



PROCEEDINGS

The 4th International Conference on Sustainable Innovation (ICoSI) 2020

Cutting Edge Innovations for Sustainable Development Goals

Universitas Muhammadiyah Yogyakarta (Indonesia)

October 13 - 14 2020

<https://icosi.umy.ac.id/>

Focal Conferences



- ✔ (ICPU) The 2nd International Conference on Pharmaceutical Updates
- ✔ (ICOMS) The 6th International Conference on Management Sciences
- ✔ (ICLAS) The 9th International Conference on Law and Society
- ✔ (ICMHS) The 4th International Conference Medical and Health Sciences
- ✔ (ICAF) The 6th International Conference for Accounting and Finance
- ✔ (ILEC) The 2nd International Language and Education Conference
- ✔ (ICONURS) The 2nd International Conference on Nursing
- ✔ (ICITAMEE) The 1st International Conference on Information Technology, Advanced Mechanical and Electrical Engineering
- ✔ (IConARD) International Conference on Agribusiness and Rural Development
- ✔ (ISHERSS) The 2nd International Symposium on Social Humanities Education and Religious Sciences
- ✔ (ICONPO) The 10th International Conference on Public Organization
- ✔ (DREAM) The 5th Dental Research and Exhibition Meeting
- ✔ (ICHA) The 5th International Conference on Hospital Administration
- ✔ (ICOSA) The 3rd International Conference on Sustainable Agriculture





Proceedings

4th International Conference on Sustainable Innovation

2020

Publisher UMYPress

Lembaga Penelitian, Pengabdian, dan Pengembangan Masyarakat (LP3M)

Universitas Muhammadiyah Yogyakarta

Address

Gedung D Lantai 2

Universitas Muhammadiyah Yogyakarta

Jalan Brawijaya, Bantul,

55183 Indonesia

ISBN : 978-623-7054-43-6



The 4th ICoSI 2020 Commitees

Advisory Board

Dr. Ir. Gunawan Budiyo, M.P, IPM
Prof. Dr. Ir. Sukamta, M.T., IPM
Prof. Dr. Nano Prawoto, S.E., M.Si
Dr. Suryo Pratolo, M.Si, Akt
Prof. Hilman Latief, MA., Ph.D
Prof. Dr. Achmad Nurmandi, M.Sc

Chairs

Dr. Yeni Rosilawati, S.IP., S.E., MM
Dr. Arie Paksi, S.IP., M.A
Dr. Dyah Dewanti

Secretariat

Abdul Rasyid Ghazali, M.Sc.
Mariska Intan Sari, S.S., M.A
Fitria Rahmawati, S.Pd. M.Hum.
Khanza Nabila Iftina, S.I.Kom
Qholiva Yuni Fadilla, S.I.Kom

Treasurer

Twediana Budi Hapsari, S.Sos., M.SI., Ph.D
Safaroh Ivory Fananda, S.Sos

Scientific Committee

Prof. Agus Setyo Muntohar, S.T., M.Eng.Sc., Ph.D.(Eng.)
dr. Iman Permana, M.Kes., Ph.D
Dr. Sudarisman, M.T
Iwan Satriawan, Ph.D
Dr. Indira Prabasari, M.P
Eko Priyo Purnomo, S.IP., M.Si., M.Res., Ph.D
Dr Nuryakin, M.M
Prof. Dr. Achmad Nurmandi, M.Sc.
Rizal Yaya, S.E., M.Sc., Ph.D., Ak, CA
Dr. Mukti Fajar ND, SH., M.Hum

Proceedings and Journals

dr. Iman Permana, M.Kes., Ph.D
Dianita Sugiyo, S.Kep., Ns., MHID
Dr. Dyah Mutiarin, M.Si.

Program and Event

Hijriyah Oktaviani, S.IP, M.M
Krisna Mulawarman, S.Sos, M.Sn

IT Support

Miftahul Yaum
Winny Setyonugroho. S.Ked., M.T., Ph.D
Anhar Wahyu, S.E

Food and Beverages

Dr. Alni Rahmawati, M.M
Dr. Sri Handari Wahyuningsih, M.M
Siti Wijayanti
Dra. Luluk Chusniati

Equipment, Facilities and Infrastructure

Bagus Subandono, ST, M. Eng
Aris Nuryanta, S.H
Galuh Sudarsono

Assets and Logistics

Eko Wahyudi, S.E
Noor Fajari
Suparno

Reviewers of 4th ICoSI 2020

- Ahmad Zaki, Ph.D.
 Al Afik, S.Kep., Ns., M.Kep.
 Ali Awaludin, Ph.D.
 Ana Majdawati
 Angga Fajar Setiawan, S.T., M.Eng., Ph.D.
 Anita Rahmawati, S.T., M.T.
 Anugrah Ilahi, Ph.D.
 apt. Aji Winanta, M.Sc
 apt. Binar Asrining Dhiani, Ph.D
 apt. Didik Setiawan, Ph.D
 apt. Erza Genatrika, M.Sc
 apt. Hari Widada, M.Sc
 apt. Indah Hairunisa, S. Farm., M.Botech
 apt. Ingenida Hadning, M.Sc
 apt. Lusi Putri Dwita, M.Si
 apt. Nurul Maziyyah, M.Sc
 apt. Raditya Weka, M.Farm
 apt. Rifki Febriansah, M.Sc
 Assoc. Prof. Dr. Khairil Azmin Mokhtar
 Asti Widuri
 Azizah Khoiriyati, S.Kep., Ns., M.Kep
 Cahyu Septiwii, M.Kep., Sp.Kep., MB., Ph.D.
 Dedi Suryadi
 Dina Wahyu Trisnawati, Ph.D.
 Dr. Ahim Abdurahin M.Si., SAS., Ak., CA
 Dr. Anas Puri, S.T., M.T.
 Dr. Ani Hairani
 Dr. apt. Bangunawati Rahajeng, M.Si
 Dr. apt. Dwi Utami, M.Si
 Dr. apt. Ika Yuni Astuti, M.Si
 Dr. apt. Nurkhasanah, M.Si
 Dr. apt. Siska, M.Farm
 Dr. apt. Supandi, M.Si
 Dr. Arni Surwanti, M.Si.
 Dr. Astuti Masdar
 Dr. Birgit C. P. Koch, PharmD, Ph.D
 Dr. dr. Arlina Dewi, M.Kes., AAK
 Dr. Dr. Nur Hidayah, M.M.
 Dr. dr. Sri Sundari, M.Kes.
 Dr. drg. Dwi Aji Nugroho MDSc
 Dr. Drh. Sapto Yuliani, M.P
 Dr. Edi Soesanto, S.Kp., M.Kes
 Dr. Eko Hanudin
 Dr. Elsy Maria Rosa, M.Kep.
 Dr. Fadia Fitiyanti
 Dr. Firman Pribadi, M.Si.
 Dr. Firman Pribadi, SE., MM.
 Dr. Hosam Alden Riyadh A. Alazeez, M.S.A
 Dr. Ihsan Nurkomar
 Dr. Ika Nurul Qamari, SE., M.Si
 Dr. Indah Fatmawati, M.Si
 Dr. Innaka Ageng Rineksane
 Dr. Istianah ZA
 Dr. Lis Noer Aini
 Dr. Lisa Musharyanti, S.Kep., Ns., M.Med.Ed
 Dr. Mahendro Prasetyo Kusumo
 dr. Maria Ulfa, MMR., Ph.D.
 Dr. Muhammad Ichsan
 Dr. Muria Indah Sokowati, M.Si
 Dr. Ns. Umi Solikhah, S.Pd., M.Kep,
 Dr. Nur Chayati, S.Kep., Ns., M.Kep
 Dr. Nuryakin, MM.
 Dr. Qurratul Aini, S.KG., M.Kes.
 Dr. Seplika Yadi
 Dr. Siti Nur Aisyah
 Dr. Titih Huriah, M.Kep., Sp., Kom
 Dr. Yeni Rosilawati
 Dr. Eng. Rahmita Sari Rafdinal, S.ST., M.Eng.
 Dr. Eng. Pinta Astuti, S.T., M.Eng.
 Drg Arya Adiningrat PhD
 Drg Atiek Driana R Sp.KGA
 Drg Dian Yosi A MDSc PhD
 Drg Dwi Suhartiningtyas MDSc
 Drg Edwyn Saleh Sp.BMM
 Drg Erlina Sih Mahanani
 Drg Fahmi Yunisa Sp. Pros
 Drg Hartanti Sp.Perio
 Drg Iwan Dewanto MMR PhD
 drg Sartika Puspita MDSc
 Dr. Dyah Ekaari Sekar J
 Eko Purwanti
 Eko Purwanti, Ph.D
 Ema Waliyanti, S.Kep., Ns., MPH
 Endro Dwi Hatmanto
 Erna Rochimawati, Ph.D
 Erna Rochmawati
 Etik Kresnawati, Dr., M.Si.
 Evi Rahmawati, S.E., M.Acc., Ph.D., Ak., CA.
 Evy Rahman Utami, S.E., M.Sc.
 Fanny Monika, S.T., M.Eng.
 Ferika Indarwati, S.Kep., Ns., M.Ng
 Fitri Arofiati, S.Kep., Ns., MAN., Ph.D
 Galuh Suryandari
 Genesiska, S.Si., M.Sc.
 Gina Puspita
 Hafiez Sofyani, S.E., M.Sc.
 Harjanti Widiastuti, Dr., S.E., M.Si., Ak.
 Hendy Setiawan, Ph.D.
 Hidayatul Kurniawati
 Ida Faridah, S.Kp., M.Kes
 Ietje Nazaruddin, Dr., M.Si., Ak., CA.
 Ika Setyawati
 Ikhlas Muhammad Jenie
 Iman Permana
 Imaniar Ranti
 Inayati
 Indira Prabasari, Ph.D.
 Ir. Latif Budi Suparma, M.Sc., Ph.D
 Iwan Satriawan, Ph.D
 Jebul Suroso, Ns. M.Kep
 Jenita Doli Tine Donsu, S.KM. M.Si
 Lilis Suryani

M. Bahrul Ilmi, S.E., M.E.Sy
M. Endriyo Susila, Ph.D.
M. Syifa Amin Widigdo, Ph.D
Mahendro Prasetyo Kusumo
Matyana Dwi Cahyati, S.T., M.Eng.
Meika Kurnia Puji, RDA,M.Si.,Ph.D."
Muhammad Chairunsyah Riskyta Akbar
Muhammad Hazyar Arumbinang, S.H., LL.M
Muhammad Ibnu Syamsi, S.T., M.Eng.
Mundakir, S,Kep. Ns. M.Kep
Naim Abdul Majid
Nasrullah, S.H., S.Ag., MCL.
Naufal Bagus Pratama, S.H.
Noriko Kuwano
Nurvita Risdiana, S.Kep., Ns., M.Sc
Prof. Djoko Legono
Prof. Dr. Alan Lau, Pharm.D., FCCP
Prof. Dr. apt. Dyah Aryani Perwitasari S.Si., M.Si
Prof. Dr. Arthorn Riewpaiboon
Prof. Heru Kurnianto
Tjahjono,MM"
Prof. Hilman Latief, Ph.D.
Prof. Hironori Yasuda
Prof. Iman Satyarno
Prof. Ir. Mochamad Teguh, MSCE., Ph.D.
Prof. Jamsari
Prof. Keith Walters
Prof. Kriengsak Panuwatwanich
Prof. Maria Rosa Mosquera Losada
Prof. Maurice S. B. Ku
Prof. Michael Henry Boehme
Prof. Normah Mohd Noor
Punang Amaripuja,SE.,ST.,M.IT
Ratna Indriawati
Retno Widowati PA.,M.Si.,Ph.D.
Rizal Yaya, S.E., M.Sc., Ph.D., Ak., CA.
Rizka Fakhriani
Rofi Aulia Rahman, S.H., LL.M
sabtanti harimurti
Shanti Wardaningsih, Ph.D
Sherly Usman
SN Nurul Makiyah
Sri Atmaja P. Rosyidi, S.T., MSc.Eng., Ph.D., PE
Sri Rejeki M
Sri Sundari
Sudarisman
Suryanto
Suryo Pratolo, Dr., S.E., M.Si., Ak., CA., AAP-A.
Sutantri, Ns., M. Sc.,Ph.D
Talqis Nurdianto
Taufiq Hidayat, S.P., M.Sc.
Taufiqur Rahman, S.IP, M.A, Ph.D.
Titiek Hidayati
Tri Pitara
Tri Wulandari Kesetyaningsih
Tumin, Ph.D
Twediana Budi Hapsari, Ph.D
Wantoro, M.Kep., Ns., Sp.Kep., M.B., Ph.D
Warih Andan
Winny Setyonugroho,Ph.D.
Yanuar Fahrizal., S.Kep., Ns., M.Kep., Sp.Kep.J
Dr. Yoni Astuti
Yordan Gunawan, S.H., Int.MBA., M.H

Preface by the Chairperson of the 4th ICoSI 2020



Dr. Yeni Rosilawati, S.IP. S.E., MM.

Assalamu'alaikum Wr. Wb.

All praise is due to Allah, the Almighty, on whom we depend for sustenance and guidance. Prayers and peace be upon our Prophet, Muhammad SAW, his family and all of his companions.

On behalf of the organizing committee, it is my pleasure and privilege to welcome the honourable guests, distinguished keynote & invited speakers, and all the participants.

With the main theme of “Cutting-Edge Innovations on Sustainable Development Goals (SDGs)”, the 4th International Conference on Sustainable Innovation (ICoSI) 2020 serves as a forum to facilitate scholars, policy makers, practitioners, and other interested parties at all levels from Indonesia and abroad to present their novel ideas, promote cutting-edge research, and to expand collaboration network. The conference has about 1373 participants participating from more than 8 countries 4 continents all over the world, making this conference a truly international conference in spirit.

This multidisciplinary conference was first held in 2012 and has undertaken various changes and adopted to the current technological trends of our education system. From having this conference with just 175 participants back in 2012 we have come a long way in making the conference a huge success with more than 1373 participants participating in this two-day conference.

Formerly, this conference consisted of only 9 (nine) focal conferences. This year, there are 14 focal conferences from various disciplines, namely: 1) The 2nd International Conference on Pharmaceutical Updates (ICPU), 2) The 6th International Conference on Management Sciences

(ICoMS), 3) The 9th International Conference on Law and Society (ICLAS), 4) The 4th International Conference Medical and Health Sciences (ICMHS), 5) The 6th International Conference for Accounting and Finance (ICAF), 6) The 2nd International Language and Education Conference (ILEC), 7) The 2nd International Conference on Nursing (ICONURS), 8) The International Conference on Information Technology, Advanced Mechanical and Electrical Engineering (ICITAMEE), 9) The 2nd International Conference of Agribusiness and Rural Development (IConARD), 10) The 10th International Conference on Public Organization (ICONPO), 11) The 2nd International Symposium on Social Humanities Education and Religious Sciences (ISHERSS), 12) The 5th Dental Research and Exhibition Meeting (DREAM), 13) The International Conference on Hospital Administration (ICHA), and 14) The 3rd International Conference on Sustainable Agriculture (ICoSA).

Accordingly, We are proud to announce that this year, the 4th ICoSI 2020 breaks the Museum Rekor-Dunia Indonesia (MURI) record as the Virtual Multidisciplinary Conference with the Largest Number of Area of Fields in Indonesia

In addition, this year, this conference holds special value since this is the first conference in the history of our university where the entire conference is taking place remotely on a digital platform through the use of advance technologies due to the Covid-19 Pandemic.

I would take this opportunity to express my highest respect to the Rector of Universitas Muhammadiyah Yogyakarta, Dr. Gunawan Budiyanto who gave approval and ensured the maximal support from all the faculty members of Universitas Muhammadiyah Yogyakarta (UMY) that made this event a big success. In addition, my appreciation goes to all the support teams who have provided their valuable support and advice from planning, designing and executing the program.

Let me conclude my speech by encouraging the delegates to participate with an increasing number in all the activities and discussions through the digital platforms for the next two days. I wish everyone a successful, safe, and fruitful conference.

Thank you!

Wassalamu'alaikum Wr. Wb.

Yogyakarta, Indonesia, 14 October 2020



Welcoming Remarks by the Rector of Universitas Muhammadiyah Yogyakarta



Assoc. Prof. Dr. Gunawan Budiyanto

Innovation is the beginning of the development of technology, and technology is a development machine that is expected to provide benefits to humans and provide the smallest possible impact on environmental quality. In the concept of sustainable development, development must improve the quality of human life without causing ecological damage and maintain the carrying capacity of natural resources.

International Conference on Sustainable Innovation (ICoSI) is an international conference which is an annual conference held by the University of Muhammadiyah Yogyakarta (UMY), Indonesia. In 2020 this raises the issue of "Cutting-Edge Innovations on Sustainable Development Goals." Therefore, on behalf of all UMY academics, I would like to congratulate you on joining the conference, hoping that during the Covid-19 Pandemic, we can still provide suggestions and frameworks for achieving sustainable development goals.

About The 4th International Conference on Sustainable Innovation (ICoSI) 2020

Cutting Edge Innovations for Sustainable Development Goals

The 2030 Agenda for Sustainable Development is enacted by the United Nations as a shared blueprint for peace and prosperity for people and the planet, now and into the future. It consists of strategies to improve health and education, reduce inequality, and spur economic growth while also conserving natures by 2030.

This year, however, at the first one-third of its timeline, the SDG Reports shows that the outbreak of COVID-19 did hinder the achievement, or at least decelerate the progress of achieving the 17 goals. In fact, according to the report, “some number of people suffering from food insecurity was on the rise and dramatic levels of inequality persisted in all regions. Change was still not happening at the speed or scale required”, accordingly.

Therefore, in this event of pandemic, the quantity and quality of research, innovation, and more importantly multi-disciplinary collaboration are indispensable. Furthermore, there needs to be clear ends of those works. That is how those research are applicable and benefits directly to the society. That is how those research is incorporated as the drivers of policy making, and used practically in the society. Hence, the stakeholders especially the triple helix of higher education institution, government, and industry must be re-comprehended and supported to reach the common goal of the SGD.

International Conference on Sustainable Innovation (ICoSI) has been essentially attempting to strengthen this regard since its first establishment. One of the goals of ICoSI is to provide primarily a platform where scholars, practitioners, and government could grasp the development and trends of research. Hopefully, meeting these actors altogether would result in stronger collaboration, sophisticated and advantageous research, and brighter ideas for further research. Based on these reasoning, this year, the 4th ICoSI 2020 UMY is themed ‘Cutting-edge Innovations for Sustainable Development Goals’.

Improving from last year conference which brought nine focal conference, this year ICoSI 2020 UMY brings 14 disciplines, from social sciences, natural sciences, and humanities. ICoSI 2020 received as much as 1005 papers. The paper works submitted in ICoSI 2020 UMY will be published in Atlantis Proceedings, IOP Proceedings, National/International Journals, and ICoSI ISBN-indexed Proceedings.

Nevertheless, ICoSI believes that publication is only the beginning of research dissemination. The publications will enhance the chance of the research known by wider audience, and then used, applied, and incorporated at either system, institutional, or personal level of human lives.



CONTENTS



The 4 th ICoSI 2020 Committees	2
Reviewers of 4 th ICoSI 2020	5
Preface by the Chairperson of the 4 th ICoSI 2020	7
Welcoming Remarks by the Rector of Universitas Muhammadiyah Yogyakarta.....	9
About The 4 th International Conference on Sustainable Innovation (ICoSI) 2020	10
CONTENTS	11
TRACK ECONOMICS, LAW, EDUCATION, SOCIAL, AND HUMANITIES	15
A Policy Analysis for Building Regulation in Disaster Situations on Sleman Regency	16
Wisnu Dimas Punto Aji ^{1,*} Dewi Sekar Kencono ²	16
Valuation of a Declining Oilfield under Stochastic Oil Prices and Non-Constant Interest Rates	20
Fransiscus Pratikto ^{1,*} , Sapto Indratno ² , Kadarsah Suryadi ³ , Djoko Santoso ⁴	20
The Dispute Board as an Alternative to the Construction Service Disputes Settlement.....	26
Fadia Fitriyanti ^{1,*} Emil Adli ²	26
The Promotion and Protection of Human Rights in Islam for Creating the Culture of Peace	33
Martinus Sardi ^{1,*}	33
Trusts Concept Settings in Management Limited Company.....	39
Reni Anggriani ^{1,*} King Faisal ²	39
Legal Protection of Nurses in Health Care Efforts During the co-pandemic Period 19	43
Reny Suryanti ^{1,*} Nyoman Putra Putra ²	43
Effect of Parenting against Smartphone Addiction	47
Mawaddah Nasution ^{1,*} , Siswanto Masruri ² , Khoiruddin Bashori ³	47
Model of Organizing Film Productio Amid the Covid-19 Outbreak in Indonesia.....	51
Citra Dewi Utami ^{1,*}	51
Accountability of Village Fund Allocation Management (ADD) in Village Government.....	56
Mohamad Sukarno ^{1,*}	56
Effect of Parenting against Moral Development of Children Aged 4-10 Years	62
Widya Masitah ^{1,*} Asmadi Alsa ² Abd.Madjid ³	62
The Influence of Family Communication on Children’s Social Competence at SD Ar-Rahman Full Day School Medan.....	67
Juli Maini Sitepu ^{1,*} Asmadi Alsa ² Abd.Madjid ³	67
The Integration of Law and Religion for New Civilization in Indonesia	72
Dewi Nurul Musjtari ^{1,*} Nurmawati ² Zola Fi Dinillah Halim ³	72
Head of East Java Aisyiah Board Women’s Empowerment Methods in Realizing Sustainable Development Goals Di Indonesia.....	78
Nur Azizah Hidayat ^{1,*} Iman Zukhrufi Nur Azzam ²	78
Optimization of Child-Friendly City Development Policy in Yogyakarta City	89
Septi Nur Wijayanti ^{1,*} Hanum Salsabila ²	89
The Obligation of Indonesian Government to Ratify the Rome Statute for the Global Justice	98
Muhammad Nur Islami ¹ , Martinus Sardi ²	98
Legal Politics of Restoration of Indonesia’s State Policy Post Amendment of the 1945 Constitution	103
King Faisal Sulaiman ^{1,*}	103
Competition Price Regulations in an Islamic Perspective: Determination of the Aircrat Ticket Tariff	109
M. Tri Saputra ^{1,*} Mukti Fajar ND ²	109
Romanticism Dyanamics of Legal Politics Protection and Management of Environmental Protection to Indonesia’s Ecocracy	116
Al Qodar Purwo S ¹ , Nur Azizah Hidayat ² , Iman Zukhrufi Nur Azzam ³	116
Ambiguity of Environmental Economic Instruments between Ecological or Economic Interests, in Controlling Environmental Damage in Special Region of Yogyakarta.....	123
Sunarno ¹ Arvin Setiyana Dewangga ²	123
The Law Enforcement against a Non-Sharia Compliance Banking Transaction by the Financial Services Authority in Indonesia	130
Dewi Nurul Musjtari ^{1,*} Nasrullah ² Aunurochim Mas’ad ³ Nurmawati ⁴	130

Shariah Audit Expectation-Performance Gap in Malaysian Islamic Banks.....	137
Supiah Salleh ¹ , Mustafa Mohd Hanefah ² , Zurina Shafii ³	137
Students' Attitudes towards Blended Learning Implementation in a private university of Yogyakarta	144
Avita Elok Faiqoh ¹ , Eko Purwanti ²	144
How Millenial Think About Privacy Concern?	152
Anissa Hakim Purwantini ¹ , Betari Maharani ¹	152
Impact Of Changes in Psak on the Competence of Lecturers and Students Understanding Levels.....	157
Duwi Rahayu ^{1*} , Imelda Dian Rahmawati ^{1*} , Bayu Hari Prasajo ¹	157
The Influence of Internal Locus of Control, Idealism, Ethical Knowledge, and Gender on Accounting Students' Ethical Perception.....	167
Aji Baskoro ^{1*} , Dyah Ekari Sekar Jatiningsih ¹	167
Effect of Net Income, Rupiah Exchange Rate, Interest Rate dan Inflation on Stock Price.....	174
Edon Ramdani ^{1*} , Zehan Nur Apsah ²	174
A Comparative Analysis on the Recognition of Zakat in the Taxation Systems of Malaysia and Indonesia	187
Suhaila Abdul Hamid ^{1*} , Ickuk Rangga Bawono ^{2*} , Ayu Ratu Wulandari ²	187
Developing an Environmental Tax Framework for Malaysia:	192
Izlawanie Muhammad ^{1*} , Norfakhirah Nazihah Mohd Hasnu ²	192
Determining Factors for Success Use of E-Learning in Learning Process in College.....	196
Mohammad Alfian ^{1*} , Hikmatul Maulidah ²	196
Effect Of Money Ethics And The Use Of Siskeudes On The Level Of Fraud In Village Fund Management With Religiosity As A Moderation Variable.....	202
Elisa Purwitasari ^{1*} , Mohammad Alfian ^{1*} , M. Sofyan Firman Syah ^{1*}	202
The Relationship between Performance Based Budgeting Implementation, Budget Absorption, Accountability and Local Government Performance.....	208
Parwoto ^{1*}	208
The Influence of Information Technology (IT) on Accrual Accounting Adoption of the Jordanian Public Sector .	217
Moawiah Awad Alghizzawi ^{1*} , Rosnia Masruki ¹	217
The Effect of Professional Skeptisism, Auditor Expertise, and Integrity of Audit Quality.....	224
Ruci Arizanda Rahayu ^{1*} , Sarwenda Biduri ^{1*} , Mahardika D. Kusuma Wardana ^{1*}	224
E-Procurement and Effectiveness of Internal Controls on Fraud Prevention	231
Sarwenda Biduri ^{1*} , Wiwit Hariyanto ^{1*} , Ilmi Usrotin ¹	231
Usefulness of Accounting Information in Predicting Hedging Decision	234
Sustari Alamsyah ^{1*} , Triana Zuhrotun Aulia ¹	234
Religious Belief & Halal Cosmetic Products Consumption	241
Tanti Handriana ¹ , Praptini Yulianti ² , Ryan Bayu Permana ³	241
Does Corporate Social Responsibility Disclosure Affect Profit Sharing Ratio?	246
Veni Soraya Dewi ^{1*} , Fritztina Anisa ^{1*} , Faqiatul Mariya Waharini ¹	246
Determination Analysis Affecting Intellectual Capital Disclosure and Its Effect on Market Performance and Cost of Equity Capital.....	252
Wawan Sadtyo Nugroho ^{1*} , Nia Kurniati Bachtiar ¹	252
TRACK HEALTH AND NURSING SCIENCE	261
The Effect of Assertive Behaviour Therapy towards Bullying Behavior in Adolescents	262
Chindy Maria Orizani ^{1*} , Dwi Yuniar Ramadhani ²	262
Characteristics and Level of Knowledge of Newborn Baby Care in Pandemic Covid 19	265
Devita Elsanti ^{1*} , Diyah Yulistika Handayani ²	265
Risk factors for disease severity in paediatric patients with Covid-19: A literature review	269
Eka Oktavianto ¹ , Gani Apriningtyas Budiayati ² , I Made Moh. Yanuar Saifudin ^{3*} , Endar Timiyatun ⁴ , Aris Setyawan ⁵	269
The Role of Self-Efficacy and Family Support in Improving the Quality Of Life of Patients with Hypertension ...	276
Erni Tri Indarti ^{1*} , Oktaffrasya Widhamurti ² , Remita Yuli Kusumaningrum ³	276
The Influence of Head Nurses Supervision on Discharge Planning Completeness	280
Etik Kustiati ^{1*} , Vivi Yosafianti Pohan ²	280
Lemon and Rose Aromatherapy Reduce Blood Pressure in Preeclampsia during Pregnancy	284
Etika Purnama Sari ^{1*} , Dewi Andriani ²	284



Phenomenology of Acceptance Process and Self Concept Changes of the Hernia Post-Surgery Clients in Kebumen Regency, Central Java Indonesia	288
Ike Mardiaty Agustin ¹ , Doni Kurniawan ² , Sawiji ³	288
The Role of Family Support to Medication, Diet and Activity of Diabetic Patients.....	292
Indah Wulandari ^{1,*} , Kusnanto ² , Sony Wibisono ³ , Dwi Abdul Aziz ⁴	292
The Effectiveness of Giving Fe Tablet in Increasing Hemoglobin Levels in Adolescent at Vocational School of Swadaya Temanggung.....	297
Halimah Sarjiyati ¹ , Luluk Rosida ^{2,*}	297
The Effect of Passive Physiotherapy on Hemodynamic Status of Patients with Head Injury: A Literature Review	300
Ni Luh Seri Astuti ¹ , I Made Moh. Yanuar Saifudin ^{2,7,*} , Novida Prima Wijayanti ³ , Marsha Yoke Nancy ⁴ , Ahmad Firdaus ⁵ , Sri Setiyorini ⁶	300
The Effectiveness of Cognitive Behaviour Therapy towards Hallucination Intensity in Skizofrenia Patients.....	312
Noviana Ayu Ardika ^{1,*} , Mohammad Fatkhul Mubin ²	312
The Effect of Tuberculosis Event on the Self-Concept of Positive Pulmonary Tuberculosis and Negative Pulmonary Tuberculosis	316
Nurbaiti ¹ , Meynur Rohmah ^{2,*}	316
An Overview of the Implementation of IMCI in Primary Health Community of Bantul and Yogyakarta City.....	320
Rahmah ^{1,*}	320
The Influence of Cervical Cancer Education on Cervical Cancer Prevention Behaviour in Women of Childbearing Age: a Literature Review	325
Riska Putri Miharja ¹ , Enny Fitriahadi ^{2,*}	325
Family Support for Type 2 DM Patients in Controlling Blood Sugar levels in Kebonsari Surabaya	330
Rusdianingseh ^{1,*} , Difran Nobel Bistara ²	330
Relationship Family Support with Menstrual Hygiene Behavior in Early Adolescents.....	333
Julita Kartrikasari Eka Pratiwi ¹ , Sarwinanti ^{2,*}	333
Risk Factors of Stunting: A Literature Review	339
Sholihah Gustavia Yolanda ^{1,*} , Ellyda Rizki Wijhati ²	339
Analysis of Education and Family Income Factors on Caregiver Burden in Elderly Care at Community Health Center of Perak Timur	345
Siti Aisyah ^{1,*} , Gita Marini ²	345
Analysis of Diet Compliance in Patients with Diabetes Mellitus on the occurrence of complications in the Polyclinic in Nganjuk Regional Hospital.....	350
Sony Wahyu Tri Cahyono ^{1,*} , Laili Indana Lazulva ² , Indah Permatasari ³	350
Anti-Cancer Activity of Ants Nest Plant (<i>Myrmecodia Pendans Merr. & Perry</i>) on Protein Transduction Signal Resistance Complex CDK-2-Cyclin-E and NF-Kb: Silico Molecular Docking Study.....	354
Ana Medawati ^{1,*} , Supriatno ² , Sofia Mubarika ³ , Sitarina Widyarini ⁴	354
Black Triangle Treatment with Non Surgeryaesthetic Restoration (Case Report).....	358
Any Setyawati ^{1,*}	358
The Effect of Rosella Flower Tea Solution Onto Discoloration of Plate Heat Cured Acrylic Resin Base	361
Fransiska Nuning Kusmawati ^{1,*} , Tabitha Nurul Arifa ²	361
Management of Dental Mobility with Combinations of Splinting And Jacket Crown.....	367
Hartanti ^{1,*}	367
Dental Service Time in the Implementation of Indonesia National Health Insurance Based on the Highest Dental Treatments At Primary Care	370
Iwan Dewanto ^{1,*} , Sharon Sesita Frinces ²	370
The Oral Hygiene Level Of Dentistry School Female Students Using Fixed Orthodontics	374
Muhammad Shulchan Ardiansyah ^{1,*} , Rizki Adzhani Nur Shabrina ²	374
Radix Anchor Post as Intracanal Retention in Porcelain Fused Metal Crown Restoration.....	378
Nia Wijayanti ^{1,*}	378
Correlation between Dental Behavior and Dental Caries Status (DMF-T) of Pendul Community Sedayu District Bantul Yogyakarta	381
Novitasari Ratna Astuti ^{1,*}	381
An Evaluation of the Training of Structured Feedback with 4c/Id Method in Clinic Advisors.....	385





Nyka Dwi Febria ^{1,*} , Mora Claramitha ² , Widyandana ³	385
Halal and Tayyib is The New Life Style of Food Consumption in Achieving Sustainable Development Goals ...	389
Arif Pujjiono ^{1,*}	389
Entrance and Exit Wound in Gunshot Death Cases at Forensic and Medicolegal Installation of Dr. Soetomo Hospital in 2019: Case Study	392
Desy Martha Panjaitan ^{1,*} , Ahmad Yudianto ² , Ariyanto Wibowo ³	392
Measuring Urban Self-Payers' WTP for the JKN-KIS Health Insurance: A Choice-Based Conjoint Approach ...	395
Fransiscus Rian Pratikto ^{1,*} Rika Teddy ²	395
Level of Lipoprotein (a) as A Predictive Factor for Coronary Thrombus.....	400
Iin Novita Nurhidayati Mahmuda ^{1,*}	400
The Influence of Health Education (Health Promotion) Breast Self Examination (BSE) Against Behavior of BSE (Knowledge, Attitudes, and Action) Student of Madrasah Aliyah Ar-Raudlatul Ilimiyah Islamic Boarding School Kertosono in Early Detection of Breast Cancer	403
Lina Nur Hidayah ¹ , Nurma Yuliyanasari ² , Musa Ghufro ³ , Muhammad Anas ^{4,*}	403
Case Report: Misdiagnosis Case Of Nasopharyngeal Carcinoma in Patient with Chronic Rhinosinusitis: Family Doctors Awareness is Essential	408
Oke Kadarullah ^{1,*}	408
The Effectiveness of Iler Leaf (<i>Plectranthus Scutellarioides</i> [L.] R.Br. <i>Folium</i>) on the Healing Process (Diameter) Of Burn Injury Grade II A on White Mouse (<i>Rattus Norvegicus</i>) Wistar Strain.....	411
Wulandini Ayuning Dinda ^{1,*} , Kusumawinakhyu Titik ² , Bahar Yenni ³ , Romdhoni Fadhol Muhammad ⁴	411
Influence of Body Height on Central Motor Conduction Time Using Transcranial Magnetic Stimulation	415
Yetty Hambarsari ^{1,*} , Priyanka Ganesa Utami ² , Rivan Danuaji ³ , Baarid Luqman Hamidi ⁴ , Subandi ⁵ , Sulistyani ⁶	415
The Effect of <i>Phoenix Dactylifera Pollen</i> on Histology Liver of <i>Rattus norvegicus</i> Exposed with Air Fresheners.....	419
Yuningtyaswari ^{1,*} , Mega Silviana Dewi ²	419
Comparison of Dominant and Non-Dominant Hemisphere Cortical Excitability Using Transcranial Magnetic Stimulation	425
Yetty Hambarsari ^{1,*} , Baarid Luqman Hamidi ² , Rivan Danuaji ³ , Priyanka Ganesa Utami ⁴ , Sulistyani ⁵	425



TRACK ECONOMICS, LAW, EDUCATION, SOCIAL, AND HUMANITIES



Radix Anchor Post as Intracanal Retention in Porcelain Fused Metal Crown Restoration

Nia Wijayanti^{1,*}

¹ Conservative department of dentistry school of Universitas Muhammadiyah Yogyakarta

*Corresponding author. Email: niawijayanti_drg@umy.ac.id

ABSTRACT

In the large cavity of necrose teeth, an adequate final restoration greatly influences case prognosis. The addition of intracanal retention and suitable cores will increase treatment success. Intracanal retention has several types of material and shape configurations. The radix anchor is a type of metal post with a parallel and threaded configuration and has a bristled head. This configuration will increase retention in both the intracanal and core sections, thereby increasing the final restoration's retention strength. A 42-year-old female patient presented with a left upper back tooth broken and swollen for three years. The objective examination of tooth 24 showed that a minimum residual tooth of less than a third of incisal height with percussion, palpation, and vitality examinations indicated a negative result. Radiographic examination showed a straight root canal with thickening of the periodontal ligament at the apical third. In this case, conventional root canal treatment was performed with the crown down preparation and single-cone method root canal filling and continued with the final restoration. Metal radix anchor post was placed in the root canal and continued with composite resin core attached to the flared head of the radix anchor. The composite resin core preparation was carried out and continued with dental impression with an elastomer material for the fabrication of a porcelain fused metal jacket crown. One month follow-up after the final restoration showed no complaints on subjective or objective examinations. Radiographic examination showed that the periodontal ligament thickening has diminished.

Keywords: Radix anchor post, Intracanal retention, Definitive restoration.

1. INTRODUCTION

Root canal treatment is one of the treatments to maintain the oral cavity's teeth and restore the teeth to be biologically acceptable to the surrounding tissue [1]. Root canal treatment can be done in several visits or one visit. One visit treatment can be carried out on the teeth with the requirement that the teeth must be in conditions including no periapical sensitivity or periapical lesions, no exudate in the root canal, and no odor [2]. Root canal treatment can be divided into three phases: preparation or cleaning and forming root canals, root canal disinfection, and obturation or filling of root canals [3].

Root canal treatment can result in the loss of a lot of tooth structure, altered physical properties due to loss of nerves and blood vessels, and changes in its aesthetic properties as the teeth become darker in color. After root canal treatment, tooth restoration is designed to protect the remaining tooth tissue from fracture, avoid re-infection of the root canal system, and replace the lost tooth tissue structure [3]. The choice of restoration type in post-root canal treatment requires consideration because restoration is expected to restore tooth function both in terms of use and aesthetics. The basic principles of restoration design in post-root canal treatment to fulfill a function and good

durability include the design that maintains the remaining tooth structure by minimizing dentin removal. It should have good retention that can be obtained with the remaining dentin structure in a vertical or core direction or by the additional use of posts and by protecting the remaining tooth tissue structure [5]. The consideration to choose the post type is based on several factors, comprising the tooth's position in the arch, occlusion, the function of the restored tooth, the amount of remaining tooth tissue, and the root canal configuration [6]. The post's purpose is to maintain the core that will support the final restoration of anterior teeth when less than half of the core remains or the remaining dentine wall is thin [7]. It is recommended to use a post to increase retention and stabilization to strengthen the tooth [8].

The final restoration choice in post-root canal treatment depends on the remaining tooth structure's size, horizontal pressure, and chewing load [10]. For post-root canal treatment anterior teeth with intact marginal edges, direct restoration can be performed using composite resin and does not require the use of crowns jacket [9]. Trauma and decay are mostly associated with an extensive loss of tooth structure, necessitating restoration of the tooth with a complete crown for esthetic and functional rehabilitation. It is impossible to achieve sufficient anchorage of restoration in the remaining dentin when a large portion of the crown

has been lost to damage. In such situations, post and core restorations are required for additional retention [11,12].

The purpose of this paper is to inform the use of radix anchor post and composite resin cores with a fused to metal porcelain jacket crown as a final restoration. The use of radix anchor post aimed to maximized retention in the root canal and support core resistance.

2. CASE

A 42-year-old woman came to the dental conservation clinic at Prof. Soedomo Dental and Oral Hospital with complaints that her upper left and back teeth had been broken and swollen three years ago, but currently, the tooth did not hurt. On clinical examination, the remaining 24 teeth were minimal, only less than 1/3 of the incisal height; the percussion, palpation, and mobility examinations showed a negative response, and a vitality test uncovered a negative response. The radiograph showed a narrow straight root canal with a thickened periodontal ligament at the apical 1/3. The diagnosis was 24 tooth pulp necrosis accompanied by apical periodontitis. The treatment performed was a multi-visit root canal followed by restoration of a porcelain fused metal jacket crown with intracanal retention of radix anchor metal pins.



Figure 1. Intraoral radiograph and initial radiograph

3. MANAGEMENT OF CASE

The first visit was performed on a subjective, objective examination, intraoral photographs, diagnosis, and determination of the patient's treatment plan and explanation. Root canal treatment started with installing a rubber isolator and then cavity cleaning until a healthy dentin tissue was obtained. The access cavity was made using endo access bur and diamendo (Dentsply) and was irrigated with 2.5% NaOCl. Work length measurements were taken by measuring the estimated working length based on radiographs to be confirmed with the apex locator (Propex II, Dentsply). After obtaining the working length, the conventional root canal treatment was continued with the crown down preparation using a protaper file up to number F2. Each file change was irrigated using NaOCL 2.5% and EDTA. Root canal dressing was performed with a mixture of Ca (OH) 2 mixed with glycerin, then covered with a temporary filling and evaluation for one week.

After removing the temporary filling and cleaning the root canal with saline on the second visit, the master cone was fitted according to the apical constriction. The root

canals were flooded with chlorhexidine gluconate 2% for 30 seconds, and then obturation was performed using a single cone technique with F2 size gutta-percha protaper with resin sealer (top seal, Dentsply). The evaluation was carried out for one week before post-placement and final restoration.



Figure 2. Root canal treatment, (a) preparation and (b) obturation

On subsequent visits, preparations were made for the restoration and construction of post canals. The temporary filling was opened, and the tooth color was selected. For cavity preparation, all Cavo surface margins on the enamel structure that were not supported by dentin were leveled by a chamfer-shoulder design (also known as rounded bevel or hollow ground bevel) using a flame diamond bur. It was followed by the preparation of the post, starting with the removal of gutta-percha by inserting a heated plugger, continued with preparation using a Peeso reamer from sizes 1 to 3 and followed by using a precision drill from the radix anchor.

It was followed by the insertion of metal radix anchor pegs on the root canal. The application of glass ionomer cement to the root canal was with Lentulos. The treatment continued with the creation of a composite resin core attached to the threaded head from the radix anchor. The core preparation was carried out optimally and continued with printing using elastomeric molding materials for manufacturing porcelain fused metal jacket crowns in the laboratory. On the next visit, a try in for the crown of a porcelain fused metal jacket was performed. After the borders and colors were appropriate, cementation was carried out using glass ionomer cement. Patients were asked to evaluate for a week, and there were no complaints during the evaluation process.



Figure 3. Insertion of radix anchor post

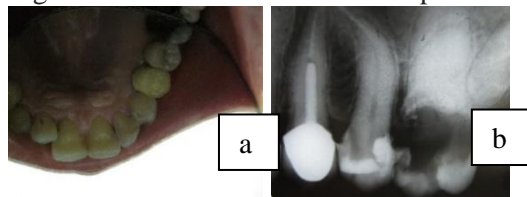


Figure 4. a) Tooth 24 post restoration (clinical picture), b) Tooth 24 post restoration (radiographic picture)

4. DISCUSSION

In this case, before the restoration, a multi-visit root canal was performed; this was because the radiographic examination found periapical abnormalities in the tooth. In this tooth, there is extensive loss of dental tissue. Trauma and decay are mostly associated with an extensive loss of tooth structure, necessitating restoration of the tooth with a complete crown for esthetic and functional rehabilitation. It is impossible to achieve sufficient anchorage of restoration in the remaining dentin when a large portion of the crown has been lost to damage. In such situations, post and core restorations are required for additional retention [11,12]. Post root canal treatment is considered based on the size of the remaining tooth structure and as a support for the final restoration.

In this case, radix anchor posts with a lamella head were chosen because the teeth were less than half of the core remaining, or the remaining dentine walls were thin. The use of posts is recommended to increase retention and stabilization to strengthen the teeth. The radix anchor post is cylindrical with one sharp thread whose purpose is to thread both the root before luting and act as a retention element after the luting procedure [13].

In conclusion, the restoration of a fused metal porcelain jacket crown with radix anchor posts can be an alternative treatment in cases of extensive tooth fractures.

REFERENCES

- [1] Bence R. *Endodontik Klinik (terj)*. Jakarta: Penerbit Universitas Indonesia;1990.
- [2] Weine FS. *Endodontic Therapy* 6th Ed. St Louis: Mosby Co; 2004.
- [3] Grossman LI, Oliet S, Del Rio CE. *Ilmu Endodontik Dalam Praktek (terj.) Ed11*. Jakarta: EGC; 1988.
- [4] Hargreaves KM, Cohen S, Berman LH. *Cohen's Pathways of The Pulp*, edisi 10. St Louis: Mosby Co;2011.
- [5] Torabinejad M, Walton RE. *Endodontic Principles and Practice* edisi 4. St Louis: Saunders Elsevier; 2009.
- [6] Summit BJ, Robbins JW, Hilton TJ, Schwarz RS. *Fundamental of Operative Dentistry*. Illinois: Quintessence Co; 2006.
- [7] Gutmann JL, Dumsha TC, Lovdahl, PE. *Problem in Solving Endodontics*. St Louis: Mosby Co; 2006.
- [8] Cheung W. A review Of the Management of Endodontically Treated Teeth. *J Am Dent Assoc* 2005; 5.
- [9] Deliperi S. Direct Fiber-Reinforced Composite Restoration in An Endodontically-Treated Molar: A Three-Year Case Report. *Operative Dentistry* 2008; 33.
- [10] Haselton DB. *Color Atlas of Endodontics, Restoration of The Endodontically Treated Tooth*. St Louis: Mosby Co; 2005.
- [11] Weine FS. *Endodontoc Therapy*. 4th Ed. St Louis: Mosby; 2000
- [12] Alves J, Walton R, Drake D. Coronal Leakage: Endotoxin Penetration from Mixed Bacterial Communities Through Obturated, post Repaired Root Canals. *J ndod* 1998
- [13] Ellner S, Bergendall T, Bergman B. Four post and core combination as abutment for fixed single crown: A prospective up to 10 year study. *Int J Prosthodont* 2003. 16 ed