



2nd ICHMS & 2nd LSC

PROCEEDING

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The 2nd International Conference of Medical and Health Sciences (ICMHS) and The 2nd Life Sciences Conference (LSC) 2016

*"Towards a Better Quality of Life
through Interdisciplinary Research"*

Yogyakarta, 9th-10th December 2016
The Alana Hotel and Convention Center

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**The 2nd International Conference of Medical & Health Sciences
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TABLE OF CONTENT

COMMITTEE	viii
WELCOMING SPEECH	
Welcome Message from Committee	ix
Welcome Message from Dean	x
Welcome Message from Rector	xi
Welcome Message from the Head of Provincial Health Office Special Region of Yogyakarta	xiii
KEYNOTE SPEAKER OF INTERNATIONAL CONFERENCE	xv
REVIEWER	xvi
FULL ARTICLE	
Diabetic Neuropathy - A Chance Towards A Better Treatment <i>Tri Wahyuliati</i>	2
Herbal Medicine a Holistic Approach; in Case of Food Supplement Formulation of <i>Sauropus androgynus</i> and <i>Elephantopus scaber</i> to Modulate Immune and Hormonal System in Pregnant <i>Salmonella typhi</i> Infected Mice <i>Muhammad Sasmito Djati</i>	10
Continuing Competence of Practicing Nurses in Indonesia <i>Fitri Arofiati, SKep.,Ns, MAN Ph.D</i>	19
The Influence of Neuromuscular Taping (NMT) in Walking Speed for the Patients After Ischemic Stroke <i>Umi Budi Rahayu</i>	29
Correlation between Larvae Free Number with DHF Incidence in Sleman, Yogyakarta, Indonesia <i>Tri Wulandari Kesetyaningsih, Sri Andarini, Sudarto, Henny Pramoedyo</i>	34
Correlation Interdialytic Weight Gain-Idwg towards Physical and Psychological Health to Quality of Life in Patients with Hemodialisa <i>Cecilya Kustanti, Maria Putri Sari Utami</i>	42

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

Quality of Life in Hemodialysis Patiens with Hypertension <i>Maria Putri Sari Utami, Elsy Maria Rosa, Azizah Khoiriyati</i>	48
Environmental Housing Characteristic of Pulmonary Tuberculosis Sufferers in Slum Area <i>Iwan Stia Budi, Yustini Ardillah, Indah Purnama Sari, Dwi Septiawati</i>	55
Exploration Study in Psychological Changed on First Trimester Pregnant Women at Kembaran II Health Center, Banyumas <i>Wilis Dwi Pangesti, Dewi Ambarwati, Inggat Ratna Kusuma</i>	63
The Anxiety of Pregnant Mother with History of Abortion in Health Service 2 Banyumas Qualitative Study <i>Evicenna Naftuchah Riani, Wilis Dwi Pangesti, Diah Atmarina Yuliani</i>	72
Analysis of Infection Control Risk Assessment and Strategies to Reduce Health-Care Associated Infections in RS PKU Muhammadiyah Gamping Yogyakarta <i>Nurmalita Sari, Elsy Maria Rosa</i>	76
Health Promotion Program for Disaster Eruption of Mount Merapi Refugee in Youth Centre Sleman Distric, Yogyakarta Special Province, Indonesia <i>Novitasari Ratna Astuti</i>	91
Pap Smear is Important Screening of Cervical Cancer for Women <i>Ivanna Beru Brahma</i>	100
Analysis of Compliance on Implementing Standard Precautions on Dental Health Service at PKU Muhammadiyah Gamping Hospital of Yogyakarta <i>Maria Margaretha S Nogo Masa, Elsy Maria Rosa</i>	108
Qualitative Study of Stakeholders' Knowledge Regarding Alert Village Program in Ogan Ilir Regency <i>Asmaripa Ainy, Iwan Stia Budi</i>	123
The Influence of Parents Knowledge and Health Care Access to the Identification of Children with Hearing Impairment <i>Asti Widuri, Alazi, Muhammad Pringgo Arifianto</i>	131

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

The Comparison of Maternal Leukocytosis Incidence between Preterm Premature Rupture of Membranes and Premature Rupture of Membranes at Term in Panembahan Senopati Hospital Bantul Yogyakarta <i>Choirotun Jum'iyatin Nisak, Supriyatningsih</i>	137
Analysis of Patient Safety Culture Instrument by MaPSaF <i>Arum Astika Sari, Arlina Dewi</i>	143
The Relationship of Fish Consumption to Cognitive Development in Students of SD Saptosari, Gunungkidul, Yogyakarta <i>Dewi Ngaisyah</i>	158
Inter Professional Education and Collaborative Practice: Reflection from Health students <i>Wiwik Kusumawati, Ika Setyawati, Romdzati, Likky Tiara Alphianti</i>	164
Steroidal Saponin in Ethanol Extract Tuber of Purple Yam (<i>Dioscoreaalata L.</i>) Decrease IL-4 Density of Blood Sera on BALB/c Mice Model Digestive Tract Allergy <i>Sri Nabawiyati Nurul Makiyah, Muhaimin Rifa'i, Widodo, Muhammad Sasmito Djati</i>	173
Managerial Leadership Competence in PKU Muhammadiyah Hospital of Gamping <i>Ranggit Oktanita, Qurratul Aini, Ekorini Listiowati</i>	184
Malaria Occurrence Factor Analysis Based on Elevation of Sea Surface in the District of OganKomeriungUlu, South Sumatra <i>Pademi Alamasyah, Chairil Anwar, Dwi Setyawan, Laila Hanum</i>	200
Increasing Family Involvement to Reduce of Cigarette Consumption with Participatory Learning Action (PLA) Approach <i>Tri Hastuti Nur Rochimah, Salmah Orbayinah</i>	212
Air Pollution Effect to Human Health in Palembang City <i>Marsidi, M.T. Kamaluddin, Fauziah N. Kurdi, Novrikasari</i>	230
Identification of Patient Satisfactory Profile for Outpatient Pharmaceutical Service at Private and Government Hospital within Semarang District <i>Pramitha Esha Nirmala Dewi, Novita Dwi Dahliyanti</i>	241

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

Intervention of Family Nutritional Awareness to Increase Family's Food Security <i>Fatmalina Febri, Anita Rahmiwati, Fenny Etrawati</i>	249
The Effects of Exercises in Molecular Neuron Cells of Cerebellum in Congenital Hypothyroidism Rats <i>Idiani Darmawati, Marten Bhara Suryo Aji, Zulkhah Noor</i>	258
The Effect of Air Freshener Exposure on Corneal Thickness of White Rat (<i>Rattus norvegicus</i>) <i>Yuningtyaswari, Pajar Sigit Nugroho</i>	265
The Correlation between Education about Personal Hygiene and Knowledge and Attitude of Personal Hygiene of the Adolescent <i>Kusbaryanto, Wahana</i>	272
The Relationship between Sports Activities and Premenstrual Syndrome In SMA N 1 Sentolo, Kulon Progo <i>Fenthy Vabiella, Alfaina Wahyuni</i>	277
Relationship Thyroid Status to the Physical Growth and Psychomotor Development on Children Under 2 Years in Endemic Areas of Iodine Deficiency Disorders in District Samigaluh of Kulonprogo Regency <i>Adang Muhammad Gugun, Zulkhah Noor, Jifani Rasyad, Mardylla Nur Fitriany..</i>	282
Baby Blood Vessel Detection-Based Touch Sensors <i>Ade Pajar Pirdianto, Anna Nur Nazila Chamim</i>	299
Analysis of Factors that Influence Smokers Using Alcohol among Students in a Private University in Yogyakarta <i>Iman Permana, Gibran Ilham Setiawan</i>	306
The Effectiveness of Combined Warm Water Foot Submerging and Breath Relaxation Therapy on Lowering the Blood T Pressure in Hypertensive Patients in the Work Area of Puskesmas Penumping Surakarta <i>Prima Trisna Aji, Novita Kurnia Sari, Sri Nabawiyati Nurul Makiyah</i>	315
Assessment of Interprofessional Communication and Collaboration: Using Multi Methods <i>Sri Sundari Purbohadi</i>	335

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

Bed Side Teaching as Effort for Decreasing Needle Stick and Sharp Injury in Clinical Practice Students of PSIK FKIK UMY <i>Azizah Khoiriyati, Novita Kurnia Sari</i>	342
The Relationship between Working Period and Cholinesterase Blood Levels among Pesticides-Spraying Workers in the Oil Palm Plantation <i>Restu Dewi Lestari, Merry Tiyas Anggraini</i>	350
The Effect of Interpersonal Relationship toward Birth Satisfaction <i>Hema Dewi Anggraheny</i>	356
Effect of Early Mobilization Education of The Level Anxiety and Independence of Patients After Total Knee Replacement in Hospital <i>Amik Muladi, Sagiran, Azizah Khoiriyati</i>	363
The Effect of Normal Dose Extract Gempur Batu Kejibeling (<i>Strobilanthus crispus</i> .BL) to the Histological of Rat's Digestive Tract <i>Yoni Astuti, Ali Usodo Mulyo, Harminani</i>	371
Effectiveness of Alcohol 70%, Clorhexidine Gluconate 4% Soap and Irgasan DP 300 as Hand Sanitizers in Reducing Bacterial Growth <i>Inayati, Pinter Hartono</i>	377

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

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and
The 2nd Life Sciences Conference 2016**

**Chair person of The 2nd International Conference of Medical and
Health Sciences and The 2nd Life Sciences Conference 2016**



Welcome to Jogja, sugeng rawuh!

For the second time, the Faculty of Medicine and Health Sciences Universitas Muhammadiyah Yogyakarta is going to conduct the 2nd International Conference of Medical and Health Sciences (ICMHS) this December in vibrant Yogyakarta, Indonesia. This year we are going to collaborate with the Life Sciences Society of Pakistan for their 2nd Life Sciences Conference (LSC) with Dr. Zahid Iqbal as the general secretary.

This year's conference theme "Towards a better quality of life through interdisciplinary research" will be celebrating an era of seamless interdisciplinary integration and collaboration in scientific innovations with the involvement of more extensive topics and disciplines in the conference. We aim to exhibit the products of that kind of approach in solving challenges, improving the quality of life, and creating sustainable developments. We are happy to announce that our conference is filled with Invited speakers from Pakistan, United States of America, Uni Emirates Arab, Malaysia and Indonesia. Presentations will be conducted in oral as well as poster that covers topics from medicine, public health, dentistry, pharmacy, biomedical to agriculture. To put more credibility to the conference we are collaborating with Isra Medical Journal and the Asian Journal of Agriculture and Biology to publish selected papers from the event. Other paper will be published in the ISBN Proceeding book.

The last but not least, enjoy the conference, start networking and sharing ideas, and let immerse yourself to the heritage cultural ambient of Jogja, sumonggo!

Yogyakarta, 1st December 2016

dr. Iman Permana, M.Kes, Ph.D.

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

**Dean of Faculty of Medicine and Health Sciences,
Universitas Muhammadiyah Yogyakarta**



Assalamu'alaikum Wr. Wb.

Science, especially in the areas of health and life growing more rapidly. We need to work together in the research of various disciplines to the advancement of science and to provide benefits to human life.

After successfully organized international scientific meeting last year, the Faculty of Medical and Health Sciences Universitas Muhammadiyah Yogyakarta, held the second scientific meeting ICMHS along with "2nd Life Sciences Conference". In this second scientific meeting, FKIK UMY collaborates with various researchers, among others from Pakistan, Malaysia, and the United States. Taking the theme "Towards a better quality of life through interdisciplinary research" we hope to establish cooperation with various parties to be able to contribute ideas to the civilization of human life.

Finally, we congratulate the scientific meeting in the city of Yogyakarta Indonesia. Enjoy the beautiful city of Yogyakarta with priceless historical relics. We hope that this meeting can run smoothly and provide benefits to the advancement of knowledge.

Wassalamu'alaikum Wr. Wb.

Yogyakarta, 1st December 2016

dr. Ardi Pramono, M.Kes, Sp.An.

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

Rector of Universitas Muhammadiyah Yogyakarta



Assalaamu'alaikum Wr. Wb.

Ladies and Gentlemen,

Welcome to the 2nd International Conference on Medical and Health Science in conjunction with the 2nd Life Sciences Conference 2016

Welcome to Yogyakarta City of Tolerance

Our Faculty of Medicine and Health Sciences has been doing such international conference almost every year for the last ten years. This and other previous conferences are the things that supporting our vision as an excellence and Islamic university, a young and global university. We will always try to keep monitoring the development of science through sending more lecturers to do the sabbatical leave overseas, doing international research collaborations and also the international conference. Each department should do this strategy of internationalization so that each department has its own network. Faculty of medicine and health science is one of the most progressive units in implementing this strategy by inviting international experts on a regular basis. This program will certainly strengthen our vision.

International conference on medicine and health sciences is a smart choice to offer our lecturers access to the most recent development of the subjects. The participants will also gain the same knowledge and latest information on medicine and health sciences. As everyone knows that the development of science and technology are faster today compared to the previous period. Information technology, computer, and other development havefastened the transformation of medicine and health science into the different and more complex stage.

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

Cellular technology, for instance, can be used for several functions including those that directly impacts our daily life. There is no long distance call anymore today because cellular phone can do everything we need to contact other people far from where we stand anytime anywhere. People will finally innovate cellular phone for the sake of personal health services. We will in the future using our simple cellular phone to detect our body temperature, blood pressure, even how much fat we have in our body and how much it is supposed to be. We may also be able to check the health of our body without leaving our house and order medicine without going into the drug store. Everything is almost possible as long as we think hard for the better of people in the future. Enjoy the conference and don't forget to visit our rich tourist destinations, mountains, beaches or caves (underground waterways).

Thank you

Wassalaamu'alaikum Wr. Wb.

Prof. Dr. Bambang Cipto, MA

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

Keynote Speech

**by Head of Provincial Health Office Special Region of Yogyakarta
in International Conference
of Medical and Health Sciences and Life Sciences Conference**

The Alana Hotel and Convention Center, Yogyakarta, December 9-10, 2016

The honorable:

- Rector of Muhammadiyah University of Yogyakarta,
- The Dean of Medical and Health Sciences Muhammadiyah University of Yogyakarta,
- The chairman of organizing committee of the international conference of medical and health,
- Distinguished guests and colleagues.

Assalamu'alaikum Warahmatullahi Wabarakatuh,

First of all, we thank God for His blessings that today we may attend the International Conference of Medical Health Towards a Better Quality of Life Through Interdisciplinary Research in Yogyakarta.

My distinguished colleagues,

In Indonesia National Long Term Development Plan (2005-2024), the Indonesian Ministry of Health have determined a paradigm shift that have governed health services in health development plan. There has been a shift from Curative Health Services to Preventive and Promotive Health Services.

Recently, Indonesia suffers from a triple burden of diseases as health development challenges. The triple burden of diseases are: 1) the backlog of common infections, undernutrition, and maternal mortality; 2) the emerging challenges of non-communicable diseases (NCDs), such as cancer, diabetes, heart disease; and 3) mental illness, and the problems directly related to globalization, like pandemics and the health consequences of climate change.

Dear colleagues,

Here are some data that show several health problems in Indonesia:

1. Maternal mortality rate in 2015 is 4,809 cases, infant mortality rate in 2015 is 22,267 cases;
2. Regarding to children under the age of five, the national stunting rate is 37.2% which consists of 18% for very short dan 19.2% for short (Riskesdas 2013);

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3. HIV testing coverage is 14% dan antiretroviral (ARV) therapy coverage is 65.58% (Directorate General of Disease Control and Prevention Ministry of Health, 2015);
4. Tuberculosis (TB) notification rate in 2015 is 73.5% and tuberculosis treatment success rate is 72% (Directorate General of Disease Control and Prevention Ministry of Health, 2015).

Distinguished guests,

Indonesia Health Development Program in 2015-2019 strengths in improving human quality life through Health Indonesia Program with family approach. The Indonesian Ministry of Health issued The Minister of Health Regulation (Permenkes) No. 39 Year 2016 as a Guideline of Implementation of Health Indonesia Program with Family Approach. This program has 12 main indicators as markers of a family health status. Currently, many health programs have been implemented by Indonesian Ministry of Health, Provincial Health Offices, and District Health Offices. However, many health problems, some as mentioned above, still become health burdens. We may ask a question whether the programs that we conducted have answered the health problems we have in Indonesia.

It would be better if all health programs that we implement based on scientific health research, especially interdisciplinary research. The research should be related to detection, prevention, and treatment of diseases or problem solving for better health.

My dear colleagues,

Being a province with speciality, Special Region of Yogyakarta placed Traditional Medicine as one of the priority programs in Provincial Medium Term Development Plan (2017-2022). We still encounter many challenges in developing Traditional Medicine, especially in providing services which are based on scientific evidence.

Distinguished colleagues,

We look forward to results of interdisciplinary research which would support health problem solving, especially by developing traditional medicine in Yogyakarta. We believe that collaboration in interdisciplinary research would improve quality of human life.

Finally,

Thank you for your attention. We wish you a successful conference.

Wassalamu'alaikum Warahmatullahi Wabarakatuh,

On behalf of
the Head of Provincial Health Office
Special Region of Yogyakarta

Drg. Pembajun Setyaningastutie, M.Kes

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

**SPEAKER OF
INTERNATIONAL CONFERENCE**

Zahid Iqbal

Al-Nafees Medical College Isra University Islamabad Campus Islamabad, Pakistan
“One Health Program for Public Health Benefit”

Prof. Dr. Abdul Khaliq

Professor, Department of Agronomy, University of Agriculture, Faisalabad
“Role of Agriculture in Poverty Alleviation of Rural Areas”

Fitri Arofati

Universitas Muhammadiyah Yogyakarta, Indonesia
“Continuing Professional Development of Practicing Nurses in Indonesia”

Tri Wahyuliati

Universitas Muhammadiyah Yogyakarta, Indonesia
“Diabetic Neuropathy - A Chance Towards A Better Treatment”

Mohammad Khalid Ashfaq

University of Mississippi, USA
“Natural Products –Use or Misuse”

Muhammad Mukhtar

American University of Ras Al Khaimah, United Arab Emirates
“Emerging Biotechnologies and Genomic Medicines in Human Health and Well-Being”

Muhammad Sasmito Djati

Brawijaya University Malang, Indonesia
“Herbal Medicine a Holistic Approach: in case of food supplement formulation of Sauropusandrogynus and Elephantopuscaberto modulate immune and hormonal system in pregnant Salmonella typhi infected mice”

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

REVIEWER

1. Dr. Zahid Iqbal, Ph.D (Isra University, Islamabad, Pakistan)
2. Prof. Dr. Abdul Khaliq (University of Agriculture, Faisalabad)
3. Dr. Mohammad Khalid Ashfaq, DVM, DTVM, MS, Ph.D (University of Mississippi, USA)
4. Dr. Muhammad Mukhtar, Ph.D (American University of Ras Al Khaimah, United Arab Emirates)
5. Dr. Ir. Muhammad Sasmito Djati, MS. (Brawijaya University Malang, Indonesia)
6. Fitri Arofiati, S.Kep., Ns., MAN., Ph.D (Universitas Muhammadiyah Yogyakarta, Indonesia)
7. Dr. SN Nurul Makiyah, S.Si., M.Kes (Universitas Muhammadiyah Yogyakarta, Indonesia)
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15. Dr. Elsy Maria Rosa, M.Kep (Universitas Muhammadiyah Yogyakarta, Indonesia)
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21. Dr. dr. Wiwik Kusumawati, M.Kes (Universitas Muhammadiyah Yogyakarta, Indonesia)
22. Sabtanti Harimurti, S.Si., M.Sc., Ph.D., Apt. (Universitas Muhammadiyah Yogyakarta, Indonesia)

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and
The 2nd Life Sciences Conference 2016**

**SPEAKER OF
INTERNATIONAL CONFERENCE**

**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

ICMHS-O-1-23

Pap Smear is Important Screening of Cervical Cancer for Women

Ivanna Beru Brahmana

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Abstract

Cervical cancer is the most common cancer in women. Cervical cancer account about 15,000 new cases per year, and 6% of all malignancies in women in the United States. The Pap smear is the best screening for cervical cancer. Fifty percent of newly diagnosed women with cervical cancer never had a Pap smear. Sensitivity of Pap smear is 90% if doing annually, 87% if doing every two years, 78% if doing every three years, and 68% if doing every five years. The most common main complain when the patients come to the clinic is leucorrhoea. The screening result of Pap smear show normal or abnormal smear in cervix. The abnormal smear can be *Cervical Intraepithelial Neoplasia (CIN) I, II, III, HPV*, or cervical cancer. Because of the high sensitivity of Pap smear, it is important to do the screening of cervical cancer in women routinely. Pap smear result's description between January 2015 until July 2016. 98.50% is normal smear, and 1.87% is abnormal smear such as: 1.12% *CIN*, 0.37% cervical cancer, and 0.37% *HPV*. Pap smear result shows 1.87% is abnormal smear. It means 2 out of 100 women who did Pap smear's screening, are diagnosed *CIN* or cervical cancer. It shows Pap smear is important screening of cervical cancer that women should do routinely.

Keywords: leucorrhoea, Pap smear, cervical cancer.

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INTRODUCTION

The World Health Organization estimates that yearly, about 530000 women worldwide are identified with cervical cancer and 275000 women die from the disease. Cervical cancer is heralded as being the third most common cause of cancer among women in the world and the second most common form of cancer in women in the developing world. Cervical cancer is responsible for the largest cause of mortality in women due to cancer in most developing countries.¹ The other journal mentioned in worldwide, approximately 500,000 new cases of cervical cancer and 274,000 deaths are attributable to cervical cancer yearly, making cervical cancer the second most common cause of death from cancer in women. Fortunately, the incidence of cervical cancer has decreased by more than 50% in the past 30+ years, largely due to the increasing use of cervical cancer screening with cervical cytology.⁴ From IARC Handbooks of Cancer Prevention about Cervix Cancer Screening mentioned cancer of the cervix uteri is the second most common cancer among women worldwide, with an estimated 471.000 new cases (and 233.000 deaths). Almost 80% of the cases occur in developing countries, where, in many regions, it is the most common cancer among women, responsible for about 15% of all new cancers.⁵

The cervix is the lower aspect of the uterus. It is roughly cylindrical in shape, projects through the superior-anterior vaginal wall and communicates with the vagina through the endocervical canal, which terminates in the external os located at the top of the vagina. Cancer of the cervix may originate from the mucosa of the surface of the cervix or from within the canal. Carcinoma of the uterine cervix grows locally and may extend in continuity to the uterus and paracervical tissues, and pelvic organs.⁶

MATERIAL AND METHODS

Cervical Cancer Screening. The systemic screening with the Papanicolaou cytological test (Pap smear) to find pre-invasive cervical lesions and early stage cancer has drastically reduced the incidence and death from cervical cancer in the United States and other industrialized nations.¹

Major risk factors for cervical cancer are: infection with human papillomavirus (HPV), smoking, infection with human immunodeficiency virus (HIV) and/or any type of immune suppression, extended use of oral contraceptives, giving birth to many children, a diet low in fruits and vegetables, low socioeconomic status, age, diethylstilbestrol (DES) a hormone drug, administered to the woman's mother, family history of cervical cancer.⁷

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Cervical Cytology Tests. Papanicolaou's sampling technique, initially developed to study the hormonal status of mice, was a vaginal smear, and this was the method originally used in clinical observations on women. Microscopic examination of the vaginal smear was tedious, time consuming, and required the most careful screening of the material, searching for a few abnormal cells as evidence of cervical cancer or precancerous states. It was not surprising, therefore, that when the Canadian gynecologist and ardent follower of Papanicolaou, J. Ernest Ayre, proposed that a wooden tongue depressor, cut to fit the contour of the uterine cervix, would allow a direct sampling of this organ under visual control the method was endorsed enthusiastically. The direct cervical smear was easier to interpret and required much less screening time than the vaginal smear. It is of historic interest that the direct cervical smear for cancer diagnosis also was proposed and described by a Romanian pathologist, Aureli Babes, at least a year before Papanicolaou presented his first observations in 1928.⁸ Pap smear is a screening test only. Positive test requires further investigation like colposcopy, cervical biopsy and fractional curettage. Pap smear can detect 98% of cancer of the cervix and about 70% of endometrial cancer. Reliability of the report depends upon the slide preparation and skill of cytology. Whereas single test yields as much as 10 –15% false negative reading, it is reduced to only 1% with repeated test.⁹

The conventional Pap smear test was used for cytology. The Pap smear has been the method of choice for cervical cancer screening since the 1950s, proving valuable for mass screening and enabling detection of lesions early enough for effective treatment. The Pap smear has some limitations, however. The most important are its limited sensitivity, which is between 47-62%, and the subjective interpretation of the results. On the other hand, Pap smear testing also has strengths, such as wide acceptance, meeting most of the criteria for a good screening test in settings with adequate resources, obtaining a permanent record of the test in the form of a slide, and having a high specificity of 60-95%.¹⁰

There are two forms of Pap smears, conventional and liquid-based cytology. In the conventional method cells are obtained from the neck of the cervix and then the cells are spread on a glass slide. In the liquid-based cytology method, the cells are obtained from the neck of the cervix, but instead of being spread on a glass slide, they are placed in a small glass vial that contains preserving fluid. There has been much debate with regards to which form is superior. Current evidence indicates that no clinically important differences in sensitivity or specificity exists when comparing liquid-based and conventional cytology.¹

The recommendation to perform routinely a prenatal Papanicolaou smear gained widespread acceptance in the United States in the late 1950s.¹¹

The 2nd International Conference of Medical & Health Sciences and The 2nd Life Sciences Conference 2016

The screening result of Pap smear show normal or abnormal smear in cervix. The abnormal smear can be *Cervical Intraepithelial Neoplasia (CIN) I, II, III, HPV*, or cervical cancer. Because of the high sensitivity of Pap smear, it is important to do the screening of cervical cancer in women routinely.

Screening Interval. Screening women aged 21 to 65 years every 3 years with cytology provides a reasonable balance between benefits and harms. Among women aged 30 to 65 years, *HPV* testing combined with cytology (co-testing) every 5 years offers a comparable balance of benefits and harms and is therefore a reasonable alternative for women in this age group who would prefer to extend the screening interval.

Screening with cytology more often than every 3 years confers little additional benefit, with large increases in harms, including additional procedures and assessment and treatment of transient lesions.¹²

RESULTS

In the outpatient clinic, all patients come with main complain leuchorrea were done screening cervical cancer with the Pap smear test. It collects from January 2015 until July 2016. Totally It has 535 patients with the Pap smear's result are normal smear, preinvasive lesions or cervical cancer.

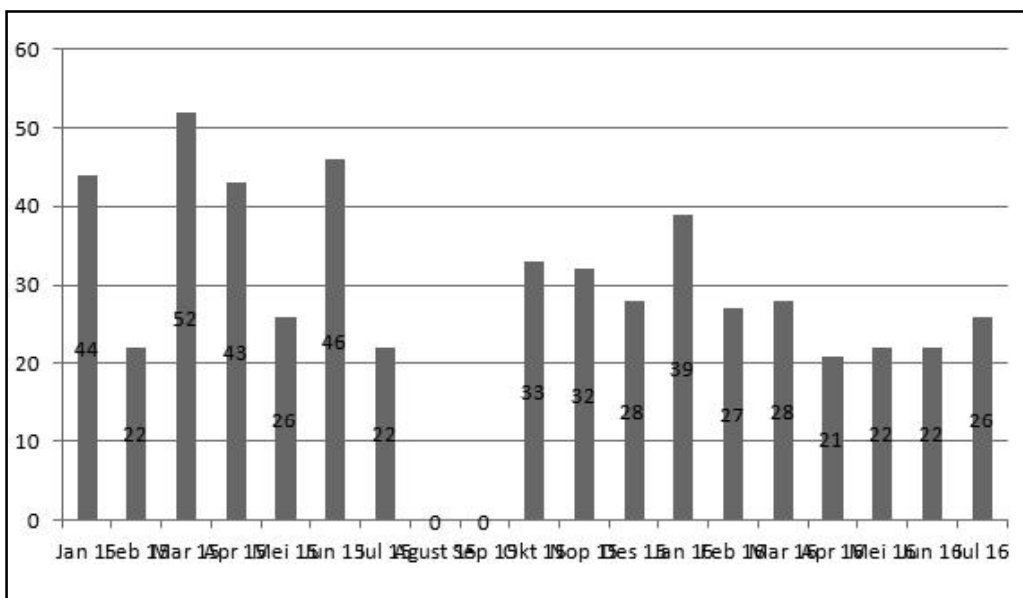


Figure 1. Total Pap smear Test Monthly.

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and
The 2nd Life Sciences Conference 2016**

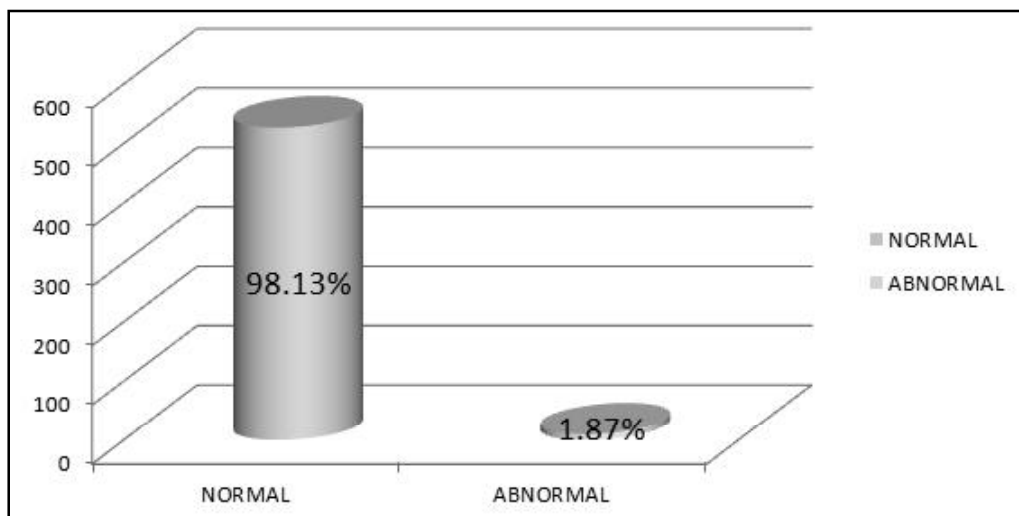


Figure 2. Total Normal Smear and Abnormal Smear.

From total 535 patients had done The Pap Smear test, the result is 525 patients (98,13%) with normal smear and 10 patients (1,87%) with abnormal smear. From the abnormal smear, we get 6 patients who preinvasive cervical lesion and 2 patients who cervical cancer and 2 patients who *HPV* positive. We know that cervical cancer is related to *HPV* (*Human Papilloma Virus*) infection (especially types 16, 18, 31, 45).³

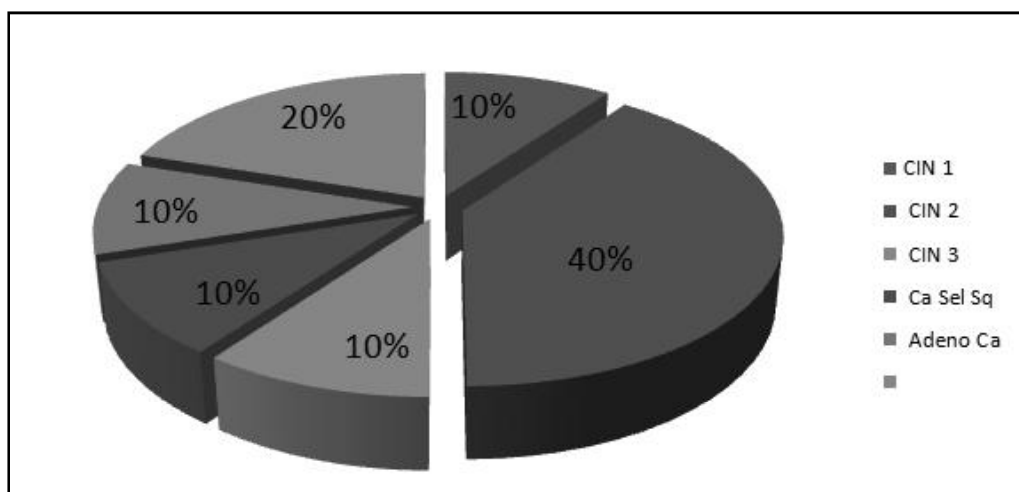


Figure 3. Abnormal Smear.

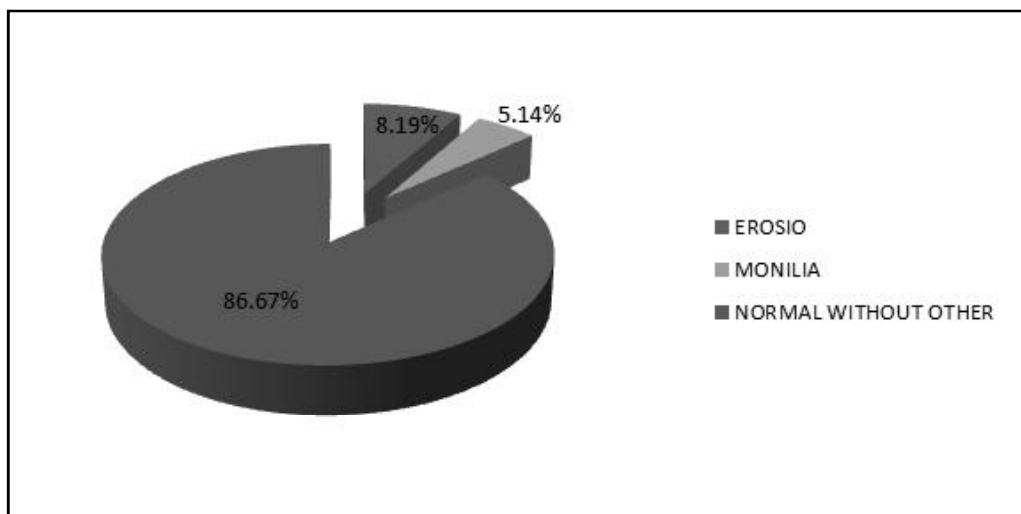


Figure 4. Normal Smear.

DISCUSSION

Cytological testing involves collection of exfoliated cells from the cervix and microscopic examination of these cells after staining. The concept of utilizing exfoliative cytology to identify women with invasive cervical cancer was introduced by Papanicolaou and Babes in the 1920s.⁵ Subsequently, Papanicolaou refined the technique and demonstrated that conventional cytology could also be used to identify precancerous lesions of the cervix.⁵ The shift in emphasis from using cytology as a way to identify cases of invasive cervical cancer to using it to identify women with high-grade precursor lesions who are at risk for subsequently developing invasive cervical cancer was highly significant, as it meant that cervical cytology could be used to actually prevent the development of cervical cancer rather than simply identify cases at an early stage.⁵

Pap smear is a simple, cheap, safe and practical diagnostic tool for early detection of cervical cancer in high risk group population and therefore should be established as routine screening procedure. Pap smear is a valuable tool for investigation as a screening procedure in asymptomatic women and as a diagnostic procedure in symptomatic women. It also has an important role in diagnosis of inflammatory lesions including the identification of causative organism, atrophic changes, changes of radiation therapy and some rare tumors.¹³

In the outpatient clinic, whose main complaint is leucorrhoea, it was done the Pap smear test. We collected the data from January 2015 until July 2016. We got 535 patients totally. From 535 patients, the results of the Pap smear test are 525 patients (98,13%) with normal smears and 10 patients (1,87%) with abnormal smears, of whom 6 patients are preinvasive

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cervical lesion, 2 patients cervical cancer, and 2 patients with HPV positive. We know that the cause of cervical cancer is HPV (*Human Papilloma Virus*). So 2 patients with HPV positive must follow up with routine Pap smear test yearly. The American College of Obstetricians and Gynecologists recommends yearly examination for patients with any risk factor for cervical cancer (HPV infection, HIV, high-risk behaviour).³

From the result of The Pap smear test in this outpatient clinic, it show how is the important to done the Pap smear test for screening cervical cancer. Wong L.P. et al in their experiment have conclusion, education, communication and reassurance are required to overcome such resistance. Therefore, efforts to reduce cervical cancer mortality should focus on reaching out to the women who have never had a Pap smear test within the target age group.¹⁴ The benefits and the weaknesses of cervical cancer detection based primarily on the use of the cervical smear show that the system has deficiencies that are based on human factors and cannot be remedied readily by rules and regulations.⁸

CONCLUSION

The screening result of Pap smear show normal or abnormal smear in cervix. The abnormal smear can be *Cervical Intraepithelial Neoplasia (CIN) I, II, III, HPV*, or cervical cancer. Because of the high sensitivity of Pap smear, it is important to do the screening of cervical cancer in women routinely.

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**The 2nd International Conference of Medical & Health Sciences
and
The 2nd Life Sciences Conference 2016**

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