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Contents

Volume 15 No. 1, 2024

	<u>Page No.</u>
1. Comparative Study of Thyroidectomy Wound Closure using Subcuticular Suture Versus Steri-strips in Jharkhand Population <i>Alok Kumar, Sunil Kumar</i>	1
2. Determinants of Postgraduate Medical Education Regarding Speciality and Place among North Indian Graduates: A Cross Sectional Study <i>Aman Dev Singh, Simmi Oberoi, Rohit Batish, Muskan Chopra</i>	5
3. Severe Leptospirosis With non-Oliguric Renal Failure With 'Myocarditis' Mimicking Acute Coronary Syndrome: A Rare Presentation From Northern India <i>Amit Kumar, Majaz Ahmad, Desai Vishal Jakshibhai</i>	11
4. Prevalence & Reasons of Substance Abuse among Adolescent boys of an Underserved Rural Community of Southern Haryana: A Preliminary Study <i>Anil Kumar, Pawan Goel, Neeraj Gour, Abhishek Singh</i>	15
5. Cytological Analysis of Thyroid lesions According to the Bethesda System for Reporting Thyroid Cytology and their Correlation with Histopathology: A Prospective Study <i>Aruna Kumari Pagalla, Lalitha Pragna Merla, Prashanth Gunde, Manoj Gunde</i>	19
6. Post Covid-19 Effect on Avascular Necrosis of Hip Joint <i>Ashok Kumar Jha, Vishal Sidhu</i>	25
7. Evaluation of Pancytopenia in Adults <i>Ashutosh sanga, Manish Kumar Singh</i>	31
8. Hybrid Learning in Medical Curriculum: Perception of Medical Students of a Dedicated COVID Hospital in Eastern India <i>Adwitiya Das, Debopam Sil, Arya Saha, Ria Mukherjee</i>	36
9. Covid-19 Vaccine Mandates: Challenges and Prospects <i>Azoof Khalid Qalyoubi</i>	43
10. Comparative Study of Efficacy of Corticosteroid Versus Analogues PRP in Chronic Plantar Fasciitis in Andhra Pradesh Population <i>B. Bhanu Pratap, Kiran Kumar Tapal</i>	49
11. Assessment of Skills of Health Care Professionals Posted in Labour Room and Maternity OTs Based on OSCE (Objective Structured Clinical Examination) Using LaQshya Guidelines <i>Chandra Gopal Dogne, Shailesh Rai, Nalini Dogne, Sana Afrin, Deepa Raghunath, Salil Sakalle</i>	55

12.	An Epidemiological Profile of Previously Treated Patients Registered in Tuberculosis Units in Urban Visakhapatnam <i>Devi Madhavi Bhimarasetty, VenkataDurga Prasad Vithanala, Jayasree Palla, Sindhura Moparthy</i>	61
13.	Exploring Pregnant Women and Very Low Birth Weight Babies: A Study in a Tertiary Care Medical College Hospital <i>Anumodan Gupta, Aditi Saini, Ghanshyam Saini, Mohammad Irfan Dar</i>	68
14.	A Systematic Review and Metaanalysis of Clinical Perspective in Trichotillomania <i>Dimple Gupta, Chirag Ambaliya, Aman Ankur, Abhinav Ankur</i>	72
15.	A Study on the Effectiveness of Cognitive Training on Attention, Concentration, Motor Dexterity and Working Memory among Children with Attention Deficit/ Hyperactivity Disorder <i>M M Mahesh, Ferina Fradinand</i>	78
16.	Diagnostic Importance of Clinic-Pathologic Features and p16, CD34, MDM2 Expression in Differential Diagnosis of Tumors <i>Pankaj Deval, Kaveri Agrawal</i>	84
17.	Comparative Analysis of Mini Open versus Arthroscopic Repair of Supraspinatus Tears <i>Parth P Thakor, C Sai Sabharish Reddy</i>	89
18.	Assessment of Community Accordance to the Essential Actions at School Level and Support for Reopening in Covid Era <i>Shruti Kardalkar, Harsha B, Mayur S Sherkhane, Swetha, Harikrishna B N</i>	93
19.	Genital Hygiene Behavior and its Relationship with Vaginitis <i>Rully Ayu Nirmalasari Hariadi Putri, Lily Marliany Surjadi, Arleen Devita, Ida Effendi</i>	100
20.	A Community Based Study on Various Aspects of Breast-Feeding Practices from Central India <i>Sanjay Silawat, Vijay Verma, Praveen Yuwane, Shivam Dixit, Shailesh Rai</i>	105
21.	A Comparative Study of Visual Outcome and IOP Changes in Postoperative PCO Cases Among Diabetics and Non Diabetics Following Nd: YAG Laser Capsulotomy <i>Anil Kumar, Pranesh Kulkarni</i>	111
22.	Assessment of Clinical Profile, Perceptions of Polycystic Ovarian Syndrome & Its Associated Factors among Adolescents Girls Attending O&G OPD <i>Sushree Priyadarsini Satapathy, Rabinarayan Dash</i>	115
23.	Pancytopenia in Pediatric Population: An Etiological and Haematological Analysis in a Tertiary Care Hospital, TS <i>Fakeha Firdous, Zuafshan Sultana, Anjani Devi, Srujana R, G J Vani Padmaja</i>	121
24.	Coverage of Antenatal Care Services in a Rural Area of District Nuh, Haryana <i>Gaurav Bhati, Neeraj Gour, Pawan Kumar Goel, Suraj Chawla, Arpit Rustagi</i>	126
25.	Evaluation of Operative Outcomes of Open Fractures of Distal Femur <i>Gaurav singh, Nitin Goyal, Neha Agrawal</i>	132
26.	Laryngeal Mask Airway and Adenotonsillectomy <i>Grace Budhiraja, Navjot Kaur, Harsimrat Singh</i>	137

27.	Functional Outcome Following Internal Fixation of Intraarticular Fractures of the Distal Humerus	142
	<i>Harsh Pratap Shishodia, Ramji LalSahu, Ajit Jangale, Sidhartha Samal</i>	
28.	Reflections of Health Care Professionals During COVID-19 Pandemic: A Qualitative Approach Towards Inclusiveness of Ethics in Medical Education	149
	<i>Jarina Begum, Samhitha Gundakaram, Syed Irfan Ali, D Lakshmi Lalitha</i>	
29.	Necrotizing Fasciitis: A Vicious Soft Tissue Infection: Review Article	156
	<i>J. Ajin Manovah, J.A. Jayalal, Mohamed Rafeek, M.R. Vivek</i>	
30.	Knowledge, Attitude, and Practices about Biomedical Waste Management among Healthcare Personnel in Primary Healthcare Centers in Western Maharashtra	163
	<i>Kale Kalpana M, Patil Ashok G, AswarNandkeshav R, Kamble Navnath T, Mujumdar Harshawardhan N</i>	
31.	Menstrual Hygiene Knowledge and Practices among Adolescent School-Girls in Haldwani, Uttarakhand: Probing the Association with School Environment	169
	<i>Kanakmeet Kaur Anand, Sadhana Awasthi, MohdNajmul Aqib Khan, Harpreet Singh, Rupali Gupta, Kunal Chaudhary</i>	
32.	Comparative Study of Plating Versus Closed Square Nailing in Forearm Fractures in Andhra Pradesh Population	176
	<i>Kiran Kumar Tapal, B Bhanu Pratap</i>	
33.	Cytohistological Evaluation of Unusual Male Breast lesions: A Case Series from a Tertiary Care Centre	180
	<i>Madhumita Paul, Manisha Mahata, Sajeeb Mondal, Rajashree Pradhan, Bidisha Chakraborty</i>	
34.	Spectrum of Lymph Node Lesions in Surgical Patients Diagnosed by FNAC and Histopathology	185
	<i>Manish Kumar Singh, Ashutosh sanga</i>	
35.	Effect of Propofol, Sevoflurane, and Isoflurane on Postoperative Cognitive Function Following Laparoscopic Cholecystectomy in Elderly Patients	189
	<i>Megha Singh, Robina Makker, Gurpreet Kaur Atwal</i>	
36.	Clinical Profile of Paediatric Patients Admitted with Dengue Fever in a Tertiary Care Hospital of North India	195
	<i>Mousin Mustafa Batt, Aditya Gupta, Anirodh, Mohammad Irfan</i>	
37.	Prevalence of Self Medication in Medical Students	199
	<i>Muskan Jaiswal, Sachin Gupta, Neetu Kumar, Vinod Narkhede</i>	
38.	Prevalence of Distress among Diagnosed Type 2 Diabetics Residing in Rural and Urban Areas of District Amritsar: A Cross-Sectional Study	205
	<i>Navpreet Kaur, Sanjeev Mahajan, Preeti Padda, Vineet Bal, Shyam Sundar Deepti, Kompal</i>	
39.	An Epidemiological Study on Mucormycosis Patients Admitted in Tertiary Care Hospital of Central India	212
	<i>Neelam Anupama Toppo, Aditya Thakur, Deepali Soni, Priyanka Dubey, Sapna Tiwari</i>	
40.	Snack Bars as a Functional Snack Option for Individuals with Diabetes: A Review	218
	<i>Nidhi Chauhan, Payal Mahajan</i>	
41.	Knowledge, Attitude and Practices towards COVID-19 among Adults in a Rural area of Sonapat: A Cross-Sectional Study	223
	<i>Pankaj Yadav, Sanjay Kamar Jha, Babita Rani, Anita Punia, Tanvi Goel</i>	

42.	Knowledge, Attitude, and Practice of Contraception Methods among Nursing and Paramedical Staff of Tertiary Care Hospital of Sabarkantha District, Gujarat <i>Parmar Meghavini, Patel Jaiminkumar Pravinbhai, Sheth Moin S</i>	229
43.	Quality of Life of Female Employees (A Study in Aligarh) <i>Pawan Kumar Patric, Uzma Eram, Anjali Bhardwaj</i>	235
44.	Effect of COVID-19 Pandemic on Over the Counter Drugs use and its Associated Factors among Adults of an Urban Slum in Hyderabad: A Cross Sectional Study <i>Pidakala Mary Moses, Nadipena Jhansi, Maruthi Reddy Mandadi, Thej Kiran Reddy Dalli, Hari Krishna B N, Sumalatha Bangi</i>	241
45.	Comparative Study of Treatment of Distal end Radius Fracture by Non-Operative Method Versus Operative Method with Joshi's External Stabilisation System <i>Pothukuchi Sree Lakshmi Prapurna, Sachinshah</i>	248
46.	Physical Activity Pattern among Undergraduate Medical Students in a Rural Medical College in Southkerala: A Cross-Sectional Study <i>Pranav Pramod, Siji VS, Leela Itty Amma K R, Alice Matilda Mendz, Prajwal, Vaishnavi, Ruksana</i>	254
47.	Clinical and Endoscopic Profile of Upper Gastrointestinal Bleed Patients <i>Prashant Kumar Swarnkar, Kamyia Verma, Shrey Srivastava, Neelabh Pratap</i>	259
48.	Evaluating Spectrum of Epithelial Cell Abnormalities in Cervical Cytology Smears with a Focus on Atypical Squamous Cells of Undetermined Significance (ASCUS): A Study in Eastern India <i>Pratyusha Bhattacharjee, Partha Pratim Sinha Roy, Riya Das, Saumik Chakraborty</i>	264
49.	Health Related Quality of Life and its Effective Factors in Tuberculosis Patients Receiving Directly Observed Treatment Short-Course (DOTS) <i>Priya Gangadharan, Shivaramakrishna HR</i>	270
50.	Unusual Clinicopathological Presentations of Mature Cystic Teratoma: A case series <i>Rajashree Pradhan, Madhumita Paul, Arindam Bandopadhyay, Sajeeb Mondal</i>	275
51.	Publication of Healthcare Research - Current Scenario and Potential Solutions <i>Rajesh Dasaraju, Thejaswini Muppala, Sachin Gupta, Ashutosh Mangalgiri</i>	280
52.	Perception and Practices Related to Breast Milk Donation and Acceptance among Donor and Recipient's Mothers of a Breast Milk Bank at a Tertiary Care Hospital in South India <i>Rajesh Jayanandan, Ramya Rajamanickam, Rohith Kumaran, Santhiya Saravanasundaram, Priyadharshini Dhanasekaran, Shajene Sathiyamoorthi, Reena G Rajan</i>	288
53.	Examining the Artificial Sweeteners in Commonly Consumed Beverages, Chewing Gums, Chocolates, and Mouthwashes using HPLC and TLC Methodology <i>Rakesh Naik, Soumya Ranjan Pradhan, Prasanthi Prabhakaran Sobhana, Devindra Shakappa</i>	294
54.	Cytohistological Evaluation of Chest wall Nodules: A Series of Rare Entities from a Tertiary Care Centre <i>Sajeeb Mondal, Bidisha Chakraborty, Madhumita Paul, Rajashree Pradhan</i>	301
55.	Effectiveness of ligation of Inter Sphincteric Fistula Tract (LIFT) in the Management of Fistulas in ano in Maharashtra Population: Retrospective Study <i>Sampat Tukaram Waghmare</i>	305

56.	Morbidity Pattern Amongst Women of Reproductive Age Group (15-44 Years) Residing in Rural and Urban Field Practice Areas of Government Medical College, Amritsar: A Cross-Sectional Study <i>Sandeep kaur, M.L. Sharma, Sanjeev Mahajan, Tejbir Singh, Vineet Bal</i>	310
57.	A Cross Sectional Study to Measure the level of Depression and the Quality of life among the Geriatric Population Residing in Old Age Home <i>Sandeep Soni, Deepak Vishwakarma, Aravindh AJ</i>	317
58.	Factors Determining Place of Delivery in Rural Area of Punjab: A Cross-Sectional Study <i>Sanyogita, Tejbir Singh, S S Deepti</i>	324
59.	Study of Total Intravenous Anaesthesia in laparoscopic Surgery <i>Simran Pal Singh Bhatia, Pawan Kumar Dutta, Kumar Naren Chandra</i>	330
60.	A Cross-Sectional Study on Physical Activity Patterns and Dietary Habits of a Nursing College Students in Central Karnataka <i>Sindhu BM, Abhinandan S Kumbar, Shashank KJ, Rashmi BM</i>	333
61.	Tuberculosis of Ankle Joint: Case Series <i>Sonali Parida, Priyadarshini Behera, Chaitanya Kiran Gara, Sangita Jena</i>	340
62.	Study on Types of Umbilical Cord Insertion in Normal and Intrauterine Growth Restriction <i>Sudhakara Babu Chelli, Vinaya G, Surekha S M</i>	346
63.	Assessment of Knowledge, Attitude and Practices among Healthcare Professionals Regarding Hepatitis B Infection and Vaccination in a Tertiary Care Hospital <i>Suraj Sirohi, Shivam Dixit, A.K.Khatri, Ayushi Shrivastava, Shweta Goswami</i>	350
64.	Devising A Nurse Led Care Program on Breast Cancer Prevention (NLCP): Awareness among South Indian Women regarding Breast Cancer and Its Prevention: Phase I Study <i>Jolly Daniel, Abhilash Venunathan, Aflah Abdullah, Aliya Sherin, Ameena Fiza, Rabeeha Rahman, Shibila</i>	357
65.	Effects of Intra-Articular Platelet Rich Plasma on Clinical Outcomes in Knee Osteoarthritis <i>Umang Sanghvi, Abhishek Rupavatiya</i>	361
66.	Family Caregivers' Dilemma while Providing Palliative Care to Elderly Patients <i>Ushvinder Kaur Popli, Tuba Naqvi</i>	366
67.	Study on Pattern of Self-Management Practices in Patients of Diabetes in Rural Population in Aligarh <i>Uzma Eram, Ambika Saraswat, Salman shah, Anees Ahmad</i>	372
68.	A Comparative Study of Intraocular Pressure Measurements by Goldmann Applanation Tonometer and Schiotztonometer and the Study of Schiotz Tonometer a Screening Tool in North Karnataka Population <i>Uzma Saara Munaff, Pranesh Kulkarni</i>	378
69.	A Study of Association of Serological Markers and Platelet count in Dengue Patients in GHMC limits, Hyderabad, Telangana <i>Zu Afshan Sultana, K Sujatha, Fakeha Firdous, Mohammed Saad Hussain</i>	382
70.	Knowledge, Attitude and Practices of Menstrual Health among Adolescent School Girls in Kurnool District, Andhra Pradesh <i>B.Renuka, P.Sudha Kumari, S.Pushpa Latha</i>	386
71.	Association between Coronary Artery Disease and Body Mass Index <i>J. B. Ashraf Ali M.D., R. Mohan M.D., T. Dinesh M.D.</i>	392

Genital Hygiene Behavior and its Relationship with Vaginitis

Rully Ayu Nirmalasari Hariadi Putri¹, Lily Marliany Surjadi²,
Arleen Devita³, Ida Effendi⁴

^{1,2}Obstetric and Gynecology Department, Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia;

^{3,4}Microbiology Department, Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia.

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Abstract

Purpose: To determine the relationship between genital hygiene behavior and the emergence of vaginitis, especially in female motorcycle taxi drivers at Jakarta area

Patients and methods: Subjects are 50 female motorcycle taxi drivers in Jakarta area who met inclusion/ exclusion criteria. A questionnaire of genital hygiene behavior inventory (GHBI) was used to obtain the genital hygiene behavior among subjects. Vaginal examination and microbiological swab from vaginal discharge were then performed as diagnostic for any type of vaginitis. Data collected were then analyzed using SPSS application for univariate and bivariate analysis to show subjects' characteristics and to look for relationships between variables.

Results: 62% of respondents are over 40 years old and most of them work more than 8 hours per day. Vaginitis was found in 42% of drivers divided into 21 subjects with bacterial vaginosis (42%) and 8 subjects with vaginal candidiasis (16%). There are more subjects with poor knowledge of general genital hygiene, menstrual hygiene management, and self-awareness of abnormal genital symptoms, but no statistically significant difference in the incidence of vaginitis and the total GHBI score ($p>0,05$). This study found a relationship between age and the incidence of vaginitis in female motorcycle taxi drivers in Jakarta area.

Conclusion: There is no relationship between the GHBI score, duration of work, length of working experience, access to clean toilet and the incidence of vaginitis. There is a significant relationship between age and the incidence of vaginitis in female motorcycle taxi drivers.

Keywords: female motorcycle taxi drivers, genital hygiene behavior inventory (GHBI), vaginal swab, vaginitis.

Introduction

Genital hygiene is very important to reproductive function. Poor genital hygiene may end in reproductive tract infection which can cause advanced problem. Many habits in daily life especially during menstruation thought as an effort

to increase genital hygiene were actually harmful, such as vaginal douching, tampon using, etc. These activities may result in vaginal flora shifting and cause vaginal dysbiosis.^(1,2)

Bacterial vaginosis (BV) is an unspecific vaginal inflammation (vaginitis) caused by imbalanced

Corresponding Author: Lily Marliany Surjadi, Obstetric and Gynecology Department, Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia.

E-mail: lily0712@trisakti.ac.id

vaginal flora, with less lactobacillus (peroxide produced bacteria) and other bacteria to be dominant such as *Gardnerella vaginalis*.⁽³⁻⁵⁾ Other inflammation can be caused by fungi and parasite. Many factors have been identified to correlate with vaginitis, like smoking, vaginal douching, wrong method of genital wiping, types of underwear, and menstruation hygiene. Vaginitis is thought to be a result of complex interaction between host, environment and vaginal microbe.⁽⁶⁾ It has been known that vaginitis is a risk factor of many advanced reproductive tract damages such premature labor, pelvic infection, infertility, ectopic pregnancy, cervical cancer and with more following problems.^(7,8)

Motorcycle taxi (Ojek) is one of transportation mode widely known nowadays, especially in Indonesia. Many women, especially single moms, choose this job for it is considered easy because the time is flexible. All drivers, including female drivers, must spend most of the time on the road, despite sunny or rainy weather, wearing thick pants especially made from denim material, with limited access to clean toilet and water supply. This condition could create a big problem especially in women for vulvovaginal hygiene care, especially during period.⁽⁹⁾

Previous studies showed contradictive results about the relationship of genital hygiene and bacterial vaginosis. Bahram et al conducted a study in Zanjan, Iran showed positive relationship, while study by Demba et al in Gambia, West Africa showed the opposite.^(10,11) Most studies were performed in adolescents around menarche. This inconsistencies encourage us to conduct a similar study in female motorcycle taxi drivers with limited access to clean toilet and water supply.

Material and methods

An analytic observational designed as a cross sectional study has been performed in 50 subjects who are online motorcycle taxi drivers around Jakarta areas. The study itself took place at Faculty of Medicine Universitas Trisakti during January 2023. Data collection were taken using genital hygiene behavior inventory (GHBI) questionnaire, followed by vaginal examination and vaginal swab was performed for microbiology testing. All subjects have been informed completely the purpose of this study

as well as the examination that will be performed, and asked to sign their approval.

Genital hygiene behavior questionnaire consists of 23 question that divided in 3 groups, that is 12 questions about general genital hygiene, 8 questions about menstrual hygiene management and 3 questions about their self-awareness of genital abnormal signs and symptoms. Subjects are also asked to fulfill a form about their characteristics as age, length of work hour, etc. After completing the questionnaire, respondent's vaginal examination and swab were taken privately, and the specimens were then sent to microbiology department Faculty of Medicine, Universitas Trisakti for vaginitis testing using Nugent score for detecting bacterial vaginosis and detection of hyphae for candidiasis.

All data from questionnaire and microbiology findings were recorded and will be presented in tables and then analyzed using Statistical Package for Social Sciences (SPSS) application for univariate and bivariate analysis.

Results and discussion

Table 1 showed characteristics data from the total of 50 subjects. According to the characteristics, it was found that most subjects were ≥ 40 years of age (62%), have been working as motorcycle taxi driver for less than 5 years with more than 8 working hours per day and mostly have no problems with access to clean toilet. From further discussion, they stated that they can use public toilet at some minimarket or at gas station, and they were quite satisfied with the toilet's condition. The questionnaire showed that most subjects have poor knowledge about genital hygiene, menstrual hygiene, and self-awareness of abnormal genital symptoms, but the result of microbiology testing for vaginitis were quite similar (42% negative and 58% positive results).

Table 2 were designed to look for relationship between respondents' characteristics with the microbiology result. There is no relationship between length of working experience, daily working hours and difficulty in access to clean toilet. However, there is a relationship between age and the incidence of vaginitis in female online motorcycle taxi drivers ($p=0,01$).

Table 3 showed the relationship between respondents' knowledge and awareness with microbiology result. Although there were more drivers who had poor knowledge about general genital hygiene, menstrual hygiene management, and

self-awareness about abnormal genital symptoms, the relationship with the incidence of vaginitis was not statistically significant ($p>0,05$). Thus, GHBI total score has no significant relationship with the incidence of vaginitis ($p>0,05$)

Table 1 Characteristics of respondents

Characteristics		n	%	
Age (years)	<40	19	38	
	≥40	31	62	
Experience in this job (years)	≤ 5	39	78	
	>5	11	22	
Working hour per day (hours)	≤ 8	12	24	
	>8	38	76	
Difficulty in access to clean toilet	Yes	23	46	
	No	27	54	
Knowledge of general genital hygiene	Poor	28	56	
	Good	22	44	
Knowledge of menstrual hygiene management	Poor	28	56	
	Good	22	44	
Self awareness of abnormal genital symptoms	Poor	27	54	
	Good	23	46	
Total genital hygiene knowledge	Poor	26	52	
	Good	24	48	
Vaginitis finding of vaginal swab	Negative	21	42	
	Positive	Bacterial vaginosis	21	42
		Vaginal candidiasis	8	16

Table 2. Relationship of respondent's characteristics and bacterial vaginosis

Characteristics		Vaginitis findings				p
		Positive		Negative		
		n	%	n	%	
Age (years)	< 40	15	78,9	4	21,1	0,01*
	≥40	8	25.8	23	74.2	
Experience in this job (years)	≤ 5	18	46.2	21	53.8	1*
	> 5	5	45.5	6	54.5	
Working hour per day (hours)	≤ 8	5	41.7	7	58.3	0,98*
	>8	18	47.4	20	52.6	
Difficulty in access to clean toilet	Yes	12	60	8	40	0,18*
	No	11	35.7	19	64.3	

* chi-square test

Table 3. Relationship of genital hygiene behavior and bacterial vaginosis

Characteristics		Bacteriology findings				p
		Positive		Negative		
		n	%	n	%	
Knowledge of general genital hygiene	Poor	12	54.5	10	45.5	0,43*
	Good	11	39.3	17	60.7	
Knowledge of menstrual hygiene management	Poor	11	50	11	50	0.82*
	Good	12	42,8	16	57.2	
Self awareness of abnormal genital symptoms	Poor	13	56.5	10	43.5	0,27*
	Good	10	37.0	17	63.0	
Total genital hygiene knowledge	Poor	13	54.2	11	45.8	0,40*
	Good	10	38.5	16	61.5	

* Chi-square test

Discussion

Environment is one of the factors that encourage women to choose a job. The internal environment that has the most effect is their family. They want their family's needs to be met.⁽¹²⁾ Being an online motorcycle taxi driver is easier and has flexible working hours, especially for single mothers. Most of drivers who took part in this study were ≥ 40 years old. Some of them are single parents and others have to work to support the husband for their ability to earn money have declined due to age, illness or being laid off from workplace. Most of them have been working for 1-5 years as an online female motorcycle taxi driver. Although they have to work with male drivers, they feel safe because their male fellow drivers treat them well and considered equal by others driver. They are more worried about the indecent behavior of the male passengers so for safety reason, they prefer to be an online food delivery drivers instead of taking passengers. Regarding the duration of work, even though they work a total of more than 8 hours a day, they can start working after finish preparing for their family's household needs such as cooking and taking the children to school. This is in accordance with the study from Rafidan H. qualitative study that states that online motorcycle taxi women interpret their profession as fulfilling economic needs for their families and themselves. And this kind of profession has a comfortable work environment.⁽¹³⁾

None of subjects have ever received education about reproductive health care as online motorcycle

taxi drivers. Likewise, we have never found reproductive health studies in Indonesian female online motorcycle taxi drivers, so it was shown in the result of this study that most subjects have poor knowledge about genital hygiene behavior. Although it is not significantly related to vaginitis, subjects with vaginitis have insufficient knowledge about general genital hygiene and self-awareness of abnormal genital symptoms. Bardin M, et al showed in their study that some hygiene habits were associated to bacterial vaginosis and/or vulvovaginal candidiasis, such as the use of soap while cleaning genital area and left the genital moist after urination.⁽¹⁴⁾

In this study, it was found that 58% of female drivers had vaginitis (21 of them were bacterial vaginosis and 8 were candidiasis). The use of tight pants, thick or made of denim material is associated with an increased incidence of vulvovaginitis.⁽¹⁵⁾ Moreover, most subjects did not change their wet pants but left the wet pants to dry after hit by rain during their working hours. This risk factor is also supported by the finding that almost all drivers have been experienced fungal inflammation in the genital area.

Age has a significant relationship with vaginitis. Li Meng et al found that the possibility of getting bacterial vaginosis was higher with the age of 40-50.⁽¹⁶⁾ Ocviyanti et al also found that age above 40 years old was risk factor for BV.⁽¹⁷⁾ At that age, approaching perimenopausal stage, there is a decrease in estrogen levels which will affect the

vaginal acidity. This environmental change made it harder for *Lactobacillus* sp. to grow and causing other microorganisms to be more dominant.

Conclusion

There is no statistically significant relationship between the GHBI score, working hours, length of working experience, or access to clean toilet and the incidence of vaginitis. There is a relationship between age and the incidence of vaginitis in female motorcycle taxi driver.

Acknowledgments: Authors thanks Paguyuban Ojek Online Jabodetabek particularly female drivers, Head of occupational medicine study center at Faculty of medicine Universitas Trisakti and all parties who contributed to this research.

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Genital Hygiene Behavior and its Relationship with Vaginitis

Rully Ayu Nirmalasari Hariadi Putri¹, Lily Marliany Surjadi²,
Arleen Devita³, Ida Effendi⁴

^{1,2}Obstetric and Gynecology Department, Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia;
^{3,4}Microbiology Department, Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia.

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Abstract

Purpose: To determine the relationship between genital hygiene behavior and the emergence of vaginitis, especially in female motorcycle taxi drivers at Jakarta area

Patients and methods: Subjects are 50 female motorcycle taxi drivers in Jakarta area who met inclusion/ exclusion criteria. A questionnaire of genital hygiene behavior inventory (GHBI) was used to obtain the genital hygiene behavior among subjects. Vaginal examination and microbiological swab from vaginal discharge were then performed as diagnostic for any type of vaginitis. Data collected were then analyzed using SPSS application for univariate and bivariate analysis to show subjects' characteristics and to look for relationships between variables.

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Conclusion: There is no relationship between the GHBI score, duration of work, length of working experience, access to clean toilet and the incidence of vaginitis. There is a significant relationship between age and the incidence of vaginitis in female motorcycle taxi drivers.

Keywords: female motorcycle taxi drivers, genital hygiene behavior inventory (GHBI), vaginal swab, vaginitis.

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