









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





















































































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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 4^{th} 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

Inter atlor onferen on Sustrable



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

CONTENIS	
The 4 th ICoSI 2020 Committees	2
Reviewers of 4 th ICoSI 2020	5
Preface by the Chairperson of the 4 th ICoSI 2020	
welcoming Remarks by the Rector of Universitas Munammadiyan Yogyakarta	9
About The 4 th International Conference on Sustainable Innovation (ICoSI) 2020	
CONTENTSTRACK ECONOMICS, LAW, EDUCATION, SOCIAL, AND HUMANITIES	
A Policy Analysis for Building Regulation in Disaster Situations on Sleman Regency	
Wisnu Dimas Punto Aji ^{1,*} Dewi Sekar Kencono ²	
Valuation of a Declining Oilfield under Stochastic Oil Prices and Non-Constant Interest Rates	
Fransiscus Pratikto ^{1,*} , Sapto Indratno ² , Kadarsah Suryadi ³ , Djoko Santoso ⁴	
The Dispute Board as an Alternative to the Construction Service Disputes Settlement	
Fadia Fitriyanti ^{1,*} Emil Adli ²	
The Promotion and Protection of Human Rights in Islam for Creating the Culture of Peace	
Martinus Sardi ^{1,*}	
Trusts Concept Settings in Management Limited Company	
Reni Anggriani ^{1,*} King Faisal ²	
Legal Protection of Nurses in Health Care Efforts During the co-pandemic Period 19	
Reny Suryanti ^{1,*} Nyoman Putra Putra ²	
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	
Mohamad Sukarno ^{1,*}	
Effect of Parenting against Moral Development of Children Aged 4-10 Years	
Widya Masitah ^{1,*} Asmadi Alsa ² Abd.Madjid ³	
The Influence of Family Communication on Children's Social Competence at SD Ar-Rahman Full Day Scho	
Medan	
Juli Maini Sitepu ^{1,*} Asmadi Alsa ² Abd.Madjid ³	
The Integration of Law and Religion for New Civilization in Indonesia	
Dewi Nurul Musjtari ^{1,*} Nurmawati ² Zola Fi Dinillah Halim ³	
Head of East Java Aisyiah Board Women's Empowerment Methods in Realizing Sustainable Development Di Indonesia	
Nur Azizah Hidayat ^{1,*} Iman Zukhrufi Nur Azzam ²	
Optimization of Child-Friendly City Development Policy in Yogyakarta City	
Septi Nur Wijayanti ^{1,*} Hanum Salsabila ²	
The Obligation of Indonesian Government to Ratify the Rome Statute for the Global Justice	
Muhammad Nur Islami ¹ , Martinus Sardi ²	
Legal Politics of Restoration of Indonesia's State Policy Post Amendment of the 1945 Constitution	
King Faisal Sulaiman ^{1,*}	
Competition Price Regulations in an Islamic Perspective: Determination of the Aircrat Ticket Tariff	
M. Tri Saputra ^{1,*} Mukti Fajar ND ²	
Romanticism Dyinamics of Legal Politics Protection and Management of Environmental Protection to Indon	
Ecocracy	
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	
Sunarno ¹ Arvin Setiyana Dewangga ²	
The Law Enforcement against a Non-Sharia Compliance Banking Transaction by the Financial Services Au	
in Indonesia	
Dewi Nurul Musitari ^{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	
Students' Attitudes towards Blended Learning Implementation in a private university of Yogyakarta	
Avita Elok Faiqoh¹, Eko Purwanti²	. 144
How Millenial Think About Privacy Concern?	
Anissa Hakim Purwantini1 [*] Betari Maharani ¹	
Impact Of Changes in Psak on the Competence of Lecturers and Students Understanding Levels	. 157
Duwi Rahayu ^{1,*} Imelda Dian Rahmawati ^{1,*} Bayu Hari Prasojo ¹	. 157
The Influence of Internal Locus of Control, Idealism, Ethical Knowledge, and Gender on Accounting Students	s '
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,*} Icuk Rangga Bawono ^{2,*} Ayu Ratu Wulandari ²	. 187
Developing an Environmental Tax Framework for Malaysia:	. 192
Izlawanie Muhammad ^{1,*} Norfakhirah Nazihah Mohd Hasnu ²	
Determining Factors for Success Use of E-Learning in Learning Process in College	. 196
Mohammad Alfian ^{1,*} Hikmatul Maulidah ²	
Effect Of Money Ethics And The Use Of Siskeudes On The Level Of Fraud In Village Fund Management Witl	
Religiosity As A Moderation Variable	
Elisa Purwitasari ^{1,*} Mohammad Alfian ^{1,*} M. Sofyan Firman Syah ^{1,*}	
The Relationship between Performance Based Budgeting Implementation, Budget Absorption, Accountability	
Local Government Performance	
Parwoto ^{1,*}	
The Influence of Information Technology (IT) on Accrual Accounting Adoption of the Jordanian Public Sector	. 217
Moawiah Awad Alghizzawi ^{1,*} Rosnia Masruki ¹	
The Effect of Professional Skeptisism, Auditor Expertise, and Integrity of Audit Quality	
Ruci Arizanda Rahayu ^{1,*} Sarwenda Biduri ^{1,*} Mahardika D. Kusuma Wardana ^{1,*}	
E-Procurement and Effectiveness of Internal Controls on Fraud Prevention	
Sarwenda Biduri ^{1,*} Wiwit Hariyanto1 ^{,*} Ilmi Usrotin ¹	
Usefulness of Accounting Information in Predicting Hedging Decision	
Sustari Alamsyah ^{1,*} Triana Zuhrotun Aulia ¹	
Religious Belief & Halal Cosmetic Products Consumption	
[*] Tanti Handriana ¹ , Praptini Yulianti ² , Ryan Bayu Permana ³	
Does Corporate Social Responsibility Disclosure Affect Profit Sharing Ratio?	
Veni Soraya Dewi ^{1,*} Friztina Anisa ^{1,*} Faqiatul Mariya Waharini ¹	
Determination Analysis Affecting Intellectual Capital Disclosure and Its Effect on Market Performance and Co	
Equity Capital	
Wawan Sadtyo Nugroho ^{1,*} Nia Kurniati Bachtiar ¹	
TRACK HEALTH AND NURSING SCIENCE	
The Effect of Assertive Behaviour Therapy towards Bullying Behavior in Adolescents	
Chindy Maria Orizani ^{1,*} , Dwi Yuniar Ramadhani ²	
Characteristics and Level of Knowledge of Newborn Baby Care in Pandemic Covid 19	
Devita Elsanti ^{1,*} , Diyah Yulistika Handayani ²	
Risk factors for disease severity in paediatric patients with Covid-19: A literature review	
Eka Oktavianto ¹ , Gani Apriningtyas Budiyati ² , I Made Moh. Yanuar Saifudin ^{3,*} , Endar Timiyatun ⁴ , Aris	00
Setyawan ⁵	. 269
The Role of Self-Efficacy and Family Support in Improving the Quality Of Life of Patients with Hypertension	
Erni Tri Indarti ^{1,*} , Oktaffrastya Widhamurti ² , Remita Yuli Kusumaningrum ³	
The Influence of Head Nurses Supervision on Discharge Planning Completeness	
Etik Kustiati ^{1,*} Vivi Yosafianti Pohan ²	
Lemon and Rose Aromatherapy Reduce Blood Pressure in Preeclampsia during Pregnancy	
Etika Purnama Sari ^{1,*} , Dewi Andriani ²	



Phenomenology of Acceptance Process and Self Concept Changes of the Hernia Post-Surgery Clients in	
Kebumen Regency, Central Java Indonesia	
Ike Mardiati Agustin ¹ , Doni Kurniawan ² , Sawiji ³	
The Role of Family Support to Medication, Diet and Activity of Diabetic Patients	
Indah Wulandari ^{1,*} Kusnanto ^{2,} Sony Wibisono ^{3,} Dwi Abdul Aziz ⁴	
The Effectiveness ff Giving Fe Tablet in Increasing Hemoglobin Levels in Adolescent at Vocational School of	
Swadaya Temanggung	297
Halimah Sarjiyati ¹ , Luluk Rosida ^{2,*}	
The Effect of Passive Physiotherapy on Hemodynamic Status of Patients with Head Injury: A Literature Rev	
Ni Luh Seri Astuti ¹ , I Made Moh. Yanuar Saifudin ^{2,7,*} , Novida Prima Wijayanti ³ , Marsha Yoke Nancy ⁴ , Ahn	
Firdaus ⁵ , Sri Setiyorini ⁶	
The Effectiveness of Cognitive Behaviour Therapy towards Hallucination Intensity in Skizofrenia Patients	
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	
Nurbaiti ¹ , Meynur Rohmah ^{2,*}	
An Overview of the Implementation of IMCI in Primary Health Community of Bantul and Yogyakarta City	
Rahmah ^{1,*}	
The Influence of Cervical Cancer Education on Cervical Cancer Prevention Behaviour in Women of Childbe	•
Age: a Literature Review	
Riska Putri Miharja ¹ , Enny Fitriahadi ^{2,*}	
Family Support for Type 2 DM Patients in Controlling Blood Sugar levels in Kebonsari Surabaya	
Rusdianingseh ^{1,*} Difran Nobel Bistara ²	
Relationship Family Support with Menstrual Hygiene Behavior in Early Adolescents	
Julita Kartrikasari Eka Pratiwi ¹ , Sarwinanti ^{2,*}	
Risk Factors of Stunting: A Literature Review	
Sholihah Gustavia Yolanda ^{1,*} Ellyda Rizki Wijhati ²	
Analysis of Education and Family Income Factors on Caregiver Burden in Elderly Care at Community Health	
Center of Perak Timur	
Siti Aisyah ^{1,*} , Gita Marini ²	345
Polyclinic in Nganjuk Regional Hospital	250
Sony Wahyu Tri Cahyono ^{1,*} , Laili Indana Lazulva ² , Indah Permatasari ³	
Anti-Cancer Activity of Ants Nest Plant (<i>Myrmecodia Pendans Merr. & Perry</i>) on Protein Transduction Signa	
Resistance Complex CDK-2-Cyclin-E and NF-Kb: Silico Molecular Docking Study	
Ana Medawati ^{1,*} , Supriatno ² , Sofia Mubarika ³ , Sitarina Widyarini ⁴	
Black Triangle Treatment with Non Surgeryaesthetic Restoration (Case Report)	
Any Setyawati 1,*	
The Effect of Rosella Flower Tea Solution Onto Discoloration of Plate Heat Cured Acrylic Resin Base	
Fransiska Nuning Kusmawati ^{1,*} Tabitha Nurul Arifa ²	
Management of Dental Mobility with Combinations of Splinting And Jacket Crown	
Hartanti ^{1,*}	
Dental Service Time in the Implementation of Indonesia National Health Insurance Based on the Highest De	
Treatments At Primary Care	
Iwan Dewanto ^{1,*} Sharon Sesita Frinces ²	
The Oral Hygiene Level Of Dentistry School Female Students Using Fixed Orthodontics	
Muhammad Shulchan Ardiansyah ^{1,*} Rizki Adzhani Nur Shabrina ²	
Radix Anchor Post as Intracanal Retention in Porcelain Fused Metal Crown Restoration	
Nia Wijayanti ^{1,*}	
Correlation between Dental Behavior and Dental Caries Status (DMF-T) of Pendul Community Sedayu Dist	
Bantul Yogyakarta	
Novitasari Ratna Astuti ^{1,*}	
	385
Interaction on Sustantial Innovation	e



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 Arif Pujiyono ^{1,*}	. 389 . 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	
Fransiscus Rian Pratikto ^{1,*} Rika Teddy ²	
Level of Lipoprotein (a) as A Predictive Factor for Coronary Thrombus	
lin Novita Nurhidayati Mahmuda ^{1,*}	
The Influence of Health Education (Health Promotion) Breast Self Examination (BSE) Against Behavior of BS (Knowledge, Attitudes, and Action) Student of Madrasah Aliyah Ar-Raudlatul Ilmiyah Islamic Boarding School	l
Kertosono in Early Detection of Breast Cancer	
Lina Nur Hidayahtur Rohmah ¹ , Nurma Yuliyanasari ² , Musa Ghufron ³ , Muhammad Anas ^{4,*}	
Case Report: Misdiagnosis Case Of Nasopharyngeal Carcinoma in Patient with Chronic Rhinosinusitis: Famil	
Doctors Awareness is Essential	
Oke Kadarullah ^{1,*}	
The Effectiveness of Iler Leaf (Plectranthus Scutellarioides [L.] R.Br. Folium) on the Healing Process (Diamet	
Of Burn Injury Grade II A on White Mouse <i>(Rattus Norvegicus)</i> Wistar Strain	
Influence of Body Height on Central Motor Conduction Time Using Transcranial Magnetic Stimulation	
Yetty Hambarsari ^{1,*} , Priyanka Ganesa Utami², Rivan Danuaji³, Baarid Luqman Hamidi⁴, Subandi⁵, Sulistya	ni ⁶
The Effect of <i>Phoenix Dactylifera Pollen</i> on Histology Liver of <i>Rattus norvegicus</i> Exposed with Air Fresheners Yuningtyaswari ^{1,*} , Mega Silviana Dewi ²	s419
Comparison of Dominant and Non-Dominant Hemisphere Cortical Excitability Using Transcranial Magnetic	
Stimulation	. 425
Yetty Hambarsari ^{1,*} Baarid Lugman Hamidi ² , Riyan Danuaii ³ , Priyanka Ganesa Utami ⁴ , Sulistyani ⁵ ,	. 425





TRACK ECONOMICS, LAW, EDUCATION, SOCIAL, AND HUMANITIES





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 Ilmiyah Islamic Boarding School Kertosono in Early Detection of Breast Cancer

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ABSTRACT

Background: Breast Self Examination (BSE) behavior in teenagers is essential for the early detection of breast cancer. BSE is a cheap and easy way to detect early. The incidence of breast cancer in Indonesia is significant, and the mortality rate can not be separated due to a lack of awareness. BSE health education is one of the factors that can influence BSE behavior, which includes knowledge, attitudes, and actions. With the formation of BSE behavior, if health workers can immediately check found abnormalities or changes in the breast. Besides and can directly get therapy and, in the long term, can reduce the mortality rate of breast cancer. Purpose: To determine the effect of health education on behavior (knowledge, attitudes, and actions) BSE students of Madrasah Aliyah Islamic Boarding School Ar-Raudlatul Ilmiyah Kertosono. Method: This research is a true-experimental study with the posttest-only control group design. Tools used to collect data knowledge, attitude, and action is a questionnaire. The analysis is only made at the posttest-only. Result: The results of the analysis in the knowledge, attitude, and action questionnaire obtain a Pearson correlation >0.444, p-value < 0,05, and Cronbach alpha value >0.6. Independent T-Test obtained significance values (p <0.05) from each domain that is equal to 0.00 in the knowledge domain, 0.00 in the attitude domain, 0.03 in the action domain, and 0.00 in the total behavior score. Conclusion: The questionnaire is valid and reliable. There is a significant influence of BSE health education on behavior, knowledge, attitudes, and actions

Keywords: Health Education, BSE, Knowledge, Attitude, Action

1. INTRODUCTION

Breast Self Examination (BSE) behavior in adolescents for early detection of breast cancer is still deficient. Though this behavior is essential for the early detection of breast cancer patients because breast cancer is currently not only attacking women aged >30 years but also attacking young women and even teenagers (Sinaga and Ardayani) [1]. In Indonesia, the incidence of breast cancer continues to increase. Increased mortality due to breast cancer can not be separated due to a lack of awareness of BSE behavior so that more than 80% of cases are found in an advanced stage (Dyanti and Suariyani) [2]. BSE, or known as breast self-examination, is one way of early detection that is cheap and easy to do. The purpose of this BSE examination is if found abnormalities or changes in the breast can be immediately

checked by health workers (Seftiani) [3] and directly get therapy so that in the long term can reduce the mortality rate of breast cancer (Ministry of Health of the Republic of Indonesia) [4].

Health behavior can be defined as all activities that can be observed or not associated with health maintenance and improvement. This health care includes disease prevention, the protection of diseases, and the healing of diseases. BSE health education is one of the factors that can influence BSE behavior, which includes knowledge, attitudes, and actions. Health promotion through a health education approach can shape health behavior if education is directed according to the target behavioral factors. Behavioral factors are divided into 3, namely predisposing factors, enabling factors, and reinforcing factors. Predisposing factors include knowledge and attitudes, enabling factors to add facilities and infrastructure, and reinforcing elements consist of customs



and culture that are believed by a community environment. So health promotion can shape a person's behavior if it can increase beliefs, knowledge, attitudes, and can provide adequate facilities and infrastructures (Notoatmodjo) [5].

Based on the research mentioned earlier, the researcher wants to combine health education and the media as an effort to establish BSE behavior in the different settings of places, subjects, learning media, length of time, and the ways of evaluating the research.

2. RESEARCH METHODS

This research is a true-experimental study with the posttest-only control group design. The sampling technique in this study was to use total sampling by taking all Madrasah Aliyah students of the Islamic Boarding School Ar-Raudlatul Ilmiyah Kertosono in natural sciences courses who meet the criteria. Then using a simple random sampling technique to make two groups, namely the treatment group and the group control, then obtained a sample of 30 students as a treatment group and 30 students as a control group. The treatment group is the group that is given BSE health education counseling, while the control group is the group that is not given BSE education counseling. The measurement of knowledge, attitude, and action scores are carried out using a questionnaire that will be tested for validity and reliability. All of the collected data will be tested for the normal distribution and homogeneous; the Independent T-Test is performed to find out whether there are significant differences in the knowledge, attitude, and BSE measures between the treatment group and the control group.

3. RESULT

The questionnaire of this study is adapted from Purba's report [6] and Rahma's report [7], then tested their's validity and reliability as a preliminary study on January 17th, 2019.

Validity test of knowledge (20 items) questionnaire, as mentioned table I, that tested to 20 subjects as a preliminary study, and the result is Pearson correlation value is >0,444 Pearson table value. Reliability test of knowledge (20 items) questionnaire, as mentioned table I, that tested to 20 subjects as a preliminary study, the result of Cronbach's Alpha values are over 0,6.

Table I. Validity and Reliability Test of Knowledge Item

	Val	Reliability		
	Pearson Correlation	Cronbach's Alpha		
Item1	,510*	0,022	20	0,846
Item2	,494*	0,027	20	0,846
Item3	,516*	0,02	20	0,847
Item4	,494*	0,027	20	0,846
Item5	,473*	0,035	20	0,847
Item6	,474*	0,035	20	0,848
Item7	,578**	0,008	20	0,843

Item8	,494*	0,027	20	0,846
Item9	,494*	0,027	20	0,846
Item10	,507*	0,023	20	0,847
Item11	,494*	0,027	20	0,846
Item12	,449*	0,047	20	0,848
Item13	,516*	0,02	20	0,847
Item14	,622**	0,003	20	0,841
Item15	,494*	0,027	20	0,846
Item16	,574**	0,008	20	0,845
Item17	,449*	0,047	20	0,848
Item18	,494*	0,027	20	0,846
Item19	,607**	0,005	20	0,841
Item20	,578**	0,008	20	0,843
* C 1		1 0 0 5 1 1	(0 : 11	1)

^{*.} Correlation is significant at the 0.05 level (2-tailed).

Validity test of attitude (5 items) questionnaire, as mentioned in table II, tested to 20 subjects as a preliminary study, and the result is Pearson correlation value is >0,444 Pearson table value. Reliability test of attitude (5 items) questionnaire, as mentioned in table II, that tested to 20 subjects as a preliminary study, the result of Cronbach's Alpha values are over 0,6.

Table II. Validity and Reliability Test of Attitude Item

	Va	Reliability		
	Pearson Correlation	Sig. (2-tailed)	N	Cronbach's Alpha
Item1	,756**	0	20	0,928
Item2	,868**	0	20	0,891
Item3	,816**	0	20	0,901
Item4	,938**	0	20	0,865
Item5	,938**	0	20	0,865

^{*.} Correlation is significant at the 0.05 level (2-tailed).

Table III. Validity and Reliability Test of Action Item

Tubic	Validity Reliability Reliability							
	Pearson Correlation	Sig. (2-tailed)	N	Cronbach's Alpha				
Item1	,518*	0,019	20	0,629				
Item2	,496*	0,026	20	0,642				
Item3	,519*	0,019	20	0,632				
Item4	,467*	0,038	20	0,648				
Item5	,467*	0,038	20	0,648				
Item6	,508*	0,022	20	0,633				
Item7	,506*	0,023	20	0,632				
Item8	,471*	0,036	20	0,643				
Item9	,557*	0,011	20	0,625				

^{**.} Correlation is significant at the 0.01 level (2-tailed)

^{**.} Correlation is significant at the 0.01 level (2-tailed).



Item10	,489*	0,029	20	0,641			
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

Validity test of action (10 items) questionnaire, as mentioned at table IIII, tested to 20 subjects as a preliminary study, and the result is Pearson correlation value is >0,444 Pearson table value. Reliability test of action (10 items) questionnaire, as mentioned in table III, that tested to 20 subjects as a preliminary study, the result of Cronbach's Alpha values are over 0,6.

Based on table 4, the age data of the research subjects in the treatment group is 16 years old at the most, amounting to 11 people or 36.7% of the total sample of the treatment group, whereas in the control group is 17 years old, totaling ten people or 33.3% of the number of control group samples. In the history of menarche, the most menarche age was> 12 years old in both groups, with 18 people or 60% of the total treatment group sample and 14 people or 46.7% of the total control group sample. In the self-examination discipline, discipline obtained treatment group subjects did the most checks on the 7-10 days menstruation totaling 18 people or as much as 60% of the total sample of the treatment group. In contrast, the control group subjects obtained the most checks carried out on more than the 10th day of menstruation of 21 people or 70% of the total control group sample. A family history of cancer found one person or as much as 3.3% of the treatment group, whereas, in the group, there were no subjects who had a family history of cancer. In the history of BSE counseling from the two groups, 100% had never received a history of BSE counseling before.

Table IV. Characteristics of Research Subjects

Characteristics	Treatment	Group (T)	Control	Group (C)
	Sum (n)	Percentage (%)	Sum (n)	Percentage (%)
Age				
15 y.o	6	20%	9	30%
16 y.o	11	36.7%	7	23.3%
17 y.o	7	23.3%	10	33.3%
18 y.o	6	20%	4	13.3%
Menarche				
< 12 y.o	4	13.3%	5	16.7%
12 y.o	8	26.7%	11	36.7%
> 12 y.o	18	60%	14	46.7%
BSE examination	discipline	<u> </u>		
7th-10th day	18	60%	9	30%
> 10th day	12	40%	21	70%
Family history of	cancer			
Yes	1	3.3%	-	0%
No	29	96.7%	30	100%
History of BSE co	ounseling		l	
Ever	0	0%	0	0%
Never	30	100%	30	100%

From table V, the mean score of knowledge scores in the treatment group was 16.47, with a standard deviation value of 1.358, while the mean score for the control group was 13.80, with a standard deviation value of 1.937. In the attitude domain, the mean value in the treatment group was 17.67, with a standard deviation of 1,373, while the mean value in the control group was 15.07, with a standard deviation of 2,490. In the action domain, the mean value in the treatment group was 13.73, with a standard deviation of 1.413, while the mean value in the control group was 12.80, with a standard deviation of 1.955.

Table V also obtained p-value in the knowledge domain of 0.00, attitude of 0.00, and action of 0.03. The p-value in the three domains <0.05, so that it can be concluded that there are significant differences in the mean scores of knowledge, attitudes, and BSE actions between the treatment and control groups. This result shows that there is an effect of BSE health education on knowledge, attitudes, and actions.



Table V. Effects of BSE health education with BSE knowledge, attitudes and actions

Behavio	Treatment Group (T)				D		
ur Domain	Sum (n) Means SD		Sum (n) Means SD			r	
Knowledge	30	16.47	1.358	30	13.80	1.937	0.00
Attitude	30	17.67	1.373	30	15.07	2.490	0.00
Action	30	13.73	1.413	30	12.80	1.955	0.03

Table VI. The effect of BSE health education on Total Behavior Scores

	Tre	eatment Grou	p (T)	Control Group (C)			P
Behavior	Sum	M	D	Sum (n)	M	S	
	(n)	eans	L		eans	D	
Total Behavior	30	47	1	30	4	3.	0.
Score	30	.87	.995	30	1.67	827	00

From table VI, the mean value of the total score in the treatment group was 47.87, with a standard deviation of 1,995, while the mean total score of the control group was 41.67, with a standard deviation of 3,827. It also obtained a p-value on the total score of 0.00 (p <0.05), so it can be concluded that there is a significant difference in the mean score of total behavior between the treatment and control groups. This result shows that there is an effect of BSE health education on BSE behavior.

4. DISCUSSION

4.1. Validity and Reliability Test of Knowledge, Attitudes, and Actions Ouestionnaire

The validity and reliability test was carried out on January 17th, 2019, using a subject of 20 Madrasah Aliyah Islamic Boarding School students from Ar-Raudlatul Ilmiyah Kertosono. The results obtained in the knowledge, attitude and action questionnaire have a value of Pearson correlation value > 0.444 (r table value, df 20), p-value < 0,05, and Cronbach alpha value > 0.6. So that it can be concluded that the questionnaire used in this study is valid and reliable, which is in line with Sugiyono [8] and Putrana et al. study [9].

4.2. Analysis of the Effects of BSE Health Education with Levels of BSE Knowledge, Attitudes, and Actions

The knowledge score data in table 5 obtained a value of p 0.00 (p < 0.05); this indicates that there were significant differences in the mean scores of BSE knowledge scores between the treatment (16.47) and control groups (13.80). So it can be concluded that there was an influence of BSE health education on BSE knowledge scores. Research that is in line with this research is Seniorita's research [10], which states that the effect of health education about BSE on the knowledge of adolescent girls (treatment groups) in the early detection of breast cancer in Yaspend Paba High School in 2017 which is marked by a value of p 0.00 (p <0.05). This result happened because of the effectiveness of BSE health education delivery. The educational method provided in this study is to use lecture and demonstration methods through video media, power points, posters, and mannequins. The effectiveness of the BSE health education

method in this study is supported by Hidayati et al. 's research [11]. They obtained that there is an influence of health education through lecture and demonstration methods on BSE knowledge in Futuhiyyah Mranggen High School students in Demak Regency Demak with a value of p 0.00 (p <0.05). Lecture and demonstration methods through video media, power points, posters, and mannequins are included in audiovisual aids education aids (Maryam) [12] so that it will stimulate the senses of sight and hearing of respondents in capturing information conveyed from BSE health education counseling. According to Maryam [12] states that the more the five senses are used, the more and more clear knowledge is gained.

Average attitude score data in table V obtained a value of p 0.00 (p <0.05); this shows that there is a significant difference in the mean score of BSE attitude scores between the treatment group (17.67) and the control group (15.07). So it can be concluded that there is an influence of BSE health education on BSE attitude scores. Attitude is a person's closed response to a stimulus or object. Manifestations cannot be seen, but can only be interpreted. Attitude is a tendency that comes from the individual to behave in specific patterns due to the establishment and feel of an object (Maryam) [12]. Attitudes can be obtained through the learning process (Novasari et al.) [13], wherein this study, the learning process occurs between the treatment group. The researchers provide BSE health education counseling so that the treatment group will be able to address whether BSE is essential to do or not as an effort to early detection of breast cancer. Another researcher, Seniorita's research [10] also states that there is an influence of health education about BSE towards the attitudes of adolescent girls (treatment groups) in the early detection of breast cancer in Yaspend Paba High School in 2017, which is marked by the value of p 0.00 (p < 0.05).

The action score data in table 5 obtained a p-value of 0.03 (p <0.05); this indicates that there were significant differences in the mean scores of BSE action scores between the treatment and control groups. So it can be concluded that there was an influence of BSE health education on BSE measures. Also, the result is supported by the average score of the BSE of the treatment group (13.73) being higher than the control group (12.80). This result happened because in the previous analysis, which showed that the treatment group had a higher score in



knowledge and attitude scores than the control group. So this agrees with Maryam [12], who stated that when someone already knew the stimulus or health object, then held an assessment or opinion towards what is known, the next process is someone will be able to carry out an action what is already known and believed. This study is also in line with Fauzatin's research [14], in which there is the influence of knowledge on the practice of BSE action, where knowledge about good BSE will form the right BSE actions as well.

4.3. Analysis of the Effect of BSE Health Education with a Total Behavior Score

Because the behavioral domain includes knowledge, attitudes, and actions (Notoatmodjo) [5], it is necessary to analyze the total score so that from the results of the analysis, it can be seen whether there is an influence of BSE health education on BSE behavior. The total score is obtained from the sum of the scores of knowledge, attitudes, and actions.

For the treatment groups, the overall performance score (47.87) is higher than the control groups (41.67) shown in table 6. It obtains p-value 0.00~(p < 0.05) shows in table 6, suggesting that the mean total BSE behavior score is substantially different. So it can be inferred that BSE behavior is affecting. This result happens because the treatment group has a predisposing factor that includes knowledge and the right attitude and is supported by enabling factors that include a mirror mounted in the bathroom of the treatment group's dormitory by the researcher. This study is in line with the theory of Notoatmodjo [5], which states that health education can shape a person's behavior if it can increase beliefs, knowledge, attitudes and can provide adequate facilities and infrastructures.

The results showed a significant influence of BSE health education on BSE behavior, so it means that BSE health education is essential to give to adolescents (Ali and Hussein) [15]. Based on the above, at the end of the study, the researchers continued to provide BSE health education through posters distributed to the control group.

5. CONCLUSION

There is a significant influence of BSE health education on knowledge, attitudes, and actions, as well as the behavior of Madrasah Aliyah Islamic Boarding School students of Ar-Raudlatul Ilmiyah Kertosono.

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