



2nd ICHMS & 2nd LSC

PROCEEDING

PROCEEDING

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

ISBN: 978-602-757-793-0



9 786027 1577930



PROCEEDING

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

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

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 Brahmana</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 OganKomerungUlu, 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.BL</i>) 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**

Committee of ICMHS & LSC 2016

Supervisor	dr. Ardi Pramono, Sp.An, M.Kes
Chair	dr Iman Permana, M.Kes, Ph.D
Partner	Dr Zahid Iqbal, Ph.D
Secretary	Winnie Setyonugroho, S.Ked, MT, Ph.D
Secretariat	dr Bramantyas Kusuma H, M.Sc Futuh Hidayat, SEI Elida Tri Grahani, SE
Treasury	dr Hidayatul Kurniawati, M.Sc
Scientific section	Dr dr Ikhlas M Jenie, M.Med, Sc Dr Sri Nabawiyati Nurul Makiyah, S.Si, M.Kes Lia Fitriana, SP
Programme section	dr Ika Setyawati, M.Sc dr Imaniar Ranti, M.Sc dr Ahmad Ikhludin, SpM
Publication and Documentation section	dr April Imam Prabowo Arif Hadianto, ST
Logistic and Transportation	dr Muhammad Kurniawan, M.Sc Aris Nuryanta, SH Muhammad Ma'rifatullah Katiga Putra Dwi Hatmo Budi, S.IP
Fund Raiser	dr Maria Ulfa, MMR dr Akhmad Syaiful Fatah Husein, SpAn

**The 2nd International Conference of Medical & Health Sciences
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);

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

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)
8. dr. Iman Permana, M.Kes, Ph.D (Universitas Muhammadiyah Yogyakarta, Indonesia)
9. Dr. dr. Ikhlas M. Jenie, M.Med, Sc (Universitas Muhammadiyah Yogyakarta, Indonesia)
10. Dr. dr. Arlina Dewi, M.Kes, AAK (Universitas Muhammadiyah Yogyakarta, Indonesia)
11. dr. Oryzati Hilman, M.Sc, CMFM (Universitas Muhammadiyah Yogyakarta, Indonesia)
12. Dr. Dra. Yoni Astuti, M.Kes, Ph.D (Universitas Muhammadiyah Yogyakarta, Indonesia)
13. Dr. drg. Tita Ratya Utari, Sp. Ort (Universitas Muhammadiyah Yogyakarta, Indonesia)
14. Dr. dr. Tri Wahyuliati, Sp.S, M.Kes (Universitas Muhammadiyah Yogyakarta, Indonesia)
15. Dr. Elsy Maria Rosa, M.Kep (Universitas Muhammadiyah Yogyakarta, Indonesia)
16. Dr. dr. Titiek Hidayati, M.Kes (Universitas Muhammadiyah Yogyakarta, Indonesia)
17. Dr. Shanti Wardaningsih, M.Kep., Ns., Sp.Kep.J., Ph.D. (Universitas Muhammadiyah Yogyakarta, Indonesia)
18. Dr. dr. Sri Sundari, M.Ke (Universitas Muhammadiyah Yogyakarta, Indonesia)
19. Dra. Lilis Suryani, M.Kes (Universitas Muhammadiyah Yogyakarta, Indonesia)
20. Drh. Tri Wulandari K, M.Kes (Universitas Muhammadiyah Yogyakarta, Indonesia)
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)

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

**SPEAKER OF
INTERNATIONAL CONFERENCE**

ICMHS-O-1-40

Analysis of Patient Safety Culture Instrument by MaPSaF

Arum Astika Sari¹, Arlina Dewi^{2*}

^{1,2} Master of Hospital Management, Universitas Muhammadiyah Yogyakarta

*Email: dewikoen@gmail.com

Abstract

Hospital as health care organization must develop a patient safety culture in an effort to improve the quality of care in order to prevent the occurrence of adverse event. MaPSaF (Manchester Patient Safety Framework) is one of instrument that published by National Patient Safety Agency (NPSA) in 2006, it can be used to measure the level of patient safety culture. The aim of this study was to determine the dimensions of the patient safety culture instrument by MaPSaF. This study was a quantitative design with study literature approach. The results of this study was MaPSaF composed of 10 dimensions of patient safety culture with 24 themes. The dimensions are commitment to overall continuous improvement, priority given to safety, system errors and individual responsibility, recording incidents and best practice, evaluating incidents and best practice, learning and affecting change, communication about safety issues, personnel management and safety issues, staff education and training, and team working. The themes are commitment to improvement, audit, policies, priority of patient safety, risk management system, implementation of patient safety, the cause of the incident, patient safety culture, reporting feeling and system, data analysis, the focus and result of investigation, incidents learning, the people in deciding of change, communication about patient safety between staf, patient or both, share the information, supporting the staff, training needs and purposes, team structure, the flow of information and sharing. The conclusion of this study was MaPSaF tools suitable for assessing the level of patient safety culture at the hospital in Indonesia.

Keywords : patient safety culture, instrument, MaPSaF

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

INTRODUCTION

In this era patient safety is one of the many critical issues in hospitals that often published and became a focus in Indonesia and international. Patient safety in the hospital then becomes an important issue because of the many cases of medical errors that occur in many countries. Each year in the United States nearly 100,000 patients who were hospitalized died because of medical error, other than that the research also proved that the deaths due to medical injury 50% of which are preventable.¹

Institute of Medicine (IOM) United States in 2000 published the report "To Err is Human, Building to Safer Health System" which states that hospitals in Utah and Colorado found adverse event was 2.9% and 6.6% died, while in New York found adverse event was 3.7% and 13.6% died. Furthermore, mortality due to adverse event in hospitalized patients in the United States totalled 33.6 million per year range 44000-98000 people. In the other hand, the publication of the WHO in 2004 declared adverse event was in range of 3.2% - 16.6% at the hospitals in various countries such as US, UK, Denmark and Australia.²

With these data, hospitals need to make effective efforts to minimize the occurrence of medical error or adverse event related aspect of quality care improvement, the hospital management needs to create and develop a culture of patient safety. The concept of safety culture refers to the shared attitudes, beliefs, values and assumptions that underlie how people perceive and act upon safety issues within Reviews their organisasi. Over the last decade in healthcare, it is a concept that has received a great deal of attention.^{3,4}

Development of The Manchester Patient Safety Framework (MaPSaF). Several instruments with differing characteristics are available to assess the generic concept of patient safety culture, which is part of organisational culture. In recent years some specific instruments have been developed to measure the patient safety culture, such as Hospital Survey on Patient Safety Culture (HSOPSC) from the Agency for Healthcare Research and Quality (AHRQ) in the USA, Manchester Patient Safety Assessment Framework (MaPSaF) from the University of Manchester in the UK, Safety Attitudes Questionnaire from the University of Texas / Johns Hopkins University in the USA.^{5,6,7} In addition, a number of other instruments used were commented on, but not directly recommended. These instrument tend to be based on surveys of the organisation's culture, emphasising individual attitudes and opinions, share beliefs, values and assumption.

Manchester Patient Safety Framework (MaPSaF), an instrument developed specifically to assist healthcare organizations begin to understand and improve the safety culture. The first version of MaPSaF was developed at the University of Manchester for use in primary care organizations. Initially, nine dimensions of patient

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

safety were identified from a review of the literature and were reviewed and approved by opinion leaders from primary care organizations. Then 30 interviews were carried out, with a range of staff from six primary care organizations, and including chief executives, practice managers and general practitioners. The data collected in the interviews was used to develop a description of a primary care organization in terms of each of the nine dimensions of patient safety, at each of five levels of safety culture. Details of the theoretical underpinnings of the five levels of safety culture are provided below. The face validity and utility of the framework were assessed, via 33 individual interviews and 14 focus group discussions exploring opinions about MaPSaF in terms of the dimension descriptors (comprehensiveness, clarity of language), and its potential usefulness in helping healthcare professionals think about the safety culture of their organization. At this point the NPSA (National Patient Safety Agency) became involved, and supported a project to adapt the primary care versions of the MaPSaF to acute, mental health and ambulance settings. In order to adapt the wording, two focus groups were carried out for each care setting which comprised a broad range of staff from acute, mental health and ambulance organizations. The suggestions emerging from the focus group discussions were incorporated in versions of the MaPSaF framework for each care setting. The suggested changes and descriptions were then circulated to the focus groups for sign off and draft versions of the acute, mental health and ambulance MaPSaF frameworks were produced. More details on the development of the framework has been reported elsewhere.^{8, 9, 10}

The form that MaPSaF takes is informed by two key points. The first is that organizations do not either have, or not have a safety culture. Rather they develop a safety culture over time, passing through several stages of development. The second key point is that safety culture is not a separate tangible aspect of the organization, but rather an emergent property that manifests itself in all safety related aspects of the organization. Therefore, a useful safety culture assessment tool ought to consider multiple aspects, or dimensions, of safety culture, separately, and not simply provide one overall 'score' for safety culture, which might disguise a complex picture of relative strengths and weaknesses. In other words, in order to develop an understanding of the subtle and complex nature of safety culture in healthcare organizations, a multidimensional measurement tool is needed.¹¹

MaPSaF handles both of these points, allowing users to consider both the multi-dimensional nature, and the stage of development of the safety culture in their organization. In the version for use in primary care settings, the nine dimensions of safety culture covered are as follows : (1) overall commitment to quality, (2) priority given to patient safety, (3) perceptions of the causes of patient safety incidents and their identification, (4) investigating patient safety incidents, (5) organizational learning

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

following a patient safety incident, (6) communication about safety issues, (7) personnel management and safety issues, (8) staff education and training about safety issues, (9) team working around safety issues. But in MaPSaF-acute care or hospital there is little difference in dimensions, which consists of 10 dimensions of patient safety culture, with the added dimension “system error and individual responsibility”.

Use the Framework. Here we describe the development of an instrument that aims to determine the dimensions of patient safety culture by MaPSaF. It takes the concept of patient safety culture more meaningful to clinicians and managers. We used the MaPSaF-Acute Care in this study. There are two-step studies to develop each dimensions of the instrument. The first step was develop a framework document which would take part the concept of safety culture, and the second step was establish the face validity and utility of the framework using expert review.

The theory underpinning the study was originally developed by Westrum, who proposed that one key way of distinguishing between organisational cultures is to examine the ways in which information is handled by the organization.^{12, 13} He proposed three different organisational cultures, which he called pathological, bureaucratic and generative. The most immature stage of organisation has a pathological culture, which is one in which information is hidden, failure is covered up and new ideas are actively crushed. There is active discouragement of sharing with and learning from others. A more mature organisational culture is one that has developed systems to handle the flow of information. In this-the bureaucratic organization-information is collected but may then be ignored, new ideas are seen to create problems, and learning and sharing are tolerated but not encouraged. The generative organisation represents the most advanced state of cultural maturity. Here information is actively sought, and some staff members are specifically trained to collect it. New ideas are welcomed, and failure prompts inquiry rather than cover-up or blame.

Westrum’s tripartite typology was later extended to a five level model and adapted by Parker and Hudson specifically with respect to safety culture (table 1).^{12, 13} A safety culture assessment tool based on the five-level model was developed and is now widely used in the oil and gas industry. It was thought that taking the same approach and adopting a methodology that has been successful in one high-risk industry, in healthcare might be beneficial. Therefore we used the extended five-level model as the theoretical basis for the present study.

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

Table 1. Level of Organization Safety Culture

Level of organisational safety culture	Characterisation
Level 1: Pathological	Why do we need to waste our time on risk management and safety issues?
Level 2: Reactive	We take risk seriously and do something every time we have an incident
Level 3: Calculative	We have systems in place to manage all possible risks
Level 4: Proactive	We are always on the alert, thinking of risks that might emerge
Level 5: Generative	Risk management is an integral part of everything we do

We undertook a comprehensive review of the peer-reviewed literature to generate a list of the dimensions, or key categories, describing safety culture in healthcare organisations. We conduct the search terms/strategies used for the review and the bibliographic databases that were searched. In addition, we reviewed key texts, reports and policy documents relating to patient safety and safety culture. A preliminary list of the dimensions identified was then sent to expert in patient safety and risk management for comments and adaptation. The final list of 10 dimensions formed the framework which contains 10 dimensions (Table 2).

Table 2. Dimension of patient safety culture in healthcare

Dimension	Description
Commitment to overall continuous improvement	How much is invested in developing the quality agenda? What is seen as the main purpose of policies and procedures? What attempts are made to look beyond the organisation for collaboration and innovation?
Priority given to patient safety	How seriously is the issue of patient safety taken within the organisation? Where does responsibility lie for patient safety issues?
System errors and individual responsibility	What sort of reporting systems are there? How are reports of incidents received? How are incidents viewed – as an opportunity to blame or improve?
Recording incidents and best practice	Who investigates incidents and how are they investigated? What is the aim of recording the incident?
Evaluating incidents and best practice	How are any incidents evaluated? What recognition is there of safe practice? How is the resultant data used?
Learning and effecting change	What happens after an event? What mechanisms are in place to learn from the incident? How are changes introduced and evaluated?

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

Dimension	Description
Communication about safety issues	What communication systems are in place? What are their features? What is the quality of record keeping to communicate about safety like?
Personnel management and safety issues	How are safety issues managed in the workplace? How are staff problems managed? What are the recruitment and selection procedures?
Staff education and training	How, why and when are education and training programmes about patient safety developed? What do staff think of them?
Team working	How and why are teams developed? How are teams managed? How much team working is there around patient safety issues?

RESULT

Based on the description of each dimension of patient safety culture, we divided into several themes related to each dimension (Table 3-13). The theme of contains a more detailed description of contents and described in more detail. It aims to enable researchers to conduct safety culture surveys of patients in hospitals without doing focus group discussion and facilitate research to understand the contents of each dimension of patient safety culture.

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

Table 3. Commitment to overall continuous improvement

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Commitment to quality	Already formed culture of continuous improvement that has an impact on decision making.	The hospital has a great desire and enthusiasm to continue to make improvements.	Staffs who are on the front lines are not involved in the repair process. Improvements are seen as purely management activities.	Repair quality improvement discussed when there is a case.	Do not care to the quality of care.
Inspection/Audit	Patient safety team designing an audit program involving patients and their families.	Hospital wants to provide the best quality service. The doctor involved in the audit process in order to continuous improvements.	Take some audit without serious actions.	Audits are done only if there are serious cases happen.	Less serious audit with no actions coming after
SOP and policies	Staffs already know about any possible risk so they reduce the SOP. Patients and families are involved in giving advice.	SOPs, protocols and policies are discussed and implemented as a basic rule of service. Patients and families are involved in decision-making services.	Many rarely implemented SOPs are made	SOPs and protocols are outdated and updated when there is a case.	Low risk management implementation

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

Table 4. Priority given to patient safety

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Priority is given to patient safety	Patient safety is the hospital priority.	Actively identify patient safety risks.	The existing system shows good patient safety priority	Priority that is given to the patients safety is controlled by a government regulation.	Low patient safety priority
Risk management system	The entire staff implement risk management systems and continuous quality improvement consistently	The risk management system has been socialized more widely in hospital and community organizations.	The risk management system has not been widely socialized.	The risk management system has been implemented but still minimal (just for formality).	Organizations are not yet aware of the importance of the risk management system.
Implementation of patient safety	Implementation of patient safety is inherent to all activities in the hospital.	All staff involved in patient safety	Implementation of the patient safety fail to respond the complexity of the problems that occur.	Patient safety is discussed when there is an incident happens. Patient safety carries the staff security but not for patient.	Staffs are less concerned about patient safety, because it is covered by insurance.

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

Table 5. System errors and individual responsibility

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
The cause of incident	An incident report has become a staff "value".	An incident report is already underway, both at the organizational and national levels.	The incident occurred due to a system error, not just individual.	The incident occurred due to human error and the solution is punishment.	The incident is happened beyond the control of the organization due to human error and the patient.
Practice of Patient safety	hospital has open and fair practices, staffs feel the atmosphere of a good culture.	Staff feel safe to report any incidents.	Staff do not feel the implementation of the open and fair practices	There is no support to solve the problems	Blame culture

Table 6. Recording incidents and best practice

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Reporting system and its functions	Patient safety incident is reported through a right system	Reporting process is easy and friendly.	Reports are taken from staff reports, audits, and complain forms.	The reports data are collected but not analyzed	The team that collects incident data works inappropriately.
Staff feeling on reporting incident	Staff safely reports patient and near miss incidents even they do not cause any major effect to the patient.	The staff safely reports incident and take a lesson from it.	Staffs reported the incident reluctantly.	Staffs are reluctant to report incidents because they do not get support.	Staffs are afraid to report the incident.

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

Table 7. Evaluating incidents and best practice

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Data analysis	Analysis of patient safety data has been reviewed systematically and regularly	Conducting incidents analysis with basic cause analysis and the goal is for learning.	Useless statistical incident data.	Collective incidence data were not analysed.	Hiding the incident
Focus of investigation	Patient safety investigation involves internal and external organizations.	Focussing on taking care the patient safety and near misses incidents that involving the patient.	Patients safety and near misses incidents focus only on the individual and the environment in the vicinity of the incidents.	Patient safety investigation is done only at certain events.	Patient safety incidents were investigated in moderation, just to cover up mistakes.
Result of investigation	The results of the investigation resulted in best practice and distributed to all units and even to the national level.	The results of the investigation are used to analyse trends and identify the most common cause of incidents and testing of the implementation of the training.	The results of the investigation are used for discussion and implementation procedures.	Investigations are stopped when the problem is solved	The results of the investigation only used to impose sanctions.

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

Table 8. Learning and effecting change

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Learning from safety incidents	Learning from inside and outside of the hospital. Patient safety incidents discussed openly in the forum.	There is learning culture from the incident and share the results to make changes.	The learning system is not exhaustive.	Learning only from a particular incident.	There are no lessons learned from the incident.
Who determines the change after the incident	Patient safety incidents discussed openly along with staffs in order to generate changes	Staff participate actively in deciding the changes and implement them.	Patient safety team and manager conduct the changes but do not involve all the staff	Changes can only be made by a senior manager.	Changes is made only to follow the rules

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

Table 9. Communication about safety issues

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Communication about patient safety	Patients are involved in developing risk management policies.	Communicate with other institutions that are considered to know more about patient safety.	There is an internal communication on patient safety and make a policy about it.	Communication on patient safety unplanned and limited to who was involved in the incident	There was no communication about patient safety.
Sharing the Information	Innovative ideas about patient safety is communicated through the right communication line	Information about patient safety were distributed at a briefing session which has been scheduled by the staff.	Less information about patient safety that is understood by the staff.	Communication about patient safety is an instruction.	Bad communication
Communication about patient safety to patients	Good internal and external communication	Communicating patient safety to patients and families/visitors of hospital.	Informations about patient safety are not utilized effectively.	One-way communication	Patients receive information when legally regulated.

Table 10. Personnel management and safety issues

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Do staffs feel supported?	Personnel management review and discuss about the competence of the staff, supervise and mentoring, and give attention to the staff health	Management designs support meets the need of the staff and pay attention to their health.	Personnel management procedures are used to control staff.	Auth staff note if there are incidents happen.	The staff were not supported because the management did not pay attention to their health. No increase in human resources program.

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

Table 11. Staff education and training

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Training needs	Staff have the opportunity to take the training according to their needs.	Identifying staff training needs that adapts to the needs of hospital.	Training helps to meet the needs of hospital.	The training is only done when there is an incident. Staff lack of skills.	There is no priority for training. Training is regarded as disturbing activities, wasting time and costly
Training purposes	Training is a way to support staff in order to develop their potentials.	Employee training and development support associated with other systems such as incident reporting.	Training is used to increase hospital revenue and not the staff career development	Training is considered to prevent errors.	Hospital felt no need to provide training because they think that hospital personnel are trained and ready to work

Table 12. Team working

Aspect/Theme	Generative	Proactive	Calculative	Reactive	Pathological
Team structure	The team is flexible and appreciate the support of other parties.	The members are multidisciplinary with flexible structure	The team is composed of a multidisciplinary elements just to meet government policy.	staff work as a team when instructed.	Patient safety teams work independently with a rigid hierarchical structure
What would be a team member?	Team have the same vision and mission	Collaboration between members of the team runs well.	The members are multidisciplinary but do not have a commitment to the team.	Team work is just a slogan	Team is a name list
The flow of information and sharing	The team is open to sharing information with other parties (local, national and international)	The team is open to share the information included on outsiders.	The mechanisms that regulate the information is not effective.	The flow of information continues in accordance with the appropriate level of the hierarchy of their respective interests	The team members keep information

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

CONCLUSION

The framework developed in this study for assessing the patient safety culture in hospital as healthcare organization, which we have called the Manchester Patient Safety Framework (MaPSaF). MaPSaF tool covers multiple dimensions of safety culture, and five levels of safety culture development. This tool can be used to identify the level of patient safety culture at the hospital in Indonesia. The framework is based on an established theory and has been developed using a qualitative approach to define the dimensions and test its face validity and utility in healthcare organization. It acknowledges the multidimensional and dynamic nature of culture, and allows for the organization to assess their progress in developing a patient safety culture. The tool assists healthcare teams in measuring their progress towards making patient safety a central focus within their organization. It can help identify areas of particular strengths or weakness which help to channel resources in the most appropriate way to improve patient safety culture.

REFERENCES

1. Cahyono, S.B. 2008. *Membangun Budaya Keselamatan Pasien dalam Praktik Kedokteran*. Percetakan Kanisius. Yogyakarta.
2. Depkes RI. 2006. *Panduan Nasional Keselamatan Pasien di Rumah Sakit*. Jakarta.
3. Leape L.L. & Berwick D.M. 2000. Safe health care: are we up to it? *British Medical Journal* 320, 725–726.
4. Vincent C., Taylor-Adams S., Chapman E.J. et al. 2000. How to investigate and analyse clinical incidents: clinical risk management unit and association of litigation and risk management protocol. *British Medical Journal* 320, 777–781.
5. Nieva V.F. & Sorra J. 2003. Safety culture assessment: a tool for improving patient safety in healthcare organizations. *Quality and Safety in Healthcare* 12, ii17.
6. Singer S.J., Gaba D.M., Geppert J.J., Sinaiko A.D., Howard S.K. & Park K.C. 2003. The culture of safety: results of an organization-wide survey in 15 California hospitals. *Quality and Safety in Health Care* 12, 112–118.
7. Weingart S., Farbstein K., Davis R. & Phillips R. 2004. Using a multihospital survey to examine the safety culture. *Joint Commission Journal on Quality and Safety* 30, 125–132.
8. Ashcroft D.M., Morecroft C., Parker D. & Noyce P. 2005. Safety culture assessment in community pharmacy: development, face validity and feasibility of the Manchester Patient Safety Framework. *Quality and Safety in Healthcare* 14, 417–442.
9. Kirk S., Parker D., Claridge T., Esmail A. & Marshall M. 2007. Patient safety culture in primary care: developing a theoretical framework for practical use. *Quality and Safety in Healthcare* 16, 313–320.

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

10. Parker D., Lawrie D., Carthey J. & Coultous M.. 2008. The Manchester Patient Safety Framework: sharing the learning. *Clinical Risk* 14(4): 140–142, 1–3.
11. Hale A.R. 2000. Culture_s confusion. *Safety Science* 34,1–14.
12. Westrum R.. 1993. Cultures with requisite imagination. In *Verification and Validation in Complex Man-Machine Systems* (J. Wise, P. Stager & J. Hopkin eds), pp. 401–417. Springer, New York, NY.
13. Westrum R. 2004. A typology of organisational cultures. *Quality and Safety in Health Care* 13, ii22–ii27.