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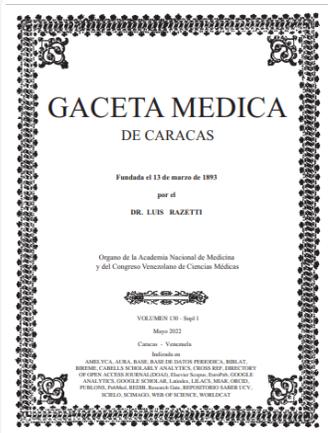
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Inicio (http://caelum.ucv.ve/ojs/index.php/rev_gmc/index)/ Archivos (http://caelum.ucv.ve/ojs/index.php/rev_gmc/issue/archive) / Vol. 130 Núm. 1 S (2022)

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Información

Para lectores/as

(http://caelum.ucv.ve/ojs/index.php/rev_gmc/informacion)

Para autores/as

(http://caelum.ucv.ve/ojs/index.php/rev_gmc/informacion)

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Navegar

NÚMERO COMPLETO

Acceso a la Revista completa GMC 130 Suplemento (1)2022
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23853)

Gaceta Médica

ÍNDICE

Ver el contenido del presente número en español
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23854)

Gaceta Médica

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23854/144814490062)

INDEX

Ver el contenido del presente número en inglés
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23855)

Gaceta Médica

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23855/144814490063)

ACADÉMICOS

Junta Directiva, Individuos de Número, Miembros Correspondientes Nacionales y Extranjeros, Invitados de Cortesía y Comisiones de la ANM
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23856)

Gaceta Médica

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23856/144814490064)

COMITÉ EDITORIAL

Comité Editorial de la Gaceta Médica de Caracas (Editorial Board)
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23857)

Gaceta Médica

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23857/144814490065)

COMISIONES CIENTÍFICAS

Comisiones Científicas para el bienio 2020-2022
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23858)

Gaceta Médica

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23858/144814490066)

NORMAS

Revise las Normas para los autores de publicaciones en la Gaceta Médica de Caracas (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23859)

Gaceta Médica

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23859/144814490067)

EDITORIAL

Innovative Research in Medicine and Health Sciences to Responses the Health Challenges (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23860)

Ferry Efendi

S1-S2

CASOS CLÍNICOS

Solitary Fibrous Tumor/Hemangiopericytoma of the Ovary: A Rare Case Report and Literature Review. (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23861)

Nurwiyeni Nurwiyeni, Tofrizal Tofrizal, Meta Zulyati Oktora

S3-S6

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23861/144814490068)

Immature Teratoma Ovarium in Young Women: Two Case Reports and Literature Reviews (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23862)

Ni Putu Ekawati, I Wayan Juli Sumadi, Ni Made Mahastuti, I Made Wirya Santosa

S7-S14

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23862/144814490069)

Poorly Differentiated Thyroid Carcinoma: A Case Report (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23863)

I Gusti Ayu Sri Mahendra Dewi, I Made Wirya Sastra, Herman Saputra, Ni Putu Ekawati

S15-S22

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23863/144814490070)

Ameboma of the Ascending Colon (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23865)

Lily Lucia Loho, Feronika Durry Meilany, Leopold Jim Edwin

S23-S25

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23865/144814490072)

Adenosquamous Carcinoma of the Cervix in a 48-Year-Old Woman: A Case Report (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23866)

Fadhilaturrehmi Fadhilaturrehmi, Lidya Imelda Laksmi

S26-S30

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23866/144814490073)

Secretary Carcinoma of the Breast in a 24-Year-Old Woman: A Case Report (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23868)

Fadhilaturrehmi Fadhilaturrehmi, Delyuzar Delyuzar

S31-S35

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23868/144814490075)

Type-A Thymoma in a 56-Year-Old Male: A Case Report (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23869)

I Gusti Ayu Sri Mahendra Dewi, Ivana Juliarty Sitanggang, Anak Agung Ayu Ngurah Susraini, Ni Wayan Winarti

S36-S41

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23869/144814490076)

Endometrial Clear Cell Carcinoma: A Case Report. (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23871)

I Gusti Ayu Sri Mahendra Dewi, Ni Kadek Ayu Maya Damayanti, Ni Putu Ekawati, Luh Putu Iin Indrayani Maker

S42-S48

Mucinous Adenocarcinoma (Signet Ring Cell Carcinoma) of the Urinary Bladder in Young Male: A Case Report (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23877)Ni Wayan Winarti, Tjandra Kristiana, Ni Putu Sriwidayani, I Wayan Juli Sumadi
S49-S55PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23877/144814490083)**ARTÍCULOS ORIGINALES****Association between Cytologic Features of Tuberculous Lymphadenitis and CD4 Levels** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23880)Delyuzar Delyuzar, Restuti Hidayani Saragih
S56-S59PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23880/144814490086)**Cut-off Point of Ki-67 Proliferation Marker in Differentiating Premalignant and Malignant Prostatic Lesions** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23884)Lidya Imelda Laksmi, Syafrudin Ilyas, Nurjati Chairany Siregar, Arlinda Sari Wahyunio
S60-S63PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23884/144814490090)**Well-Differentiated Neuroendocrine Tumor of the Appendix** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23885)Meilany Feronika Durry, Poppy Magdalena Lintong
S64-S67PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23885/144814490091)**Correlation of Her-2 Expression with Clinicopathological Characteristics in Invasive Ductal Breast Cancer Patients** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23886)Fitriani Lumongga, Esther Reny Deswani Sitorus, Juliandi Harahap
S68-S72PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23886/144814490092)**Clinicopathological Profile of Patients with Bladder Lesions in Sanglah Hospital during the Period 2013-2017** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23887)Ni Wayan Winarti, Luh Ayu Widayanti
S73-S78PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23887/144814490093)**The Correlation between KRAS/NRAS Mutation Status and some Clinicopathologic Prognostic Factors of Colorectal Carcinoma** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23888)Loli Devianti, Salmiah Agus, Anbiar Manjas
S79-S86PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23888/144814490094)**Stem cell-like Subtypes in Triple-Negative Breast Cancer.** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23889)Betty Betty, Delyuzar Delyuzar
S87-S94PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23889/144814490095)**The Effect of Cigarette Smoke Exposure Time Difference on the Histopathological Images of Mice Lungs (Mus musculus)** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23890)I Nyoman Sasputra, Herman Pieter Louis Wungouw, Wylie Medwin Lulan
S95-S100PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23890/144814490096)**An Overview of Anxiety Levels in Pregnant Women During the COVID-19 Pandemic** (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23891)Nova Elok Mardliyah, Irma Maya Puspita, Awwalul Wiladatil Qodliyah, Yuanita Wulandari
S101-S106

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23891/144814490097)

Somatosensory Stimulation of The Foot Versus Tai Chi to Improve Dynamic Balance in The Elderly (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23892)

Khabib Abdullah, Atik Swandari, Anastasia Putu Mharta Anggarani, Siti Aisyah
S107-S112

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23892/144814490098)

Psychoeducation with The Small Group Discussion Approach Increases Knowledge of Parents in Caring for Children with Autism and Aggressive Behavior (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23893)

Reliani Reliani, Nugroho Ari Wibowo, Zaimatun Zuhroh, Ade Susanty, Chlara Yunita Prabawati
S113-S118

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23893/144814490099)

The Effect of Yophytta Exercise for Shortening the Second Stage of Labour in Primigravidas (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23894)

Supatmi Supatmi, Intan Permatasari, Fathiya Luthfil Yumni, Aryunani Aryunani
S119-S124

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23894/144814490100)

Phytochemical analysis and antioxidant activities using DPPH (1,1-Diphenyl-2-Picrylhydrazine) assay of Averrhoa bilimbi L. growing in Indonesia (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23896)

Ria Hanistya, Fuad Muzakky, Subhan Rullyansyah, Karima Samlan, Rahma Widiastuti
S125-S130

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23896/144814490101)

Anxiety and Behavior of Breastfeeding Mothers During the COVID-19 Pandemic in Surabaya Indonesia (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23897)

Fulatul Anifah, Syuhrotut Taufiqoh, Umi Ma'rifah, Supatmi Supatmi
S131-S136

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23897/144814490102)

Education, Income and Parenting Patterns in relation to Toddler Temper Tantrum Incidents and Parents Using Smartphones (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23898)

Pipit Festi Wiliyanarti, Priska Indah Riswanti, Reliani Reliani, Erfan Rofiqi, Annisa' Wigati Rozifa
S137-S142

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23898/144814490103)

Phytochemical Screening and Evaluation of Red Ginger Extracts on Aphrodisiac Activity (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23899)

Subhan Rullyansyah, Fuad Muzakky, Karima Samlan, Ria Hanistya, Ellies Tunjung Sari Maulidiyanti
S143-S148

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23899/144814490104)

Analysis of Albumin Levels in Cork and Eel Fish Using the Spectrophotometry Method (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23900)

Siti Mardiyah, Olifia Mei Wulandari, Puspitasari Puspitasari, Nur Vita Purwaningsih, Etik Wahyuningsih
S149-S155

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23900/144814490105)

The Effect of Giving a Hot Pack to Grade Shivering in Post-Operative Patients Following a Cesarean Section in the Recovery Room (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23901)

Nur Mukarromah, Yuanita Wulandari, Rheyima Sinar, Eni Sumarliyah
S156-S163

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23901/144814490106)

Parental Support for The Independence of Mental Retardation Children (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23902)

Aries Chandra Ananditha, Reliani Reliani, Imroatus Sholichah, Uswatun Hasanah
S164-S168

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23902/144814490107)

The Food Intake Pattern in Relation to the Nutritional Status of School Age 6-12-Year-Old in Muhammadiyah Orphanage
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23903)

Gita Marini, Eri Herawati Susanti, Suyatno Hadi Saputro, Reliani Reliani, Anis Rosyiatul Husna
S169-S175

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23903/144814490108)

Cultural Care Analysis of Scabies Disease Based on the Sunrise Theory of the Leininger Model
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23904)

Nur Mukarromah, Achmad Zakaria, Daroini Daroini, Retno Sumara
S177-S184

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23904/144814490109)

Maternal Health Literacy Affects COVID-19 Preventive Behavior in Surabaya, Indonesia
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23905)

Supatmi Supatmi, Fathiya Lutfil Yumni, Jefri Ali Saiful, Erfan Rofiqi, Septian Galuh Winata
S184-S190

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23905/144814490110)

The Relationship between Gender, Education Level, and Age on Work Stress Public High School Teachers in Indonesia
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23906)

Andi Bungawati, Taqwin Taqwin
S191-S197

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23906/144814490111)

Determinants of Developmental Delay in the First 5 Years of Children
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23907)

Ayling Sanjaya, Suhartati Suhartati, Haryson Tondy Winoto, Anna Lewi Santoso, Inawati Inawati, Atik Sri Wulandari, Sukma Sahadewa, Meivy Isnoviana, Kartika Ishartadiati, Aina Intan, James Hadiputra Sunarpo
S198-S205

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23907/144814490112)

Increasing Adolescents' Religiosity and Resilience through Islamic Spiritual Mindfulness
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23908)

Meidiana Dwidiyanti, Diyan Yuli Wijayanti, Badrul Munif, Akhmad Yanuar Fahmi Pamungkas
S206-S215

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23908/144814490113)

Knowledge, Attitudes, and Behaviors among Office Workers about COVID-19 Prevention
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23909)

Nur Lailatul Masruroh, Vega Tyas Pradani, Tri Pemiluwati, Nur Melizza, Yoyok Bekti Prasetyo, Anggraini Dwi Kurnia
S216-S224

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23909/144814490114)

Perceptions of Sanitation Hygiene Refill Drinking Water Depot in The Region of Indonesia
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23910)

Endang Purnawati Rahayu Rahayu, Herniwanti Herniwanti
S225-S230

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23910/144814490115)

The Correlation Between Health Care Access and Pregnancy Checkup with Choice of Birth Attendants
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23911)

Hamimatus Zainiyah, Dwi Wahyuning Tiyas, M. Hasinuddin
S231-S236

PDF (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23911/144814490116)

The Effect of Physical Activity on Symptoms of Depression in the Elderly in Indonesia: The Indonesian Family Life
(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23912)

Jasrida Yunita, Nurlisis Nurlisis

S237-S244

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23912/144814490117\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23912/144814490117)

A Comparative Study of Loneliness in Older Adults Based on Place of Residence in Indonesia (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23913)

Lita Lita, Abdurrahman Hamid, Riski Syntia Ayu

S245-S250

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23913/144814490118\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23913/144814490118)

Shifting in Community Response Regarding Emergency Condition in The Era of COVID-19 Pandemic (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23914)

Maria Imaculata Ose, Fitriya Handayani, Ahmat Pujianto, Nurman Hidayat, Donny Tri Wahyudi

S251-S256

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23914/144814490119\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23914/144814490119)

Combination of Egg Tray Silencer and Progressive Relaxation to Overcome Community Auditory Disorders in Indonesian Noise Train Environments (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23915)

Moch Maftuchul Huda, Soeharyo Hadisaputro, Suprihati Suprihati, Ari Suwondo

S257-S264

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23915/144814490120\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23915/144814490120)

Knowledge and Perception and Its Relationship with Preventive Behaviors of COVID-19 among Indonesian Nursing Students (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23916)

Nur Melizza, Anggraini Dwi Kurnia, Nur Lailatul Masruroh, Aby Yazid Al Busthomy Rofi'i, Yoyok Bekti Prasetyo

S265-S270

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23916/144814490121\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23916/144814490121)

The Effectiveness of Laughter Therapy by Using Wayang Kulit (Shadow Puppets) Video Media to Reduce Elderly Anxiety During The COVID-19 Pandemic (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23917)

Raja Fitriana Lestari, Eka Wisanti, Lilik Tri Rahayu

S271-S275

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23917/144814490122\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23917/144814490122)

Experience of Physical and Mental Symptoms when Confirmed Positive COVID-19 among Community in Tarakan City, Indonesia (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23918)

Ramdya Akbar Tukan, Eko Satriya Hermawan, Darni Darni, Hendy Lesmana, Dewi Wijayanti

S276-S284

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23918/144814490123\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23918/144814490123)

Clinical Nursing Worksheet: Indonesian Nursing Diagnosis Standard-Based Assessment Form as An Online Learning Media of Nursing Clinical Practice (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23919)

Trijati Puspita Lestari, Nurul Hikmatul Qowi, Sylvi Harmiardillah

S285-S291

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23919/144814490124\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23919/144814490124)

Health Promotion of Families and Early Childhood Education Teachers in Improving Cognition, Commitment and Behavior to Prevent COVID-19 Transmission in Children (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23920)

Ulva Noviana, M. Hasinuddin, Heni Ekawati

S292-S298

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23920/144814490125\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23920/144814490125)

The Effectiveness of Hypnobreast feeding Massage on Anxiety and Breast Milk Production in Postpartum Mothers. (http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23921)

Yurike Septianingrum, Nety Mawarda Hatmanti, Andikawati Fitriyanti, Lono Wijayanti, Nunik Purwanti

S299-S307

[PDF \(http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23921/144814490126\)](http://caelum.ucv.ve/ojs/index.php/rev_gmc/article/view/23921/144814490126)

Mother's Independence in Stimulation of Growth and Development of Children During the COVID-19 pandemic

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An Overview of Anxiety Levels in Pregnant Women During the COVID-19 Pandemic

Una descripción general de los niveles de ansiedad en mujeres embarazadas durante la pandemia de COVID-19

Nova Elok Mardliyana^{1a*}, Irma Maya Puspita^{2a}, Awwalul Wiladatil Qodliyah^{3a}, Yuanita Wulandari^{4a}

SUMMARY

Introduction: Pregnant women often experience anxiety because hormonal changes affect physical and psychological changes during pregnancy. During the COVID-19 pandemic, pregnant women are worried about regular checkups during pregnancy in the health services because they are afraid of being exposed to the virus, especially in cities or regions with social restrictions. This study aims to describe the anxiety levels in pregnant women during the COVID-19 pandemic in Surabaya.

Methods: This study was descriptive research with a quantitative design. The population was pregnant women living in Surabaya during May – July 2020. Meanwhile, there were 100 respondents by purposive sampling. The instrument was the Hamilton Anxiety Rating Scale (HARS) to determine the anxiety levels. The method of collecting data utilized a questionnaire

through a google form link distributed to respondents. Then, the data were analyzed univariately and presented in a frequency distribution.

Results: The study results revealed that 44 % of respondents had moderate anxiety levels, 31 % had severe anxiety, and 25 % had mild anxiety.

Conclusion: In conclusion, most pregnant women in Surabaya experience moderate anxiety levels, followed by severe anxiety levels during the COVID-19 pandemic. Concerns about the risk of COVID-19 transmission increase anxiety levels in pregnant women. Antenatal care (ANC) visit restrictions could be replaced by online communication and consultation on the Maternal and Child Health (MHC) handbook conducted by health workers.

Keywords: Anxiety levels, COVID-19 pandemic, pregnant women

RESUMEN

Introducción: Las mujeres embarazadas suelen experimentar ansiedad debido a que los cambios hormonales inciden en cambios físicos y psicológicos durante el embarazo. Durante la pandemia de COVID-19, las mujeres embarazadas están preocupadas por los controles regulares durante el embarazo en los servicios de salud porque temen exponerse al virus, especialmente en ciudades o regiones con restricciones sociales. Este estudio tiene como objetivo describir los niveles de ansiedad en mujeres embarazadas durante la pandemia de COVID-19 en Surabaya.

Métodos: Este estudio fue una investigación descriptiva con un diseño cuantitativo. La población

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ORCID ID: 0000-0002-6901-510X¹

ORCID ID: 0000-0002-2268-5253²

ORCID ID: 0000-0003-1377-4075³

ORCID ID: 0000-0001-9104-8883⁴

^a Universitas Muhammadiyah Surabaya, Indonesia

*Corresponding Author: Nova Elok Mardliyana
E-mail: novaelok@fik.um-surabaya.ac.id

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Resultados: Los resultados del estudio revelaron que el 44 % de los encuestados tenía niveles de ansiedad moderados, el 31 % tenía ansiedad severa y el 25 % tenía ansiedad leve.

Conclusión: En conclusión, la mayoría de las mujeres embarazadas en Surabaya experimentan niveles de ansiedad moderados, seguidos de niveles de ansiedad severos durante la pandemia de COVID-19. Las preocupaciones sobre el riesgo de transmisión de COVID-19 aumentan los niveles de ansiedad en las mujeres embarazadas. Las restricciones de visitas de atención prenatal (ANC) podrían reemplazarse por comunicación y consulta en línea sobre el manual de salud materno infantil (MHC) realizado por trabajadores de la salud.

Palabras clave: Niveles de ansiedad, pandemia de COVID-19, embarazadas.

INTRODUCTION

Hormonal changes during pregnancy cause physical and psychological changes. Psychologically, pregnancy provides confidence to become a real woman and improves family and social life (1-3). However, pregnant women have anxiety about things that might happen to themselves or their fetuses, especially during the COVID-19 pandemic (4,5). A study reported the number of pregnant women experiencing anxiety as 23 % in Canada, 15 % in Germany, and 49 % in Pakistan (6,7). East Java is the province with the second-highest cumulative number of COVID-19 cases in Indonesia after Jakarta. It is categorized as the black zone (8-10). In addition, the number of pregnant women infected with COVID-19 in East Java is relatively high. During the pandemic, confirmed cases in pregnant women at Dr. Soetomo Hospital reached 35 people (11).

COVID-19 is a new respiratory disease that has spread throughout the world. Knowledge

related to pregnancy and the fetus is still limited. The COVID-19 pandemic increases stress and anxiety for pregnant women. They are worried about regular checkups during pregnancy in the health services because they are afraid of being exposed to the virus, especially in cities or regions with social restrictions (12,13). During the COVID-19 pandemic, there were no specific guidelines for COVID-19 treatment in pregnant women. Pregnancy causes a decrease in partial immunity due to physical and psychological changes, resulting in pregnant women being more susceptible to viral infections (14). Therefore, pregnant women are highly recommended to increase their immunity so as not to be vulnerable to the disease (15).

Some data obtained from cases of pregnant women with COVID-19 shows that there is no vertical intrauterine transmission. No virus is found in the amniotic fluid, placenta, breast milk, and baby's nasal secretions. However, the infection occurs due to close contact between the baby and the mother during postpartum. Direct breastfeeding is not recommended for postpartum mothers with COVID-19, so the most likely method is giving expressed breast milk to babies by healthy caregivers or health workers (16). This paper describes the anxiety levels in pregnant women during the COVID-19 pandemic in Surabaya.

METHODS

This research was conducted in the city of Surabaya in May - July 2020 using a descriptive method with a cross-sectional approach. The population in this study was all pregnant women in the city of Surabaya. The sampling technique used is a non-probability technique with the accidental sampling method so that the sample taken is 100 people with the consideration of the minimum sample limit set. This research was conducted through an online survey by filling out a google form questionnaire. Questionnaires were distributed to pregnant women who live in the city of Surabaya. The research instrument uses the Hamilton Anxiety Rating Scale (HARS) which was developed by Max Hamilton in 1956 to measure signs of anxiety, both psychological and somatic (17).

This research is in accordance with the ethical principles of research, namely respect for human dignity, respect for the privacy and confidentiality of research subjects (respect for privacy and confidentiality), and fairness, considering the benefits and disadvantages.

RESULTS

The study results included characteristics of respondents and anxiety levels in pregnant women during the COVID-19 pandemic.

Table 1

Characteristics of the respondents by age, education, occupation, parity status, and gestational age

Characteristics	Frequency	Percentage (%)
Age		
Young Reproduction (<20 years old)	1	1
Healthy reproductive period (20-35 years old)	96	96
Old Reproduction (>35 years old)	3	3
Education		
Primary (Elementary School - Junior High School)	8	8
Secondary (High School)	56	56
Tertiary (College)	36	36
Occupation		
Work	46	46
Housewife	54	54
Parity Status		
Multigravida	52	52
Primigravida	48	48
Gestational Age		
1-3 months	30	30
4-6 months	33	33
7-8 months	37	37
Total	100	100

Table 1 shows that most respondents are housewives (54 %) and multigravida (52 %). In addition, they are in a healthy reproductive period (96 %), have secondary education (56 %), and have seven to eight months of gestation (37 %).

Table 2 reveals that almost half of respondents have moderate anxiety levels (44 %), followed by severe anxiety (31 %).

DISCUSSION

In this paper, almost half of the respondents had moderate anxiety levels, followed by severe anxiety. Several factors are closely associated with anxiety in pregnant women, including COVID-19. The COVID-19 pandemic causes pregnant women to become anxious and afraid of being infected with the virus. Concerns about the risk infected increase anxiety levels in pregnant women. As a result, they choose to labor in an independent midwife practice because they

Table 2

Anxiety Levels in Pregnant Women during the COVID-19 Pandemic

Variable	Frequency	Percentage (%)
Anxiety Levels		
Mild	25	25
Moderate	44	44
Severe	31	31
Total	100	100

consider the hospital vulnerable to transmitting the virus (18).

Pregnant women are vulnerable to being infected with the COVID-19 virus because of the decreased immune system due to physiological changes during pregnancy. Several studies have stated that the COVID-19 pandemic is likely to severely affect pregnant women (19) whether at times of disaster or not, are well-established risk factors for preterm birth, low birthweight, and infant health problems and may have long-lasting effects on the offspring. 1,2 Approximately 21% to 25% of women experience prenatal anxiety symptoms (eg, excessive worry, nervousness, agitation). Both physiological and immunological changes during pregnancy can increase the risk of respiratory and obstetric infections in the mother and fetus. Based on the experience of previous outbreaks (SARS and MERS), pregnant women are at higher risk of obstetric complications such as abortion, premature birth, IUGR (Intrauterine growth restriction), and even death. In addition, the Covid-19 pandemic also causes psychological problems in pregnant women and increases the number of depressions during pregnancy. There should be proper management is needed to overcome the issues (20).

Concern about COVID-19 transmission increases anxiety, stress, and fear in pregnant women. There were 34.2 % of pregnant women had depressive symptoms (6). This happened along with the increasing number of COVID-19 cases in various regions for several months. The number has not subsided until now. During the COVID-19 pandemic, pregnant women planning healthcare delivery, especially in hospitals, feel worried and afraid. They are scared of being exposed to COVID-19 during the delivery process or during a trip to the hospital. Some pregnant women who still have to work and interact outside the home increasingly use antiseptics such as sodium hypochlorite and alcohol. Antiseptics can protect themselves from virus transmission. However, antiseptics use in large quantities, and recurring frequency can cause poisoning and affects fetal growth and development (4).

In pregnant women, factors influencing anxiety are age, education level, parity status, occupation, previous obstetric history, and daily habits. In this paper, most respondents were in

a healthy reproductive period. The mother's age during pregnancy affects her pregnancy. Pregnant women with a healthy reproductive period will lower complications than young or old reproductive years. Pregnant women who are too young or old will be more anxious or afraid because their physical state is not ready for pregnancy and childbirth. In a healthy reproductive period, they have better prepared physically and mentally to undergo pregnancy and childbirth.

Moreover, most respondents had secondary education. Education also affects the psychological state of pregnant mothers. Higher education makes mothers have insight, self-development, and intellectual maturity. So, they can more easily find information and seek medical help during pregnancy. Furthermore, they can prepare for child delivery during the COVID-19 pandemic (21).

On the other hand, 46 % of respondents in this paper were a worker. Working hours are correlated with the level of work stress felt by pregnant women significantly. It can affect employees' stress levels because work generally demands cognitive, emotional, and physical resources. At a cognitive level, working hours of more than eight hours per day are associated with decreased attention. Working excessive hours can also reduce mental health disorders such as fatigue or depression. A study reported that the risk of cardiovascular disease in pregnant women increased by stress caused by long working hours, affecting the health of the mother and fetus (22).

Parity status can affect anxiety because it is related to psychological aspects. In this research, 48 % of respondents were primigravida, while 52 % were multigravida. A previous study revealed that Nulliparous women reported higher childbirth anxiety than multiparous mothers (23). Primigravida mothers do not have an idea about what will happen during childbirth. They are afraid because they often hear terrible stories from friends or relatives about experiences during delivery, such as the mother or baby dying. It affects their mindset about the scary childbirth process. Meanwhile, multigravida feels fear, tension, and anxiety due to her pain from previous childbirth (24).

In addition, most of the respondents were

at 7-8 months of pregnancy (third trimester). Results from previous studies showed that anxiety in pregnancy was significantly associated with preterm birth. Anxiety in the Second-trimester pregnancy was not associated with preterm birth, while in the third trimester was correlated with preterm birth (25).

One of the government policies implemented to reduce the transmission of COVID-19 is social distancing. Pregnant women have to restrict themselves from interaction outside the home. They must be more vigilant and disciplined in implementing Health protocols by hand washing and personal protective equipment (PPE) – such as masks and face shields. They can minimize visits to the hospital through online consultations with a midwife. In addition, they can increase their knowledge by learning the Maternal and Child Health (MCH) handbook. The handbook consists of information to improve health and recognize danger signs during pregnancy (25,26).

There is a restriction on antenatal care (ANC) visits to prevent the transmission of covid-19. However, the ANC visits can be held online by communication and consultation between health workers and mothers, both individually and in groups. Health workers, especially midwives, must improve mothers' and families' ability to understand the MCH Handbook to recognize the signs and dangers of pregnancy and care during pregnancy. The handbook also includes preparation for labor, postpartum and newborn babies in everyday life (27).

CONCLUSION

In conclusion, most pregnant women in Surabaya experience moderate anxiety levels, followed by severe anxiety levels during the COVID-19 pandemic. Concerns about the risk of COVID-19 transmission increase anxiety levels in pregnant women. Antenatal care (ANC) visit restrictions could be replaced by online communication and consultation on the Maternal and Child Health (MHC) handbook conducted by health workers.

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*Corresponding Author: Nova Elok Mardliyana

E-mail: novaelok@fik.um-surabaya.ac.id

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Parity Status		
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Gestational Age		
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7-8 months	37	37
Total	100	100

Table 1 shows that most respondents are housewives (54 %) and multigravida (52 %). In addition, they are in a healthy reproductive period (96 %), have secondary education (56 %), and have seven to eight months of gestation (37 %).

Table 2 reveals that almost half of respondents have moderate anxiety levels (44 %), followed by severe anxiety (31 %).

DISCUSSION

In this paper, almost half of the respondents had moderate anxiety levels, followed by severe anxiety. Several factors are closely associated with anxiety in pregnant women, including COVID-19. The COVID-19 pandemic causes pregnant women to become anxious and afraid of being infected with the virus. Concerns about the risk infected increase anxiety levels in pregnant women. As a result, they choose to labor in an independent midwife practice because they

Table 2
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Variable	Frequency	Percentage (%)
Anxiety Levels		
Mild	25	25
Moderate	44	44
Severe	31	31
Total	100	100

consider the hospital vulnerable to transmitting the virus (18).

Pregnant women are vulnerable to being infected with the COVID-19 virus because of the decreased immune system due to physiological changes during pregnancy. Several studies have stated that the COVID-19 pandemic is likely to severely affect pregnant women (19) whether at times of disaster or not, are well-established risk factors for preterm birth, low birthweight, and infant health problems and may have long-lasting effects on the offspring. 1,2 Approximately 21% to 25% of women experience prenatal anxiety symptoms (eg, excessive worry, nervousness, agitation). Both physiological and immunological changes during pregnancy can increase the risk of respiratory and obstetric infections in the mother and fetus. Based on the experience of previous outbreaks (SARS and MERS), pregnant women are at higher risk of obstetric complications such as abortion, premature birth, IUGR (Intrauterine growth restriction), and even death. In addition, the Covid-19 pandemic also causes psychological problems in pregnant women and increases the number of depressions during pregnancy. There should be proper management is needed to overcome the issues (20).

Concern about COVID-19 transmission increases anxiety, stress, and fear in pregnant women. There were 34.2 % of pregnant women had depressive symptoms (6). This happened along with the increasing number of COVID-19 cases in various regions for several months. The number has not subsided until now. During the COVID-19 pandemic, pregnant women planning healthcare delivery, especially in hospitals, feel worried and afraid. They are scared of being exposed to COVID-19 during the delivery process or during a trip to the hospital. Some pregnant women who still have to work and interact outside the home increasingly use antiseptics such as sodium hypochlorite and alcohol. Antiseptics can protect themselves from virus transmission. However, antiseptics use in large quantities, and recurring frequency can cause poisoning and affects fetal growth and development (4).

In pregnant women, factors influencing anxiety are age, education level, parity status, occupation, previous obstetric history, and daily habits. In this paper, most respondents were in

a healthy reproductive period. The mother's age during pregnancy affects her pregnancy. Pregnant women with a healthy reproductive period will lower complications than young or old reproductive years. Pregnant women who are too young or old will be more anxious or afraid because their physical state is not ready for pregnancy and childbirth. In a healthy reproductive period, they have better prepared physically and mentally to undergo pregnancy and childbirth.

Moreover, most respondents had secondary education. Education also affects the psychological state of pregnant mothers. Higher education makes mothers have insight, self-development, and intellectual maturity. So, they can more easily find information and seek medical help during pregnancy. Furthermore, they can prepare for child delivery during the COVID-19 pandemic (21).

On the other hand, 46 % of respondents in this paper were a worker. Working hours are correlated with the level of work stress felt by pregnant women significantly. It can affect employees' stress levels because work generally demands cognitive, emotional, and physical resources. At a cognitive level, working hours of more than eight hours per day are associated with decreased attention. Working excessive hours can also reduce mental health disorders such as fatigue or depression. A study reported that the risk of cardiovascular disease in pregnant women increased by stress caused by long working hours, affecting the health of the mother and fetus (22).

Parity status can affect anxiety because it is related to psychological aspects. In this research, 48 % of respondents were primigravida, while 52 % were multigravida. A previous study revealed that Nulliparous women reported higher childbirth anxiety than multiparous mothers (23). Primigravida mothers do not have an idea about what will happen during childbirth. They are afraid because they often hear terrible stories from friends or relatives about experiences during delivery, such as the mother or baby dying. It affects their mindset about the scary childbirth process. Meanwhile, multigravida feels fear, tension, and anxiety due to her pain from previous childbirth (24).

In addition, most of the respondents were

at 7-8 months of pregnancy (third trimester). Results from previous studies showed that anxiety in pregnancy was significantly associated with preterm birth. Anxiety in the Second-trimester pregnancy was not associated with preterm birth, while in the third trimester was correlated with preterm birth (25).

One of the government policies implemented to reduce the transmission of COVID-19 is social distancing. Pregnant women have to restrict themselves from interaction outside the home. They must be more vigilant and disciplined in implementing Health protocols by hand washing and personal protective equipment (PPE) – such as masks and face shields. They can minimize visits to the hospital through online consultations with a midwife. In addition, they can increase their knowledge by learning the Maternal and Child Health (MCH) handbook. The handbook consists of information to improve health and recognize danger signs during pregnancy (25,26).

There is a restriction on antenatal care (ANC) visits to prevent the transmission of covid-19. However, the ANC visits can be held online by communication and consultation between health workers and mothers, both individually and in groups. Health workers, especially midwives, must improve mothers' and families' ability to understand the MCH Handbook to recognize the signs and dangers of pregnancy and care during pregnancy. The handbook also includes preparation for labor, postpartum and newborn babies in everyday life (27).

CONCLUSION

In conclusion, most pregnant women in Surabaya experience moderate anxiety levels, followed by severe anxiety levels during the COVID-19 pandemic. Concerns about the risk of COVID-19 transmission increase anxiety levels in pregnant women. Antenatal care (ANC) visit restrictions could be replaced by online communication and consultation on the Maternal and Child Health (MHC) handbook conducted by health workers.

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