intake during pregnancy: An overview of recent evidence. *Nutrients*. 2019;11(2):443. <https://doi.org/10.3390/nu11020443>
PMid:30791647
 17. Fox R, Kitt J, Leeson P, Aye CY, Lewandowski AJ. Preeclampsia: Risk factors, diagnosis, management, and the cardiovascular impact on the offspring. *J Clin Med*. 2019;8(10):1625. <https://doi.org/10.3390/jcm8101625>
PMid:31590294
 18. Berliana SM, Kristinadewi PA, Rachmawati PD, Fauziningtyas R, Efendi F, Bushy A. Determinants of early marriage among female adolescent in Indonesia. *Int J Adolesc Med Health*. 2021;33(1):32-44. <https://doi.org/10.1515/ijamh-2018-0054>
 19. Ulhaq RA, Anis W, Fatmaningrum W, Akbar MI. Association between pre-pregnancy body mass index and gestational weight gain and the risk of preeclampsia: A systematic review and meta-analysis. *Asian Pac J Reprod*. 2021;10(1):1-10. <https://doi.org/10.4103/2305-0500.306431>
 20. oast E, Jones E, Lattof SR, Portela A. Effectiveness of interventions to provide culturally appropriate maternity care in increasing uptake of skilled maternity care: A systematic review. *Health Policy Plan*. 2016;31(10):1479-91. <https://doi.org/10.1093/heapol/czw065>
PMid:27190222
 21. Khowaja AR, Qureshi RN, Sheikh S, Zaidi S, Salam R, Sawchuck D, *et al*. Community's perceptions of pre-eclampsia and eclampsia in Sindh Pakistan: A qualitative study. *Reprod Health*. 2016;13 Suppl 1:36. <https://doi.org/10.1186/s12978-016-0136-x>
PMid:27357953
 22. Diana R, Rachmah Q. Nutrition intervention of pregnant adolescents: A systematic review. *Nutr Food Sci*. 2020;51(2):234-43. <https://doi.org/10.1108/nfs-03-2020-0096>
 23. Schoenaker DA, Soedamah-Muthu SS, Mishra GD. The association between dietary factors and gestational hypertension and pre-eclampsia: A systematic review and meta-analysis of observational studies. *BMC Med*. 2014;12:157. <https://doi.org/10.1186/s12916-014-0157-7>
PMid:25241701
 24. Symington EA, Baumgartner J, Malan L, Zandberg L, Ricci C, Smuts CM. Nutrition during pregnancy and early development (NuPED) in urban South Africa: A study protocol for a prospective cohort. *BMC Pregnancy Childbirth*. 2018 24;18(1):308. <https://doi.org/10.1186/s12884-018-1943-6>
PMid:30041623
 25. Dewi NU, Mahmudiono T. Effectiveness of food fortification in improving nutritional status of mothers and children in Indonesia. *Int J Environ Res Public Health*. 2021;18(4):2133. <https://doi.org/10.3390/ijerph18042133>
PMid:33671696
 26. Morente F, Ferràs X, Žižlavský O. Cultural innovation models: review and proposal for next steps cultural models of innovation. *Univ Empres*. 2018;20(4):53-81. <https://doi.org/10.12804/revistas.urosario.edu.co/empresa/a.5433>
 27. Campinha-Bacote J. The process of cultural competence in the delivery of healthcare services: A model of care. *J Transcult Nurs*. 2002;13(3):181-4; discussion 200-1. <https://doi.org/10.1177/10459602013003003>
PMid:12113146
 28. Akeju DO, Vidler M, Oladapo OT, Sawchuck D, Qureshi R, von Dadelszen P, *et al*. "Community perceptions of pre-eclampsia and eclampsia in Ogun state, Nigeria: A qualitative study. *Reprod Health*. 2016;13 Suppl 1:57. <https://doi.org/10.1186/s12978-016-0134-z>
PMid:27357695
 29. Sami J, Quack Lötscher KC, Eperon I, Gonik L, de Tejada BM, *et al*. Giving birth in Switzerland: A qualitative study exploring migrant women's experiences during pregnancy and childbirth in Geneva and Zurich using focus groups. *Reprod Health*. 2019;16(1):112. <https://doi.org/10.1186/s12978-019-0771-0>
PMid:31331344
 30. Im EO, Lee Y. Transcultural nursing: Current trends in theoretical works. *Asian Nurs Res (Korean Soc Nurs Sci)*. 2018;12(3):157-65. <https://doi.org/10.1016/j.anr.2018.08.006>
PMid:30179700
 31. Roberts JM, August PA, Bakries J, Barton JR, Beirstain IM, Druzin M, *et al*. ACOG Guidelines: Hypertension in Pregnancy; 2012.
 32. Ghosh S, Ghosh S. Maternal health and nutrition. *Nutr Child Care A Pract Guid*. 2004;1:9.
 33. Koenig MD. Nutrient intake during pregnancy. *J Obstet Gynecol Neonatal Nurs*. 2017;46(1):120-2.
PMid:27875675
 34. Joewono HT, Sulistyono A, Haslinda Y, A. Maternal and perinatal outcome of women with obesity in pregnancy. *Syst Rev Pharm*. 2020;11(2):690-4.
 35. Gebreweld A, Tsegaye A. Prevalence and factors associated with anemia among pregnant women attending antenatal clinic at St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia. *Adv Hematol*. 2018;2018:3942301. <https://doi.org/10.1155/2018/3942301>
PMid:30245724
 36. Lowe SA, Bowyer L, Lust K, McMahon LP, Morton M, North RA, *et al*. The SOMANZ Guideline for the Management of Hypertensive Disorders of Pregnancy, SOMANZ Guidelines; 2014. p. 8.
 37. Brion MJ, Ness AR, Rogers I, Emmett P, Cribb V, Smith GD, *et al*. Maternal macronutrient and energy intakes in pregnancy and offspring intake at 10 y: Exploring parental comparisons and prenatal effects. *Am J Clin Nutr*. 2010;91(3):748-56. <https://doi.org/10.3945/ajcn.2009.28623>
PMid:20053880
 38. Oh C, Keats EC, Bhutta ZA. Vitamin and mineral supplementation during pregnancy on maternal, birth, child health and development outcomes in low-and middle-income countries: A systematic review and meta-analysis. *Nutrients*. 2020;12(2):491. <https://doi.org/10.3390/nu12020491>
PMid:32075071
 39. Fogacci S, Fogacci F, Banach M, Michos ED, Hernandez AV, Lip GY, *et al*. Vitamin D supplementation and incident preeclampsia: A systematic review and meta-analysis of randomized clinical trials. *Clin Nutr*. 2020;39(6):1742-52. <https://doi.org/10.1016/j.clnu.2019.08.015>
PMid:31526611
 40. Meija L, Rezeberga D. Guidelines: Proper Maternal Nutrition during Pregnancy Planning and Pregnancy: A Healthy Start in Life Recommendations for Health Care Specialists-WHO-OMS. Geneva: World Health Organization; 2017. p. 1-31.
 41. Lee SE, Lee MH, Peters AB, Gwon SH. Assessment of patient safety and cultural competencies among senior


-
- baccalaureate nursing students. *Int J Environ Res Public Health*. 2020;17(12):4225. <https://doi.org/10.3390/ijerph17124225>
PMid:32545746
42. Kaihlanen AM, Hietapakka L, Heponiemi T. Increasing cultural awareness: Qualitative study of nurses' perceptions about cultural competence training. *BMC Nurs*. 2019;18:38. <https://doi.org/10.1186/s12912-019-0363-x>
- PMid:31440116
43. Hussen SA, Kuppalli K, Castillo-Mancilla J, Bedimo R, Fadul N, Oforokun I. Cultural competence and humility in infectious diseases clinical practice and research. *J Infect Dis*. 2020;222 Suppl 6:S535-42. <https://doi.org/10.1093/infdis/jiaa227>
PMid:32926742
44. Bengre A. Transcultural nursing: Cultural competence in nurses. *Int J Nurs Educ*. 2012;4(1):5-7.

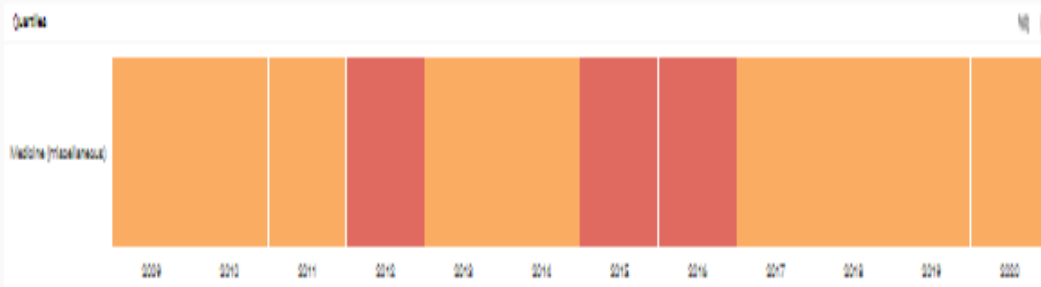
Open Access Macedonian Journal of Medical Sciences


COUNTRY	SUBJECT AREAS AND CATEGORY	PUBLISHER	H-INDEX
Macedonia	Medicine ↳ Medicine (miscellaneous)	Open Access Macedonian Journal of Medical Sciences	17
			
PUBLICATION TYPE	ISSN	COVERAGE	
Journal	1857-9622	2016-2022	

SCOPE

Information not loaded

 Join the conversation about this journal



FIND SIMILAR JOURNALS 

options |

1 Journal of Clinical and Diagnostic Research IND	2 Journal of International Medical Research GBR	3 Medicina CHE	4 Advances in Clinical and Experimental Medicine POL	5 Medicine (United States) USA
---	---	----------------------	--	--------------------------------------

Ads by Google

[Stop seeing this ad](#) [Why this ad?](#)