



SALINAN

**KEPUTUSAN
REKTOR UNIVERSITAS AIRLANGGA
NOMOR 999/UN3/2022**

TENTANG

PELAKSANAAN RISET KOLABORASI INDONESIA TAHUN 2022

REKTOR UNIVERSITAS AIRLANGGA,

- Menimbang : a. Bahwa dalam rangka meningkatkan kualitas penelitian riset Perguruan Tinggi Indonesia sebagai salah satu wujud dari pelaksanaan tridharma, Kementerian Pendidikan, Kebudayaan, Riset dan, Teknologi menyelenggarakan program Riset Kolaborasi;
- b. bahwa dari hasil seleksi proposal program riset kolaborasi perguruan tinggi negeri tahun 2022, terdapat beberapa judul yang dinyatakan lolos didanai maka perlu menetapkan pelaksanaan riset dimaksud melalui Keputusan Rektor;
- c. bahwa berdasarkan pertimbangan sebagaimana dimaksud pada huruf a dan huruf b, perlu menetapkan Keputusan Rektor tentang Pelaksanaan Riset Kolaborasi Indonesia Tahun 2022;
- Mengingat : 1. Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional (Lembaran Negara Republik Indonesia Tahun 2003 Nomor 78, Tambahan Lembaran Negara Nomor 4301);
2. Undang-Undang Nomor 14 Tahun 2005 tentang Guru dan Dosen (Lembaran Negara Republik Indonesia Tahun 2005 Nomor 157, Tambahan Lembaran Negara Nomor 4586);
3. Undang – Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 158, Tambahan Lembaran Negara Tahun 2012 Nomor 5336);
4. Peraturan Pemerintah Republik Indonesia Nomor 57 Tahun 1954 tentang Pendirian Universitas Airlangga di Surabaya sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 3 Tahun 1955 tentang Pengubahan Peraturan Pemerintah Nomor 57 Tahun 1954. (Lembaran Negara Republik Indonesia Tahun 1954 Nomor 99 Tambahan Lembaran Negara Nomor 695 juncto Lembaran Negara Republik Indonesia Tahun 1955 Nomor 4 Tambahan Lembaran Negara Nomor 748);
5. Peraturan Pemerintah Nomor 37 Tahun 2009 tentang Dosen (Lembaran Negara Republik Indonesia Tahun 2009 Nomor 76, Tambahan Lembaran Negara Republik Indonesia Nomor 5007);

6. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 16, Tambahan Lembaran Negara Nomor 5500);
7. Peraturan Pemerintah Nomor 30 Tahun 2014 tentang Statuta Universitas Airlangga (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 100, Tambahan Lembaran Negara Nomor 5535);
8. Peraturan Pemerintah Nomor 26 Tahun 2015 tentang Bentuk dan Mekanisme Pendanaan Perguruan Tinggi Negeri Badan Hukum sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 8 Tahun 2020 (Lembaran Negara Republik Indonesia Tahun 2020 Nomor 28, Tambahan Lembaran Negara Republik Indonesia Nomor 6461);
9. Peraturan Presiden Nomor 62 Tahun 2021 tentang Kementerian Pendidikan, Kebudayaan, Riset dan, Teknologi (Lembaran Negara Republik Indonesia Tahun 2021 Nomor 156);
10. Peraturan Menteri Keuangan Nomor 100/PMK.02/2020 tentang Tata Cara Penyediaan, Pencairan, dan Pertanggungjawaban Pemberian Bantuan Pendanaan Perguruan Tinggi Negeri Badan Hukum;
11. Keputusan Majelis Wali Amanat Universitas Airlangga Nomor 3/UN3.MWA/K/2020 tentang Pengangkatan Rektor Universitas Airlangga Periode 2020-2025;
12. Peraturan Rektor Universitas Airlangga Nomor 42 Tahun 2016 tentang Organisasi dan Tata Kerja Universitas Airlangga sebagaimana telah diubah dengan Peraturan Rektor Nomor 39 Tahun 2017;
13. Peraturan Rektor Universitas Airlangga Nomor 22 Tahun 2021 tentang Pedoman Pendidikan Universitas Airlangga sebagaimana telah diubah dengan Peraturan Rektor Nomor 25 Tahun 2021;
14. Keputusan Rektor Universitas Airlangga Nomor 913/UN3/2020 tentang Pemberhentian dan Pengangkatan Ketua Lembaga Universitas Airlangga;

Memperhatikan : Surat Ketua Lembaga Penelitian dan Pengabdian Masyarakat Nomor 530/UN3.15/PT/2022 perihal Permohonan Keputusan Rektor tentang Pelaksanaan Riset Kolaborasi Indonesia, tertanggal 12 Mei 2022;

MEMUTUSKAN :

Menetapkan : **KEPUTUSAN REKTOR TENTANG PELAKSANAAN RISET KOLABORASI INDONESIA TAHUN 2022.**

- KESATU : Menetapkan pelaksana Program Riset Kolaborasi Indonesia (RKI) Universitas Airlangga tahun 2022 sebanyak 33 (tiga puluh tiga) judul penelitian yang dinyatakan lolos seleksi, dengan susunan nama peneliti sebagaimana tercantum dalam lampiran yang merupakan bagian tidak terpisahkan dari Keputusan Rektor ini.
- KEDUA : Biaya keseluruhan untuk pelaksanaan program riset sebagaimana dimaksud pada diktum KESATU adalah sebesar Rp. 2.425.000.000,- (dua milyar empat ratus dua puluh lima juta rupiah).
- KETIGA : Dalam melaksanakan tugasnya, penerima dana program riset sebagaimana dimaksud pada diktum KESATU, bekerja secara jujur dan transparan dengan berpedoman pada ketentuan peraturan perundang-undangan yang berlaku, serta bertanggungjawab kepada Rektor.
- KEEMPAT : Biaya pelaksanaan Keputusan ini dibebankan pada dana Rencana Kerja dan Anggaran Tahunan (RKAT) Lembaga Penelitian dan Pengabdian Masyarakat Universitas Airlangga Tahun 2022.
- KELIMA : Jangka waktu pelaksanaan riset sebagaimana dimaksud pada diktum KESATU terhitung mulai tanggal ditetapkannya Keputusan Rektor ini sampai dengan tanggal 31 Desember 2022.
- KEENAM : Keputusan Rektor ini mulai berlaku pada tanggal ditetapkan.

Salinan disampaikan Yth :

1. Pimpinan Unit Kerja di Lingkungan UNAIR;
2. Yang bersangkutan.

Ditetapkan di Surabaya
pada tanggal 13 Mei 2022

REKTOR,

TTD

MOHAMMAD NASIH
NIP 196508061992031002

Salinan sesuai dengan aslinya
Sekretaris Universitas,



KOHO SRIMULYO
NIP. 196602281990021001

LAMPIRAN KEPUTUSAN REKTOR UNIVERSITAS AIRLANGGA
NOMOR : 999/UN3/2022, TANGGAL 13 MEI 2022.
TENTANG : PELAKSANAAN RISET KOLABORASI INDONESIA TAHUN 2022.

DAFTAR NAMA PENELITI RISET KOLABORASI INDONESIA
 YANG DINYATAKAN LOLOS UNTUK DIDANAI TAHUN 2021

NO	NAMA PENELITI UNAIR	TIM PENELITI	PERAN	SKEMA	JUDUL	DANA
1	Prof. Soetjipto, dr., MS, Ph.D.	Mitra : 1. Endarko, M.Si., Ph.D. (ITS) 2. Dr. Gustia Rini, SpA (UNAND)	Host	Skema A	Glucometer Non Invasive Berbasis Near Infrared Sebagai Alternatif Pemeriksaan Kadar Gula Darah Pada Anak Dengan Dm Tipe 1	Rp 100.000.000
2	Prof. Dr. Ah. Yusuf S., S.Kp., M.Kes.	Mitra : 1. Jenny Marlindawani Purba, S.Kp., MNS., Ph.D (USU) 2. Ns. Dewi Eka Putri, M. Kep, Sp. Kep.J (UNAND)	Host	Skema A	Model Perawatan Lansia Berbasis Keluarga	Rp 100.000.000
3	Ferry Efendi, S.Kep., Ns., M.Sc., Ph.D	Mitra : 1. Prof. Dr.rer.pol. Heri Kuswanto, S.Si., M.Si. (ITS) 2. Hema Malini, S.Kp., MN., Ph.D. (UNAND) 3. Dr. Eka Mishbahtul M.HAS., S.Kep., Ns., M.Kep. (UNAIR) 4. Mahendra Tri Arif Sampurna, dr., Sp.A., Ph.D. (UNAIR)	Host	Skema A	Analisis Kesenjangan Mortalitas Neonatal Di Wilayah Perkotaan Dan Pedesaan Di Indonesia.	Rp 100.000.000

4	Tutik Sri Wahyuni, S.Si., Apt., M.Si.,Ph.D	Mitra : 1. dr. Widya Wasityastuti, M.Sc., M.Med.Ed., Ph.D. (UGM) 2. Suratno Lulut Ratnoglik, M.D., M.Biomed., Ph.D (UI) 3. Laura Navika Yamani, S.Si., M.Si., Ph.D. (UNAIR)	Host	Skema A	Studi Mekanisme Secara In Vivo Dan Molecular Pada Tanaman Aktif Anti Virus Hepatitis C	Rp 100.000.000
5	Dr. Miguel Angel Esquivias Padilla, M.SE.	Mitra : 1. Wahyu Widodo, S.E., M.Si., Ph.D (UNDIP) 2. Bhimo Rizky Samudro, S.E., M.Si, Ph.D (UNS)	Host	Skema A	Program Promosi Ekspor Nasional (Epp) Sebagai Penggerak Sumber Daya Organisasi Dan Kemampuan Perusahaan Ekspor: Pengaruh Epp Terhadap Strategi, Keunggulan Kompetitif, Dan Kinerja Perdagangan	Rp 100.000.000
6	Prof. Dr. Kuntaman, dr., M.S., Sp.MK.	Mitra : 1. dr. Yulia Rosa Saharman, Ph.D., Sp.MK(K) (UI) 2. dr. Endang Sri Lestari, Ph.D. (UNDIP) 3. Rosantia Sarasari, dr., Sp.MK., Ph.D. (BRIN) 4. Novaria Sari Dewi Panjaitan, S. Farm., Ph.D. (BRIN) 5. Dr. dr. Hasta Handayani Idrus, M.Kes. (BRIN) 6. Yustinus Maladan, M.Si. (BRIN) 7. Itaru Hirai, Ph.D (University of the Ryukyus) 8. Prof. Christopher Gomez (Kobe University)	Host	Skema C	Creating New Detection System For Amr Plasmid Based On Upstream Genetic Structure Of Amr Genes	Rp 150.000.000

7	Prof. Dr. Retna Apsari, M.Si.	Mitra : 1. Dr. Yessie Widya Sari S.Si., M.Si. (IPB) 2. Prof. Indriana Kartini, M.Si., Ph.D (UGM) 3. Rafdzah Ahmad Zaki (University of Malaya)	Host	Skema C	The Design Of Selective Novel Local Chlorophyll Photosensitizer Exogenous For Laser Based Cancer Phototherapy	Rp 150.000.000
8	Muhammad Miftahussurur, dr., M.Kes., Sp.PD., Ph.D	Mitra : 1. Prof. Dr. dr. Ari Fahrial Syam, Sp.PD-KGEH., MMB., FINASIM (UI) 2. Prof. Dr. dr. Gontar Alamsyah Siregar, Sp.PD., KGEH. (USU) 3. Prof. Yoshio Yamaoka, MD, Ph.D (Oita University)	Host	Skema C	Low-Grade Intestinal Metaplasia In Indonesia: Insights Into Pro-Inflammatory Cytokine Expression Observed During Helicobacter Pylori Infection And Unique East-Asian Caga Characteristics	Rp 150.000.000
9	Trias Mahmudiono, S.KM, MPH (Nutr.), GCAS, Ph.D	Mitra : 1. apt. Cindra Tri Yuniar, S.Farm., M.Si. (ITB) 2. RISTI KURNIA DEWI, SGz, M.Si (UNAND) 3. Dr. Shirley Tang Gee Hoon (Universiti Kebangsaan Malaysia)	Host	Skema C	Application Of Health Belief Model Towards Nutrition Education Intervention To Improve Supplement And Nutrients Intake Of Adults With And Without Covid-19 History.	Rp 150.000.000

10	Prof. Djoko Santoso, dr., Ph.D., Sp.PD.K-GH.FINASIM.	Host : Prof. Dr. Ir. Dodi Nandika, MS (IPB) Mitra : 1. Dr.rer.nat. Lucia Dhiantika Witasari, S.Farm., Apt., M.Biotech. (UGM) 2. Yanti Rachmayanti, M.Si., Ph.D. (ITB)	Mitra	Skema A	Bioprospeksi Fungus Comb Sarang Rayap: Anticancer Activity Of Termite's Fungus Comb	Rp 50.000.000
11	Prof. Dr. Pratiwi Pudjiastuti, M.Si	Host : Prof. Dr. Dra Fahimah Martak, M.Si (ITS) Mitra : Prof. Dr. Syukri Arief, M. Eng. (Unand)	Mitra	Skema A	Sintesis Nanocarrier Kitosan Sebagai Pembawa Senyawa Turunan 2-Tiohidantoin Antidengue	Rp 50.000.000
12	Dr. Deni Kusumawardani, S.E., M.Si	Host : Mokhammad Nur Cahyadi, S.T., M.Sc., Ph.D. (ITS) Mitra : Dr. Eng. Meifal Rusli, MT (Unand)	Mitra	Skema A	Effects Of The Eruption Of Mount Semeru On The Distribution Of Poverty Using Spatial Auto- Correlation And Regional Interlinkages	Rp 50.000.000
13	Anjar Tri Wibowo S.Si., M.Sc., Ph.D.	Host : Dr. Yekti Asih Purwestri, S.Si., M.Si. (UGM) Mitra : Husna Nugrahapraja, Ph. D. (ITB)	Mitra	Skema A	Simultaneous Production Of Solid Fuel, Bio-Pigment, And Value-Added Compounds From Microalgae Via Thermochemical Processing	Rp 50.000.000

14	dr. Pradana Zaky Romadhon, Sp.PD, K-HOM, FINASIM	Host : dr. Eric Daniel Tenda, DIC., Ph.D., Sp.PD., FINASIM. (UI) Mitra : dr. Harik Firman Thahadian, Sp.PD., Ph.D. (UGM)	Mitra	Skema A	Pengembangan Dan Validasi Skoring Sistem Prediktif Berbasis Artificial Intelligence Dan Parameter Klinis Serta Laboratoris Terhadap Luaran Perawatan Pada Pasien Terkonfirmasi Covid-19 Di Rs Universitas Airlangga Dan Rsup Sardjito	Rp 50.000.000
15	Tahta Amrillah, S.Si., M.Sc., Ph.D.	Host : Prof. Dr. Ahmad Taufiq, S.Pd, M.Si. (UNM) Mitra : Prof. Dr. Agustinus Agung Nugroho Sulistyo Hutomo (ITB)	Mitra	Skema A	Green Technology Nano Besi Oksida Untuk Aplikasi Biomarker Diseases Dan Drug Delivery System	Rp 50.000.000
16	Prof. Yudi Her Oktaviono, dr. Sp.JP(K)FIHA	Host : Dr. Suharti, S.Pd, M.Si (UNM) Mitra : Prof. Dr. dr. DJANGGAN SARGOWO, Sp.PD, Sp.JP, FIHA, FACC, FESC, FCAPC, FASCC. (UB)	Mitra	Skema A	Inovasi Pengembangan Produk Halal Berbasis Budaya Lokal Ekstrak Fermentasi Sambal Lalapan Sebagai Terapi Suportif Dalam Pencegahan Dan Pengendalian Penyakit Kardiovaskuler	Rp 50.000.000
17	Dr. Alexander Patera Nugraha, drg., M.Imun	Host : Dr. Mada Triandala Sibero, S.Pi., M.Si. (UNDIP) Mitra : Kindi Farabi, S.Si., M.Si, Ph.D (UNPAD)	Mitra	Skema A	Mining The New Antifungal From Sponge-Associated Actinomycetes To Treat Multidrug Resistant Candida Spp. In Oral Candidiasis Infection	Rp 50.000.000

18	Dr. Tintin Sukartini, S.Kp., M.Kes.	Host : Dewi Elizadiani Suza, S.Kp., MNS., Ph.D. (USU) Mitra : dr. FINNY FITRY YANI, Sp.A(K). (UNAND)	Mitra	Skema A	Pengembangan Tele Pediatric Nursing Application (Telepednursapp) Berbasis Sekolah Untuk Rescue Kesehatan Mental Anak Dari Dampak Pandemi Covid 19 Dalam New Normal Life	Rp 50.000.000
19	Dr. Gunanti Mahasri, Ir., M.Si.	Host : Dr. Uun Yanuhar, S.Pi, M.Si (UB) Mitra : Prof. Dr. Heru Suryanto, S.T., M.T. (UNM)	Mitra	Skema A	Optimalisasi Kultur Masal Chlorella Vulgaris Sebagai Bahan Antivirus Vnn Untuk Penyiapan Ikan Unggul	Rp 50.000.000
20	Dr. Tri Siwi Agustina, SE.,M.Si.	Host : Donard Games, SE, M.Bus (Adv), PhD (UNAND) Mitra : Dr. Rambat Lupiyoadi, SE, M.E. (UI)	Mitra	Skema A	Peran Modal Spiritual Dalam Inovasi, Kesejahteraan, Dan Kesuksesan Berwirausaha: Suatu Perspektif Dari Pelaku Usaha Rintisan Di Indonesia	Rp 50.000.000
21	Febdian Rusydi, S.T., M.Sc., Ph.D.	Host : Dr. Eng. Muhammad Iqbal, S.T., M.T. (ITB) Mitra : Dr. Ir. Irzaman M.Si. (IPB) Dr. drh. Widagdo Sri Nugroho, M.P. (UGM)	Mitra	Skema A	Implementasi Quantum Engineering Design Untuk Menginvestigasi Kapabilitas Co-Mof, Ni-Mof, Dan Nico-Mof Sebagai Katalis Elektrokimia	Rp 50.000.000

22	Sapto Andriyono, Ph.D	Host : Nita Rukminasari, SPi., Ph.D. (UNHAS) Mitra : Prof. Dr.rer.nat. Indra Junaidi Z., M.Si. (UNAND)	Mitra	Skema A	Aplikasi Dna Barcoding Pada Identifikasi Kista Dinoflagellata Sedimen Dari Muara Sungai Brantas Dan Sungai Bengawan Solo (Jawa Timur) Sebagai Deteksi Dini Kasus Alga Bloom	Rp 50.000.000
23	Dr. Alfa Akustia Widati, S.Si, M.Si.	Host : Saharman Gea S.Si., M.Si. Ph.D (USU) Mitra : Dr. Syukri, S.Si, M.Si (UNAND)	Mitra	Skema A	Pengaruh Impregnasi Ion Dan Ukuran Fecucr/Zeolit Terhadap Aktivitasnya Reaksi Cracking Asam Oleat	Rp 50.000.000
24	Prof. Hery Purnobasuki, M.Si., Ph.D.	Host : Ramadhani Eka Putra, S.Si., M.Si., Ph.D. (ITB) Mitra : Dr. Ir. Rika Raffiudin M.Si. (IPB) Dr. R.C. Hidayat Soesilohadi, M.S. (UGM)	Mitra	Skema A	Produk Dan Tanaman Sumber Pakan Lebah Madu: Studi Etnomedisin Di Kelompok Etnis Jawa	Rp 50.000.000
26	dr. A. Khairul R. Purba, M.Sc., Sp.FK., Ph.D	Host : dr. Dwi Aris Agung Nugrahaningsih, M.Sc., Ph.D (UGM) Mitra : Dr. Yulia Sari., S.Si., M.Si. (UNS) Dr. Maftuchah Rochmanti, dr., MKes (UNAIR)	Mitra	Skema A	Pengembangan Senyawa Aktif Biji Mahoni (Swietenia Macrophylla King.) Sebagai Kandidat Terapi Diabetes: Kajian In Vitro Pada Sel Hepg2 Dan In Vivo Pada Zebrafish.	Rp 50.000.000

27	Dr. dr. Azwin Mengindera Putera, Sp.A(K)	Host : Prof. dr. Muh. Nasrum Massi, Ph.D. (UNHAS) Mitra : Prof. Dr. dr. Yusrawati (UNAND) Prof. Nauki Shimojo (Chiba University Graduate School of Pharmaceutical Sciences)	Mitra	Skema C	Kadar Vitamin D Tali Pusat Dan Dampaknya Pada Kesehatan Bayi Dan Anak: Suatu Penelitian Kohort (Vitadi Study)	Rp 75.000.000
28	Inge Dhamanti, SKM., M.Kes., MPH., PhD.	Host : Auliya Abdurrohimi Suwantika , S.Si., Apt., Ph.D. (UNPAD) Mitra : Dr. apt. Amirah Adlia, S.Si., M.Si. (ITB) Prof. Maarten J. Postma (University of Groningen)	Mitra	Skema C	Analisis Efektivitas Biaya Vaksinasi Covid-19 Di Indonesia Dengan Mempertimbangkan Efek Samping Dari Vaksin.	Rp 75.000.000
29	Apt. Elida Zairina, MPH., PhD	Host : Sofa Dewi Alfian, M.K.M., Apt., Ph.D. (UNPAD) Mitra : Apt. Dr. Susi Ari Kristina, M.Kes (UGM) Prof. dr. Eelko Hak (University of Groningen)	Mitra	Skema C	Knowledge, Perception, And Willingness To Use Telepharmacy Among Pharmacist Students And The General Population In Indonesia	Rp 75.000.000

30	Dr. Santi Martini, dr., M.Kes	Host : dr. Rahayu Lubis, M.Kes., Ph.D (USU) Mitra : Hanafi, S.S., M.App.Ling., Ph.D. (UNAND) Ass. Prof. dr. Rafdzah Ahmad Zaki, MBChB, MPH, DrPH (University of Malaya)	Mitra	Skema C	Impact Of Universal Health Coverage On Infectious And Non-Communicable Diseases	Rp 75.000.000
31	Ayu Lana Nafisyah, S.Pi., M.Sc., Ph.D.	Host : Dr. Eng. Obie Farobie S.Si., M.Si. (IPB) Mitra : Dr. Eng. Puji Rahmawati Nurcahyani, S.TP., M.Si. (UPI) Delicia Y. Rahman (BRIN) Widya Fatriasari (BRIN) Assoc. Prof. Dr. Eng. Muhammad Aziz (The University of Tokyo)	Mitra	Skema C	Simultaneous Production Of Solid Fuel, Bio-Pigment, And Value-Added Compounds From Microalgae Via Thermochemical Processing	Rp 75.000.000
32	Prof. Rachmah Ida, Dra., M.Comm., Ph.D	Host : Dr. Endra Gunawan, S.T., M.Sc. (ITB) Mitra : Cecep Pratama, S.Si., M.Si., D.Sc. (UGM) Deasy Arisa (BRIN) Nuraini Rahma Hanifa (BRIN) Iwan Hermawan (Nanyang Technological University)	Mitra	Skema C	Risk Communication Management And Community Engagement To Enhance Disaster Mitigation And Early Warning System In East Java Province	Rp 75.000.000

33	Erwin Sutanto, S.T., M.Sc.	Host : Dr. Ir. Fahmi S.T., M.Sc., IPM (USU) Mitra : Muhammad Imran Hamid, Ph.D (UNAND) Assoc. Prof. Dr. Eng. Muhammad Aziz (The University of Tokyo)	Mitra	Skema C	Pengembangan Sistem Monitoring Baterai Kendaraan Listrik+F8 Berbasis Iot	Rp 75.000.000
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Ditetapkan di Surabaya

REKTOR,

TTD

MOHAMMAD NASIH
NIP 196508061992031002

Salinan sesuai dengan aslinya
Sekretaris Universitas,



KOKO SRIMULYO
NIP. 196602281990021001



UNIVERSITAS AIRLANGGA
LEMBAGA PENELITIAN DAN PENGABDIAN MASYARAKAT

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laman : <http://lppm.unair.ac.id>; e-mail : penelitian@lppm.unair.ac.id, pengmas@lppm.unair.ac.id

PERJANJIAN PENUGASAN PENELITIAN
RISET KOLABORASI INDONESIA TAHUN ANGGARAN 2022
Nomor 1074/UN3.15/PT/2022

Pada hari ini **Selasa** tanggal **Dua Puluh Empat** Bulan **Mei** tahun **Dua Ribu Dua Puluh Dua**, yang bertandatangan di bawah ini:

1. Dr. Gadis Meinar Sari, dr., M.Kes. : Ketua Lembaga Penelitian dan Pengabdian Masyarakat, Universitas Airlangga, yang berkedudukan di Kampus C Universitas Airlangga, selanjutnya dalam Surat Perjanjian ini disebut **PIHAK PERTAMA**;
2. Trias Mahmudiono, S.KM, MPH (Nutr.), GCAS, Ph.D : Staf pengajar pada Fakultas Kesehatan Masyarakat Universitas Airlangga yang berkedudukan di Surabaya, dalam hal ini bertindak sebagai Peneliti Utama dalam kegiatan penelitian Tahun Anggaran 2022 untuk selanjutnya disebut sebagai **PIHAK KEDUA**.

Berdasarkan Surat Keputusan Rektor Universitas Airlangga tentang Pelaksanaan Program Riset Kolaborasi Indonesia Tahun Anggaran 2022 di Lingkungan Universitas Airlangga Nomor: 999/UN3/2022 tanggal 13 Mei 2022, **PIHAK PERTAMA** memberikan penugasan kepada **PIHAK KEDUA**, untuk melaksanakan Penelitian **Riset Kolaborasi Indonesia** Tahun Anggaran 2022 dengan ketentuan sebagai berikut:

PASAL 1
RUANG LINGKUP PENUGASAN

- (1) **PIHAK PERTAMA** memberi tugas kepada **PIHAK KEDUA** dan **PIHAK KEDUA** menerima tugas tersebut dari **PIHAK PERTAMA**, untuk melaksanakan dan menyelesaikan Penelitian Riset Kolaborasi Indonesia Tahun Anggaran 2022 dengan judul :

“Application of Health Belief Model towards Nutrition Education Intervention to Improve Supplement and Nutrients Intake of Adults with and without Covid-19 history.”

- (2) **PIHAK KEDUA** melaksanakan kegiatan Penelitian Riset Kolaborasi Indonesia dengan tim peneliti:
- a. Nama Peneliti Mitra 1 apt. Cindra Tri Yuniar, S.Farm., M.Si. dari Universiti Kebangsaan Malaysia
 - b. Nama Peneliti Mitra 2 RISTI KURNIA DEWI, SGz, M.Si dari Universitas Andalas
 - c. Nama Peneliti Mitra 3 Dr. Shirley Tang Gee Hoon dari Universiti Kebangsaan Malaysia
 - d. Nama Peneliti Mitra 4 dari
 - e. Nama Peneliti Mitra 5 dari
 - f. Nama Peneliti Mitra 6 dari
 - g. Nama Peneliti Mitra 7 dari
 - h. Nama Peneliti Mitra 8 dari
- (3) **PIHAK KEDUA** bertanggungjawab penuh atas pelaksanaan, administrasi dan keuangan atas kegiatan penelitian sebagaimana dimaksud pada ayat (1) dan berkewajiban menyimpan semua bukti-bukti pengeluaran serta dokumen pelaksanaan lainnya.

PASAL 2 DANA PENELITIAN

- (1) Besarnya dana untuk melaksanakan penelitian dengan judul sebagaimana dimaksud pada Pasal 1 ayat 1 adalah sebesar **Rp. 150.000.000,- (Seratus Lima Puluh Juta Rupiah)**.
- (2) Dana Penelitian sebagaimana dimaksud pada ayat (1) dibebankan pada dana RKAT LPPM Universitas Airlangga sesuai dengan:
 - a. Berita Acara Bersama Evaluasi Proposal Riset Kolaborasi Indonesia - 16 PTNBH tertanggal 11 Mei 2022 secara daring.
 - b. Surat Keputusan Rektor Universitas Airlangga Nomor: 999/UN3/2022 tanggal 13 Mei 2022 tentang Pelaksanaan Program Riset Kolaborasi Indonesia Tahun 2022.

PASAL 3
TATA CARA PEMBAYARAN DANA PENELITIAN

- (1) **PIHAK PERTAMA** akan membayarkan dana penelitian sebagaimana yang dimaksud pada Pasal 2 kepada **PIHAK KEDUA** secara bertahap dengan ketentuan sebagai berikut:
- a. Pembayaran Tahap Pertama sebesar 70% dari total dana penelitian yaitu $70\% \times \text{Rp. } 150.000.000,- = \text{Rp. } 105.000.000,-$ (Seratus Lima Juta Rupiah), yang akan dibayarkan oleh **PIHAK PERTAMA** kepada **PIHAK KEDUA** setelah **PIHAK KEDUA** mengumpulkan revisi proposal dan besaran dana penelitian yang disetujui.
 - b. Pembayaran Tahap Kedua sebesar 30% dari total dana penelitian yaitu $30\% \times \text{Rp. } 150.000.000,- = \text{Rp. } 45.000.000,-$ (Empat Puluh Lima Juta Rupiah), dibayarkan oleh **PIHAK PERTAMA** kepada **PIHAK KEDUA** setelah **PIHAK KEDUA** menyelesaikan kegiatan penelitian dan memenuhi kewajiban sebagai berikut:
 1. Mengumpulkan Laporan akhir tahun penelitian selambat-lambatnya **tanggal 9 Desember 2022.**
 2. Menyerahkan bukti diterima (*Accepted*) minimal **1 artikel publikasi ke jurnal internasional dan terindeks Scopus dengan kualitas Q2 (Peneliti Utama)**
 3. Menyerahkan bukti 3 artikel publikasi terindeks di Scopus (Peneliti Mitra)
- (2) Dana Penelitian sebagaimana dimaksud pada ayat Pasal 2 ayat (1) akan disalurkan oleh **PIHAK PERTAMA** kepada **PIHAK KEDUA** ke rekening sebagai berikut:
- | | | |
|-----------------------|---|-----------------------|
| Nama | : | Trias Mahmudiono |
| Nomor Rekening | : | 0102160617 |
| Nama Bank | : | Bank Negara Indonesia |
| NPWP Perguruan Tinggi | : | 73.773.758.5-619.000 |
- (3) **PIHAK PERTAMA** tidak bertanggung jawab atas keterlambatan dan/atau tidak terbayarnya sejumlah dana sebagaimana dimaksud pada Pasal 2 ayat (1) yang disebabkan karena kesalahan **PIHAK KEDUA** dalam menyampaikan data peneliti, nama bank, nomor rekening, dan persyaratan lainnya yang tidak sesuai dengan ketentuan.

PASAL 4 JANGKA WAKTU

Jangka waktu pelaksanaan penelitian sebagaimana dimaksud pada Pasal 1 sampai selesai adalah dihitung sejak **penandatanganan perjanjian penelitian** dan berakhir pada **Tanggal 15 Desember 2022**.

PASAL 5 TARGET LUARAN

Target luaran dimaksud adalah mengacu pada target luaran ketua peneliti pada Pasal 1 Ayat 2 Butir a yaitu:

- (1) **PIHAK KEDUA** berkewajiban untuk mencapai target **luaran** penelitian berupa minimal 1 (satu) artikel yang telah dikirim (*submitted*) ke jurnal internasional terindeks Scopus berkualitas sekurangnya Q2 (sebagai *first* atau *corresponding* author) dan 3 artikel publikasi terindeks di Scopus.
- (2) **PIHAK KEDUA** berkewajiban untuk melaporkan perkembangan pencapaian target luaran sebagaimana dimaksud pada ayat (1) kepada **PIHAK PERTAMA**.
- (3) **PIHAK KEDUA** berkewajiban mencantumkan nama seluruh peneliti dari Perguruan Tinggi yang terlibat dalam penelitian ini dalam semua publikasi yang dihasilkan

PASAL 6 HAK DAN KEWAJIBAN PARA PIHAK

- (1) Hak dan Kewajiban **PIHAK PERTAMA**:
 - a. **PIHAK PERTAMA** berkewajiban untuk memberikan dana penelitian kepada **PIHAK KEDUA** dengan jumlah sebagaimana dimaksud pada Pasal 2 ayat (1) dan dengan tata cara pembayaran sebagaimana dimaksud pada Pasal 3.
 - b. **PIHAK PERTAMA** berhak untuk mendapatkan luaran penelitian dari **PIHAK KEDUA**.
 - c. **PIHAK PERTAMA** berhak meminta dan menerima segala bentuk data, informasi dan dokumen yang berkaitan dengan pelaksanaan penelitian yang dilakukan oleh **PIHAK KEDUA**.
- (2) Hak dan Kewajiban **PIHAK KEDUA**:
 - a. **PIHAK KEDUA** wajib melaksanakan dan menyelesaikan penelitian.
 - b. **PIHAK KEDUA** berhak menerima dana penelitian dari **PIHAK PERTAMA** dengan jumlah sebagaimana dimaksud pada Pasal 2 ayat (1).

- c. **PIHAK KEDUA** berkewajiban menyerahkan kepada **PIHAK PERTAMA** laporan pelaksanaan dan luaran penelitian dengan judul sebagaimana yang dimaksud pada Pasal 1 ayat (1).
- d. **PIHAK KEDUA** wajib mengikuti monitoring dan evaluasi yang dilakukan oleh **PIHAK PERTAMA**.
- e. **PIHAK KEDUA** bertanggungjawab mutlak dalam pembelanjaan dana penelitian yang diterimanya dan berkewajiban untuk menyimpan semua bukti pengeluaran sesuai dengan jumlah dana yang diberikan oleh **PIHAK PERTAMA**.
- f. **PIHAK KEDUA** berkewajiban untuk menyampaikan kepada **PIHAK PERTAMA** laporan penggunaan dana.

PASAL 7

LAPORAN PELAKSANAAN PENELITIAN

- (1) **PIHAK KEDUA** memberikan laporan pelaksanaan penelitian sebagaimana dimaksud pada pasal 1 ayat (1) dengan ketentuan sebagai berikut:
 - a. Laporan hasil Penelitian ditulis sesuai dengan format yang ditentukan **PIHAK PERTAMA**.
 - b. Laporan pelaksanaan penelitian terdiri dari laporan kemajuan yang diserahkan kepada **PIHAK PERTAMA** sebanyak 1 (satu) eksemplar selambat-lambatnya tanggal **26 Agustus 2022** dan Laporan Akhir beserta bukti luaran diserahkan ke **PIHAK PERTAMA** sebanyak 1 (satu) eksemplar selambat-lambatnya tanggal **9 Desember 2022**.
- (2) **PIHAK KEDUA** menyerahkan laporan keuangan yang berisi bukti-bukti pembayaran sesuai dengan dana yang diterima oleh **PIHAK PERTAMA** dan bukti setor pajak kepada **PIHAK PERTAMA** sebanyak 1 (satu) eksemplar selambat-lambatnya **26 Agustus 2022** untuk laporan keuangan tahap I (70%) dan selambat-lambatnya tanggal **9 Desember 2022** untuk laporan keuangan tahap II (30%).

PASAL 8

MONITORING DAN EVALUASI

PIHAK PERTAMA dalam rangka pengawasan akan melakukan monitoring dan evaluasi terhadap pelaksanaan penelitian tahun anggaran 2022.

PASAL 9
SANKSI

Apabila sampai dengan batas waktu yang telah ditetapkan untuk melaksanakan Penelitian sebagaimana yang dimaksud pada Pasal 1 ayat (1) telah berakhir, namun **PIHAK KEDUA** belum menyelesaikan tugasnya, maka **PIHAK KEDUA** dikenakan sanksi administratif berupa penghentian pembayaran.

PASAL 10
PEMBATALAN PERJANJIAN

- (1) **PIHAK PERTAMA** mempunyai hak untuk membatalkan Kontrak Penelitian Riset Kolaborasi Indonesia ini secara sepihak apabila:
 - a. Judul penelitian sebagaimana dimaksud pada Pasal 1 ayat (1) ditemukan adanya duplikasi dengan penelitian lain dan/atau ditemukan adanya ketidakjujuran, itikad tidak baik, dan/atau perbuatan yang tidak sesuai dengan kaidah ilmiah dari atau dilakukan oleh **PIHAK KEDUA**, maka penugasan penelitian ini dinyatakan batal dan **PIHAK KEDUA** wajib mengembalikan dana penelitian yang telah diterima kepada **PIHAK PERTAMA** yang selanjutnya akan disetor ke Kas Negara.
 - b. Menurut perhitungan **PIHAK PERTAMA**, **PIHAK KEDUA** tidak mampu menyelesaikan tugasnya.
- (2) Setelah Penugasan Penelitian Riset Kolaborasi Indonesia ini dibatalkan, maka **PIHAK KEDUA** wajib mengembalikan seluruh dana penelitian yang telah diterima kepada **PIHAK PERTAMA** yang selanjutnya akan disetor ke Kas Negara, selambat-lambatnya 7 (tujuh) hari setelah pembatalan.
- (3) Bukti setor sebagaimana dimaksud pada butir (2) disimpan oleh **PIHAK PERTAMA**.

PASAL 11
PAJAK-PAJAK

PIHAK KEDUA berkewajiban membayar dan menyetor pajak ke kantor pelayanan pajak setempat sesuai ketentuan yang berlaku.

PASAL 12
KEKAYAAN INTELEKTUAL

- (1) Kekayaan Intelektual yang dihasilkan dari pelaksanaan penelitian diatur dan dikelola sesuai dengan peraturan dan perundang-undangan yang berlaku dimana Pemegang Hak Cipta atas Ciptaan dan/atau Pemegang Hak Paten atas Paten yang dibuat oleh pencipta dan/atau inventor dalam hubungan dinas, yang dianggap Pencipta dan/atau Pemegang Hak Paten yaitu institusi pemerintah, dalam hal ini Ciptaan dan/atau Paten digunakan secara komersial, Pencipta dan/atau Inventor mendapatkan imbalan berupa Royalti (pemberian Royalti untuk penggunaan secara komersial diatur dengan Peraturan Pemerintah).
- (2) **PIHAK KEDUA** berkewajiban untuk mengupayakan hasil Penelitian Riset Kolaborasi Indonesia untuk memperoleh hak paten atau kekayaan intelektual lainnya, serta publikasi ilmiah untuk judul penelitian sebagaimana dimaksud pada Pasal 1 ayat (1).
- (3) Perolehan sebagaimana dimaksud pada ayat (1) dimanfaatkan sebesar-besarnya untuk pelaksanaan tridharma perguruan tinggi.
- (4) **PIHAK KEDUA** berkewajiban untuk melaporkan perkembangan perolehan hak paten atau hak kekayaan intelektual lainnya, serta publikasi ilmiah seperti yang dimaksud pada ayat (1) selambat-lambatnya tanggal **9 Desember 2022**.
- (5) Apabila hasil penelitian ini dipatenkan, maka paten dari hasil pekerjaan ini merupakan milik pemerintah yang pengelolaan dan proses pengalihannya diatur sesuai dengan kesepakatan bersama yang melibatkan keseluruhan tim peneliti dari empat universitas.

PASAL 13
PERALATAN DAN/ALAT HASIL PENELITIAN

Hasil Pelaksanaan Penelitian yang berupa peralatan dan/atau alat yang dibeli dari kegiatan penelitian ini adalah milik Institusi yang pengelolaannya diatur sesuai dengan kesepakatan bersama.

PASAL 14
PENYELESAIAN SENGKETA

Apabila terjadi perselisihan antara **PIHAK PERTAMA** dan **PIHAK KEDUA** dalam pelaksanaan Penugasan Penelitian ini akan dilakukan penyelesaian secara musyawarah dan mufakat, dan apabila tidak tercapai penyelesaian secara musyawarah dan mufakat maka penyelesaian dilakukan melalui proses hukum yang berlaku dengan memilih domisili hukum di Pengadilan Negeri.

PASAL 15
KEADAAN MEMAKSA (*FORCE MAJEURE*)

- (1) **PARA PIHAK** dibebaskan dari tanggung jawab atas keterlambatan atau kegagalan dalam memenuhi kewajiban yang dimaksud dalam Penugasan Penelitian disebabkan atau diakibatkan oleh peristiwa atau kejadian diluar kekuasaan **PARA PIHAK** yang dapat digolongkan sebagai keadaan memaksa (*force majeure*).
- (2) Peristiwa atau kejadian yang dapat digolongkan keadaan memaksa (*force majeure*) dalam Penugasan Penelitian ini adalah bencana alam, wabah penyakit, kebakaran, perang, blokade, peledakan, sabotase, revolusi, pemberontakan, huru hara serta adanya tindakan pemerintah dalam bidang ekonomi dan moneter yang secara nyata berpengaruh terhadap pelaksanaan Penugasan Penelitian ini.
- (3) Apabila terjadi keadaan memaksa (*force majeure*) maka pihak yang mengalami wajib memberitahukan kepada pihak lainnya secara tertulis, selambat-lambatnya dalam 7 (tujuh) hari kerja sejak terjadinya keadaan memaksa (*force majeure*), disertai dengan bukti-bukti yang sah dari pihak berwajib, dan **PARA PIHAK** dengan itikad baik akan segera membicarakan penyelesaiannya.

PASAL 16
LAIN-LAIN

- (1) **PIHAK KEDUA** menjamin bahwa penelitian dengan judul sebagaimana yang dimaksud pada Pasal 1 ayat (1) belum pernah dibiayai dan/atau diikutsertakan pada pendanaan penelitian lainnya, baik yang diselenggarakan oleh instansi, lembaga, perusahaan atau yayasan baik di dalam maupun di luar negeri.
- (2) Apabila terdapat hal-hal yang belum diatur dalam Penugasan Penelitian ini dan memerlukan pengaturan, maka akan diatur kemudian oleh **PARA PIHAK** melalui amandemen Penugasan Penelitian ini dan/atau melalui pembuatan perjanjian tersendiri yang merupakan bagian tak terpisahkan dari Penugasan Penelitian ini.

Penugasan penelitian ini dibuat dan ditandatangani oleh **PARA PIHAK** pada hari dan tanggal tersebut diatas, dibuat rangkap 2 (dua) dan bermaterai cukup sesuai dengan ketentuan yang berlaku, yang masing-masing mempunyai kekuatan hukum yang sama.

PIHAK PERTAMA



Dr. Gadis Meinar Sari, dr., M.Kes.

NIP 196605041996032001

PIHAK KEDUA

A handwritten signature in blue ink, consisting of stylized initials and a surname.

Trias Mahmudiono, S.KM, MPH
(Nutr.), GCAS, Ph.D

NIP 198103242003121001

LAPORAN AKHIR

PROGRAM RISET KOLABORASI INDONESIA



**APPLICATION OF HEALTH BELIEF MODEL TOWARDS NUTRITION
EDUCATION INTERVENTION TO IMPROVE SUPPLEMENT AND
NUTRIENTS INTAKE OF ADULTS WITH AND WITHOUT COVID-19
HISTORY**

**Peneliti Utama : Trias Mahmudiono, S.KM, MPH (Nutr.), GCAS, PhD
(Universitas Airlangga)**

**Peneliti Mitra : 1. Cindra Tri Yuniar, S. Farm., M.Si. (Institut
Teknologi Bandung)
2. Risti Kurnia Dewi, S.Gz., M.Si. (Universitas
Andalas)
3. Dr. Shirley Tang Gee Hoon (Universiti
Kebangsaan Malaya)**

UNIVERSITAS AIRLANGGA

Desember 2022

HALAMAN PENGESAHAN

Judul : *Application of Health Belief Model Towards Nutrition Education Intervention To Improve Supplement And Nutrients Intake Of Adults With And Without Covid-19 History*

Peneliti Utama
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Biaya yang diusulkan : Rp 150.000.000, -
Target Publikasi Internasional : 1 Jurnal Q1

Mengetahui,
Ketua LPPM UNAIR



(Dr. Gadis Meinar Sari, dr., M.Kes.)
NIP. 196605041996032001

Surabaya, 09 Desember 2022
Peneliti Utama/Mitra,

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RINGKASAN EKSEKUTIF

Selama dua tahun terakhir, seluruh dunia menghadapi pandemi dari Covid-19 dan menyebabkan beragam perubahan. Di Indonesia, beberapa peraturan dan rekomendasi dari Kementerian Kesehatan juga turut serta mengubah perilaku masyarakat terutama dalam hal konsumsi makanan. Hasil penelitian sebelumnya menemukan perubahan atau pergeseran pilihan pangan yang menyebabkan peningkatan konsumsi sayur, buah, dan suplemen di Indonesia di masa pandemi. Perubahan ini dapat menjadi perubahan yang positif yang terbentuk akibat kondisi pandemi Covid-19. Peningkatan konsumsi sayuran, buah, dan suplemen tidak hanya dapat meningkatkan sistem imun dan mencegah Covid-19 namun juga dapat mencegah penyakit tidak menular yang berkaitan dengan gizi seperti diabetes dan hipertensi. Oleh karena itu, untuk meningkatkan konsumsi makanan bergizi dan suplemen, maka proses edukasi perlu dilakukan. *Health Belief Model* (HBM) merupakan salah satu metode edukasi yang terbukti kemampuannya untuk menjelaskan dan memprediksi perilaku yang berkaitan dengan kesehatan. Penelitian ini bertujuan untuk mengetahui pengaruh Health Belief Model dalam meningkatkan asupan makanan bergizi dan suplemen pada orang yang memiliki maupun tidak memiliki riwayat COVID-19. Penelitian ini menggunakan desain penelitian quasi experimental. Jumlah sampel yang dibutuhkan pada penelitian ini adalah 130 orang yang akan terbagi 65 orang di kelompok kontrol yang berisikan orang yang tidak memiliki riwayat COVID-19 dan dengan jumlah yang sama di kelompok intervensi yang berisikan orang dengan riwayat COVID-19. Kedua kelompok akan mendapatkan edukasi yang sama. Pre dan post-test akan dilakukan untuk mengetahui perbedaan sebelum dan sesudah penelitian. Analisis deskriptif dan inferensial akan dilakukan pada hasil dari penelitian ini. Jenis uji statistik yang digunakan pada penelitian ini adalah uji-t-berpasangan dan uji t-bebas. Luaran dari penelitian ini adalah 1 jurnal yang telah dipublikasi di jurnal internasional berindex scopus (Q1) dan 3 jurnal lainnya yang akan dipublikasikan di jurnal internasional berindex scopus. Hasil dari penelitian baik di Surabaya, Bandung, dan Padang menunjukkan adanya peningkatan pengetahuan dari responden setelah diberikan edukasi pendidikan gizi. Hal tersebut menunjukkan bahwa edukasi yang diberikan memberikan pengaruh terhadap pengetahuan responden terkait dengan Gizi Seimbang dan Health Belief Models Pandemi COVID-19, Peran Suplemen dalam Meningkatkan Daya Tahan Tubuh, serta Gizi dan Imunitas.

BAB I

PENDAHULUAN

1.1 LATAR BELAKANG MASALAH

Selama dua tahun, seluruh dunia menghadapi pandemi COVID-19. Secara global, jumlah kasus hingga hari ini adalah sebanyak 471 juta (1). Di sisi lain, jumlah kasus nasional adalah sebanyak 5,96 juta kasus (2). Walaupun demikian, jumlah penyintas atau orang yang berhasil sembuh adalah sebesar 407 juta orang secara global dan 5,58 juta orang secara nasional (1,2). Pandemi ini menyebabkan berbagai macam perubahan terutama setelah dikeluarkannya regulasi New Normal dan rekomendasi dari kementerian kesehatan untuk meningkatkan imunitas (3,4).

Sejak kasus COVID-19 pertama kali ditemukan di Indonesia, penekanan akan pentingnya makanan bergizi untuk meningkatkan sistem kekebalan tubuh banyak digaungkan. Salah satu rekomendasi dari Kementerian Kesehatan Republik Indonesia adalah untuk mengonsumsi makanan bergizi atau makanan yang bergizi seimbang (4). Selama pandemi, konsumsi sayur dan buah meningkat hingga 35% (5). Menariknya, konsumsi makanan cepat saji menurun hingga lebih dari 50% selama situasi *lock down* di Indonesia (5). Terdapat perubahan pada pengeluaran bahan makanan pada masyarakat Indonesia selama pandemi COVID-19 dimana masyarakat Indonesia lebih banyak mengeluarkan uangnya untuk bahan makanan atau makanan segar dibandingkan dengan makanan instan maupun rokok (6). Penelitian lain yang serupa juga menunjukkan bahwa pembelian bahan makanan segar seperti buah-buahan, sayur, dan telur meningkat selama pandemi COVID-19 sementara konsumsi minuman berkarbon, minuman energi, sirup, makanan kaleng, dan makanan siap saji menurun (7). Tidak hanya menyarankan untuk mengonsumsi makanan bergizi seimbang, Kementerian Kesehatan Republik Indonesia juga merekomendasikan untuk mengonsumsi suplemen jika dibutuhkan (4). Selama situasi *lock down*, konsumsi suplemen masyarakat Indonesia meningkat hingga 47%. Penelitian pada kelompok lansia menunjukkan bahwa sebagian besar lansia setuju bahwa suplemen dapat melindungi mereka selama masa *new normal* (8). Oleh karena itu, hasil dari penelitian-penelitian sebelumnya menunjukkan bahwa

selama pandemi COVID-19 terdapat perubahan konsumsi sayur, buah, dan suplemen di masyarakat Indonesia.

Peningkatan konsumsi sayur, buah, dan suplemen dapat menjadi perilaku positif yang terbentuk selama pandemi. Konsumsi sayur, buah, dan suplemen tidak hanya bersifat preventif terhadap COVID-19 namun juga penyakit tidak menular lainnya yang berkaitan dengan gizi seperti diabetes dan hipertensi yang prevalensinya tinggi di Indonesia (9). Perilaku positif ini akan bermanfaat jika dilakukan sehari-hari.

Health belief model adalah sebuah teori yang berfokus pada upaya peningkatan kesehatan masyarakat dengan memahami mengapa seseorang gagal mengadopsi tindakan preventif kesehatan (10). Model ini telah berhasil direplikasi berkali-kali dan dapat menunjukkan kemampuannya untuk menjelaskan dan memprediksi berbagai perilaku yang berkaitan dengan perilaku yang berdampak positif terhadap kesehatan (11). Terdapat empat persepsi individu yang dapat memprediksi perilaku mereka (10). Yang pertama adalah kerentanan yang dirasakan. Persepsi ini berpendapat bahwa orang akan lebih termotivasi untuk berperilaku sehat jika mereka percaya bahwa mereka rentan terhadap hasil kesehatan yang negatif. Kedua, adalah tingkat keparahan yang dirasakan. Ini berpendapat bahwa semakin kuat persepsi orang tentang tingkat keparahan hasil kesehatan yang negatif, semakin mereka akan termotivasi untuk bertindak untuk menghindari hasil tersebut. Ketiga, persepsi tentang hambatan dan manfaat yang berpendapat ketika hambatan kuat ditemukan dalam mengadopsi perilaku pencegahan, mereka tidak akan mungkin melakukannya. Terakhir, *self-efficacy* mengusulkan bahwa motivasi keseluruhan untuk mengejar kesehatan dapat mempengaruhi keputusan mereka untuk menampilkan perilaku positif.

Pandemi COVID-19 menyebabkan beberapa perubahan kualitas hidup (QoL) dan kualitas hidup terkait kesehatan (SDM-QoL) para penyintas (12,13). Apalagi, mereka yang selamat dari COVID-19 mengalami tekanan dan masalah yang berbeda dibandingkan dengan mereka yang tidak memiliki riwayat COVID-19. Hal ini dapat menunjukkan perbedaan nilai, pandangan, terutama persepsi antara mereka yang memiliki dan tidak memiliki riwayat COVID-19 terhadap perilaku

pencegahan. Selain itu, model HBM yang dibangun berdasarkan persepsi kerentanan, persepsi keparahan, hambatan dan manfaat yang dirasakan terbukti efektif dalam meningkatkan persepsi kerentanan dan keparahan pada pasien atau penyintas untuk menunjukkan perilaku positif (14).

1.2 TUJUAN PENELITIAN

Penelitian ini bertujuan untuk mengukur pengaruh intervensi edukasi gizi menggunakan health belief model untuk meningkatkan asupan gizi dan suplemen pada dewasa dengan ataupun tanpa riwayat COVID-19 ini.

BAB II

METODOLOGI

Penelitian ini merupakan penelitian intervensi dengan desain penelitian quasi eksperimen yang berlokasi di Surabaya, Padang, dan Bandung. Besar sampel penelitian ini dihitung dengan menggunakan simple random sampling dengan responden berjumlah 140 orang di masing-masing senter. Responden di masing-masing center dibagi ke dalam 4 kelompok yaitu kelompok covid control, non-covid control, covid intervensi, dan non-covid intervensi masing-masing kelompok berjumlah 35 orang.

Kriteria inklusi responden dalam penelitian ini adalah termasuk dalam kelompok usia dewasa (18-59 tahun), dengan atau tanpa riwayat COVID-19, dan setuju untuk mengikuti penelitian dengan menandatangani informed consent.

Instrumen yang digunakan dalam pengambilan data baseline dan end line adalah kuesioner. Kelompok intervensi akan mendapatkan materi edukasi setiap dua minggu sekali selama tiga bulan dengan hasil 6 kali pertemuan. Ketiga modul tersebut berjudul “Gizi Seimbang Dan Health Belief Model Pandemic Covid-19”, “Gizi dan Imunitas” serta “Peran Suplemen dalam Meningkatkan Daya Tahan Tubuh”. Kelompok kontrol akan mendapatkan edukasi tentang modul “Perilaku Hidup Bersih dan Sehat di masa Pandemi COVID-19” oleh Kementerian Pendidikan dan Kebudayaan.

Analisis deskriptif dan inferensial akan dilakukan. Analisis deskriptif akan menentukan karakteristik responden. Analisis inferensial akan menganalisis perbedaan antara kerentanan yang dirasakan masing-masing kelompok dan keparahan yang dirasakan. Statistik yang akan digunakan dalam penelitian ini adalah t-paired-test untuk menilai perbedaan antara pre dan posttest pada masing-masing kelompok. Sementara itu untuk menilai perbedaan antara masing-masing kelompok, uji t-dependen akan diterapkan.

BAB III

HASIL DAN LUARAN YANG DICAPAI

3.1 HASIL

Hingga bulan Desember 2022, telah didapatkan persetujuan etik penelitian yang diterbitkan oleh Fakultas Kedokteran Gigi, Universitas Airlangga dengan nomor 362/HRECC.FODM/VI/2022. Telah dilaksanakan kegiatan pelatihan enumerator dan nutrition educator di 3 senter (Surabaya, Bandung, dan Padang), selain itu pengumpulan data baseline telah selesai dan sudah dilakukan pengolahan data secara bivariat. Nutrition educator dilatih untuk memberikan intervensi yang terstandar menggunakan modul yang sudah dikembangkan oleh Tim RKI yang telah memiliki HKI dan sedang dalam pengurusan ISBN. Pelatihan enumerator dan educator dilaksanakan secara tatap muka di masing-masing sektor dengan membahas setia pertanyaan yang ada di kuisisioner, cara dan tehnik menggali pertanyaan, serta poin poin yang perlu ditekankan Ketika edukasi menggunakan modul, serta cara mengukur antropometri menggunakan stadiometer. Pelatihan yang diadakan mampu memunculkan banyak pertanyaan yang diajukan seperti tehnik melakukan wawancara tanpa menyinggung responden terkait hal yang diteliti dalam kuisisioner yaitu poin HFIAS. Dengan pelatihan yang terstandar di tiga kota yang dihadiri oleh tim dari Host University (Universitas Airlangga) diharapkan terjadi penyamaan persepsi dan kapasitas dari para nutrition educator di semua senter.

Telah dihasilkan 3 modul yang akan dibagikan dan sebagai bahan acuan edukasi kepada responden. Ketiga modul tersebut berjudul “Gizi Seimbang Dan Health Belief Model Pandemic Covid-19”, “Gizi dan Imunitas” serta “Peran Suplemen dalam Meningkatkan Daya Tahan Tubuh” yang dihasilkan dari Kerjasama dan diskusi ketiga sector yaitu Surabaya, Padang dan Bandung. Modul yang telah disiapkan dalam proses pengajuan hak cipta ke Direktorat Jenderal Hak Kekayaan Intelektual. Mitra luar negeri dari Universiti Kebangsaan Malaysia memberikan revisi dan feedback terhadap modul yang telah dikembangkan di Indonesia.

3.1.1 Karakteristik Responden

Berdasarkan Penelitian yang telah dilakukan didapatkan 140 responden dengan mayoritas usia 18-25 tahun sebesar (86%), dengan sebaran usia 18-60 tahun. Latar belakang pendidikan yang dimiliki sangat beragam dengan mean tamat SMA/ sederajat, dengan 50% memiliki riwayat covid-19, dan 50% tanpa riwayat covid-19. Sebagian besar responden yang memiliki riwayat covid-19 1x sebesar 41%. Pemeriksaan antropometri responden sangat beragam dengan sebaran tinggi badan 145-190 cm dan berat badan 30-120 kg.

Tabel 1. Karakteristik Responden Surabaya

	Kategori	Frekuensi (n)	Persentase
Usia	Dewasa awal (< 40 tahun)	133	94,9
	Dewasa madya (41-59)	7	5,1
Pendidikan	Tidak tamat SD	3	2,14285714
	Tamat SD	1	0,71428571
	Tamat SMP/ sederajat	1	0,71428571
	Tamat SMA/ sederajat	90	64,2857143
	Akademi/D1,D2,D3	18	12,8571429
	Universitas/PT	27	19,2857143
Riwayat Covid	Sudah	70	50
	Tidak	70	50
Frekuensi Terkena Covid	Tidak Pernah	70	50
Terkena Covid	1x	57	40,7142857
	2x	11	7,85714286
	3x	2	1,42857143
Perawatan Ketika Covid	Isolasi Mandiri di Rumah	78	55,7142857
	Isolasi Mandiri di Hotel	25	17,8571429
	Isolasi Mandiri di Asrama Haji	12	8,57142857
	Di Rawat di RS	26	18,5714286
Berat Badan	30-40 kg	7	5
	41-50 kg	43	30,7142857
	51-60 kg	47	33,5714286
	61-70 kg	28	20
	71-80 kg	8	5,71428571

	81-90 kg	4	2,85714286
	91-100 kg	1	0,71428571
	101-110 kg	1	0,71428571
	111-120 kg	1	0,71428571
Tinggi Badan	145-150 cm	20	14,2857143
	151-160 cm	80	57,1428571
	161-170 cm	28	20
	171-180 cm	11	7,85714286
	181-190 cm	1	0,71428571

Sedangkan untuk karakteristik responden dari senter Padang adalah sebagai berikut.

Tabel 2. Karakteristik Responden Senter Padang

Karakteristik		n	%
Usia	Dewasa Awal (< 40 tahun)	113	80.7
	Dewasa madya (40 – 59 tahun)	27	19.3
Jenis Kelamin	Laki - laki	35	25.0
	Perempuan	105	75.0
Pendidikan Terakhir	Tamat SD	3	2.1
	Tamat SMP/ sederajat	1	0.7
	Tamat SMA/ sederajat	80	57.1
	D1/D2/D3	13	9.3
	Universitas/PT	43	30.7
Status pernikahan	Sudah menikah	63	45.0
	Belum menikah	73	52.1
	Cerai hidup/mati	4	2.8
Penghasilan bulanan	< 2,500,000	46	32.9
	2,500,000 – 5,000,000	34	24.3
	5,500,000 – 7,500,000	7	5.0
	5,000,000 – 10,000,000	1	0.7
	Belum / tidak berpenghasilan	52	37.1
Pengeluaran bulanan	< 2,500,000	82	58.6
	2,500,000 – 5,000,000	37	26.4
	5,500,000 – 7,500,000	2	1.4
	Belum / tidak ada pengeluaran	19	13.6
Tempat tinggal	Rumah sendiri	39	27.9
	Rumah orang tua	48	34.3
	Kos/kontrak	49	35.0
	Rumah kerabat	4	2.9
Pekerjaan	Pelajar / mahasiswa	51	36.4
	Pegawai negeri	4	2.9
	Pegawai swasta	38	27.1
	Wirausaha	15	10.7
	Freelance	13	9.3
	Tidak bekerja	18	13.6

Karakter responden dari senter Bandung adalah sebagai berikut.

Tabel 3. Karakter Responden Senter Bandung

Parameter	Kelompok Covid (n=23)	Kelompok Noncovid (n = 29)
Jenis kelamin		
Laki-laki	4 (17,39%)	5 (17,24%)
Perempuan	19 (82,61%)	24 (82,76%)
Usia		
≤20 tahun	0 (0%)	1 (3,45%)
21 -30 tahun	18 (78,26%)	20 (68,96%)
31 -40 tahun	4 (17,39%)	6 (20,69%)
41 -50 tahun	1 (4,35%)	1 (3,45%)
>50 tahun	0 (0%)	1 (3,45%)
Pekerjaan		
ASN	1 (4,35%)	4 (13,80%)
BUMN	1 (4,35%)	0 (0%)
Dosen	0 (0%)	3 (10,34%)
Ibu Rumah Tangga	3 (13,04)	0 (0%)
Pelajar/ Mahasiswa	5 (21,74%)	13 (44,82%)
Pegawai Swasta	6 (26,09%)	3 (10,34%)
Tenaga Kesehatan	6 (26,09%)	1 (3,45%)
Tenaga Kependidikan	1 (4,35%)	4 (13,80%)
Wiraswasta	0 (0%)	1 (3,45%)

Tabel 4. Data Pengalaman Penggunaan Suplemen oleh responden dari Senter Bandung

Karakteristik (n = 404)	Jumlah (Σ)	Presentase (%)
Mengetahui suplemen yang digunakan pada saat		

pandemi		
Ya	382	94,6
Tidak	22	5,4
Pernah menggunakan suplemen di masa pandemic		
Ya	349	86,4
Tidak	55	13,6

Berdasarkan tabel diatas, ditunjukkan pengalaman responden menggunakan suplemen di masa pandemi. Dari 404 responden, 94,6% mengetahui suplemen yang digunakan pada saat pandemi dan juga 86,4% pernah menggunakan suplemen pada saat pandemi. Dapat dilihat dari angka tersebut cenderung tinggi. Hal ini kemungkinan besar terjadi karena kesadaran masyarakat yang baik terkait penggunaan suplemen dapat mencegah atau mengobati tubuh dari COVID-19.

3.1.2 Perceived Susceptibility

Perceived susceptibility adalah keyakinan individu mengenai kerentanan dirinya atas resiko penyakit dalam mendorong orang untuk mengadopsi perilaku yang lebih sehat. Pertanyaan yang diberikan seputar hubungan mengonsumsi makanan gizi seimbang dengan daya tahan tubuh dan imunitas seseorang dalam menghadapi covid-19. Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 5. Karakteristik Perceived Susceptibility di Surabaya

PERCEIVED SUSCEPTIBILITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Semua orang yang tidak mengonsumsi giziseimbang berisiko terkena COVID-19	15	10,7	25	17,8	17	12,1	33	23,5
Semua orang yang tidak mengonsumsi giziseimbang mudah sakit	20	14,2	20	14,2	30	21,4	33	23,5
Semua orang yang tidak mengonsumsi makanan pokok (nasi, kentang, jagung) dengan jumlah yang cukup berisiko terkena COVID-19	8	5,7	30	21,4	26	18,5	12	8,5
Semua orang yang tidak mengonsumsi protein hewani dengan jumlah yang cukup berisiko terkena COVID-19	10	7,1	8	5,71	18	12,8	12	8,57
Semua orang yang tidak mengonsumsi protein nabati dengan jumlah yang cukup berisiko terkena COVID-19	12	8,5	17	12,1	12	8,57	18	12,8
Semua orang yang tidak mengonsumsi sayur dengan jumlah yang cukup berisiko terkena COVID-19	13	9,2	16	11,4	13	9,28	16	11,4
Semua orang yang tidak mengonsumsi buah dengan jumlah yang cukup berisiko terkena COVID-19	26	18,5	22	15,7	12	8,5	11	7,8
Semua orang yang tidak mengonsumsi air mineral 8 gelas per hari berisiko terkena COVID-19	8	5,7	8	5,7	15	10,7	25	17,8
Karena anggota keluarga saya terkena covid maka resiko saya terkena covid meningkat	11	7,8	11	7,8	17	12,1	25	17,8

PERCEIVED SUSCEPTIBILITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika keluarga saya terkena covid, apabila sayamengonsumsi gizi seimbang maka saya tidak akan mudah terkena	10	7,1	19	13,5	1	0,71	11	7,8
Saya beresiko sangat mudah untuk terkenaCOVID-19	0	0	1	0,7	12	8,5	22	15,7
Saya akan mencari pengobatan untuk mengurangipaparan virus COVID-19	22	15,7	22	15,7	0	0	0	0
Saya beresiko untuk susah sembuh dari COVID-19	0	0	1	0,7	8	5,7	15	10,7
Kemungkinan saya akan mudah terserang COVID-19 jika kebutuhan nutrisi saya tidakterpenuhi	12	8,5	21	15	10	7,1	11	7,8
Kemungkinan saya akan mengalami kekurangangizi jika terserang COVID-19 dalam waktu yanglama	6	4,2	10	7,1	8	5,7	12	8,5
Saya akan tetap sehat walaupun kebutuhan nutrisisaya tidak terpenuhi	4	2,8	6	4,2	10	7,1	13	9,2
Saya tidak akan terinfeksi COVID-19 walaupnkebutuhan nutrisi saya tidak terpenuhi	8	5,7	22	15,7	7	5	11	7,8

Tabel 6. Karakteristik Perceived Susceptibility di Padang

PERCEIVED SUSCEPTIBILITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Semua orang yang tidak mengonsumsi giziseimbang berisiko terkena COVID-19	14	40,0	23	65,7	18	51,4	20	57,1
Semua orang yang tidak mengonsumsi giziseimbang mudah sakit	26	74,3	31	88,6	26	74,3	27	77,1
Semua orang yang tidak mengonsumsi makananpokok (nasi, kentang, jagung) dengan jumlah yang cukup berisiko terkena COVID-19	10	28,6	11	31,4	13	37,1	18	51,4
Semua orang yang tidak mengonsumsi proteinhewani dengan jumlah yang cukup berisiko terkena COVID-19	10	28,6	16	45,7	14	40,0	15	42,9
Semua orang yang tidak mengonsumsi protein nabati dengan jumlah yang cukup berisiko terkenaCOVID-19	11	31,4	14	40,0	12	34,3	15	42,9
Semua orang yang tidak mengonsumsi sayurandengan jumlah yang cukup berisiko terkena COVID-19	13	37,1	23	65,7	13	37,1	18	51,4
Semua orang yang tidak mengonsumsi buahdengan jumlah yang cukup berisiko terkenaCOVID-19	22	62,9	24	68,6	12	34,3	16	45,7
Semua orang yang tidak mengonsumsi air mineral8 gelas per hari berisiko terkena COVID-19	12	34,3	21	60,0	15	42,9	11	31,4
Karena anggota keluarga saya terkena covid makaresiko saya terkena covid meningkat	16	45,7	28	80,0	21	60,0	25	71,4

PERCEIVED SUSCEPTIBILITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika keluarga saya terkena covid, apabila saya mengonsumsi gizi seimbang maka saya tidak akan mudah terkena	14	40,0	13	37,1	20	57,1	22	62,9
Saya beresiko sangat mudah untuk terkena COVID-19	1	2,9	5	14,3	4	11,4	9	25,7
Saya akan mencari pengobatan untuk mengurangi paparan virus COVID-19	22	62,9	17	48,6	16	45,7	18	51,4
Saya beresiko untuk susah sembuh dari COVID-19	1	2,9	2	5,7	1	2,9	1	2,9
Kemungkinan saya akan mudah terserang COVID-19 jika kebutuhan nutrisi saya tidak terpenuhi	13	37,1	21	60,0	12	34,3	13	37,1
Kemungkinan saya akan mengalami kekurangan gizi jika terserang COVID-19 dalam waktu yang lama	13	37,1	8	22,9	11	31,4	12	34,3
Saya akan tetap sehat walaupun kebutuhan nutrisi saya tidak terpenuhi	8	22,9	4	11,4	11	31,4	12	34,3
Saya tidak akan terinfeksi COVID-19 walaupun kebutuhan nutrisi saya tidak terpenuhi	5	14,3	0	0,0	11	31,4	9	25,7
Saya tidak peduli dengan adanya COVID-19 dan saya tetap beraktifitas sehari-hari saya	10	28,6	0	0,0	13	37,1	9	25,7

3.1.3 Perceived Severity

Perceived Severity atau keseriusan yang dirasa. Perasaan mengenai keseriusan terhadap covid-19 meliputi kegiatan evaluasi terhadap konsekuensi klinis dan medis (sebagai contoh, kematian, cacat, dan sakit) dan konsekuensi sosial yang mungkin terjadi (seperti efek pada pekerjaan, kehidupan keluarga, dan hubungan sosial). Banyak ahli yang menggabungkan kedua komponen diatas sebagai ancaman yang dirasakan (*perceived threat*). Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 7. Karakteristik Perceived Severity di Surabaya

PERCEIVED SEVERITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika saya terkena COVID-19 maka dapat menyebabkan kematian	22	15,7	25	17,8	17	12,1	17	12,1
Saya khawatir saya dan keluarga saya akan terinfeksi virus corona baru	10	7,1	20	14,2	17	12,1	11	7,8
Pandemi COVID-19 membuat saya berpikir berlebihan seperti, "Apakah akan ada virus di benda ini?"	18	12,8	26	18,5	26	18,5	28	20
Jika saya terkena COVID-19, maka saya tidak bisa melakukan hal-hal yang saya suka	11	7,8	8	5,7	18	12,8	27	19,2
Saya percaya pandemi COVID-19 masih akan ada gelombang selanjutnya	1	0,7	17	12,1	8	5,7	9	6,4
Jika saya terkena COVID-19, keluarga (anak/adik/orang tua) saya tidak ada yang mengurus	26	18,5	16	11,4	13	9,2	15	10,7

PERCEIVED SEVERITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika saya terkena COVID-19, maka saya akan mendapat stigma negative dari tetangga dan lingkungan tempat tinggal saya	1	0,7	1	0,7	1	0,71	1	0,71\
Jika saya terkena COVID-19, maka saya kehilangan pekerjaan saya	15	10,7	21	15	12	8,5	16	11,4
Jika saya terkena COVID-19, dapat menyebabkan pendapatan saya menurun	15	10,7	6	4,2	12	8,5	15	10,7
Jika saya terkena COVID-19 bisa membuat saya stress karena terlalu takut memikirkannya	10	7,1	2	1,4	1	0,7	15	10,7

Tabel 8. Karakteristik Perceived Severity di Padang

PERCEIVED SEVERITY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika saya terkena COVID-19 maka dapat menyebabkan kematian	10	28,6	12	34,3	7	20,0	6	17,1
Saya khawatir saya dan keluarga saya akan terinfeksi virus corona baru	14	40,0	26	74,3	17	48,6	23	65,7

PERCEIVED SEVERITY								
Pandemi COVID-19 membuat saya berpikir berlebihan seperti, "Apakah akan ada virus dibenda ini?"	14	40,0	20	57,1	17	48,6	19	54,3
Jika saya terkena COVID-19, maka saya tidakbisa melakukan hal-hal yang saya suka	13	37,1	18	51,4	17	48,6	27	77,1
Saya percaya pandemi COVID-19 masih akan adagelombang selanjutnya	3	8,6	10	28,6	9	25,7	16	45,7
Jika saya terkena COVID-19, keluarga (anak/adik/orang tua) saya tidak ada yangmengurus	7	20,0	5	14,3	8	22,9	9	25,7
Jika saya terkena COVID-19, maka saya akan mendapat stigma negative dari tetangga dan lingkungan tempat tinggal saya	11	31,4	17	48,6	12	34,3	17	48,6
Jika saya terkena COVID-19, maka sayakehilangan pekerjaan saya	8	22,9	4	11,4	9	25,7	9	25,7
Jika saya terkena COVID-19, dapat menyebabkan pendapatan saya menurun	13	37,1	9	25,7	14	40,0	16	45,7
Jika saya terkena COVID-19 bisa membuat saya stress karena terlalu takut memikirkannya	15	42,9	15	42,9	16	45,7	20	57,1

3.1.4 Perceived Benefit

Perceived benefits, manfaat yang dirasakan. Penerimaan susceptibility seseorang terhadap suatu kondisi yang dipercaya dapat menimbulkan keseriusan (perceived threat) adalah mendorong untuk menghasilkan suatu kekuatan yang mendukung kearah perubahan perilaku gizi. Hal ini bergantung pada kepercayaan seseorang terhadap efektivitas dari berbagai upaya yang tersedia dalam mengurangi ancaman covid-19, atau keuntungan-keuntungan yang dirasakan (perceived benefit) dalam mengambil upaya-upaya Kesehatan tersebut.

Ketika seorang memperlihatkan suatu kepercayaan terhadap adanya kepekaan (susceptibility) dan keseriusan (seriousness), sering tidak diharapkan untuk menerima apapun upaya 20las an2020 yang direkomendasikan kecuali jika upaya tersebut dirasa benar dan tepat. Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 9. Karakteristik Perceived Benefit di Surabaya

PERCEIVED BENEFIT								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika saya mengonsumsi makanan sesuai dengan pedoman gizi seimbang, saya akan menjadi lebih sehat	35	25	35	25	33	23,5	35	25
Jika saya mengonsumsi suplemen, saya merasa sistem imun saya lebih kuat	33	23,5	29	20,7	30	21,4	31	22,1
Jika saya mengonsumsi suplemen, Saya merasa badan lebih sehat dan bugar di masa pandemi	26	18,5	29	20,7	33	23,5	33	23,5
Jika saya mengonsumsi suplemen, Saya merasa lebih nyaman bepergian	18	12,8	17	12,1	28	20	31	22,1
Jika saya mengonsumsi suplemen, Saya merasa lebih percaya diri	26	18,5	12	8,5	24	17,1	22	15,7
Jika saya mengonsumsi makanan sesuai dengan pedoman gizi seimbang, self-image saya berubah ke arah yang lebih positif	27	19,2	29	20,7	31	22,1	34	24,2
Jika saya mengonsumsi makanan sesuai dengan pedoman gizi seimbang, Saya merasa produktivitas saya akan meningkat	29	20,7	35	25	33	23,5	33	23,5

PERCEIVED BENEFIT								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika saya mengonsumsi makanan bergizi seimbang, Kepercayaan diri saya bertambah	23	16,4	30	21,4	27	19,2	25	17,8
Jika mengonsumsi makanan bergizi seimbang, Saya merasa lebih tidak mudah stress	21	15	23	16,4	29	20,7	25	17,8
Jika saya mengonsumsi gizi seimbang, saya tercegah dari penyakit tidak menular seperti diabetes mellitus, hipertensi, stroke, dan lain-lain	24	17,1	29	20,7	31	22,1	29	20,7

Tabel 10. Karakteristik Perceived Benefit di Padang

PERCEIVED BENEFIT								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika saya mengonsumsi makanan sesuai dengan pedoman gizi seimbang, saya akan menjadi lebihsehat	32	91,4	34	97,1	35	100	34	97,1
Jika saya mengonsumsi suplemen, saya merasasistem imun saya lebih kuat	29	82,9	29	82,9	29	82,9	31	88,6
Jika saya mengonsumsi suplemen, Saya merasabadan lebih sehat dan bugar di masa pandemi	26	74,3	26	74,3	30	85,7	31	88,6

Jika saya mengonsumsi suplemen, Saya merasa lebih nyaman bepergian	18	51,4	15	42,9	25	71,4	26	74,3
Jika saya mengonsumsi suplemen, Saya merasa lebih percaya diri	21	60,0	12	34,3	24	68,6	21	60,0
Jika saya mengonsumsi makanan sesuai dengan pedoman gizi seimbang, self-image saya berubah ke arah yang lebih positif	25	71,4	28	80,0	30	85,7	31	88,6
Jika saya mengonsumsi makanan sesuai dengan pedoman gizi seimbang, Saya merasa produktivitas saya akan meningkat	31	88,6	32	91,4	33	94,3	31	88,6
Jika saya mengonsumsi makanan bergizi seimbang, Kepercayaan diri saya bertambah	23	65,7	27	77,1	27	77,1	25	71,4
Jika mengonsumsi makanan bergizi seimbang, Saya merasa lebih tidak mudah stress	21	60,0	23	65,7	29	82,9	27	77,1
Jika saya mengonsumsi gizi seimbang, saya tercegah dari penyakit tidak menular seperti diabetes mellitus, hipertensi, stroke, dan lain-lain	24	68,6	27	77,1	29	82,9	28	80,0

3.1.5 Perceived Barrier

Perceived barriers atau hambatan yang dirasakan untuk berubah. Aspek-aspek 22las an22 yang potensial dalam suatu upaya pencegahan dan perlakuan dalam menghadapi covid-19 (seperti: ketidakpastian, efek samping), atau penghalang yang dirasakan (seperti: khawatir tidak cocok, tidak senang, gugup), yang mungkin berperan sebagai halangan untuk merekomendasikan suatu perilaku. Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 11. Karakteristik Perceived Barrier di Surabaya

PERCEIVED BARRIER								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika hari ini merupakan akhir bulan, saya tidak bisa mengonsumsi makanan bergizi seimbang karena mahal	11	7,8	9	6,4	15	10,7	19	13,5
Saya sibuk bekerja sehingga tidak bisa menyesuaikan porsi makanan sesuai dengan anjuran gizi seimbang	11	7,8	14	10	15	10,7	30	21,4
Saya merasa tidak enak jika harus mengonsumsi salad sendirian ketika teman-teman saya mengonsumsi fast-food	11	7,8	5	3,5	11	7,8	17	12,1
Saya ditentang oleh orang tua ketika saya ingin mengonsumsi suplemen untuk meningkatkan imunitas saya	5	3,5	2	1,4	5	3,5	1	0,7
Saya kesulitan mengonsumsi makanan bergizi seimbang ketika liburan	9	6,4	11	7,8	14	10	18	12,8
Saya merasa tidak enak untuk menolak makanan sehingga tidak dapat mengatur porsi makan sesuai dengan pedoman gizi seimbang ketika sedang makan bersama keluarga	11	7,8	12	8,5	16	11,4	13	9,2
Saya tidak bisa mengonsumsi suplemen karena memiliki penyakit tertentu	7	5	4	2,8	7	5	8	5,7
Saya tidak tahu jenis dan jumlah suplemen yang harus saya konsumsi	14	10	15	10,7	11	7,8	13	9,2

PERCEIVED BARRIER								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Saya tidak familiar dengan konsep gizi seimbang	14	10	5	3,5	18	12,8	15	10,7
Makanan bergizi seimbang tidak dapat ditemukandi aplikasi pengantar makanan	9	6,42	5	3,5	18	12,8	17	12,1

Tabel 12. Karakteristik Perceived Barrier di Padang

PERCEIVED BARRIER								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Jika hari ini merupakan akhir bulan, saya tidakbisa mengonsumsi makanan bergizi seimbang karena mahal	13	37,1	11	31,4	11	31,4	17	48,6
Saya sibuk bekerja sehingga tidak bisa menyesuaikan porsi makanan sesuai dengananjanjuran gizi seimbang	13	37,1	14	40,0	16	45,7	25	71,4
Saya merasa tidak enak jika harus mengonsumsi salad sendirian ketika teman-teman saya mengonsumsi fast-food	8	22,9	4	11,4	11	31,4	13	37,1
Saya ditentang oleh orang tua ketika saya ingin mengonsumsi suplemen untuk meningkatkan imunitas saya	5	14,3	3	8,6	4	11,4	3	8,6

Saya kesulitan mengonsumsi makanan bergizi seimbang ketika liburan	8	22,9	10	28,6	12	34,3	12	34,3
Saya merasa tidak enak untuk menolak makanan sehingga tidak dapat mengatur porsi makan sesuai dengan pedoman gizi seimbang ketika sedang makan bersama keluarga	12	34,3	13	37,1	17	48,6	14	40,0
Saya tidak bisa mengonsumsi suplemen karena memiliki penyakit tertentu	5	14,3	3	8,6	8	22,9	9	25,7
Saya tidak tahu jenis dan jumlah suplemen yang harus saya konsumsi	13	37,1	13	37,1	11	31,4	14	40,0
Saya tidak familiar dengan konsep gizi seimbang	12	34,3	5	14,3	15	42,9	13	37,1
Makanan bergizi seimbang tidak dapat ditemukan di aplikasi pengantar makanan	7	20,0	5	14,3	15	42,9	14	40,0

3.1.6 Self-Efficacy

Self-efficacy meruakan keyakinan dalam diri seseorang akan kemampuan yang dimiliki dalam melakukan suatu tugas untuk mencapai suatu tujuan dalam mencegah dan menghadapi pandemic covid-19. Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 13. Karakteristik Self Efficacy di Surabaya

SELF-EFFICACY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Saya bisa mengonsumsi makanan gizi seimbang setiap hari	24	34,3	4	5,7	12	17,1	31	44,3
Saya bisa mengonsumsi makanan gizi seimbang minimal 2 hari sekali	19	27,1	6	8	37	52,3	34	48,6

SELF-EFFICACY									
Pernyataan	Jawaban setuju								
	Kelompok kontrol				Kelompok intervensi				
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19		
	n	%	n	%	n	%	n	%	
Saya bisa mengonsumsi makanan gizi seimbang saat akhir pekan	19	27,1	12	17,1	31	44,3	24	34,3	
Saya bisa mengonsumsi makanan gizi seimbang satu minggu sekali	6	8	1	1,4	3	4	4	5,7	
Saya bisa mengonsumsi makanan gizi seimbang dua minggu sekali	31	44,3	10	10	14	20	30	42,8	
Saya bisa mengonsumsi makanan gizi seimbang walaupun harga makanannya mahal	19	27,1	14	20	15	21,4	12	17,1	
Saya bisa mengonsumsi makanan gizi seimbang walaupun sedang berpergian	29	41,4	14	20	10	10	4	5,7	
Saya bisa mengonsumsi makanan gizi seimbang walaupun di luar rumah	14	20	15	21,4	10	10	12	17,1	
Saya bisa mengonsumsi makanan gizi seimbang walaupun sedang sibuk (tidak punya waktu untuk memasak dan memilih membeli fast food)	14	20	19	27,1	15	21,4	14	20	
Saya bisa mengonsumsi makanan gizi seimbang walaupun pembelian makanan gizi seimbang jauh	6	8	1	1,4	3	4	4	5,7	

Tabel 14. Karakteristik Self Efficacy di Padang

SELF-EFFICACY								
Pernyataan	Jawaban setuju							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Saya bisa mengonsumsi makanan gizi seimbang setiap hari	15	42,9	14	40,0	20	57,1	18	51,4
Saya bisa mengonsumsi makanan gizi seimbang minimal 2 hari sekali	19	54,3	21	60,0	22	62,9	27	77,1
Saya bisa mengonsumsi makanan gizi seimbang saat akhir pekan	9	25,7	16	45,7	24	68,6	22	62,9
Saya bisa mengonsumsi makanan gizi seimbang satu minggu sekali	13	37,1	22	62,9	22	62,9	25	71,4
Saya bisa mengonsumsi makanan gizi seimbang dua minggu sekali	11	31,4	16	45,7	18	51,4	22	62,9
Saya bisa mengonsumsi makanan gizi seimbang walaupun harga makanannya mahal	7	20,0	17	48,6	17	48,6	22	62,9
Saya bisa mengonsumsi makanan gizi seimbang walaupun sedang berpergian	11	31,4	13	37,1	19	54,3	16	45,7
Saya bisa mengonsumsi makanan gizi seimbang walaupun di luar rumah	17	48,6	16	45,7	20	57,1	20	57,1
Saya bisa mengonsumsi makanan gizi seimbang walaupun sedang sibuk (tidak punya waktu untuk memasak dan memilih membeli fast food)	10	28,6	13	37,1	17	48,6	18	51,4
Saya bisa mengonsumsi makanan gizi seimbang walaupun pembelian makanan gizi seimbang jauh	11	31,4	10	28,6	17	48,6	18	51,4

3.1.7 Kessler Psychological Distress Scale (K10)

Kessler Psychological Distress Scale adalah kuesioner 10 item yang dimaksudkan untuk menghasilkan ukuran global 28las an28 berdasarkan pertanyaan tentang kecemasan dan gejala depresi yang telah dialami seseorang dalam periode 4 minggu terakhir dalam menghadapi pandemic covid-19. Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 15. Karakteristik Kessler Psychological Distress Scale (K10) di Surabaya

KESSLER PSYCHOLOGICAL DISTRESS SCALE								
Pernyataan	Jawaban sering							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Anda merasa sangat lelah tanpa alasan yang jelas	21	30	18	25,7	22	31,4	26	37,1
Anda merasa sangat tegang	11	15,7	9	12,8	13	18,6	10	14,3
Anda merasa sangat tegang hingga tidak ada yang bisa membuat anda tenang	14	20	10	14,3	11	15,7	13	18,6
Anda merasa sangat tidak memiliki harapan	8	11,4	13	18,6	12	17,1	9	12,8
Anda merasa resah dan gelisah	15	12,4	18	25,7	22	31,4	21	30
Anda merasa resah hingga tidak dapat duduk tenang	10	14,3	7	10	13	18,6	9	12,8
Anda merasa depresi	12	17,1	15	21,4	11	15,7	13	18,6
Anda merasa sangat membutuhkan usaha untuk mengerjakan segala sesuatu	26	37,1	22	31,4	21	30	18	25,7
Anda merasa sedih hingga tidak ada yang bisa menghibur anda	13	18,6	15	21,4	10	14,3	11	15,7
Anda merasa tidak berharga	9	12,8	10	14,3	11	15,7	13	18,6

Tabel 16. Karakteristik Kessler Psychological Distress Scale (K10) di Padang

KESSLER PSYCHOLOGICAL DISTRESS SCALE								
Pernyataan	Jawaban sering							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Anda merasa sangat lelah tanpa alasan yang jelas	2	5,7	1	2,9	2	5,7	9	25,7
Anda merasa sangat tegang	3	8,6	0	0,0	1	2,9	3	8,6
Anda merasa sangat tegang hingga tidak ada yang bisa membuat anda tenang	1	2,9	2	5,7	2	5,7	2	5,7
Anda merasa sangat tidak memiliki harapan	2	5,7	0	0,0	0	0,0	1	2,9
Anda merasa resah dan gelisah	2	5,7	0	0,0	2	5,7	2	5,7
Anda merasa resah hingga tidak dapat duduk tenang	1	2,9	0	0,0	0	0,0	1	2,9
Anda merasa depresi	4	11,4	0	0,0	0	0,0	0	0,0
Anda merasa sangat membutuhkan usaha untuk mengerjakan segala sesuatu	10	28,6	3	8,6	10	28,6	13	37,1
Anda merasa sedih hingga tidak ada yang bisa menghibur anda	2	5,7	0	0,0	4	11,4	2	5,7
Anda merasa tidak berharga	9	25,7	0	0,0	1	2,9	1	2,9

3.1.8 Emotional Eating Questionnaire

Emotional Eating Scale (EES) terdiri dari empat dimensi, yaitu Anger (marah), Anxiety (kecemasan), Depression (depresi), dan Somatic (somatis). Pada alat ukur ini terdiri atas 10 item yang dapat menggambarkan keempat dimensi tersebut. Sebanyak 2 item menggambarkan dimensi Anger (marah), 4 item menggambarkan dimensi Anxiety (kecemasan), 2 item menggambarkan dimensi Depression (depresi), dan 2 item lainnya menggambarkan dimensi Somatic (somatis). Berikut merupakan hasil sebaran jawaban dari 140 responden.

Tabel 17. Karakteristik Emotional Eating Questionnaire di Surabaya

EMOTIONAL EATING QUESTIONNAIRE								
Pernyataan	Jawaban sering							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Apakah berat badan anda mempengaruhi atau merubah mood anda ?	86	61,4	54	38,5	77	55	61	49,28
Apakah anda mengidam pada makanan spesifik tertentu?	77	55	67	47,1	70	50	71	50,7
Apakah sulit untuk anda untuk berhenti mengkonsumsi makanan manis, seperti coklat?	91	65	49	35	45	32,1	36	25,7
Apakah anda memiliki masalah dalam mengontrol jumlah makanan tertentu yang anda makan?	95	67,8	45	32,1	36	25,7	79	56,4
Apakah ada makan ketika anda stress, marah, atau bosan?	70	50	70	50	69	49,8	77	55
Apakah anda makan lebih banyak makanan kesukaan anda dan sulit mengontrolnya?	69	49,28	71	50,7	69	49,28	61	43,5
Apakah ada merasa bersalah jika mengkonsumsi makanan yang dilarang untuk dimakan, seperti makanan manis atau snack?	79	56,4	61	43,5	70	50	77	55
Apakah anda merasa kurang mengontrol makanan yang dimakan ketika anda merasa lelah setelah bekerja?	71	50,7	69	49,28	85	60,7	55	29,28
Ketika anda makan berlebihan, apakah anda merasa menyerah untuk mengontrol makanan dan makan tanpa kontrol, terutama makanan yang membuat gemuk?	104	74,28	46	25,7	95	67,8	71	50,7
Seberapa sering anda merasa makanan telah mengontrol anda, dibandingkan anda yang mengontrol apa yang anda makan?	85	60,7	55	39,28	77	55	69	49,28

Tabel 18. Karakteristik Emotional Eating Questionairre di Padang

EMOTIONAL EATING QUESTIONAIRRE								
Pernyataan	Jawaban sering							
	Kelompok kontrol				Kelompok intervensi			
	Tanpa riwayat COVID-19		Dengan riwayat COVID-19		Tanpa riwayat COVID-19		Dengan riwayat COVID-19	
	n	%	n	%	n	%	n	%
Apakah berat badan anda mempengaruhi atau merubah mood anda ?	7	20,0	11	31,4	2	5,7	3	8,6
Apakah anda mengidam pada makanan spesifik tertentu?	3	8,6	13	37,1	6	17,1	8	22,9
Apakah sulit untuk anda untuk berhenti mengkonsumsi makanan manis, seperti coklat?	7	20,0	11	31,4	12	34,3	8	22,9
Apakah anda memiliki masalah dalam mengontrol jumlah makanan tertentu yang anda makan?	10	28,6	10	28,6	12	34,3	11	31,4
Apakah ada makan ketika anda stress, marah, atau bosan?	8	22,9	17	48,6	12	34,3	16	45,7
Apakah anda makan lebih banyak makanan kesukaan anda dan sulit mengontrolnya?	10	28,6	18	51,4	16	45,7	19	54,3
Apakah ada merasa bersalah jika mengkonsumsi makanan yang dilarang untuk dimakan, seperti makanan manis atau snack?	8	22,9	13	37,1	13	37,1	13	37,1
Apakah anda merasa kurang mengontrol makanan yang dimakan ketika anda merasa lelah setelah bekerja?	7	20,0	18	51,4	13	37,1	16	45,7
Ketika anda makan berlebihan, apakah anda merasa menyerah untuk mengontrol makanan dan makan tanpa kontrol, terutama makanan yang membuat gemuk?	9	25,7	6	17,1	13	37,1	15	42,9

Seberapa sering anda merasa makanan telah mengontrol anda, dibandingkan anda yang mengontrol apa yang anda makan?	10	28,6	6	17,1	7	20,0	11	31,4
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Adapun, dapat dilihat bahwa persentase responden yang mengetahui suplemen lebih banyak daripada responden yang pernah menggunakan suplemen. Hal ini dapat terjadi karena walaupun responden sudah mengetahui suplemen yang dapat digunakan di masa pandemi, masih terdapat beberapa responden yang tidak menggunakan suplemen di masa pandemi.

Tabel 19. Data Pengalaman Penggunaan Suplemen oleh Masyarakat di Masa Pandemi dari Senter di Bandung

Karakteristik	Jumlah (Σ)	Presentase (%)
Menggunakan suplemen sesuai aturan pakai		
Ya	320	91,7
Tidak	29	8,3
Jumlah jenis suplemen yang digunakan		
1	87	24,9
2	89	25,5
3	83	23,8
4	50	14,3
5	28	8
6	12	3,4
Jenis Suplemen*		
Vitamin C	298	33
Vitamin D	129	14
Vitamin E	81	9
Multivitamin	141	15
Herbal suplemen	200	22
Zink	66	7
Harga		
Tidak tahu	19	5,4
< 50.000	98	28,1
50.000 - 100.000	114	32,7
100.000 - 150.000	55	15,8
> 150.000	63	18,1
Lama konsumsi		
\leq 3 bulan	115	33
3-6 bulan	18	5,2
6-9 bulan	39	11,2
9-12 bulan	37	10,6
> 12 bulan	140	40,1

Keterangan: *: Dapat memilih jawaban lebih dari satu

Berdasarkan data, sebanyak 91,7% responden menggunakan suplemen sesuai dengan aturan pemakaiannya. Angka tersebut termasuk tinggi. Hal ini dapat terjadi karena masyarakat yang sudah memiliki pengetahuan terkait aturan pemakaian suplemen yang sesuai. Responden rata-rata menggunakan suplemen berjumlah 2 jenis suplemen (25,5%). Suplemen yang biasa digunakan untuk pencegahan atau pengobatan COVID-19 yaitu vitamin C, vitamin D, vitamin E, zink, multivitamin, dan herbal suplemen. Jenis suplemen didominasi oleh vitamin C yaitu sebanyak 33% yang menggunakan. Hal ini berkaitan dengan survei yang dilakukan oleh perusahaan riset berbasis teknologi yaitu Neurosum menunjukkan 73% masyarakat Indonesia lebih banyak mengonsumsi suplemen saat pandemi COVID-19 dan 94% responden menyatakan mengonsumsi vitamin C selama pandemi corona. Berdasarkan data penelitian ini, sebanyak 56,2% responden menggunakan suplemen secara rutin dalam periode 6 bulan dan sebanyak 9,7% responden membeli suplemen secara rutin dalam periode 6 bulan. Harga suplemen per transaksi yang dibeli oleh masyarakat didominasi pada kisaran Rp50.000 - Rp100.000 (32,7%). Hal ini dapat terjadi karena harga tersebut merupakan harga suplemen rata-rata yang tidak terlalu mahal sehingga mudah dijangkau oleh masyarakat umum. Lama masyarakat mengonsumsi suplemen paling banyak menjawab lebih dari 12 bulan (40,1%). Data ini berkaitan dengan pengetahuan dan kesadaran masyarakat yang tinggi akan pentingnya mengonsumsi suplemen, sehingga masyarakat menggunakan suplemen selama pandemi berlangsung yaitu lebih dari 12 bulan.

Praktik Masyarakat dalam Menggunakan Suplemen

Pada bagian ini, ingin mengetahui praktik masyarakat dalam menggunakan suplemen. Kuesioner ini menggunakan skala Likert (1-5). Skala Likert terdiri dari 1 = Sangat Tidak Setuju, 2 = Tidak Setuju, 3 = Netral, 4 = Setuju, dan 5 = Sangat Setuju. Responden diminta untuk memilih salah satu skala yang paling sesuai menurut responden. Berikut merupakan kode pertanyaan yang digunakan pada kuesioner bagian praktik masyarakat dalam menggunakan suplemen.

Tabel 20. Pertanyaan Dimensi Praktik Penggunaan Suplemen dari Senter di Bandung

Kode	Praktik Masyarakat dalam Menggunakan Suplemen
A1	Kekhawatiran terhadap kesehatan akibat adanya COVID-19
A2	Penggunaan suplemen untuk mencegah COVID-19
A3	Penggunaan suplemen sebagai pelengkap nutrisi harian
A4	Penggunaan suplemen untuk menjaga kesehatan tubuh
A5	Penggunaan suplemen untuk meningkatkan daya tahan tubuh
A6	Penggunaan suplemen untuk menjaga stamina tubuh
A7	Penggunaan suplemen untuk mengatasi kondisi kekurangan nutrisi

Pertanyaan-pertanyaan dalam dimensi praktik penggunaan suplemen ini, kemudian dinilai oleh responden dalam skala Likert sehingga didapatkan data distribusi seperti berikut.

Tabel 21. Data Praktik Masyarakat dalam Menggunakan Suplemen dari Senter di Bandung

Praktik	Jawaban (%)					Rata-rata	Median
	STS	TS	N	S	SS		
A1	1,1	2,3	8	31,8	56,7	4,41	5
A2	0,9	4	13,5	32,4	49,3	4,25	4
A3	1,1	4,3	8,9	31,8	53,9	4,33	5
A4	0	1,7	3,4	26,9	67,9	4,61	5
A5	0	1,7	2,9	24,6	70,8	4,64	5
A6	0	3,2	5,2	31,5	60,2	4,49	5
A7	2,6	8,6	11,2	35,2	42,4	4,06	4

Keterangan : STS : Sangat Tidak Setuju, TS : Tidak Setuju, N : Normal, S : Setuju, SS : Sangat Setuju

Berdasarkan tabel diatas, responden banyak menjawab pada skala 5 (sangat setuju). Pertanyaan A5 yang menanyakan penggunaan suplemen untuk meningkatkan daya tahan tubuh memiliki rata-rata tertinggi dibandingkan tujuh pertanyaan lainnya yaitu 4,64. Hal ini menunjukkan bahwa masyarakat sadar ketika pandemi, daya tahan tubuh harus diperkuat sebagai upaya untuk menghindari COVID-19 serta dapat menghindari penyakit lainnya pula supaya tetap sehat. Di sisi lain, pertanyaan A7 yaitu penggunaan suplemen untuk mengatasi kekurangan nutrisi memiliki nilai rata-rata terendah di antara tujuh pertanyaan lainnya yaitu 4,06. Hal ini terjadi karena kemungkinan besar masyarakat tidak mengalami

kekurangan nutrisi sehingga mereka menggunakan suplemen bukan untuk meningkatkan nutrisi tersebut, melainkan untuk alasan lainnya. Pertanyaan A4 menanyakan tentang penggunaan suplemen untuk menjaga kesehatan tubuh yang bernilai rata-rata 4,61 yaitu kedua tertinggi pada semua pertanyaan ini. Hal ini terjadi karena kesadaran masyarakat dalam mengonsumsi suplemen sudah baik. Secara menyeluruh, praktik penggunaan suplemen dapat dilihat berdasarkan nilai rata-rata yang artinya >4 (setuju) dan nilai median 5 (sangat tinggi). Maka, dapat disimpulkan bahwa praktik masyarakat dalam menggunakan suplemen cenderung tinggi.

3.1.9 Hasil Intervensi Pendidikan Gizi

Hasil *pre-test* dan *post-test* selama kegiatan edukasi di Surabaya menunjukkan mayoritas responden dengan Riwayat covid (82,8%) memiliki tingkat pengetahuan sedang, sedangkan responden tanpa Riwayat covid (62,8) memiliki tingkat pengetahuan kurang. Setelah diadakan nya intervensi Pendidikan gizi selama 6 minggu dengan bahan ajar modul, responden dengan Riwayat covid memiliki kenaikan pengetahuan dengan tingkat baik menjadi 37%, sedangkan responden tanpa Riwayat covid menunjukkan peningkatan pengetahuan di kategori sedang sebesar 51%.

Tabel 22. Hasil Pre Test dan Post Test Edukasi di Surabaya

Tingkat Pengetahuan Gizi	Sebelum intervensi				Setelah intervensi			
	Dengan Riwayat COVID-19		Without COVID-19 history		Dengan Riwayat COVID-19		Without COVID-19 history	
	n	%	n	%	n	%	n	%
Kurang (<6)	4	11,4	22	62,8	2	5,7	12	34,2
Sedang (6-8)	29	82,8	8	22,8	20	57,1	18	51,4
Baik (>8)	2	5,7	5	14,2	13	37,1	5	14,3

Hasil analisis di Padang menunjukkan mayoritas responden baik dengan maupun tanpa Riwayat infeksi COVID-19 history (71.4% and 80%) memiliki tingkat pengetahuan gizi sedang. Independent T-test menunjukkan tidak ada perbedaan signifikan ($p = 0.623$) pada kedua kelompok sebelum intervensi. Hasil juga menunjukkan setelah intervensi, 100% responden pada kedua grup memiliki tingkat pengetahuan gizi yang baik. Rata – rata skor pengetahuan gizi pada kedua

kelompok sebelum intervensi masing - masing 6.7 \pm 0.9 dan 6.8 \pm 1.0 respectively. Hasil juga menunjukkan adanya peningkatan yg signifikan ($p < 0.05$) setelah grup dengan peningkatan nilai masing - masing 2.4 and 2.5.

Tabel 23. Hasil Pre Test dan Post Test Edukasi di Padang

Tingkat Pengetahuan Gizi	Sebelum intervensi				Setelah intervensi			
	Dengan Riwayat COVID-19		Dengan Riwayat COVID-19		Dengan Riwayat COVID-19		Without COVID-19 history	
	n	%	n	%	n	%	n	%
Kurang (<6)	7	200	5	14.3	0	0	0	0
Sedang (6-8)	25	71.4	28	80.0	0	0	0	0
Baik (>8)	3	8.6	2	5.7	35	100	35	100
Rerata skor \pm SD	6.7 \pm 0.9		6.8 \pm 1.0		9.1 \pm 0.3		9.1 \pm 0.3	

Hasil penilaian pengetahuan dan perilaku responden sebelum dan sesudah edukasi di senter Bandung ditampilkan pada tabel berikut:

Tabel 24. Hasil Pre Test dan Post Test Edukasi di Bandung

Kelompok	Skor Pre-test (Mean)	Skor Post-test (Mean)	Nilai p
Covid	25,69	40,65	0,043
Non-Covid	58,04	67,08	0,055

3.2 LUARAN YANG DICAPAI

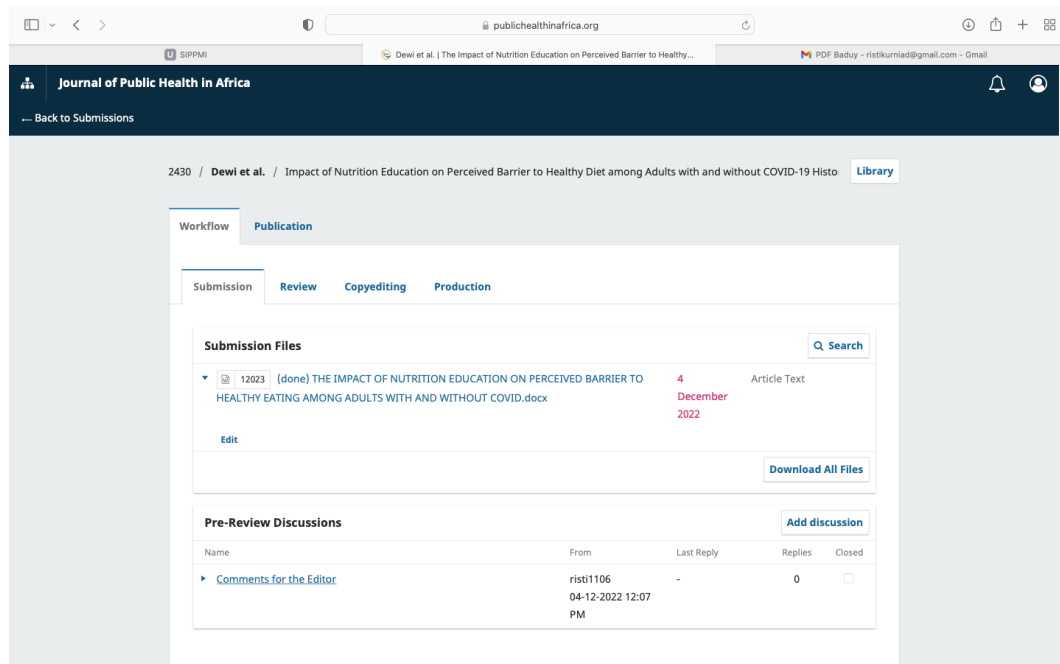
Target capaian dari proposal penelitian Riset Kolaboratif Indoensia ini adalah meningkatnya kerjasama penelitian antar peneliti di bidang gizi yakni dari Unair, Universitas Andalas dan Institut Teknologi Bandung. Target luaran wajib yang telah dicapai pada penelitian ini, hingga laporan akhir dibuat tanggal 09 Desember 2022, adalah sudah terpublikasikannya artikel dari analisis data di site Surabaya pada jurnal kategori *top tier* Scopus Q1 yaitu *Nutrients* yang diterbitkan oleh Grup MDPI (*Open Access*) (terlampir). Artikel tersebut telah dipublikasikan pada tanggal 22 Oktober 2022 dengan judul *Dissecting Supplement and Nutrients Intake of Adults with and without COVID-19 History through the Lens of Health Belief Model* dengan DOI 10.3390 Dimana artikel dapat diakses secara terbuka pada link berikut <https://doi.org/10.3390/nu14214450>. Selain itu, hasil penelitian dari

data di site Padang telah di-*submit* dan *under review* di jurnal Scopus terindeks Q3 yaitu Journal of Public Health in Africa (terlampir). Sedangkan, data penelitian dari intervensi di site Bandung masih pada tahap analisa data dan penulisan *manuscript*. Sesuai dengan kontrak penelitian RKI tahun 2022 dimana kewajiban yang harus dipenuhi peneliti adalah luaran artikel minimal Q2 satu buah dan tiga artikel terindeks Scopus, maka hingga laporan akhir ini dibuat luaran yang dicapai telah melebihi ekspektasi yaitu *publish* di *Top Tier* Q1, sedangkan tiga artikel Scopus lainnya sedang tahap *under review* (dataset Padang) maupun *drafting* (dataset Bandung), dan dataset gabungan.





Gambar 1. Sertifikat HKI Modul Intervensi



Gambar 2. Bukti Submit Artikel



nutrients

an Open Access Journal by MDPI



CERTIFICATE OF PUBLICATION

Certificate of publication for the article titled:
Dissecting Supplement and Nutrients Intake of Adults with and without COVID-19 History
through the Lens of Health Belief Model

Authored by:

Trias Mahmudiono; Cindra Tri Yuniar; Risti Kurnia Dewi; Qonita Rachmah; Dominikus
Raditya Atmaka; Eurika Zebadia;
Nur Sahila; Mutiara Arsyah Vidianinggar Wijanarko; Chika Dewi Haliman; Shirley Gee Hoon
Tang

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Academic Open Access Publishing
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Basel, October 2022

Gambar 3. Sertifikat Publikasi Nutrients

BAB IV

KESIMPULAN DAN SARAN

Tahap awal kegiatan dalam penelitian ini adalah penyusunan instrument penelitian, yaitu kuesioner untuk pengambilan data baseline dan modul untuk edukasi. Modul edukasi untuk kelompok intervensi berjudul “Gizi Seimbang Dan Health Belief Model Pandemic Covid-19”, “Gizi dan Imunitas” serta “Peran Suplemen dalam Meningkatkan Daya Tahan Tubuh”.

Hasil dari data baseline yang telah dilakukan pada 140 responden dari masing-masing senter. Untuk data dari senter Surabaya didapatkan hasil mayoritas (86%) usia responden berkisar pada rentang 18-25 tahun. Latar belakang pendidikan yang dimiliki sangat beragam dengan mean tamat SMA/ sederajat, dengan 50% memiliki riwayat covid-19, dan 50% tanpa riwayat covid-19. Pemeriksaan antropometri responden sangat beragam dengan sebaran tinggi badan 145-190 cm dan berat badan 30-120 kg.

Hasil dari pemberian intervensi berupa edukasi gizi sesuai dengan modul menunjukkan adanya peningkatan pengetahuan dari responden terkait gizi, suplemen, dan juga *health belief model*. Hal tersebut menunjukkan bahwa edukasi yang diberikan memberikan pengaruh peningkatan pengetahuan dari responden baik di Surabaya, Bandung, dan Padang.

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Lampiran 1. Formulir Evaluasi Atas Capaian Luaran Kegiatan

FORMULIR EVALUASI ATAS CAPAIAN LUARAN KEGIATAN

Peneliti Utama : Trias Mahmudiono, S.KM, MPH (Nutr.), GCAS, PhD
 Perguruan Tinggi : Universitas Airlangga
 Judul : Application of Health Belief Model Towards Nutrition Education Intervention To Improve Supplement And Nutrients Intake Of Adults With And Without Covid-19 History
 Tahun Kegiatan : 2022

Luaran yang direncanakan dan capaian tertulis dalam proposal awal:

No	Luaran yang Direncanakan	Capaian (%)
1	Publikasi jurnal internasional minimal Q2	100%
2	Publikasi ilmiah internasional terindeks Scopus	100%
3	Keterlibatan peneliti ke-4 PT pada publikasi	100%

CAPAIAN (Lampirkan bukti-bukti luaran)

1. PUBLIKASI JURNAL ILMIAH INTERNASIONAL

	Keterangan
ARTIKEL JURNAL KE-1	
Nama jurnal yang dituju	Nutrients
Klasifikasi jurnal	Jurnal Internasional Bereputasi
Q1/Q2/Terindeks Scopus	Top Tier Q1 Scopus
Judul artikel	Dissecting Supplement and Nutrients Intake of Adults with and without COVID-19 History through the Lens of Health Belief Model
Status naskah (diberi tanda ✓)	Published
- Draf artikel	
- Submitted	
- Under Review	
- Accepted	
- Published	✓

	Keterangan
ARTIKEL JURNAL KE-2	
Nama jurnal yang dituju	Journal of Public Health in Africa
Klasifikasi jurnal	Jurnal Internasional
Q1/Q2/Terindeks Scopus	Q3 Scopus
Judul artikel	The Impact of Nutrition Education on Perceived Barrier to Healthy Diet among Adults with and without COVID-19
Status naskah (diberi tanda ✓)	Under Review
- Draf artikel	
- Submitted	
- Under Review	✓
- Accepted	
- Published	

2. KETERLIBATAN PENELITI KE-4 PT PADA PUBLIKASI

ARTIKEL ILMIAH 1	Pak Trias sebagai penulis pertama menyusun manuskrip. Pak Trias (UNAIR) mengatur pembagian kerja, analisis data, dan review manuskrip. Ibu Cindra, Ibu Risti, dan Dr. Shirley terlibat pada pengambilan data di Bandung dan Padang, review, dan revisi manuskrip.
ARTIKEL ILMIAH 2	Ibu Cindra sebagai penulis pertama menyusun manuskrip, bersama dengan Ibu Qonita dan Chika D. Haliman (UNAIR) dalam analisis data. Pak Trias, Ibu Risti, dan Dr. Shirley terlibat pada pengumpulan data di Surabaya dan Padang, review, dan revisi manuskrip.
ARTIKEL ILMIAH 3	Ibu Risti sebagai penulis pertama menyusun manuskrip, bersama dengan tim dari UNAIR dalam analisis data. Pak Trias, Ibu Cindra, dan Dr. Shirley terlibat pada pengumpulan data di Surabaya dan Bandung, review, dan revisi manuskrip.

ARTIKEL ILMIAH 4	Pak Trias sebagai penulis pertama menyusun manuskrip. Pak Trias (UNAIR) mengatur pembagian kerja, analisis data, dan review manuskrip. Ibu Cindra, Ibu Risti, dan Dr. Shirley terlibat pada pengambilan data di Bandung dan Padang, review, dan revisi manuskrip.
------------------	---

Jika luaran yang direncanakan tidak tercapai, uraikan alasannya: Proses pengambilan data masih berlangsung

Surabaya, 09 Desember 2022

Peneliti Utama,

Tanda Tangan 

Trias Mahmudiono, S.KM., MPH(Nutr), GCAS, Ph.D
NIP. 198103242003121001

Article

Dissecting Supplement and Nutrients Intake of Adults with and without COVID-19 History through the Lens of Health Belief Model

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Abstract: Over the past two years, the world has faced the pandemic, COVID-19, and various changes. Several regulations and recommendations from the Ministry of Health of Indonesia have contributed to behavioral changes among Indonesian residents, especially in food consumption patterns. The change in food consumption patterns can be a positive change that formed due to the COVID-19 pandemic. This study aimed to examine whether the application of a Health Belief Model (HBM)-based nutrition education programme can be effectively used in changing the beliefs of adults with or without a COVID-19 history in supplement and nutrient intake. This study was a cross-sectional study involving 140 adults. This study placed 70 adults with/without a COVID-19 history into the intervention group. The intervention group participated in a nutrition education programme. The respondents were asked to fill out the questionnaire. The data were analyzed by independent and paired *t*-tests and Chi-square test. The result of this study showed no association between perceived susceptibility, severity, benefit, barrier, and self-efficacy, of nutrient and supplement intake with the history of COVID-19 among the respondents. However, most of the respondents in this study were low in their scores of perceivedness. Thus, it is still important for the government to increase nutrient and supplement intake education, especially in young adults aged below 25 years old.

Keywords: health belief model; COVID-19; health well-being

1. Introduction

For the past two years, the whole world has been facing a pandemic, COVID-19. Globally, as of March 2022, the number of total cases was 471 million [1]. Meanwhile, the total number of COVID-19 cases in Indonesia was 5.96 million cases as of 21 March 2022 [2]. However, the number of those who survived or were able to recover was 407 million globally and 5.58 million nationally, up to this day (March 2022) [1,2]. This pandemic caused several changes in Indonesia, especially after the release of regulations on the new-normal and several recommendations from the Ministry of Health to increase immunity [3,4].

Since the first COVID-19 case was found in Indonesia, the importance of proper nutritious food as a requirement for a healthy immune system was widely emphasized. One of the recommendations from the Ministry of Health of Indonesia was to eat nutritious food or a balanced diet [4]. The consumption of vegetables and fruits increased by more than 35% during the pandemic situation among Indonesians [5]. Interestingly, fast-food

consumption decreased by more than 50% during the lockdown situation [5]. There was also a shift in expenditure on food ingredients among Indonesians, showing that during the pandemic of COVID-19, Indonesians were more likely to spend their money on food ingredients or fresh food than instant or processed food and tobacco [6]. A similar study also verified previous findings that fresh product purchases (e.g., fresh vegetables, fresh fruit, eggs) increased during the COVID-19 pandemic, but consumption of carbonated drinks, energy drinks, syrups, ready-to-eat meals, and canned food, decreased [7]. In addition to a balanced diet, the Indonesian Ministry of Health also recommends consuming supplements when needed [4]. The consumption of supplements among Indonesians increased by more than 47% during the lockdown. A study on the Indonesian elderly population showed that most elders agreed that supplements are needed to protect them during the new-normal era [8]. Thus, these previous studies could suggest a shift in Indonesian consumption of fresh vegetables, fruits, and supplements, during the COVID-19 pandemic.

The increased consumption of fruits, vegetables, and supplements could become a positive behavior that formed during the pandemic. The consumption of fruits, vegetables, and supplements, not only served to prevent COVID-19 but also other non-communicable diseases related to nutrition that emerged in Indonesia, such as diabetes and hypertension [9]. This positive behavior could result in positive health outcomes if carried out continuously.

The health belief model (HBM) was a model that focused on efforts to improve public health by understanding why people failed to adopt preventive health measures [10]. This model has been successfully replicated countless times showing its ability to explain and predict various behaviors associated with positive health outcomes [11]. There are four individual perceptions that could predict their behavior [10]. The first one is perceived susceptibility. This perception argues that people will be more motivated to act on a healthy behavior if they believe they are susceptible to a negative health outcome. The second is perceived severity. This argues that the stronger people's perception of the severity of negative health outcomes, the more they will be motivated to act to avoid that outcome. Third, perceived barriers and benefits that argue when strong barriers were found in adopting the preventive behavior, they will be unlikely to do so. Lastly, self-efficacy proposed that overall motivation to pursue health could affect their decision to present positive behavior.

The COVID-19 pandemic caused several changes in the quality of life (QoL) and the health-related quality of life (HR-QoL) of survivors [12,13]. Moreover, those who survived COVID-19 were experiencing different pressure and problems compared to those without a COVID-19 history. This could suggest different values, views, and especially perceptions, between those with and without a COVID-19 history towards preventive behavior. Furthermore, the HBM model constructed by perceived susceptibility, perceived severity, perceived barriers, and benefits, was found to be effective in increasing the perceived susceptibility and severity in patients or survivors to exhibit positive behavior [14]. Therefore, this study aimed to assess the influence of the HBM in nutrition education intervention to improve supplement and nutrient intake of adults with and without a COVID-19 history.

2. Materials and Methods

This intervention study uses a quasi-experimental design located in Surabaya, Padang, and Bandung. The sample size of this study was calculated using simple random sampling formula. According to that formula, the sample size of this study was 140 people. Thus, the number of those in control with/without a COVID-19 history and intervention with/without a COVID-19 history group was 35 per group. The inclusion criteria for this study were an adult (18–59 years old), with or without a history of COVID-19, who agreed to join the study by signing the informed consent.

The instrument used in collecting baseline data was a questionnaire. As for the implementation of education, three modules were developed as educational media. The three modules were entitled "Balanced Nutrition and Health Belief Model of the COVID-19

Pandemic”, “Nutrition and Immunity”, and “The Role of Supplements in Increasing Body Endurance”.

The intervention group received educational material once every two weeks for three months resulting in six meetings. The control group received education about “Clean and Healthy Living Behavior during the COVID-19 Pandemic”, a module by the Ministry of Education and Culture, Indonesia.

The dependent variable in this study was the education materials that were provided to the respondents. The independent variable in this study was the respondents’ perceived susceptibility and perceived severity.

Descriptive and inferential statistical analysis were conducted. The descriptive analysis determined the respondents’ characteristics. The inferential analysis was performed to determine the difference between each group’s perceived susceptibility and perceived severity. The paired sample *t*-test was applied to assess the difference between pre and post-test in each group. Meanwhile, the independent samples *t*-test was employed to assess the differences between each group.

3. Results

This study was conducted on 140 respondents with and without a COVID-19 history. The majority of the respondents were aged 18–25 years old (86%), with an age distribution of 18–60 years old. Their educational background was very diverse with the mean graduating from high school/equivalent, with 50% having a history of COVID-19, and 50% without a history of COVID-19. Most of the respondents with a history of COVID-19 1× were 41%. The anthropometric examination of respondents was very diverse, with a distribution of 145–190 cm in height and 30–120 kg in weight (Table 1).

Table 1. Characteristics of the respondents.

Characteristics	Category	(n)	%
Age	18–25 years old	120	85.71
	26–30 years old	7	5.00
	31–25 years old	3	2.14
	36–40 years old	3	2.14
	41–45 years old	2	1.42
	46–50 years old	1	0.71
	51–55 years old	1	0.71
	56–60 years old	3	2.14
Education Level	Uneducated	3	2.14
	Primary school graduated	1	0.71
	Secondary school graduated	1	0.71
	High school graduate	90	64.28
	Diploma	18	12.85
	University graduated	27	19.28
COVID-19 History	Yes	70	50.00
	No	70	50.00
Frequency Being Infected by COVID	Never	70	50.00
	Once	57	40.71
	Twice	11	7.85
	Three times	2	1.42
Treatment during COVID-19	Isolation at home	78	55.71
	Isolation at hotel	25	17.85
	Isolation in healthcare	12	8.57
	Isolation at hospital	26	18.57

Table 1. *Cont.*

Characteristics	Category	(n)	%
Weight	30–40 kg	7	5.00
	41–50 kg	43	30.71
	51–60 kg	47	33.57
	61–70 kg	28	20.00
	71–80 kg	8	5.71
	81–90 kg	4	2.85
	91–100 kg	1	0.71
	101–110 kg	1	0.71
	111–120 kg	1	0.71
Height	145–150 cm	20	14.28
	151–160 cm	80	57.14
	161–170 cm	28	20.00
	171–180 cm	11	7.85
	181–190 cm	1	0.71

3.1. Characteristics of the Respondents

3.1.1. Perceived Susceptibility

Perceived susceptibility is an individual's belief about susceptibility to the risk of disease in encouraging people to adopt healthier behaviors. The questions asked were about the relationship between eating a balanced nutritional diet and a person's immune system, and immunity in the face of COVID-19. The following are the results of the distribution of responses from 140 respondents (Table 2).

Table 2. Perceived susceptibility results.

Perceived Susceptibility Questions	Percentage of Respondents with Agreement		p Value
	With COVID-19 History n (%)	Without COVID-19 History n (%)	
Everyone who does not eat a balanced diet is at risk of infected COVID-19.	44 (62.8)	49 (70)	0.037
Everyone who does not eat a balanced diet gets sick easily.	61 (87.1)	60 (85.7)	0.01
Everyone who does not eat staple food (rice, potatoes, corn) in sufficient quantities is at risk of infected COVID-19.	34 (48.5)	32 (45.7)	0.049
Everyone who does not consume adequate amounts of animal protein is at risk of infected COVID-19.	44 (62.8)	41 (58.5)	0.05
Everyone who does not consume adequate amounts of vegetable protein is at risk of infected COVID-19.	38 (54.2)	42 (60)	0.021
Everyone who does not eat a sufficient amount of vegetables is at risk of infected COVID-19.	47 (67.1)	51 (72.8)	0.039
Everyone who does not eat the fruit in sufficient quantities is at risk of infected COVID-19.	51 (72.8)	49 (70)	0.04
Everyone who does not consume 8 glasses of water per day is at risk of infected COVID-19.	38 (54.2)	42 (60)	0.028
Because my family members are affected by COVID-19, my risk of getting infected are increased.	66 (94.2)	63 (90)	0.00

Table 2. Cont.

Perceived Susceptibility Questions	Percentage of Respondents with Agreement		p Value
	With COVID-19 History n (%)	Without COVID-19 History n (%)	
If my family gets COVID-19 and I eat a balanced diet then I won't get infected easily.	45 (64.2)	49 (70)	0.001
I am a very easy risk of infected COVID-19.	27 (38.5)	18 (25.7)	0.005
I will seek treatment to reduce my exposure to the COVID-19.	55 (78.5)	50 (71.4)	0.002
I am at risk of having difficulty recovering from COVID-19.	5 (7.1)	7 (10)	0.03
It is possible that I will be susceptible to COVID-19 if my nutritional needs are not met.	53 (75.7)	56 (80)	0.036
It is likely that I will be malnourished if I have COVID-19 for a long time.	41 (58.5)	48 (68.5)	0.001
I will stay healthy even if my nutritional needs are not met	14 (20)	7 (10)	0.012
I will not be infected with COVID-10 even if my nutritional needs are not met.	7 (10)	13 (18.5)	0.05
I don't care about the presence of COVID-19 and I continue to do my daily activities.	14 (20)	8 (11.4)	0.018

From the table above, respondents who experienced COVID-19 (70%) agreed that if they do not eat balanced diets are at risk of being infected by COVID-19 and are more likely to get sick easily (85.7%). The respondents also agreed that everyone who does not consume staple food (rice, potatoes, corn) (48.5%), animal protein (62.8%), vegetable protein (60.0%), vegetables (72.8%), or fruit (72.8%) in sufficient quantities and drink eight glasses of water per day (60.0%) are at risk of being infected with COVID-19. Both respondents who have a COVID-19 history (94.2%), and who do not (90.0%), agreed that the risk of getting infected is increased if family members are affected by COVID-19. The respondents with a COVID-19 history (70.0%) agreed that if their family gets COVID-19 and they eat a balanced diet, they will not get infected easily. In addition, the respondents without a COVID-19 history agreed that they are at a very easy risk of being infected with COVID-19. Both respondents who have a COVID-19 history (78.5%), and who do not (71.4%), agreed to seek treatment to reduce their exposure to COVID-19.

3.1.2. Perceived Severity

Perceived severity or seriousness are the feelings about the seriousness of COVID-19, including evaluating clinical and medical consequences (for example, death, disability, and illness) and possible social consequences (such as effects on work, family life, and social relationships). Many experts combine the two components above as a perceived threat.

Based on Table 3 above, it was noticed that there was a difference in the percentage between respondents with a COVID-19 history (52.8%) and those without a COVID-19 history (65.7%) that agreed that if I get COVID-19 it can cause death. As for this study, respondents with (72.8%) and without (82.8%) COVID-19 agreed that they are worried about getting infected by COVID-19. This result was also the same as the next statement, where most respondents agreed that the COVID-19 pandemic made me overthink things like "Is there going to be a virus in this thing?". Furthermore, respondents who agreed that "if the pandemic will still have next wave" were from those who had no history (67.1%).

Table 3. Perceived severity results.

Perceived Severity Questions	Percentage of Respondents with Agreement		p Value
	With COVID-19 History n (%)	Without COVID-19 History n (%)	
If I get COVID-19 it can cause death.	37 (52.8)	46 (65.7)	0.051
I am worried that my family and I will be infected by COVID-19.	51 (72.8)	58 (82.8)	0.001
The COVID-19 pandemic makes me overthink things like “Is there going to be a virus in this thing?”.	43 (61.4)	42 (60)	0.034
If I get COVID-19, then I can’t do the things I like.	42 (60)	44 (62.8)	0.011
I believe the COVID-19 pandemic will still have the next wave.	41 (58.5)	47 (67.1)	0.000
If I get COVID-19, my family will not take care of me.	20 (28.5)	15 (21.4)	0.020
If I get COVID-19, then I will get a negative stigma from my neighbors and the environment where I live.	32 (45.7)	27 (38.5)	0.033
If I get COVID-19, then I lose my job.	12 (17.1)	12 (17.1)	0.001
If I get COVID-19, it can cause my income decrease.	30 (42.8)	37 (52.8)	0.032
If I get COVID-19, it can stress me out because I am too afraid to think about it.	32 (45.7)	41 (58.5)	0.048

3.1.3. Perceived Benefit

Perceived benefit is the acceptance of a person’s susceptibility to a condition believed to cause seriousness (perceived threat) to encourage it to produce a force that supports changes in nutritional behavior. This depends on a person’s belief in the effectiveness of the various available efforts in reducing the threat of COVID-19, or the perceived benefits of taking these health efforts. When a person believes in susceptibility and seriousness, he/she is often not expected to accept any recommended health measures unless they are deemed appropriate.

The following are the results of the distribution of answers from 140 respondents. These questions are related to perceived benefit and are broken down into 10 questions about various spectrums related to balanced nutrition consumption (Table 4).

Based on Table 4, we found that there was a difference in the percentage between respondents with a COVID-19 history (94.3%) and those without a COVID-19 history (95.7%) that agreed if they eat food according to balanced nutrition guidelines, they will be healthier. The results showed that there was a higher percentage of respondents without a COVID-19 history (92.8%) who agreed that if they take supplements their immune system would be stronger, as compared to those who had a COVID-19 history (88.6%). However, this result was different from the next perceived benefit question, where most respondents with a COVID-19 history (91.4%) agreed that if they take supplements they will be healthier and fitter during the pandemic, compared to respondents who did not have a COVID-19 history (87.1%). Furthermore, respondents who agreed that if they took supplements they were more comfortable traveling were mostly respondents with a COVID-19 history, compared to those with no history. This result is also the same as the next statement where most respondents who agreed that taking supplements will be more confident and are mostly from the group of respondents with a COVID-19 history (75.7%), compared to those who do not have a history (61.4%). However, there is no difference in the percentage of respondents who agreed that eating foods according to balanced nutrition guidelines will have a more positive self-image between respondents with a COVID-19 history (84.3%) and those without a COVID-19 history (84.3%). The largest percentage of respondents who agreed that eating food according to balanced nutrition guidelines would increase their productivity came from respondents with a COVID-19 history (88.6%), compared to

those without a COVID-19 history (84.3%). In addition, there was a difference between respondents with a COVID-19 history (74.3%) and without a COVID-19 history (72.3%) who stated that eating food according to balanced nutrition guidelines will increase their confidence. There was no difference observed in the percentage between respondents with a COVID-19 history (74.3%) and those without a COVID-19 history (74.3%) who agreed that eating a balanced nutritious diet will reduce their stress. However, it was found that most of the respondents without COVID-19 (88.6%) agreed that eating a balanced diet would prevent various non-communicable diseases when compared to those who had a COVID-19 history (85.7%).

Table 4. Perceived benefit results.

Perceived Benefits Questions	Percentage of Respondents with Agreement		<i>p</i> Value
	With COVID-19 History <i>n</i> (%)	Without COVID-19 History <i>n</i> (%)	
If I eat food according to balanced nutrition guidelines, I will be healthier.	66 (94.3)	67 (95.7)	0.011
If I take supplements, I feel my immune system is stronger.	62 (88.6)	65 (92.8)	0.002
If I take supplements, I feel healthier and fitter during the pandemic.	64 (91.4)	61 (87.1)	0.003
If I take supplements, I feel more comfortable to traveling.	55 (78.6)	46 (65.7)	0.092
If I take supplements, I feel more confident.	53 (75.7)	43 (61.4)	0.016
If I eat food according to balanced nutrition guidelines, my self-image changes in a more positive direction.	59 (84.3)	59 (84.3)	0.031
If I eat food according to balanced nutrition guidelines, I feel my productivity will increase.	62 (88.6)	59 (84.3)	0.004
If I eat a balanced nutritious diet, my self-confidence increases.	52 (74.3)	51 (72.3)	0.003
If I eat a balanced nutritious diet, I feel less stressed.	52 (74.3)	52 (74.3)	0.002
If I eat a balanced diet, I will be prevented from non-communicable diseases such as diabetes mellitus, hypertension, stroke, and others.	60 (85.7)	62 (88.6)	0.000

3.1.4. Perceived Barrier

Perceived barriers are potential negative aspects of a prevention and treatment effort in dealing with COVID-19 (such as uncertainty, and side effects), or perceived barriers (such as worrying about being unsuitable, unhappy, or nervous), which may serve as barriers to recommending a behavior. The following are the results of the distribution of answers from 140 respondents. These questions are related to perceived barriers and are broken down into 10 questions about various spectrums related to balanced nutrition consumption. The following elaboration described the related details of each question.

Based on the results in Table 5, we observed that most of the respondents who stated that they agreed that at the end of the month they could not eat a balanced nutritional diet because it was expensive, mostly came from the group of respondents who had a COVID-19 history (41.4%) compared to those without a COVID-19 history (34.3%). This result was the same as the next perceived barrier question where the majority of respondents with a COVID-19 history (48.6%) agreed that because they were busy working, they could not regulate their meal portions according to balanced nutrition guidelines compared to those without a COVID-19 history (44.3%). Additionally, there was a difference in the percentage between respondents with a COVID-19 history (27.1%) and without a COVID-19 history (17.1%) who agreed that they feel bad when they have to eat salad alone when friends eat fast food. The results of this study also found that there was a higher percentage of

respondents with a COVID-19 history (8.0%) who agreed that they were opposed by their parents when they wanted to take supplements to boost their immunity, compared to those without a COVID-19 history (1.4%). Furthermore, most respondents who agreed that when they were on vacation they found it difficult to eat a balanced diet mostly came from respondents with a COVID-19 history (44.3%), compared to those without a COVID-19 history (24.3%). The present study also observed that the highest percentage who agreed that they could not control the portion of their meal when eating with their family came from the group of respondents with a COVID-19 history (52.3%), compared to those without a COVID-19 history (42.8%). It was also shown that respondents who agreed that they could not take supplementation due to certain diseases are mostly respondents without a COVID-19 history (5.7%), compared to those with a COVID-19 history (4%). Furthermore, respondents who stated that they did not take supplements because they did not know the type and dose to take were mostly from the group of respondents without a COVID-19 history (27.1%), compared to those with a COVID-19 history (20%). The group of respondents who stated that they were not familiar with the concept of balanced nutrition mostly came from the group of respondents without a COVID-19 history (20%), compared to those with COVID-19 history (10%). Likewise, respondents who agreed that balanced nutritional food could not be found in food delivery apps mostly came from respondents without a COVID-19 history (21.4%), compared to those with a COVID-19 history (20%).

Table 5. Perceived barrier results.

Perceived Barrier Questions	Percentage of Respondents with Agreement		p Value
	With COVID-19 History n (%)	Without COVID-19 History n (%)	
If today is the end of the month, I can't eat balanced nutritious food because it's expensive.	29 (41.4)	24 (34.3)	0.044
I'm busy working so I can't adjust the portion of food according to the recommended balanced nutrition.	34 (48.6)	31 (44.3)	0.051
I feel bad if I have to eat salad alone when my friends eat fast food.	19 (27.1)	12 (17.1)	0.05
I was opposed by my parents when I wanted to take supplements to boost my immunity.	6 (8)	1 (1.4)	0.022
I have a hard time eating a balanced nutritious diet when I'm on vacation.	31 (44.3)	24 (34.3)	0.029
I feel bad for refusing food so I can't adjust the portion sizes according to balanced nutrition guidelines when I'm eating with my family.	37 (52.3)	30 (42.8)	0.000
I can't take supplements because I have a certain disease.	3 (4)	4 (5.7)	0.001
I don't know the type and amount of supplements I should take.	14 (20)	19 (27.1)	0.021
I am not familiar with the concept of balanced nutrition.	10 (10)	14 (20)	0.039
Nutritious balanced meals can't be found in food delivery apps.	14 (20)	15 (21.4)	0.041

3.1.5. Self-Efficacy

Self-efficacy is a belief in a person's ability to take an action related to balanced nutrition consumption and supplementation consumption to achieve a goal in preventing and dealing with the COVID-19 pandemic. The following are the results of the distribution of answers from 140 respondents. Question G is related to self-efficacy and it is broken down into 10 questions asking about various spectrums related to balanced nutrition consumption. The following elaboration described the related details of each question.

Based on Table 6, we discovered that 32.9% of the respondents who have experienced COVID-19 agreed with the statement that they can consume well-balanced nutritious food every day. On the other hand, 48.6% of respondents who have not experienced COVID-19 agreed that they have self-efficacy to consume well-balanced nutritious food daily. From question 1, we discovered that the percentage of respondents who agreed that they are able to consume well-balanced nutritious food every day was higher in those who have not experienced COVID-19 compared to those who have. From question 2, we discovered that 64.3% of the respondents who have experienced COVID-19 agreed with the statement that they can consume well-balanced nutritious food at least two times a day. On the other hand, 62.9% of respondents who have not experienced COVID-19 have the self-efficacy to consume well-balanced nutritious food two times a day. From question 2, we discovered that the percentage of respondents who agreed that they can consume well-balanced nutritious food two times a day was higher in those who have experienced COVID-19, compared to those who have not. From question 3, we observed that 58.6% of the respondents who have experienced COVID-19 agreed with the statement that they are able to consume well-balanced nutritious food on the weekend. On the other hand, 55.7% of respondents who have not experienced COVID-19 agreed that they have the self-efficacy to consume well-balanced nutritious food at the weekend. From question 3, we discovered that the percentage of respondents who agreed that they are able to consume well-balanced nutritious food at the weekend is higher in those who have experienced COVID-19, compared to those who have not. From question 4, it was found that 61.4% of the respondents who have experienced COVID-19 agreed with the statement that they are able to consume well-balanced nutritious food at least once a week. However, 55.7% of respondents who have not experienced COVID-19 agreed that they have the self-efficacy to consume well-balanced nutritious food once a week. From question 4, we revealed that the percentage of respondents who agreed that they are able to consume well-balanced nutritious food once a week was higher in those who have ever experienced COVID-19, compared to those who have not. From question 5, we demonstrated that 55.7% of the respondents who have experienced COVID-19 agreed with the statement that they are able to consume well-balanced nutritious food once in two weeks. On the other hand, 51.4% of respondents who have not experienced COVID-19 agreed that they have the self-efficacy to consume well-balanced nutritious food once in two weeks. From question 5, we showed that the percentage of respondents who agreed that they are able to consume well-balanced nutritious food once in two weeks was higher in those who have never experienced COVID-19, compared to those who have not. From question 6, it was noticed that 54.2% of the respondents who have experienced COVID-19 agreed with the statement that they are able to consume well-balanced nutritious food even if it is expensive. However, 48.6% of respondents in this study who have not experienced COVID-19 agreed that they have the self-efficacy to consume well-balanced nutritious food even if it is expensive. From question 6, we observed the percentage of respondents who agreed that they are able to consume well-balanced nutritious food even if it is expensive was higher in those who have experienced COVID-19, compared to those who have not. From question 7, we examined that 41.4% of the respondents who have experienced COVID-19 agreed with the statement that they are able to consume well-balanced nutritious food while travelling. On the other hand, 48.6% of respondents who have not experienced COVID-19 have the self-efficacy to consume well-balanced nutritious food while travelling. From question 7, we concluded that the percentage of respondents who agreed that they are able to consume a well-balanced nutritious diet while travelling was higher in the respondents who have not experienced COVID-19, compared to those who have. From question 8, we found that 51.4% of respondents who have ever experienced COVID-19 agreed that they have the self-efficacy to consume a well-balanced nutritious diet still while being away from home. On the other hand, 55.7% of respondents who have not experienced COVID-19 agree that they will still consume a well-balanced diet even when they are away from home. From question 8, we revealed that the percentage of agreement with the statement of self-efficacy

related to the resilience of well-balanced nutritious food consumption away from home was higher in those respondents who have not experienced COVID-19, compared to those who have. From question 9, we demonstrated that there were 35.7% of respondents who have experienced COVID-19 agreed that they have self-efficacy to still consume well-balanced nutritious food during hustle. However, 32.8% of respondents who have not experienced COVID-19 agreed that they will still consume well-balanced nutritious food during hustle. From question 9, we conclude that the percentage of agreement with the statement of self-efficacy related to the resilience of well-balanced nutritious consumption during hustle is higher in those respondents who have experienced COVID-19, compared to those who have not. From question 10, we examined that 38.6% of respondents who have experienced COVID-19 agreed that they have self-efficacy to still consume a well-balanced nutritious food even if it is far from their board. On the other hand, 30% of respondents who have not experienced COVID-19 agreed that they will still consume a well-balanced nutritious diet even if it is away from their board. From question 10, we concluded that the percentage of agreement with the statement of self-efficacy related to the resilience of well-balanced nutritious food consumption even if it is less accessible was higher in those who have experienced COVID-19, compared to those who have not.

Table 6. Self-efficacy results.

Self Efficacy Questions	Percentage of Respondents with Agreement		p Value
	With COVID-19 History n (%)	Without COVID-19 History n (%)	
I am able to consume well balanced nutritious food every day.	23 (32.9)	34 (48.6)	0.003
I am able to consume well balanced nutritious food 2 times a day in minimum.	45 (64.3)	44 (62.9)	0.011
I am able to consume well balanced nutritious food in the weekend.	41 (58.6)	39 (55.7)	0.023
I am able to consume well balanced nutritious food at least once in a week.	43 (61.4)	39 (55.7)	0.034
I am able to consume well balanced nutritious food every 2 weeks.	39 (55.7)	36 (51.4)	0.05
I am able to consume well balanced nutritious food even though it is expensive.	38 (54.2)	34 (48.6)	0.001
I am able to consume well balanced nutritious food while traveling.	29 (41.4)	34 (48.6)	0.033
I am able to consume well balanced nutritious food even when I was not in my home.	36 (51.4)	39 (55.7)	0.048
I am able to consume well balanced nutritious food during hustle.	25 (35.7)	23 (32.8)	0.05
I am able to consume well balanced nutritious food even it is far from my board.	27 (38.6)	21 (30)	0.05

3.1.6. Kessler Psychological Distress Scale (K10)

The Kessler Psychological Distress Scale is a 10-item questionnaire intended to produce a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the past four weeks, in the face of the COVID-19 pandemic. The following are the results of the distribution of answers from 140 respondents.

Based on Table 7, we want to explain questions 1 to 10 related to psychological distress results among the respondents. From question 1, we examined that 30% of the respondents who have experienced COVID-19 agreed with the statement that they ever feel exhausted without clear reason. On the other hand, 25.7% of respondents who have not experienced

COVID-19 agreed that they ever feel exhausted without clear reason. From question 1, we found that the percentage of respondents who agreed that they feel exhausted without a clear reason was higher in those who have ever experienced COVID-19. From question 2, we showed that 15.7% of the respondents who have experienced COVID-19 agreed that they feel a lot of stress. However, 12.8% of respondents who have not experienced COVID-19 agreed that they feel a lot of stress. From question 2, we found that the percentage of respondents who agreed that they feel a lot of stress was higher in those who have ever experienced COVID-19, compared to those who have not. From question 3, we revealed that 20% of the respondents who have experienced COVID-19 agreed with the statement that they feel stress until they cannot relax. On the other hand, 14.3% of the respondents who have not experienced COVID-19 agreed that they feel stressed until they cannot relax. From question 3, it was observed that the percentage of respondents who agreed that they feel stress until they cannot relax was higher in those who have experienced COVID-19, compared to those who have not. From question 4, we demonstrated that 11.4% of the respondents who have experienced COVID-19 agreed with the statement that they feel hopeless, whereas 18.6% of the respondents who have not experienced COVID-19 agreed that they feel hopeless. From question 4, we showed that the percentage of respondents who agreed that they feel hopeless was higher in those who have not experienced COVID-19, compared to those who have. From question 5, it was noticed that 21.4% of the respondents who have experienced COVID-19 agreed that they ever feel nervous or anxious. A total of 25.7% of the respondents who have not experienced COVID-19 agreed that they feel nervous or anxious. From question 5, we found that the percentage of respondents who agreed that they feel nervous or anxious was higher in those who have not experienced COVID-19, compared to those who have. From question 6, we observed that 14.3% of the respondents who have experienced COVID-19 agreed that they feel anxious until they cannot sit quietly. However, only 10% of the respondents who have not experienced COVID-19 agreed that they feel anxious until they cannot sit quietly. From question 6, researchers concluded that the percentage of respondents who agreed that they feel anxious until they cannot sit quietly was higher in those who have experienced COVID-19, compared to those who have not. From question 7, we examined that 17.1% of the respondents who have experienced COVID-19 agreed that they feel depressed. On the other hand, 21.4% of the respondents who have not experienced COVID-19 agreed that they feel depressed. From question 7, we showed that the percentage of respondents who agreed that they feel depressed was higher among those who have not experienced COVID-19, compared to those who have. From question 8, we revealed that 37.1% of the respondents who have experienced COVID-19 agreed that they need effort before doing something. However, 31.4% of the respondents who have not experienced COVID-19 agreed that they need effort before doing something. From question 8, we examined that the percentage of respondents who agreed they need effort before doing something was higher in those who have experienced COVID-19 than those who have not. From question 9, it was found that 18.6% of the respondents who have experienced COVID-19 agreed that they feel sad until nothing can cheer them up. On the other hand, 21.4% of the respondents who have not experienced COVID-19 agreed that they feel sad until nothing can cheer them up. From question 9, we concluded that the percentage of respondents who agreed that they feel sad until nothing can cheer them up was higher in those who have not experienced COVID-19, compared to those who have. From question 10, we examined that 12.8% of the respondents who have experienced COVID-19 agree that they feel worthless. On the other hand, 14.3% of the respondents who have not experienced COVID-19 agreed that they feel worthless. From question 10, we showed that the percentage of respondents who agreed that they feel worthless was higher among those who have not experienced COVID-19, compared to those who have.

Table 7. Kessler psychological distress scale results.

Kessler Psychological Distress Scale Questions	Percentage of Respondents with Agreement		p Value
	With COVID-19 History n (%)	Without COVID-19 History n (%)	
Did you feel exhausted without clear reason?	21 (30)	18 (25.7)	0.002
Did you feel a lot of tension/stress?	11 (15.7)	9 (12.8)	0.01
Did you feel very stress thus you can not relax?	14 (20)	10 (14.3)	0.032
Did you feel hopeless?	8 (11.4)	13 (18.6)	0.038
Did you feel anxious and nervous?	15 (21.4)	18 (25.7)	0.001
Did you feel anxious until you can sit quietly?	10 (14.3)	7 (10)	0.002
Did you feel depressed?	12 (17.1)	15 (21.4)	0.031
Did you feel you need a lot of effort to do something?	26 (37.1)	22 (31.4)	0.005
Did you feel sad until nothing can cheer you up?	13 (18.6)	15 (21.4)	0.0092
Did you feel worthless?	9 (12.8)	10 (14.3)	0.052

3.1.7. Emotional Eating Questionnaire

The Emotional Eating Scale (EES) consists of four dimensions, namely: Anger (anger), Anxiety (anxiety), Depression (depression), and Somatic (somatic). This measuring tool consists of 10 items that can describe the four dimensions. A total of two items describes the Anger dimension (anger), four items describe the Anxiety dimension (anxiety), two items describe the Depression dimension (depression), and two other items describe the Somatic dimension (somatic). The following are the results of the distribution of answers from 140 respondents (Table 8).

Table 8. Emotional eating questionnaire results.

Questions	Disagree n (%)	Agree n (%)
Does your weight affect or changes your mood?	86 (61.4)	54 (38.5)
Do you have cravings for certain specific foods?	77 (55)	67 (47.1)
Is it difficult for you to stop consuming sweet foods, such as chocolate?	91 (65)	49 (35)
Do you have a problem controlling the number of certain foods you eat?	95 (67.8)	45 (32.1)
Is there anything to eat when you are stressed, angry, or bored?	70 (50)	70 (50)
Do you eat more of your favorite foods and have trouble controlling them?	69 (49.28)	71 (50.7)
Do you feel guilty if you eat foods that are forbidden to eat, such as sweet foods or snacks?	79 (56.4)	61 (43.5)
Do you feel less in control of the food you eat when you feel tired after work?	71 (50.7)	69 (49.28)
When you overeat, do you feel like giving up on food control and eating without control, especially foods that make you fat?	104 (74.28)	36 (25.7)
How often do you feel that food has control over you, rather than you controlling what you eat?	85 (60.7)	55 (39.28)

From the table above, we know that in question 1 the majority answered disagree to change their mood due to weight movement (61.4%), but on the other hand, 38.5% of the participants felt weight distortion of their body affected their mood production. The questions about craving food might be felt by 55% of total respondents who answered some-times and often eat certain foods. The phenomenon of sugary food declined by 65% of participants who did not agree with the statement that it is difficult to stop consuming sweet foods, such as chocolate. Question number 4 was answered by 67% of participants who did not have any problem controlling the number of certain foods they consume. Despite that, 32.1% had some problems getting on their daily diet. Question number 5

presented any kind of food which they consume when they are stressed, angry, or bored. A total of 50% answered that it is a necessary thing to eat some food when they do not feel well. Question number 6 proves that 50.7% of respondents that eat more favorites became troubled controlling them. Question number 7 shows that 56.4% of participants did not feel guilty if they eat foods that they are forbidden to eat, such as sweet foods or snacks. Less control of the food when they feel tired after work is felt by 49.28% of total respondents. Question number 9 talks about people who feel like giving up on food control, and eating without control, which was answered by 25.7% of the participants, and 74.28% still feel secure to maintain what they eat.

3.1.8. Association

Most of the respondents in our study scored low in perceived susceptibility, severity, benefit, barrier, and self-efficacy. There was no association between perceived susceptibility, severity, benefit, barrier, and self-efficacy, with the history of COVID-19.

Table 9 shows that there is no significant association between low perceived susceptibility and COVID-19 infection. The insignificant association is shown by the p value > 0.05 . The insignificance association also happens to the other independent variables, such as average perceived susceptibility, low perceived severity, average perceived severity, low perceived benefit, average perceived benefit, low perceived benefit, low perceived barrier, average perceived barrier, low self-efficacy, and average self-efficacy with the incidence of COVID-19 infection. However, the independent variable of low perceived benefit shows that those with low perceived benefit are 1926 times more likely to experience COVID-19. Another variable, which is average perceived benefit, shows that those with average perceived benefit are 1008 more likely to experience COVID-19. Low-perceived barrier respondents are also 1222 times more likely to be infected by COVID-19. The last independent variable, the average perceived barrier, shows that those respondents with an average perceived barrier are 1545 times more likely to be infected by COVID-19.

Table 9. Association between the variable results.

	p Value	OR	95% CI	
			Lower	Upper
Low Perceived Susceptibility	0.188	0.410	0.109	1.547
Average Perceived Susceptibility	0.551	0.717	0.241	2.137
Low Perceived Severity	0.121	0.411	0.134	1.265
Average Perceived Severity	0.257	0.554	0.199	1.539
Low Perceived Benefit	0.279	1.926	0.588	6.310
Average Perceived Benefit	0.988	1.008	0.375	2.705
Low Perceived Barrier	0.676	1.222	0.478	3.124
Average Perceived Barrier	0.344	1.545	0.628	3.801
Low Self Efficacy	0.507	0.692	0.234	2.050
Average Self Efficacy	0.515	0.727	0.278	1.900

4. Discussion

Perceived susceptibility is an individual's belief about his susceptibility to the risk of disease in encouraging people to adopt healthier behaviors [15]. The questions asked were about the relationship between eating a balanced nutritional diet and a person's immune system, and immunity in the face of COVID-19. In this study, most respondents had low and average scores of perceived susceptibilities. This could be due to poor knowledge [16].

Perceived severity or seriousness that is felt is the feelings about the seriousness of COVID-19, include evaluating clinical and medical consequences (for example, death, disability, and illness), and possible social consequences (such as effects on work, family life, and social relationships) [17]. Many experts combine the two components above as a perceived threat. In this study, most respondents had a low score of perceived severity.

Perceived benefits is the acceptance of a person's susceptibility to a condition that is believed to cause seriousness (perceived threat), to encourage it to produce a force that supports changes in nutritional behavior [18]. This depends on one's belief in the effectiveness of the various available efforts in reducing the threat of COVID-19, or the perceived benefits of taking these health efforts. When a person believes in susceptibility and seriousness, he/she is often not expected to accept any recommended health measures unless they are deemed appropriate.

Perceived barriers or perceived barriers to change [15], the potential negative aspects of a prevention and treatment effort in dealing with COVID-19 (such as uncertainty, and side effects), or perceived barriers (such as worrying about being unsuitable, unhappy, or nervous), may serve as barriers to recommending a behavior. One of the factors related to perceived barrier is the lack of knowledge among the respondents. A recent study conducted by Birihaane et al. [19] showed that there was a relationship between the knowledge of the health care providers and their actions to prevent COVID-19. The study found that the respondents who have perceived barriers were more likely to not execute procedures related to COVID-19 prevention.

Self-efficacy is a belief in a person's ability to take an action to achieve a goal in preventing and dealing with the COVID-19 pandemic [15]. In this study, most of the respondents had low self-efficacy scores. This showed that there was a lack of belief among the respondents to take an action, especially in providing good nutrients and supplements to prevent and deal with COVID-19. Self-efficacy is one of the factors associated with the ability of individuals to control their emotions, as well as being implicated with a lower risk of anxiety. Recently, Delshad et al. [20] reported that the enhancement of self-efficacy level might reduce anxiety. This is because people who have high self-efficacy levels can employ more different ways to achieve their goals, hence, positively increase a person's ability to cope with stress and reduce anxiety in dealing with the COVID-19 pandemic. Additionally, Meyer et al. [21] also revealed that enhancing self-efficacy was determined to be the most important element in coping with high levels of perceived COVID-19 related stress.

According to our knowledge, this is the first study assessing adults' perceived nutrient and supplement intake among adults in Surabaya, Indonesia. There were several limitations in this study including potential selection bias, self-reported data, and recall bias. Selection bias might arise from the recruitment of respondents by the enumerator, which seems to have a higher response rate among young adult population. Even though, currently, Indonesia is undergoing a demographic dividend, the generalization of our study result to the whole population of Surabaya, Indonesia, should be made with caution. In order to minimize recall bias and measurement bias, we employed trained enumerators to guide respondents to go through the questionnaire, using probing question if necessary.

5. Conclusions

According to the construct of the Health Belief Model, the overall score of perceived susceptibility, severity, benefit, barrier, and self-efficacy, showed no significant association with the history of COVID-19 among young adults. However, association between question items of all variables in the construct of the Health Belief Model showed significant results. Thus, it is still important for the government to increase socialization and education on the importance of nutrients and supplement intake to protect themselves, and to prevent them from being infected with COVID-19.

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The Impact of Nutrition Education on Perceived Barrier to Healthy Diet among Adults with and without COVID-19 History

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Abstract

BACKGROUND: Healthy diet is an important tool to lower the risk and severity of COVID-19 infection. Low diet quality is usually caused by perceived barriers that stop people to do certain behavior. Perceived barriers can be overcome by implementing proper method such as conducting nutrition education.

AIM: This study aimed to analyze the impact of nutrition education on perceived barrier to healthy diet among adults with and without covid-19 history in Padang, Indonesia.

METHODS: This study was a pre-experimental study using pre and post-design. This study was conducted on 70 adults with or without COVID-19 infection history, residing in Padang, Indonesia. The intervention was given in the form of nutrition education. Difference test was conducted to assess the impact of nutrition education on respondents' nutrition knowledge and perceived barriers.

RESULTS: The majority of the respondents both with and without COVID-19 history (71.4% and 80%) had medium level of nutritional knowledge before the intervention. After the intervention, there was a significant ($p < 0.05$) improvement on respondents' nutritional knowledge for both groups (100%). The result also showed 40% of the respondents with COVID-19 history had medium level of perceived barriers, while 28.6% respondents without COVID-19 history (65.7%) had medium level of perceived barriers before the intervention. A significant improvement ($p < 0.05$) also showed on respondents' perceived barriers after the intervention. On both groups more 90% of the respondents only had low level of perceived barriers.

CONCLUSION: The result shows that nutrition education has significant impact both on respondents' nutritional knowledge and perceived barriers.

KEYWORDS: COVID-19, Nutrition Education, Nutritional Knowledge, Perceived barriers

Introduction

Healthy diet can be defined as diet which consist various kinds of foods in certain proportion and quantities that fulfill a person's nutritional needs. Healthy diet is an important tool to prevent not only malnutrition but also various diseases, such as COVID-19. Extensive evidence shows a strong correlation between healthy diet and COVID-19 infection [1–3] Previous studies showed that Healthy diet may lower the risk of COVID-19 infection by 0.91 and lower the severity COVID-19 infection by 0.59 [4]. Healthy diet is associated with high consumption of vegetables, fruits, whole grains, legumes, nuts, and seeds as well as low consumption of added sugar, processed meats, and sugar-sweetened beverages. It will provide balanced nutrition to support immune system to fight against COVID-19 infection [5].

The problem is that there still a lot of people who has low adherence to healthy diet. Previous studies showed that the prevalence of low diet quality is still high among Indonesian citizens [6–8]. The same result also observed during pandemic COVID-19. Even the study conducted by Fauziyana *et al.* (2022); showed that 93% of elderly in Jakarta had poor diet quality during Pandemic COVID-19 even though they were at greater risk of COVID-19 infection.

Low adherence to healthy diet can be caused by many factors including people's perceived barrier regarding healthy diet (5). Perceived barrier is one of six concepts in Health Belief Model. Health Belief Model describes the influence of people's beliefs on their health-related actions and behaviors [9]. Perceived barriers usually portray people's view regarding obstacles that stand in the way of behavior change. Barriers can be both tangible such lack of resources and intangible such as psychological influences [10].

Perceived barriers is the most significant factor in determining behavior change. Strong barriers will stop people to adopt the new behavior. Barriers will make people think the benefits of the new behavior do not outweigh the consequences of the old behavior. That's why it's important for people to overcome their barriers [10]. There are many ways to overcome barriers. One of them is through education. Education is a process in which set of learning experiences is delivered. To overcome perceived barriers to healthy diet, nutrition education is usually delivered. During the process materials regarding eating other nutrition related material is usually delivered. Through nutrition education people's knowledge regarding nutrition and health will be improved. Improved knowledge will lead to the improvement of nutrition and health literacy. Improved nutrition and health literacy will improve attitude towards nutrition and health behavior. In the end it will also improve nutrition and health practices [11–13].

COVID-19 is still being a major problem in Indonesia till today. It is important to improve the diet quality of its people to lower the risk and severity of COVID-19 infection. Overcoming barriers become an important factor to achieve the improvement in diet quality. Thus, appropriate action is needed to be taken such implementing nutrition education which already proved to be able to overcome barriers significantly. Therefore, this study aimed to analyze the impact of nutrition education on perceived barrier to healthy diet among adults with and without covid-19 history in Padang, Indonesia.

Material and Methods

The present pre-experimental study used pre and post-test design. The intervention was conducted in the form of nutrition education. This study was conducted on total of 70 adults with or without COVID-19 history, residing in Padang,

Indonesia. The study was conducted from June to November 2022. Respondents aged 18 – 59 years old were included in this study. This study was part of major study entitled *Application of Health Belief Model towards Nutrition Education Intervention to Improve Supplement and Nutrients Intake of Adults with and without Covid-19 History* and approved by Health Research Ethical Clearance Commission of the Faculty of Dental Medicine, Airlangga University, Surabaya, Indonesia number 362/HRECC.FODM/VI/2022.

Nutrition Education

The intervention of the present study was given in the form nutrition education. There were three materials delivered during the intervention. They were Balance Nutrition and Health Belief Model COVID-19 Pandemic, The Role of Health Supplements in Improving Immune System, and Nutrition and Immunity. The educations were conducted in group, once every two weeks week for total of six meetings. Each education materials were delivered twice. The educations were not only given in the form of counseling but also independent modules study. Respondents were given pre-test before education and post-test after education. The pre and post-test consisted of ten questions for each material with maximum total score of 10 to determine the nutritional knowledge level of the respondents. The nutritional knowledge levels were classified based on following cut-off points; high level (>8), medium level (6-8), and low level (<6) [14].

Perceived Barriers

Perceived barriers was analyzed using ten structured question related to barriers regarding healthy diet. Respondents were given five choices of opinion for each question. The choices range from strongly agree, agree, neutral, disagree, and strongly disagree. Scoring was also given for each choice range from 5 for strongly agree and 1 for strongly disagree. Strongly agree described strong barrier for each question. The maximum total score for perceived barriers was 50 which then classified based on following cut-off points; strong (>40), medium (30-40), and low (<30).

Data analysis

The data were analyzed using IBM SPSS software version 23 (IBM Corp., Armonk, New York, United States of America). Descriptive statistic was conducted to dissect respondents' characteristics and perceived barriers. Independent T-test was carried out to analyze the perceived barriers level between respondents with and without COVID-19 history groups. Paired T-test analysis was also used to analyze the impact of nutrition education on respondents perceived barriers on the same group.

Results

This study was conducted on 70 adults with or without COVID-19 infection history. The result showed that majority of the respondents (81.4%) were age 18-39 years old or on their early adulthood [15]. 70% of them were also female. Most of the respondents (45.8%) had high education level with them being university graduates. The data on COVID-19 infection history showed that half of the respondent were infected by COVID-19. The result also showed that most of the respondents (37.1%) had normal nutritional status but the obesity prevalence was found 10% higher than the prevalence in 2018 (Table 1) [16].

Table 1: Characteristics of respondents

Characteristics	n	%
Age		
Early adulthood (18 – 39 years old)	57	81.4
Midlife (40 – 59 years old)	13	18.6
Sex		
Male	21	30
Female	49	70
Education level		
Primary school graduate	1	1.4
High school graduate	26	37.1
Associate graduate	11	15.7
University graduate	32	45.8
COVID-19 infection history		
Yes		
No		
Nutritional status		
Underweight (<18,5 kg/m ²)	9	12.9
Normal (18,5 – 22,9 kg/m ²)	26	37.1
Overweight (23 – 24,9 kg/m ²)	13	18.6
Obesity (>25 kg/m ²)	22	31.4

Intervention given during this study was in form of nutrition education. The education was conducted once in every two weeks resulting in 6 meetings for three months long. Table 2 showed that majority of the respondents both with and without COVID-19 history (71.4% and 80%) had medium level of nutritional knowledge. Independent T-test also showed there was no significant difference ($p = 0.623$) in both group's nutritional knowledge before the intervention. Table 2 also showed that after intervention, 100% of respondents in both groups had high level of nutritional knowledge. The average total score of nutritional knowledge before intervention in both groups were 6.7 ± 0.9 and 6.8 ± 1.0 respectively. The result also showed a significant improvement ($p < 0.05$) after intervention in both group by 2.4 and 2.5 points respectively.

Table 2: Nutritional knowledge of respondents

Nutritional knowledge level	Before Intervention				After Intervention			
	With COVID-19 history		Without COVID-19 history		With COVID-19 history		Without COVID-19 history	
	n	%	n	%	n	%	n	%
Low (<6)	7	20.0	5	14.3	0	0	0	0
Medium (6-8)	25	71.4	28	80.0	0	0	0	0
High (>8)	3	8.6	2	5.7	35	100	35	100
Mean Score \pm SD	6.7 ± 0.9		6.8 ± 1.0		9.1 ± 0.3		9.1 ± 0.3	

Perceived barriers is the most significant factor in determining behavior change. The stronger the barriers, the new behavior will be more difficult to adopt [10]. The present study showed that 40.0% of the respondents with COVID-19 history had medium level of perceived barriers before the intervention. Only 28.6% respondents without COVID-19 history (65.7%) had medium level of perceived barriers before the intervention. Nevertheless, there was no significant difference ($p = 0.565$) on respondents' perceived barriers in both group before the intervention. Result also found respondents with strong level of perceived barriers before the intervention in both groups. The study showed that the intervention gave a significant impact ($p < 0.05$)

in both groups' perceived barriers. There were no respondents who had strong perceived barriers after the intervention and more than 90% of respondents in both groups only had low level of perceived barriers (Table 3).

Table 3: Perceived barriers to healthy diet of respondents

Perceived barriers level	Before Intervention				After Intervention			
	With COVID-19 history		Without COVID-19 history		With COVID-19 history		Without COVID-19 history	
	n	%	n	%	n	%	n	%
Low (<30)	19	54.3	23	65.7	32	91.4	33	94.3
Medium (30-40)	14	40.0	10	28.6	3	8.6	2	5.7
Strong (>40)	2	5.7	2	5.7	0	0	0	0
Mean Score \pm SD	28.0 \pm 5.8		26.8 \pm 6.2		22.1 \pm 5.2		21.4 \pm 5.1	

Table 4 showed the dissection of respondents' perceived barriers. Before the intervention, most of the respondents (58.6%) stated that they could not adjust the portion of food according to dietary guidelines when they were busy working. 40% of the respondents also stated that in the of the month, they could not eat balanced nutritious food because of economic reason. Nevertheless, those statements were no longer found after intervention. Another barrier that mostly faced by respondents before intervention was the difficulty in adjusting portion sizes according to dietary guidelines when they were eating with their family (44.3%). The reason was because they felt bad for refusing the served foods. After the intervention, there was an improvement on given statement (24.3%).

Table 4: Perceived barriers of respondents

Perceived barriers questions	Percentage of respondents' agreement			
	Before Intervention		After Intervention	
	n	%	n	%
If today is the end of the month, I can't eat balanced nutritious food because it's expensive.	28	40,0	0	0,0
I'm busy working so I can't adjust the portion of food according to the recommended balanced nutrition.	41	58,6	0	0,0
I feel bad if I have to eat salad alone when my friends eat fast food.	24	34,3	11	15,7
I was opposed by my parents when I wanted to take supplements to boost my immunity.	7	10,0	4	5,7
I have a hard time eating a balanced nutritious diet when I'm on vacation.	24	34,3	14	20,0
I feel bad for refusing food so I can't adjust the portion sizes according to balanced nutrition guidelines when I'm eating with my family.	31	44,3	17	24,3
I can't take supplements because I have a certain disease.	15	21,4	9	12,9
I don't know the type and amount of supplements I should take.	25	35,7	16	22,9
I am not familiar with the concept of balanced nutrition.	24	34,3	16	22,9
Nutritious balanced meals can't be found in food delivery apps.	22	31,4	16	22,9

Discussion

Nutrition education level is influenced by many factors such as education. Higher education is usually associated with higher nutrition knowledge. Higher education means taking forming education longer. People with higher education will have more knowledge since they have more access and exposures on new information [17,1]. The present study observed similar result. The result showed more than half of the respondents had higher education with them being associate and university graduates. Although we found no significant correlation between respondents' education level and their nutritional knowledge before the intervention, the results tended to show similar result. Before the intervention, both groups only had low prevalence of low level of nutritional knowledge.

Nutrition education will give more exposures on nutrition and health related information. Those exposures will increase people's knowledge. With increased knowledge, people will have a new view on the harms or benefits of certain nutrition and health related behavior including healthy diet [19–21].

Extensive evidence already showed that nutrition education is significantly improved knowledge, attitude, and practice [22–26]. Similar results were observed in this study in both groups. Before the intervention, majority of respondents only had medium level of nutritional knowledge and only less than 10% who had high level of nutritional knowledge. Nutrition education in this study gave significant impact on both groups' nutritional knowledge. After the intervention, it was observed that all the respondents in both groups had high nutritional knowledge level.

Nutrition education can be delivered in many methods, but it will be more effective if it is delivered using mix methods and longer intervention times. Previous study showed that nutrition education which was given through nutrition counseling in addition of booklets gave better impact compared to with no nutrition counseling [27]. The present study used the same methods. We combined the nutrition modules with nutrition counseling and we observed significant impact, the same as previous study.

Nutrition education will give more effective impact if it is delivered for longer times. The previous study showed that to obtain improvement not only in knowledge, but also attitude and practices, minimum of 3 months education is needed [28]. With the same intervention time, we also observed the same result. We were only observed aa significant improvement in respondents' knowledge but also on respondents' perceived barriers to healthy diet.

Perceived barriers is related to a person's view and opinion which form their attitude regarding certain behavior [10]. After the intervention, strong perceived barriers were no longer be found and more than 90% of the respondents' with and without COVID-19 infection history only had low perceived barriers to healthy diet.

The present study was not only observed intangible barriers on respondents but tangible ones, such as economic factor. COVID-19 Pandemic gave strong negative impacts on economic sectors. With job loss and reduced income, healthy food become less affordable for them especially during the end of the months. After the intervention, this barrier was no longer found with inline improvement on another barriers [29].

Conclusions

Nutrition education gave positive impacts both on respondents' nutritional knowledge and perceived barriers. Through nutrition education, respondents' nutritional knowledge was improved significantly. Some statements regarding perceived barriers on healthy diet were still found after the intervention, especially the

intangible ones. Nevertheless, nutrition education was able significantly improved respondents' perceived barriers. Thus, it is important for the government to increase nutrition education programs on healthy diet to lower people's perceived barriers in order to prevent COVID-19 infection.

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