NUTRISI *dan* LINGKUNGAN

KUNCI KESEHATAN OPTIMAL

Syamsul Alam
Sherly Wulandari
Sukmawati
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Buku ini membahas pentingnya nutrisi yang tepat dan lingkungan yang sehat dalam mencapai kesehatan manusia yang optimal. Bab pertama menjelaskan nutrisi dasar manusia yang diperlukan untuk kesehatan, termasuk nutrisi esensial, pemanfaatan nutrisi, dan sinergi antar nutrisi. Bab selanjutnya mengulas faktor-faktor lingkungan yang mempengaruhi kesehatan, seperti perbedaan kualitas makanan konvensional dan organik.

Buku ini juga menjelaskan hubungan antara nutrisi dan lingkungan dalam mencapai kesehatan optimal, serta pengaruh lingkungan terhadap asupan nutrisi. Salah satu topik yang dibahas adalah pangan organik dan pentingnya kemitraan antar-sektor untuk menjaga kesehatan lingkungan dan nutrisi. Selain itu, buku ini mengulas pengaruh kualitas lingkungan terhadap nutrisi, seperti kualitas tanah, pencemaran air, dan kontaminasi makanan.

Buku ini juga menyoroti dampak perubahan lingkungan terhadap ketersediaan dan kualitas pangan, serta solusi dan tantangan ke depan. Buku ini membahas pula dampak sampah pangan terhadap lingkungan dan metode pengelolaannya, serta strategi dan peran semua pihak dalam upaya pengurangan sampah pangan. Secara keseluruhan, buku ini bertujuan untuk memberikan pemahaman komprehensif tentang keterkaitan antara nutrisi dan lingkungan dalam mencapai kesehatan optimal manusia.

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KATA PENGANTAR

Puji syukur kami panjatkan kepada Tuhan Yang Maha Esa atas rahmat dan karunia-Nya sehingga buku ini dapat terselesaikan. Buku ini berjudul "Nutrisi dan Lingkungan Kunci Kesehatan Optimal," membahas mendalam tentang pentingnya nutrisi dan lingkungan dalam mencapai kesehatan yang optimal. Buku ini terbagi menjadi 8 bab yang membahas tentang 1. Nutrisi Dasar Manusia Untuk Kesehatan Optimal. 2. Faktor Lingkungan dan Kesehatan. 3. Nutrisi, Lingkungan dan Kesehatan Optimal. 4. Pangan Organik dan Kemitraan Antar-Sektor Untuk Kesehatan. 5. Pengaruh Kualitas Lingkungan Terhadap Nutrisi. 6. Dampak Perubahan Lingkungan Terhadap Pangan. 7. Dampak dan Metode Pengelolaan Sampah Pangan. 8. Strategi dan Peran Semua Pihak Dalam Pengurangan Sampah Pangan.

Buku ini hadir sebagai jawaban atas kebutuhan akan pemahaman yang komprehensif mengenai bagaimana nutrisi yang tepat dan lingkungan yang sehat dapat berkontribusi secara signifikan terhadap kesehatan manusia. Kami menyadari bahwa masalah gizi dan lingkungan adalah isu global yang kompleks dan memerlukan perhatian khusus dari berbagai pihak, mulai dari individu, komunitas, hingga pembuat kebijakan.

Melalui buku ini, kami berupaya untuk memberikan wawasan yang mendalam tentang berbagai aspek nutrisi dasar yang diperlukan tubuh, peran penting lingkungan dalam kesehatan, serta bagaimana kedua elemen ini saling berinteraksi. Buku ini juga menyajikan informasi tentang tantangan global terkait malnutrisi dan polusi lingkungan, serta solusi praktis untuk menghadapinya.

Kami berharap buku ini dapat menjadi referensi yang bermanfaat bagi berbagai kalangan, termasuk mahasiswa, praktisi kesehatan, akademisi, serta masyarakat umum yang peduli terhadap kesehatan dan lingkungan. Dengan pemahaman yang lebih baik, kami percaya bahwa setiap individu dapat membuat keputusan yang lebih bijak dalam menjaga kesehatan diri dan lingkungan sekitarnya.

Ucapan terima kasih kami sampaikan kepada semua pihak yang telah memberikan dukungan dan kontribusi dalam penyusunan buku ini. Semoga buku ini dapat memberikan manfaat dan menjadi inspirasi bagi pembaca dalam mencapai kesehatan yang optimal melalui pemahaman dan penerapan nutrisi yang tepat serta perlindungan lingkungan.

Selamat membaca.

Salam Hormat,

Tim Penulis

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BAB 1

NUTRISI DASAR MANUSIA UNTUK KESEHATAN OPTIMAL

A. Pendahuluan

Secara historis, ilmu gizi dibangun berdasarkan studi tentang nutrisi tunggal atau komponen makanan dalam kaitannya dengan hasil kesehatan (Melse-Boonstra A, 2020). Nutrisi yang tepat adalah dasar bagi kesehatan optimal manusia yang memainkan peran penting dalam pencegahan penyakit dan pemeliharaan fungsi tubuh yang sehat. Asupan nutrisi yang seimbang memastikan tubuh mendapatkan semua zat gizi yang dibutuhkan untuk menjalankan fungsi-fungsi vital, termasuk pertumbuhan, perbaikan jaringan, dan produksi energi (World Health Organization, 2020). Selain itu, pola makan yang sehat dapat mengurangi risiko penyakit kronis seperti penyakit jantung, diabetes, dan kanker (Micha et al., 2017).

Gizi manusia, dan apa yang dianggap sebagai nutrisi "ideal", adalah topik yang kompleks dan memiliki banyak aspek yang dipertimbangkan oleh banyak peneliti dan praktisi di era modernitas saat ini. Meskipun beberapa orang berpendapat bahwa nutrisi dasar manusia sudah cukup dipahami, tidak dapat disangkal bahwa masalah gizi global masih terus terjadi. Banyak negara yang mengalami malnutrisi atau defisit kalori, sementara negara lain mengalami kesulitan dengan konsumsi kalori yang berlebihan dan defisiensi mikronutrien (Townsend et al., 2023). Banyak faktor yang berkontribusi terhadap masalah global ini. Keterbatasan terhadap cakupan asupan energi harian yang direkomendasikan (Recommended Daily Allowances/

BAB 2 FAKTOR LINGKUNGAN DAN KESEHATAN

A. Pendahuluan

Polusi udara merupakan ancaman serius bagi kesehatan masyarakat global, yang disebabkan oleh emisi kendaraan, pembakaran bahan bakar fosil, aktivitas industri, dan pembakaran limbah (Takeshita, 2011). Polutan seperti PM2.5, PM10, ozon, nitrogen dioksida, dan sulfur dioksida berdampak buruk pada kesehatan, termasuk gangguan pernapasan, penyakit kardiovaskular, dan kanker (Ogunkunle & Ahmed, 2021). Paparan jangka panjang terhadap polusi udara dapat mengganggu perkembangan anak-anak, memperburuk kondisi seperti asma dan penyakit jantung (Ogunkunle & Ahmed, 2021), serta menurunkan kualitas hidup dengan mempengaruhi kualitas tidur, meningkatkan stres, dan menyebabkan depresi serta kecemasan (Boyd, 2019). Untuk mengatasi ini, diperlukan kerja sama lintas sektor antara pemerintah, industri, dan masyarakat. Pemerintah harus mengimplementasikan kebijakan untuk mengurangi emisi dan mempromosikan teknologi ramah lingkungan (W. Zhang et al., 2019). Industri perlu mengadopsi teknologi bersih dan efisien, sementara masyarakat harus mendukung alternatif transportasi ramah lingkungan (W. Zhang et al., 2019). Upaya pengurangan polusi udara melibatkan strategi seperti fitoremediasi, pengelolaan energi cerdas di klaster industri, dan penggunaan teknologi bersih (Dube, 2023). Teknologi seperti pengendap elektrostatik dan biofilter efektif untuk membersihkan udara dalam ruangan (Afshari et al., 2020).

BAB 3

NUTRISI, LINGKUNGAN DAN KESEHATAN OPTIMAL

A. Pendahuluan

Asupan nutrisi yang seimbang merupakan salah satu faktor kunci untuk menjaga kesehatan dan mencegah berbagai penyakit kronis. Namun, masalah gizi kurang dan gizi lebih masih menjadi tantangan global yang dihadapi banyak negara. Menurut data Organisasi Kesehatan Dunia (WHO), pada tahun 2022, sekitar 390 juta orang dewasa berusia 18 tahun ke atas di seluruh dunia mengalami kekurangan berat badan, sementara 2,5 miliar orang mengalami kelebihan berat badan, termasuk 890 juta orang yang hidup dengan obesitas. Di antara anak-anak dan remaja berusia 5-19 tahun, 390 juta orang mengalami kelebihan berat badan, termasuk 160 juta orang menderita obesitas. Sebanyak 190 juta lainnya hidup dalam kondisi kurus (BMI per usia lebih dari dua standar deviasi di bawah median acuan). Pada tahun 2022, diperkirakan 149 juta anak di bawah usia 5 tahun menderita stunting, sementara 37 juta anak hidup dengan kelebihan berat badan atau obesitas. Hampir separuh kematian anak di bawah usia 5 tahun disebabkan oleh kekurangan gizi. Hal ini sebagian besar terjadi di negara-negara berpendapatan rendah dan menengah (WHO, 2024).

Masalah gizi yang umum terjadi di negara-negara berpendapatan rendah dan menengah menunjukkan bahwa ketersediaan nutrisi memainkan peran penting dalam kesehatan masyarakat. Nutrisi, sebagai salah satu dari tiga aspek penting yang memengaruhi kualitas hidup manusia, menjadi fokus

BAB 4

PANGAN ORGANIK DAN KEMITRAAN ANTAR-SEKTOR UNTUK KESEHATAN

A. Pendahuluan

Produksi pangan organik telah menarik perhatian yang signifikan dalam beberapa tahun terakhir karena manfaatnya yang terbukti bagi kesehatan manusia dan keberlanjutan lingkungan. (Rempelos et al., 2022) menemukan bahwa standar pertanian organik secara efektif mengurangi paparan pestisida bagi konsumen dengan melarang sebagian besar pestisida sintetis. Studi oleh (Ghani et al., 2021) menunjukkan bahwa popularitas pangan organik meningkat karena persepsi bahwa produk ini lebih sehat karena tidak menggunakan bahan kimia sintetis dalam produksinya.

Tidak hanya itu, dampak negatif yang telah terbukti dari polutan organik seperti pestisida terhadap lingkungan juga mendorong pergeseran ini (Lebelo et al., 2021). Penggunaan biopestisida dan pestisida nabati dalam pertanian organik semakin dipilih sebagai alternatif yang lebih aman daripada pestisida sintetis, memberikan kontribusi signifikan terhadap peningkatan keamanan pangan dan mengurangi residu pestisida dalam produk organic (Shamim, 2021).

Uni Eropa telah memperkenalkan strategi untuk mengurangi penggunaan pestisida sintetis dan mendorong produksi organik sebagai langkah untuk meningkatkan keamanan pangan dan keberlanjutan lingkungan (Dzięgelewska, 2023). Studi oleh (An et al., 2022) menegaskan pentingnya pemantauan residu pestisida dalam pertanian

BAB 5

PENGARUH KUALITAS LINGKUNGAN TERHADAP NUTRISI

A. Pendahuluan

Kualitas lingkungan memiliki peran yang signifikan dalam menentukan status nutrisi individu dan populasi. Lingkungan yang sehat menyediakan sumber daya alam yang diperlukan untuk menghasilkan pangan yang bergizi dan aman. Namun, berbagai faktor lingkungan seperti polusi udara, kontaminasi air, degradasi tanah, dan perubahan iklim dapat berdampak negatif pada kualitas dan ketersediaan pangan, yang pada gilirannya mempengaruhi status nutrisi. Studi empiris menunjukkan bahwa lingkungan yang tercemar berkontribusi pada defisiensi nutrisi di banyak wilayah. Sebagai contoh, penelitian di wilayah urban dengan polusi udara tinggi menunjukkan peningkatan kasus defisiensi zat besi dan vitamin D. Selain itu, laporan dari Organisasi Pangan dan Pertanian (FAO) mengungkapkan bahwa perubahan iklim telah berdampak pada pola produksi pangan global, yang berimplikasi pada ketersediaan dan aksesibilitas pangan bergizi.

Penelitian telah menunjukkan bahwa peraturan lingkungan dapat meningkatkan kualitas lingkungan, sehingga memberikan dampak positif terhadap kesehatan masyarakat, seperti menurunkan angka kematian bayi dan meningkatkan produktivitas tenaga kerja (Pei et al., 2023; Tang et al., 2020). Polusi udara, yang merupakan masalah lingkungan utama, telah dikaitkan dengan berbagai masalah kesehatan, dan kualitas udara yang buruk mempunyai dampak besar terhadap

BAB 6

DAMPAK PERUBAHAN LINGKUNGAN TERHADAP PANGAN

A. Pendahuluan

Perubahan lingkungan telah menjadi topik yang semakin mendesak dalam diskusi global. Dengan peningkatan populasi manusia dan aktivitas industri, dampak lingkungan semakin terasa, terutama dalam konteks produksi pangan. Buku ini bertujuan untuk menyelidiki bagaimana perubahan lingkungan, seperti perubahan iklim dan kualitas udara, memengaruhi produksi pangan serta kesehatan tanaman. Lebih dari sekadar mengidentifikasi masalah, buku ini juga mengeksplorasi solusi dan langkah-langkah yang dapat diambil untuk mengatasi tantangan ini.

Perubahan lingkungan, yang dipengaruhi oleh faktor-faktor seperti pertumbuhan populasi manusia, aktivitas industri, dan produksi pangan, telah menimbulkan tantangan lingkungan global yang signifikan. Tantangan-tantangan ini meliputi perubahan iklim, penurunan kualitas udara, dan dampaknya terhadap kesehatan tanaman. Pertanian, yang merupakan elemen fundamental dalam produksi pangan, berkontribusi signifikan terhadap pemanasan global, perubahan iklim, degradasi lahan, dan hilangnya keanekaragaman hayati (Schroeder, 2012).

Untuk mengatasi tantangan ini, praktik berkelanjutan sangatlah penting. Perusahaan yang beroperasi dalam rantai pasokan global memainkan peran penting dalam mengatasi tekanan lingkungan dan masalah sosial yang disoroti oleh tujuan

BAB 7

DAMPAK DAN METODE PENGELOLAAN SAMPAH PANGAN

A. Pendahuluan

Isu mengenai sampah pangan menjadi semakin mendesak di tengah tantangan global terkait dengan ketahanan pangan dan keberlanjutan lingkungan. Tiap tahun, jutaan ton makanan di seluruh dunia terbuang dengan sia-sia, baik dalam tahap produksi, distribusi, maupun konsumsi. Fenomena ini tidak hanya menghasilkan ketidakseimbangan dalam pasokan pangan global, tetapi juga memberikan dampak yang signifikan pada lingkungan.

Menurut Organisasi Pangan dan Pertanian (FAO), lebih dari sepertiga makanan yang diproduksi di seluruh dunia terbuang atau rusak. Jika diamati lebih dekat, jumlahnya mencapai 1,3 miliar ton atau hampir 990 miliar USD. Makanan yang paling banyak terbuang adalah buah-buahan, sayuran, ikan, dan kerang (35%), umbi-umbian dan buah-buahan (sekitar 45% dari makanan yang dibudidayakan), dan sereal. (30%) (FAO, 2019)."Pengurangan kuantitas atau kualitas makanan " adalah definisi kehilangan makanan. Sampah pangan, yang merupakan salah satu komponen kehilangan pangan, adalah pembuangan atau penggunaan untuk tujuan selain pangan, pangan yang aman dan bergizi yang dimaksudkan untuk konsumsi manusia pada setiap tahap rantai pangan, mulai dari produksi awal hingga konsumsi akhir di rumah (FAO, 2019).

BAB 8 STRATEGI DAN PERAN SEMUA PIHAK DALAM PENGURANGAN SAMPAH PANGAN

A. Pendahuluan

Pengurangan sampah pangan adalah mengambil tindakan terhadap sumbernya dengan membatasi kelebihan produksi makanan di setiap tahap rantai pasokan makanan (yaitu produksi, pengolahan, distribusi dan konsumsi). Seluruh aliran yang masuk ke dalam rantai pasok direpresentasikan sebagai impor dan keluar sebagai ekspor, produk samping non pangan, produk samping pakan ternak, sisa makanan dan makanan yang dikonsumsi manusia (Chirsanova & Calcatiniuc, 2021).

Ketika terjadi surplus pangan, tujuan terbaik yang menjamin penggunaan sumber daya pangan yang dapat dimakan secara maksimal adalah dengan mendistribusikannya kembali untuk konsumsi manusia. Donasi makanan tidak hanya mendukung perjuangan melawan kemiskinan pangan namun juga dapat membantu mengurangi jumlah kelebihan makanan yang dikumpulkan secara industri atau dikirim sebagai limbah ke tempat pembuangan sampah (Chirsanova & Calcatiniuc, 2021).

Sampah pangan merupakan masalah yang mempengaruhi semua mata rantai dalam rantai makanan, sehingga tindakan harus dilakukan di setiap kesempatan untuk menjamin keuntungan bersama bagi semua pihak. Ada berbagai situasi pemborosan. Strategi yang berbeda harus digunakan untuk mengatasi penyebab yang berbeda. Sebagai pendukung

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TENTANG PENULIS

Syamsul Alam

Penulis lahir di tanah jaya, Kec. Kajang, Kab.Bulukumba pada tanggal 31 Oktober 1986, merupakan dosen tetap prodi Kesehatan Masyarakat UIN Alauddin Makkassar. Menamatkan pendidikan dasar di SDN 118 Lembang Tumbu Kec. Herlang tahun 1999, melajutkan pendidikan di Pesantren Modern IMMIM Makassar selama 4 tahun (Tamat SMP 2002), kemudian pada tahun 2003 melanjutkan studi di SMAN 1 Bulukumba (Tamat 2005). Memperoleh Gelar Sarjana Kesehatan Masyarakat pada Tahun 2009 di UIN Alauddin Makassar dan Gelar Magister Kesehatan Masyarakat Konsentrasi Gizi Masyarakat pada tahun 2013 di UNHAS. Tahun 2023 terdaftar sebagai mahasiswa Program Doktor Ilmu Kesehatan Masyarakat, UNHAS. Riwayat pekerjaan, pada tahun 2011 s.d 2016 bekerja di Puskesmas Salassae Kab. Bululukumba sebagai tenaga pelaksana gizi masyarakat merangkap sebagai penanggung jawab program promosi kesehatan dan Jaminan Kesehatan Nasional (JKN), tahun 2016 mengajukan mutasi sebagai ASN di UIN Alauddin Makassar. Selain aktif sebagai tenaga pengajar, penulis aktif melakukan riset dan telah mempublikasi beberapa artikel ilmiah pada jurnal nasional (Sinta) dan internasional bereputasi (Scopus), pernah diamanahkan sebagai pelatih nasional pada RISKESDAS Tahun 2018, Penanggung Jawab Teknis (PJT) Provinsi Sulawesi Selatan Pada Riset Status Gizi Balita Indonesia Tahun 2019, PJT Kabupaten Selayar pada Studi Determinan Status Gizi Tahun 2020, dan pada tahun 2021 masih diamanahkan sebagai PJT Kab. pada Studi Status Gizi Indonesia yang dilaksanakan oleh Balitbangkes Kemenkes RI, serta aktif melakukan kegiatan pengabdian masyarakat dengan memperoleh hibah dari Program TJSL PLN Sulselrabar dan Konsultan Evaluasi Program CSR PT Pertamina Makassar dan Bitung tahun 2021-2022 serta tim peneliti Balitbangda Kota Makassar Tahun 2022 & 2023.

Sherly Wulandari

Penulis lahir di Soppeng pada tanggal 27 September 1997. Penulis adalah seorang *fresh graduate* yang berfokus pada bidang Kesehatan Masyarakat dengan peminatan Kesehatan Lingkungan. Penulis menyelesaikan pendidikan Strata 1 di Universitas Halu Oleo pada tahun 2019, melanjutkan Magister di Universitas Gadjah Mada pada tahun 2020-2022 dan saat ini penulis sedang menempuh Pendidikan Doktoral di Universitas Hasanuddin sejak tahun 2023 sampai sekarang. Selama masa studi, penulis aktif dalam berbagai kegiatan akademik dan penelitian. Salah satu pengalaman berharga penulis adalah menjadi enumerator pada penelitian dosen dan Dinas Kesehatan Kota Kendari dengan judul "Penggunaan Ovitrap untuk Pengendalian Nyamuk *Aedes aegypti* ". Penelitian ini memberikan penulis wawasan mendalam tentang pengendalian vektor dan pencegahan penyakit berbasis lingkungan. Penulis juga aktif berpartisipasi dalam berbagai seminar dan konferensi yang membahas isu-isu terkini di bidang kesehatan masyarakat. Penulis telah berpartisipasi dalam *Public Health Symposium*: Creative Local Solutions for Public Health Problems, *Konferensi Nasional* Promosi Kesehatan, serta UGM *Public Health Symposium*: COVID-19 Pandemic Implication on Public Health System Strengthening. Email penulis : sherlywulandari101@gmail.com

Sukmawati

Penulis lahir di Polewali pada tanggal 2 Juli 1991. Ketertarikan Penulis terhadap Ilmu Kesehatan Lingkungan dimuali sejak tahun 2009. Hal tersebut membuat penulis memilih Program Studi Kesehatan Masyarakat Peminatan kesehatan Lingkungan di Universitas Islam Negeri Alauddin Makassar dan berhasil lulus pada tahun 2013 dan melanjutkan Pendidikan Magister (S2) Program Studi Kesehatan Lingkungan di Universitas Hasanuddin tahun 2014-2016 dan saat ini penulis melanjutkan Pendidikan Doktoral di Universitas Hasanuddin sejak tahun 2023. Penulis mengabdi menjadi dosen tetap Yayasan di Program Studi Kesehatan Masyarakat Fakultas Kesehatan Masyarakat Universitas Al Asyariah Mandar (UNASMAN) sejak tahun 2017. Saat ini penulis menjabat sebagai Sekretaris LPPM Universitas Al Asyariah Mandar dan pernah menajadi Kepala Bidang Publikasi dan Pengelola Jurnal dan pada tahun 2019- Maret 2022 dan menjadi Kepala Divisi Pengabdian Kepada Masyarakat Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) UNASMAN. Penulis aktif melakukan penelitian hibah Kemenristekdikti sejak tahun 2019 – 2023 dan Menjadi Dosen Pembimbing Lapangan (DPL) Kampus Merdeka pada program Kampus Mengajar Angkatan 2 Tahun 2021 yang dilaksanakan Kementrian Pendidikan dan Kebudayaan. Selain itu, penulis juga aktif menjadi Editor pada jurnal J-Kesmas: Jurnal Kesehatan Masyarakat, Editor pada jurnal PEQGURUANG Conference Series Universitas Al Asyariah Mandar, serta Editor pada Jurnal SIPISSANGNGI: Jurnal Pengabdian Kepada Masyarakat. Penulis juga aktif dalam mengikuti konferensi internasional dan berbagai artikel ilmiah hasil penelitian telah dimuat pada jurnal nasional terakreditasi. Pada tahun 2022, penulis sukses menulis buku ber-ISBN yang berjudul "Pengendalian Populasi Nyamuk Aedes Aegypti" dan "Kesehatan Lingkungan dan Lingkungan Hidup. Email Penulis: sukmawati@mail.unasman.ac.id

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Penulis lahir di Boro-Boro (Konawe Selatan), 15 September 1987, merupakan dosen Program Studi S1 Kesehatan Masyarakat Institut Teknologi dan Kesehatan Avicenna. Salah satu Perguruan Tinggi Swasta di Kota Kendari, Sulawesi Tenggara. Menempuh pendidikan Sarjana di Universitas Halu Oleo (UHO) Kendari pada tahun 2006 hingga 2010, pada konsentrasi Epidemiologi. Kemudian melanjutkan pendidikan ke jenjang Magister di Universitas Hasanuddin (UNHAS) Makassar pada tahun 2012 dan selesai tahun 2014, pada konsentrasi Kesehatan Lingkungan. Ketertarikan penulis terhadap ilmu lingkungan dimulai pada tahun 2006 silam, sehingga penulis mengambil topik Skripsi mengenai Pengelolaan Sampah di Pasar. Penulis memulai karir sebagai Pengajar dimulai tahun 2010 sebagai Asisten Dosen sekaligus Staff Akademik di Sekolah Tinggi Ilmu Kesehatan (STIKES) Konawe. Hanya sampai tahun 2012, sebab penulis melanjutkan kuliah Pascasarjana UNHAS sekaligus sebagai Penerima Beasiswa Unggulan (Calon Dosen) oleh DIKTI. Selepas kuliah, penulis menjadi Dosen Tetap Yayasan sejak tahun 2014 hingga sekarang di Institut Teknologi dan Kesehatan Avicenna. Saat ini penulis tengah mengambil kuliah Doktoral pada Program Studi Doktor Ilmu Kesehatan Masyarakat, Fakultas Kesehatan asyarakat UNHAS sejak tahun 2023. Penulis konsen di bidang Kesehatan Lingkungan, yang diwujudkan dengan giat melakukan publikasi mengenai Kesehatan secara umum, dan mengenai Lingkungan secara khusus, baik pada Jurnal Nasional maupun Jurnal Internasional. Dua penelitian didanai oleh Kemenristek DIKTI skema Penelitian Dosen Pemula (PDP) berturut-turut pada tahun 2019 dan 2020. Penulis menerbitkan buku perdana dengan Judul "Keselamatan dan Kesehatan Kerja Rumah Sakit (K3RS)" pada tahun 2020. Selanjutnya penulis bergabung dalam Book Chapter berjudul "Kesehatan Lingkungan dan Lingkungan Hidup" yang diterbitkan pada Juli 2022. Buku ketiga berjudul "Kesehatan Lingkungan dan Keselamatan Kesehatan Kerja" terbit pada Januari 2023. Buku keempat terbit pada Juli 2023

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