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Postural Control in Childhood: Investigating the Neurodevelopmental Gradient Hypothesis

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Dr. Chiara Baldacchini

Website (https://www.researchgate.net/profile/Chiara_Baldacchini) **SciProfiles** (<https://sciprofiles.com/profile/625021>)

Section Associate Editor

1. Dipartimento di Scienze Ecologiche e Biologiche (DEB), Università degli Studi della Tuscia, Viterbo, Italy
2. Istituto di Ricerca sugli Ecosistemi Terrestri (IRET), Consiglio Nazionale delle Ricerche (CNR), Porano, TR, Italy

Interests: impact of nature-based solutions on environment and society; development of new techniques to assess the air quality mitigation by plants; use of urban forest for source apportionment

Special Issues, Collections and Topics in MDPI journals



Dr. Jeanine M. Buchanich

Website (<https://www.publichealth.pitt.edu/home/directory/jeanine-buchanich>) **SciProfiles** (<https://sciprofiles.com/profile/262934>)

Section Associate Editor

Department of Biostatistics, Graduate School of Public Health, Center for Occupational Biostatistics and Epidemiology, University of Pittsburgh, Pittsburgh, PA 15260, USA

Interests: epidemiology; biostatistics; vital statistics; environmental health; occupational health; substance-related disorders; drug overdose; mortality; social determinants of health

Special Issues, Collections and Topics in MDPI journals



Dr. Oliver Grundmann

Website (<https://pharmacy.ufl.edu/profile/grundmann-oliver/>) **SciProfiles** (<https://sciprofiles.com/profile/477085>)

Section Associate Editor

Department of Medicinal Chemistry, College of Pharmacy, University of Florida, Gainesville, FL 32610, USA

Interests: forensic & clinical toxicology; natural products pharmacology & toxicology; dietary supplement quality & safety; pharmacology & toxicology of psychoactive drugs; epidemiology of drug use & abuse

Special Issues, Collections and Topics in MDPI journals



Dr. Vikas Kumar

Website (<https://www.researchgate.net/profile/Vikas-Kumar-155>) **SciProfiles** (<https://sciprofiles.com/profile/1045918>)

Section Associate Editor

Environmental Engineering Laboratory, Departament d'Enginyeria Quimica, Universitat Rovira i Virgili, Av. Països Catalans 26, 43007 Tarragona, Spain

Interests: system toxicology; biostatistics; big data and data analytics; exposure science; human biomonitoring; epidemiology; environmental and human-health risk assessment; internal dosimetry modeling (PBPK); climate change linked risk assessment

Special Issues, Collections and Topics in MDPI journals

Dr. Romuald Lepers

Website (<https://u1093.u-bourgogne.fr/fr/membres/67-romuald-lepers.html>) **SciProfiles** (<https://sciprofiles.com/profile/636850>)

Section Associate Editor

Faculté des Sciences du Sport (UFR Staps), Université de Bourgogne, 21078 Dijon, France

Interests: neurophysiology; neuromuscular plasticity; electromyostimulation; mental fatigue; aging and performance



Dr. Hanns Moshhammer

Website (<https://zph.meduniwien.ac.at/umwelthygiene/allgemeine-informationen/mitarbeiterinnen/hanns-moshhammer/>)

SciProfiles (<https://sciprofiles.com/profile/52940>)

Section Associate Editor

Institute of Environmental Health, Center for Public Health, Medical University of Vienna, Kinderspitalgasse 15, A-1090 Vienna, Austria

Interests: environmental and occupational epidemiology; environmental health impact assessment

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Dr. Elena Rada

Website (https://www.uninsubria.eu/sites/sten/files/cv_rada_18_eu_0.pdf) **SciProfiles** (<https://sciprofiles.com/profile/88816>)

Section Associate Editor



Dr. Daniela Varrica

[Website \(https://pure.unipa.it/it/persons/daniela-varrica-4\)](https://pure.unipa.it/it/persons/daniela-varrica-4) [SciProfiles \(https://sciprofiles.com/profile/313145\)](https://sciprofiles.com/profile/313145)

Section Associate Editor

Dipartimento di Scienze della Terra e del Mare (DiSTeM), Università degli Studi di Palermo, 90123 Palermo, Italy

Interests: different aspects of environmental geochemistry; ranging from hydrogeochemistry to air; water and soil pollution in volcanic; mining and anthropic areas

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Prof. Dr. Youfa Wang

[Website \(http://ghi.xjtu.edu.cn/en/info/1014/1131.htm\)](http://ghi.xjtu.edu.cn/en/info/1014/1131.htm) [SciProfiles \(https://sciprofiles.com/profile/2319677\)](https://sciprofiles.com/profile/2319677)

Section Associate Editor

Global Health Institute and School of Public Health, Xi'an Jiaotong University, Xi'an 710061, China

Interests: obesity and chronic disease prevention and control; health disparities; nutritional epidemiology; health promotion; global health

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Prof. Dr. Javier Abián-Vicén *

[Website1 \(https://dialnet.unirioja.es/servlet/autor?codigo=917925\)](https://dialnet.unirioja.es/servlet/autor?codigo=917925) [Website2 \(https://dialnet.unirioja.es/servlet/autor?codigo=917925\)](https://dialnet.unirioja.es/servlet/autor?codigo=917925)

[SciProfiles \(https://sciprofiles.com/profile/1313137\)](https://sciprofiles.com/profile/1313137)

Section Editor-in-Chief

Performance and Sport Rehabilitation Laboratory (DEPORSALUD), Faculty of Sports Sciences, University of Castilla-La Mancha, Avda. Carlos III s/n, 45071 Toledo, Spain

Interests: sport science; sport biomechanics; physical activity; caffeine; ergogenic aids; racquet sports; injury prevention; exercise performance; sonoelastography in sports injury diagnosis

* Section: Disease Prevention

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Dr. David Berrigan

[Website \(https://staffprofiles.cancer.gov/brp/prgmStaffProfile.do?contactId=1456\)](https://staffprofiles.cancer.gov/brp/prgmStaffProfile.do?contactId=1456) [SciProfiles \(https://sciprofiles.com/profile/244332\)](https://sciprofiles.com/profile/244332)

Section Editor-in-Chief

Division of Cancer Control and Population Sciences, Behavioral Research Program, National Cancer Institute, 9609 Medical Center Drive MSC 7344, Bethesda, MD 20892, USA

Interests: cancer prevention; built environment; physical activity; obesity; energy balance; natural experiments; transportation and health; acculturation; geospatial approaches to cancer control; childhood obesity

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Prof. Dr. Fabrizio Bert

[Website \(https://medchirurgia.campusnet.unito.it/do/docenti.pl/Show?_id=fbert\)](https://medchirurgia.campusnet.unito.it/do/docenti.pl/Show?_id=fbert) [SciProfiles \(https://sciprofiles.com/profile/83970\)](https://sciprofiles.com/profile/83970)

Section Editor-in-Chief

Department of Public Health, University of Turin, Via Santena 5 bis, 10126 Turin, Italy

Interests: public health; epidemiology; e-health; mental health; minority health

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Dr. Zahid Ahmad Butt

[Website \(https://uwaterloo.ca/public-health-and-health-systems/people-profiles/zahid-butt\)](https://uwaterloo.ca/public-health-and-health-systems/people-profiles/zahid-butt)

SciProfiles (<https://sciprofiles.com/profile/1062057>)

Section Editor-in-Chief

School of Public Health and Health Systems, University of Waterloo, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada

Interests: HIV/HCV/HBV coinfections; vaccine preventable diseases; communicable and non-communicable diseases; epidemiology; global health; data; spatial analysis of complex data

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Prof. Dr. Alessandra Casuccio

Website (<https://pure.unipa.it/en/persons/alessandra-casuccio-4>) **SciProfiles** (<https://sciprofiles.com/profile/395539>)

Section Editor-in-Chief

Department of Health Promotion Sciences Maternal and Infant Care, Internal Medicine and Medical Specialties "G. D'Alessandro"—Hygiene Section, University of Palermo, 90133 Palermo, Italy

Interests: health promotion; vaccination; breastfeeding; screening; health impact assessment

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Prof. Dr. Lingxin Chen *

★ (<https://clarivate.com/highly-cited-researchers/2022>) **Website1** (<https://people.ucas.ac.cn/~0008768?language=en>) **Website2** (<https://www.researchgate.net/profile/Lingxin-Chen>) **SciProfiles** (<https://sciprofiles.com/profile/968812>)

Section Editor-in-Chief

CAS Key Laboratory of Coastal Environmental Processes and Ecological Remediation, Shandong Key Laboratory of Coastal Environmental Processes, Research Center for Coastal Environmental Engineering and Technology of Shandong Province, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, Yantai 264003, China

Interests: coastal zone pollutants; typical water body pollutants; microanalysis techniques; environmental microanalysis; oceanic oil spill; situ on-line and real-time environmental monitoring techniques

* Section: Environmental Science and Engineering

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Dr. Cristina Cortis

Website (https://www.unicas.it/didattica/docenti/schedadocente.aspx?nome_cognome=cristina_cortis)

SciProfiles (<https://sciprofiles.com/profile/503847>)

Section Editor-in-Chief

Department of Human Sciences, Society and Health, University of Cassino and Lazio Meridionale, 03043 Cassino, Italy

Interests: sport performance; athlete's stress management; ageing wellbeing

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Prof. Dr. Kristie L. Ebi

Website (<https://globalhealth.washington.edu/faculty/kristie-ebi>) **SciProfiles** (<https://sciprofiles.com/profile/390396>)

Section Editor-in-Chief

Department of Global Health, University of Washington, 4225 Roosevelt Way NE, Seattle, WA 98105, USA

Interests: health risks of climate variability and change; health adaptation; health co-benefits of mitigation policy; sustainable development

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Prof. Dr. Jimmy T. Efid *

Website (<https://loop.frontiersin.org/people/36394/overview>) **SciProfiles** (<https://sciprofiles.com/profile/430>)

Section Editor-in-Chief

1. VA Cooperative Studies Program Coordinating Center, Boston, MA 02130, USA

2. Department of Radiation Oncology, Case Western Reserve University School of Medicine, Cleveland, OH 44106, USA

Interests: statistical methods; epidemiological study design; risk modeling; cardiovascular disease; cancer

* Section: Public Health Statistics and Risk Assessment

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Prof. Dr. William Douglas Evans

Website (<https://publichealth.gwu.edu/departments/prevention-and-community-health-global-health/w-douglas-evans>).

SciProfiles (<https://sciprofiles.com/profile/336941>)

Section Editor-in-Chief

Milken Institute School of Public Health, Washington, DC 20052, USA

Interests: design and evaluation of interventions using digital technologies; improving health equity through marketing and communication; social norms, social and behavior change (SBC); social marketing

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Prof. Dr. Xinbin Feng

Website (http://sourcedb.gyig.cas.cn/yw/pe/200908/t20090806_2331083.html). **SciProfiles** (<https://sciprofiles.com/profile/1026180>).

Section Editor-in-Chief

State Key Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang 550081, China

Interests: biogeochemical cycling of heavy metals in the environment and health impacts; non-traditional stable isotope geochemistry; remediation of heavy metal contaminated environment

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Prof. Dr. Olaf Gefeller

Website (<https://www.fau.eu/person/olaf-gefeller/>). **SciProfiles** (<https://sciprofiles.com/profile/206065>).

Section Editor-in-Chief

Department of Medical Informatics, Biometry and Epidemiology, Friedrich-Alexander-University of Erlangen-Nuremberg, 91054 Erlangen, Germany

Interests: epidemiology; biostatistics; melanoma; ultraviolet radiation; UV index; prevention of sun exposure

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Prof. Dr. Ulf-G. Gerdtham

Website ([http://portal.research.lu.se/portal/en/persons/ulf-gerdtham\(883e0d0d-e6d4-426b-8851-28c263a83e30\).html](http://portal.research.lu.se/portal/en/persons/ulf-gerdtham(883e0d0d-e6d4-426b-8851-28c263a83e30).html)).

SciProfiles (<https://sciprofiles.com/profile/11825>)

Section Editor-in-Chief

Department of Clinical Sciences, Department of Economics, Lund University, P.O. Box 7082, S-220 07 Lund, Sweden

Interests: health economics; health econometrics; inequalities in health; economics of health behaviour; international health expenditure; health system and organization

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Prof. Dr. Karl Goodkin

Website (<https://www.unmc.edu/psychiatry/about/faculty/Goodkin.html>). **SciProfiles** (<https://sciprofiles.com/profile/2322884>).

Section Editor-in-Chief

Department of Psychiatry, University of Nebraska Medical Center in Omaha, Omaha, NE 68198, USA

Interests: HIV-associated neurocognitive disorders (HAND); major depressive disorder in persons living with HIV; aging and HIV infection; global epidemiology of HAND; psychoneuroimmunology; psycho-oncology; chronic pain



Dr. Jun Hou

Website (<http://hjxy.hhu.edu.cn/english/2017/1020/c9934a159184/page.htm>). **SciProfiles** (<https://sciprofiles.com/profile/692074>).

Section Editor-in-Chief

College of Environment, Hohai University, Nanjing 210098, China

Interests: water quality improvement technology; water environment protection and bioremediation; coupling of biofilms and active substrata; ecological engineering; nanomaterials for environmental remediation; environmental behaviors of nanomaterials; toxicity of manufactured nanoparticles

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Prof. Dr. Ivo Iavicoli

Website (<https://www.docenti.unina.it/ivo.iavicoli>). **SciProfiles** (<https://sciprofiles.com/profile/50033>).

Section Editor-in-Chief



Prof. Dr. Dongsheng Ji

[Website \(https://people.ucas.edu.cn/~dongshengji?language=en\)](https://people.ucas.edu.cn/~dongshengji?language=en) **[SciProfiles \(https://sciprofiles.com/profile/2238773\)](https://sciprofiles.com/profile/2238773)**

Section Editor-in-Chief

State Key Laboratory of Atmospheric Boundary Layer Physics and Atmospheric Chemistry, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China

Interests: atmospheric environment; atmospheric chemistry; atmospheric physics; aerosol chemistry; volatile organic compounds; photochemical air pollution; regional air pollution; hazardous airborne elements; carbonaceous aerosols; atmospheric pollution control

Prof. Dr. Fulvio Lauretani

[Website \(https://en.unipr.it/ugov/person/97003\)](https://en.unipr.it/ugov/person/97003) **[SciProfiles \(https://sciprofiles.com/profile/331763\)](https://sciprofiles.com/profile/331763)**

Section Editor-in-Chief

Geriatric-Rehabilitation Department, University Hospital of Parma, University of Parma, 43121 Parma, Italy

Interests: frail older persons; parkinsonism; dementia; amyloid PET; older persons

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Prof. Dr. Nicola Magnavita

[Website \(https://www.researchgate.net/profile/Nicola_Magnavita\)](https://www.researchgate.net/profile/Nicola_Magnavita) **[SciProfiles \(https://sciprofiles.com/profile/184772\)](https://sciprofiles.com/profile/184772)**

Section Editor-in-Chief

Department of Public Health, Università Cattolica del Sacro Cuore, Largo Gemelli 8, 00168 Roma, Italy

Interests: health promotion; public health; epidemiology health; risk assessment; safety; risk analysis; epidemiology and public Health; Healthcare; Environmental Risk Assessment; Health and Safety sleep disorders and sleep medicine; risk factors; determination health risk assessment; exposure assessment; environmental exposure occupational health; hospital management; chemical risk assessment environmental epidemiology; health impact assessment informed consent; occupational epidemiology; chemical safety occupational medicine; occupational health and disease; inhalation toxicology; environmental medicine; aging and work; hazardous workers

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Dr. Pantelis T. Nikolaidis

[Website \(https://www.researchgate.net/profile/Pantelis_Nikolaidis\)](https://www.researchgate.net/profile/Pantelis_Nikolaidis) **[SciProfiles \(https://sciprofiles.com/profile/147346\)](https://sciprofiles.com/profile/147346)**

Section Editor-in-Chief

School of Health and Caring Sciences, University of West Attica, 12243 Athens, Greece

Interests: exercise testing; exercise physiology; ergometer; calorimetry; anaerobic power; cardiorespiratory fitness

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Prof. Dr. Jon Øyvind Odland

[Website \(https://www.ntnu.no/ansatte/jon.o.odland\)](https://www.ntnu.no/ansatte/jon.o.odland) **[SciProfiles \(https://sciprofiles.com/profile/877454\)](https://sciprofiles.com/profile/877454)**

Section Editor-in-Chief

Department of Public Health and Nursing, UiT The Arctic University of Norway, 9037 Tromsø, Norway

Interests: public health; epidemiology; environmental health; reproductive health; pregnancy care; climate change

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Prof. Dr. David Rodríguez-Lázaro

[Website \(https://investigacion.ubu.es/investigadores/35482/detalle?lang=en\)](https://investigacion.ubu.es/investigadores/35482/detalle?lang=en) **[SciProfiles \(https://sciprofiles.com/profile/929065\)](https://sciprofiles.com/profile/929065)**

Section Editor-in-Chief

Microbiology Section, Department of Biotechnology and Food Science, Faculty of Science, University of Burgos, 09001 Burgos, Spain

Interests: food-borne pathogens; food safety; food microbiology

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Prof. Dr. Jinyou Shen

Website (<https://ebe.njust.edu.cn/4b/d0/c5080a216016/page.htm>) **SciProfiles** (<https://sciprofiles.com/profile/2120171>)

Section Editor-in-Chief

School of Environmental and Biological Engineering, Nanjing University of Science and Technology, Nanjing 210094, China

Interests: wastewater treatment process; environmental engineering; anaerobic digestion; bioelectrochemistry; nanobiotechnology; advanced oxidation processes treatment; environmental remediation; biodegradation; renewable energy

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Prof. Dr. Gianrico Spagnuolo

Website (<https://cutt.ly/VlhRTM1>) **SciProfiles** (<https://sciprofiles.com/profile/477376>)

Section Editor-in-Chief

Department of Neuroscience, Reproductive and Odontostomatological Sciences, University of Naples "Federico II", 80131 Naples, Italy

Interests: oral medicine; dental materials; operative dentistry; oral health

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Prof. Dr. William A. Toscano

Website (<https://directory.sph.umn.edu/bio/sph-a-z/william-toscano>) **SciProfiles** (<https://sciprofiles.com/profile/10959>)

Section Editor-in-Chief

Division of Environmental Health Sciences, University of Minnesota, School of Public Health, Minneapolis, MN 55455, USA

Interests: toxicology; environmental hormones; public health genomics; environmental signaling

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Prof. Dr. Germán Vicente-Rodríguez

Website (<https://sideral.unizar.es/sideral/CV/german-vicente-rodriguez>) **SciProfiles** (<https://sciprofiles.com/profile/692355>)

Section Editor-in-Chief

Department of Physiatry and Nursing, Faculty of Health and Sport Sciences (FCSD), University of Zaragoza, Ronda Misericordia 5, 22001 Huesca, Spain

Interests: physical activity and health during life; exercise prescription; exercise–diet interaction for health; healthy and active aging; body composition; special populations

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Prof. Dr. Linyu Xu

Website (<http://envfaculty.bnu.edu.cn/Public/htm/news/5/37.html>) **SciProfiles** (<https://sciprofiles.com/profile/44912>)

Section Editor-in-Chief

State Key Joint Laboratory of Environmental Simulation and Pollution Control, School of Environment, Beijing Normal University, Beijing 100875, China

Interests: urban ecological environment; economic environmental management; environmental risk assessment; urban ecological planning

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Dr. Xianlai Zeng

Website (<https://www.tsinghua.edu.cn/enven/info/1052/1964.htm>) **SciProfiles** (<https://sciprofiles.com/profile/152107>)

Section Editor-in-Chief

School of Environment, Tsinghua University, Beijing 100084, China

Interests: urban mining; resource evaluation; E-waste management; circular economy

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Prof. Dr. Peter Clifton

Website (<https://people.unisa.edu.au/Peter.Clifton>) **SciProfiles** (<https://sciprofiles.com/profile/336938>)

Advisory Board Member

1. Division of Health Sciences, School of Pharmacy and Medical Sciences, University of South Australia, Adelaide, SA, Australia
2. Alliance for Research in Exercise, Nutrition and Activity (ARENA), Adelaide, SA, Australia

Interests: obesity; lipids; diabetes; heart disease

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Prof. Dr. Fabriziomaria Gobba

Website (<http://personale.unimore.it/rubrica/dettaglio/gobba>) **SciProfiles** (<https://sciprofiles.com/profile/375687>)

Advisory Board Member

Department of Biomedical, Metabolic and Neural Sciences, University of Modena & Reggio Emilia, 41125 Modena, Italy

Interests: occupational medicine; occupational diseases; non-ionizing radiations (NIRs): occupational exposure evaluation, adverse health effects in workers, and prevention; occupational skin cancer: epidemiology and prevention; visual function in workers: occupational risks to the eye, prevention

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Prof. Dr. Han C. G. Kemper

Website (<https://www.researchgate.net/profile/Han-Kemper-2>) **SciProfiles** (<https://sciprofiles.com/profile/185792>)

Advisory Board Member

Amsterdam UMC, Amsterdam Public Health Research Institute, 1218 HD Amsterdam, The Netherlands

Interests: exercise and sport science; pediatric exercise physiology; physical activity and bone health

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Prof. Dr. Elena N. Naumova

Website (<http://sites.tufts.edu/nutrition/>)

Advisory Board Member

Division of Nutrition Epidemiology and Data Sciences, Freidman School of Nutrition Science and Policy, Tufts University, 150 Harrison Avenue, Boston, MA 02111, USA

Interests: development of statistical, mathematical and computational models for climate-sensitive infectious diseases; the use of big data, novel information sources and tools, including GIS and remote sensing in public health applications and environmental research

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Dr. Renata Sisto

Website (<https://web.uniroma1.it/trasparenza/sites/default/files/cv/CV%20Renata%20Sisto%20fomato%20europeo%20maggio%202018.pdf>)

SciProfiles (<https://sciprofiles.com/profile/670083>)

Advisory Board Member

Head of the Laboratory of Synergistic Interaction among Risk Factors, Department of Occupational and Environmental Medicine, Epidemiology and Hygiene, INAIL Research Area, via Fontana Candida 1, 00040 Monteporzio Catone, Italy

Interests: physiological acoustics; noise exposure; synergistic interaction of noise and chemicals in inducing hearing loss; otoacoustic emissions; cochlear modeling

Prof. Dr. Jacqueline Agnew

Website (<https://www.jhsph.edu/faculty/directory/profile/3/jacqueline-agnew>) **SciProfiles** (<https://sciprofiles.com/profile/2575977>)

Editorial Board Member

Department of Environmental Health and Engineering, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD 21205, USA

Interests: environmental health sciences; aging workers; occupational health; occupational stress; musculoskeletal disorders; ergonomics; neurotoxins

Dr. Fulvio Amato

SciProfiles (<https://sciprofiles.com/profile/442024>)

Editorial Board Member

IDAEA-CSIC - Spanish Research Council, Barcelona, Spain

Interests: air quality; source apportionment; traffic emissions; atmospheric geochemistry

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Prof. Dr. Alan Apter

Website (<https://www.idc.ac.il/en/pages/faculty.aspx?username=aalan>) **SciProfiles** (<https://sciprofiles.com/profile/617533>)

Editorial Board Member

Department of Psychological Medicine, Schneider Children's Medical Center of Israel, Petah Tikva 4920235, Israel

Interests: suicide; children; adolescents; depression; Tourette syndrome

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Prof. Dr. Soledad Ballesteros

Website (https://portal.uned.es/portal/page?_pageid=93,25162945&_dad=portal&_schema=PORTAL)

SciProfiles (<https://sciprofiles.com/profile/495546>)

Editorial Board Member

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Department of Basic Psychology II, National Distance Education University (UNED), C/ Juan del Rosal, 10, 28040 Madrid, Spain

Interests: implicit and explicit memory in normal and pathological aging; attention; cross-modal priming; haptic and visual perception and cognitive neuroscience of aging



Prof. Dr. John R. Balmes

Website (<https://tobacco.ucsf.edu/people/john-balmes-md>) **SciProfiles** (<https://sciprofiles.com/profile/543428>)

Editorial Board Member

Division of Occupational and Environmental Medicine, School of Medicine, University of California, San Francisco, CA 94143, USA

Interests: effects of exposure to air pollution; environmental health; environmental medicine



Prof. Dr. Claudio Barbaranelli

Website (<https://corsidilaurea.uniroma1.it/it/users/claudiobarbaranelliuniroma1it>) **SciProfiles** (<https://sciprofiles.com/profile/2510487>)

Editorial Board Member

Department of Psychology, Sapienza University of Rome, Via dei Marsi, 78, 00185 Rome, Italy

Interests: structural equation modeling; self-efficacy; moral disengagement; work related stress; scale development and validation; personality structure; job insecurity; safety at work



Dr. Emma Beard

Website (<https://www.ucl.ac.uk/pals/people/emma-beard>) **SciProfiles** (<https://sciprofiles.com/profile/808050>)

Editorial Board Member

1. Department of Behavioural Science and Health, University College London, London WC1E 7HB, UK

2. SPECTRUM Research Consortium, Edinburgh EH8 9YL, UK

Interests: statistical methodology; Bayesian analysis and advanced regression methodologies; qualitative studies and smaller community based surveys; smoking and alcohol toolkit studies

Dr. Bettina M. Beech

Website (<https://www.uh.edu/medicine/about/faculty/bettina-beech/>) **SciProfiles** (<https://sciprofiles.com/profile/2421427>)

Editorial Board Member

1. Department of Health Systems and Population Health Sciences, University of Houston Tilman J. Fertitta Family College of Medicine, Houston, TX 77204, USA

2. University of Houston Population Health, University of Houston, Houston, TX 77030, USA

Interests: prevention and treatment of childhood obesity; health disparities research; adolescent health



Prof. Dr. Giovanni Benelli

★ (<https://recognition.webofsciencegroup.com/awards/highly-cited/2020/>) **Website** (https://scholar.google.it/citations?user=O16_smkAAAAJ&hl=it&oi=ao) **SciProfiles** (<https://sciprofiles.com/profile/688957>)

Editorial Board Member

Department of Agriculture, Food and Environment, University of Pisa, via del Borghetto 80, 56124 Pisa, Italy

Interests: arthropod vectors; entomology; insect control; mosquitoes; nano-synthesis; nanoparticles; nano-pesticides; nanotechnology; non-target effects; ticks

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Prof. Dr. Peng Bi

Website (<http://www.adelaide.edu.au/directory/peng.bi>) **SciProfiles** (<https://sciprofiles.com/profile/208178>)

Editorial Board Member

School of Public Health, The University of Adelaide, Adelaide, SA 5005, Australia

Interests: climate change and population health; adaptation; vulnerability; infectious disease; disaster response; public health policy and health services


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


Prof. Dr. Fabrizio Bianchi

Website (<https://areaperta.pi.cnr.it/fabrizio-bianchi/>) **SciProfiles** (<https://sciprofiles.com/profile/244737>)

Editorial Board Member

 Institute of Clinical Physiology, National Research Council, 56124 Pisa, Italy

Interests: environmental epidemiology; statistics; environment and health research; reproductive epidemiology; clinical epidemiology; medical statistics; diseases registries; public health surveillance

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Dr. Guillermo Blanco

[Website \(https://www.mncn.csic.es/es/quienes_somos/blanco-hervas-guillermo\)](https://www.mncn.csic.es/es/quienes_somos/blanco-hervas-guillermo) **[SciProfiles \(https://sciprofiles.com/profile/1024698\)](https://sciprofiles.com/profile/1024698)**

Editorial Board Member

National Museum of Natural Sciences, Spanish National Research Council, Consejo Superior de Investigaciones Científicas, 28006 Madrid, Spain

Interests: conservation biology; ecology; birds; ecotoxicology; pathogens; evolution; raptors; parrots; corvids; behavioural ecology; population dynamics; population trends; antibiotics; salmonella; parasites; conservation management; wildlife

[Special Issues, Collections and Topics in MDPI journals](#)



Prof. Dr. Denis Bourgeois

[Website \(https://cappmea.com/speaker/prof-denis-bourgeois\)](https://cappmea.com/speaker/prof-denis-bourgeois) **[SciProfiles \(https://sciprofiles.com/profile/1015897\)](https://sciprofiles.com/profile/1015897)**

Editorial Board Member

Health, Systemic, Process, UR 4129 Research Unit, University of Lyon, 69008 Lyon, France

Interests: chronic diseases; periodontology; inflammation; health policy

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Dr. Jennifer Bragg-Gresham

[Website \(https://apha.confex.com/apha/143am/webprogram/Person294765.html\)](https://apha.confex.com/apha/143am/webprogram/Person294765.html) **[SciProfiles \(https://sciprofiles.com/profile/2393650\)](https://sciprofiles.com/profile/2393650)**

Editorial Board Member

School of Public Health, University of Michigan, 1119 N University Ave, Ann Arbor, MI 48109-1084, USA

Interests: epidemiology; genetic epidemiology; chronic kidney disease; environmental health risks



Prof. Dr. Michael S. Breen

[Website \(https://www.ccee.ncsu.edu/people/msbreen/\)](https://www.ccee.ncsu.edu/people/msbreen/) **[SciProfiles \(https://sciprofiles.com/profile/84639\)](https://sciprofiles.com/profile/84639)**

Editorial Board Member

Center for Public Health & Environmental Assessment, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, USA

Interests: exposure monitoring and assessment

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Dr. Tamara Brown

[Website1 \(https://www.leedsbeckett.ac.uk/staff/dr-tamara-brown/\)](https://www.leedsbeckett.ac.uk/staff/dr-tamara-brown/) **[Website2 \(https://www.stir.ac.uk/people/1244009#aboutme\)](https://www.stir.ac.uk/people/1244009#aboutme)**

[SciProfiles \(https://sciprofiles.com/profile/92085\)](https://sciprofiles.com/profile/92085)

Editorial Board Member

1. Obesity Institute, School of Health, Leeds Beckett University, Leeds LS1 3HE, England, UK

2. Faculty of Social Sciences, University of Stirling, Stirling FK9 4LA, Scotland, UK

Interests: obesity; behaviour change; lived experience; public health; health equity

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Prof. Dr. Esther Cabrera

[Website \(https://polishnursingresearch.umlub.pl/en/speaker/esther-cabrera/\)](https://polishnursingresearch.umlub.pl/en/speaker/esther-cabrera/) **[SciProfiles \(https://sciprofiles.com/profile/1305814\)](https://sciprofiles.com/profile/1305814)**

Editorial Board Member

School of Health Sciences, TecnoCampus, Pompeu Fabra University, 08302 Mataro, Spain

Interests: nursing intervention; aging and elderly; nursing education

Prof. Dr. David Canning

Website (<https://www.hsph.harvard.edu/david-canning/>) **SciProfiles** (<https://sciprofiles.com/profile/2486550>)

Editorial Board Member

Department of Global Health and Population, Harvard T. H. Chan School of Public Health, Boston, MA 02115, USA ([toggle desktop layout cookie](#)) 🔍 ☰

Interests: air pollution and mortality; air pollution and cognition; inequalities in health; fertility



Dr. Emanuele Cannizzaro

Website (<https://www.unipa.it/persone/docenti/c/emanuele.cannizzaro/?pagina=curriculum>)

SciProfiles (<https://sciprofiles.com/profile/741485>)

Editorial Board Member

Associate Professor, Department of Health Promotion Sciences Maternal and Infantile Care, Internal Medicine and Medical Specialities "Giuseppe D'Alessandro", University of Palermo, via del Vespro 133, 90127 Palermo, Italy

Interests: occupational medicine; toxicology; work-related stress; swift work

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Prof. Dr. Gustavo Carlo

Website (https://www.faculty.uci.edu/profile.cfm?faculty_id=6783) **SciProfiles** (<https://sciprofiles.com/profile/2483588>)

Editorial Board Member

School of Education, University of California, Irvine, CA 92697, USA

Interests: prosocial and moral development; cultural mechanisms; personality; parenting; child and adolescent development



Prof. Dr. Marco Carmignani

Website (<https://www.univaq.it/rubrica.php?id=84&docente=on>) **SciProfiles** (<https://sciprofiles.com/profile/1193279>)

Editorial Board Member

Department of Basic and Applied Biology, Università degli Studi dell'Aquila, 6710 L'Aquila0, Italy

Interests: cardiovascular pharmacology/toxicology; environmental pollutants; xenobiotics and cancer; neuroendocrine toxicology



Prof. Dr. Constantinos Cartalis

Website (http://en.env.phys.uoa.gr/fileadmin/env.phys.uoa.gr/uploads/cartalis_cv_en.pdf) **SciProfiles** (<https://sciprofiles.com/profile/103106>)

Editorial Board Member

Department of Physics, National and Kapodistrian University of Athens, 15784 Athens, Greece

Interests: urban environment; air pollution; thermal environment in cities; climate change adaptation

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Albert P. C. Chan

Website (<http://www.bre.polyu.edu.hk/staff/bsachan/>) **SciProfiles** (<https://sciprofiles.com/profile/241706>)

Editorial Board Member

Faculty of Construction and Environment, The Hong Kong Polytechnic University, Hong Kong, China

Interests: construction safety and health; project management and project success; project finance and public private partnerships (PPP); construction procurement and relational contracting; construction industry development

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Susanne Charlesworth

Website (<http://www.coventry.ac.uk/research/research-directories/researchers/sue-charlesworth/>)

SciProfiles (<https://sciprofiles.com/profile/150964>)

Editorial Board Member

Centre for Agroecology, Water and Resilience, Coventry University, Coventry CV1 5FB, UK

Interests: sustainable drainage (SuDS); water and sediment quality in SuDS devices; metal pollution of urban environments; drainage of informal settlements and refugee camps; Natural Flood Resilience Measures

Special Issues, Collections and Topics in MDPI journals






Prof. Dr. Judith L. Charlton

Website (<https://research.monash.edu/en/persons/judith-charlton>) **SciProfiles** (<https://sciprofiles.com/profile/2026553>)

Editorial Board Member

Monash University Accident Research Centre, Monash University, Melbourne 3800, Australia

 [\(toggle desktop layout cookie\)](#)  

Interests: safe mobility; ageing; child passenger safety; future transport technologies; older drivers



Prof. Dr. Lianguo Chen

Website1 ([http://www.ihb.ac.cn/yjdw/yjy/index_83634.html?](http://www.ihb.ac.cn/yjdw/yjy/index_83634.html?json=http://sourcedb.ihb.cas.cn/cn/gb/yjy1/shjgcyjzx_172772/201810/t20181031_5749597.json)

http://sourcedb.ihb.cas.cn/cn/gb/yjy1/shjgcyjzx_172772/201810/t20181031_5749597.json) **Website2**

(http://edu.ihb.cas.cn/ds/bsds/202103/t20210304_627617.html) **SciProfiles** (<https://sciprofiles.com/profile/1568596>)

Editorial Board Member

Institute of Hydrobiology, Chinese Academy of Science, Wuhan 430072, China

Interests: environmental behavior, toxicology, and molecular mechanisms of emerging pollutants; development of toxicity-ameliorative measures based on gut microbiota manipulation to protect the health of animals and humans

Special Issues, Collections and Topics in MDPI journals

Dr. Mei-Chun Cheung

Website (<https://web.swk.cuhk.edu.hk/en-gb/people/full-time-teaching-staff/136-prof-cheung-mei-chun>)

SciProfiles (<https://sciprofiles.com/profile/1658819>)

Editorial Board Member

Department of Social Work, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong SAR, China

Interests: clinical neuropsychology; clinical intervention; aging and dementia; autism spectrum disorder



Prof. Dr. Imti Choonara

Website (<https://www.nottingham.ac.uk/medicine/people/imti.choonara>) **SciProfiles** (<https://sciprofiles.com/profile/79245>)

Editorial Board Member

Division of Medical Sciences and Graduate Entry Medicine, University of Nottingham, Derby DE22 3DT, UK

Interests: drug toxicity; clinical trials; rational use of medicines; epidemiology of the use of medicines; inequalities in child health; access to medicines in children

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Dr. Cain Clark

Website (<https://pureportal.coventry.ac.uk/en/persons/cain-clark>) **SciProfiles** (<https://sciprofiles.com/profile/369316>)

Editorial Board Member

Centre for Intelligent Healthcare, Coventry University, Coventry CV1 5RW, UK

Interests: data analytics; visualization and meta-analyses; physical activity; motor competence; sedentary behaviour

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Prof. Dr. Derek Clements-Croome

Website (<https://derekcroome.com/>) **SciProfiles** (<https://sciprofiles.com/profile/11099>)

Editorial Board Member

School of the Built Environment, University of Reading, PO Box 219, Whitek Nights, Reading RG6 6AW, UK

Interests: health and wellbeing; design and management of intelligent buildings; sustainable liveable buildings; environmental sensory design; creating productive and creative workplaces

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Peter Congdon

Website (<https://www.qmul.ac.uk/geog/staff/congdonp.html>) **SciProfiles** (<https://sciprofiles.com/profile/36143>)

Editorial Board Member

School of Geography, Queen Mary University of London, Mile End Road, London E1 4NS, UK

Interests: geographical health inequalities; spatial epidemiology; urban environments and health

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Paola Dalmaso

Website (<https://medchirurgia.campusnet.unito.it/do/docenti.pl/Alias?paola.dalmaso#tab-profilo>)

[SciProfiles \(https://sciprofiles.com/profile/1130341\)](https://sciprofiles.com/profile/1130341)

MDPI (0)
Editorial Board Member

Department of Public Health and Pediatrics, University of Torino, 10126 Torino, Italy

Interests: public health; epidemiology; biostatistics; child and adolescent health; well-being and health complaints; health behavior

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Prof. Dr. Shaonong Dang

[Website \(http://sph.xjtu.edu.cn/info/1154/2123.htm\)](http://sph.xjtu.edu.cn/info/1154/2123.htm) [SciProfiles \(https://sciprofiles.com/profile/323114\)](https://sciprofiles.com/profile/323114)

Editorial Board Member

Department of Epidemiology and Biostatistics, School of Public Health, Xi'an Jiaotong University, Xi'an 710061, China

Interests: nutritional epidemiology; maternal and child nutrition and health care; public health evaluation; clinical trial; data process and analysis in medical field

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Dr. Bithin Datta

[Website \(https://research.jcu.edu.au/portfolio/bithin.datta/\)](https://research.jcu.edu.au/portfolio/bithin.datta/) [SciProfiles \(https://sciprofiles.com/profile/479823\)](https://sciprofiles.com/profile/479823)

Editorial Board Member

Discipline of Civil Engineering, College of Science & Engineering, James Cook University, Townsville, QLD, Australia

Interests: hydrology; groundwater contamination; water resources; artificial intelligence

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Prof. Dr. Giovanni De Girolamo

[Website \(https://docenti.unicatt.it/ppd2/it/docenti/39590/giovanni-de-girolamo/profilo\)](https://docenti.unicatt.it/ppd2/it/docenti/39590/giovanni-de-girolamo/profilo)

Editorial Board Member

Istituti di Ricovero e Cura a Carattere Scientifico (IRCCS), St. John of God Clinical Research Centre, Via Pilastroni 4, 25125 Brescia, Italy

Interests: psychiatry; mental health



Dr. Séverine Deguen

[Website \(https://cv.archives-ouvertes.fr/severine-deguen?langChosen=en\)](https://cv.archives-ouvertes.fr/severine-deguen?langChosen=en) [SciProfiles \(https://sciprofiles.com/profile/2021404\)](https://sciprofiles.com/profile/2021404)

Editorial Board Member

Bordeaux Population Health Research Center, University of Bordeaux, Inserm, UMR 1219, F-33000 Bordeaux, France

Interests: biostatistics; environmental epidemiology; social and environmental inequalities; cumulative environmental exposure; vulnerable population

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Dr. Maurizio Delvecchio

[Website \(https://www.researchgate.net/profile/Maurizio_Delvecchio\)](https://www.researchgate.net/profile/Maurizio_Delvecchio) [SciProfiles \(https://sciprofiles.com/profile/1045124\)](https://sciprofiles.com/profile/1045124)

Editorial Board Member

Department of Metabolic and Genetic Diseases, Giovanni XXIII Children's Hospital, 70126 Bari, Italy

Interests: neonatal diabetes mellitus; type 1 diabetes; celiac disease; thyroid disorders; insulin; wolfram syndrome; prader villino syndrome

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Prof. Dr. Shyamali Dharmage

[Website \(https://findanexpert.unimelb.edu.au/profile/3474-shyamali-dharmage#tab-research\)](https://findanexpert.unimelb.edu.au/profile/3474-shyamali-dharmage#tab-research)

[SciProfiles \(https://sciprofiles.com/profile/160903\)](https://sciprofiles.com/profile/160903)

Editorial Board Member

Allergy and Lung Health Unit, University of Melbourne, Parkville 3010, Australia

Interests: epidemiology; respiratory medicine; chronic obstructive pulmonary disease (COPD); asthma; allergy; risk factors

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Dr. Julio Diaz

 [Website \(https://www.researchgate.net/profile/Julio_Diaz7\)](https://www.researchgate.net/profile/Julio_Diaz7) [SciProfiles \(https://sciprofiles.com/profile/100775\)](https://sciprofiles.com/profile/100775)

Editorial Board Member

Department of Epidemiology and Biostatistics, National School of Public Health, Carlos III National Institute of Health (Instituto Carlos III), 28029 Madrid, Spain

Interests: air pollution; noise and health; climate change; cold and heat waves

Special Issues, Collections and Topics in MDPI journals



Prof. Dr. Julia Dickson-Gomez

[Website \(https://www.mcw.edu/departments/psychiatry-and-behavioral-medicine/people/julia-dickson-gomez-phd\)](https://www.mcw.edu/departments/psychiatry-and-behavioral-medicine/people/julia-dickson-gomez-phd)

[SciProfiles \(https://sciprofiles.com/profile/2305385\)](https://sciprofiles.com/profile/2305385)

Editorial Board Member

Institute for Health and Equity, Medical College of Wisconsin, Milwaukee, WI 53226, USA

Interests: HIV; substance use disorder; homelessness; housing instability; informal settlements; global health; opioids; crack

Special Issues, Collections and Topics in MDPI journals



Dr. Thomas Dos'Santos

[Website \(https://www.mmu.ac.uk/sport-and-exercise-sciences/staff/profile/dr-thomas-dossantos\)](https://www.mmu.ac.uk/sport-and-exercise-sciences/staff/profile/dr-thomas-dossantos)

[SciProfiles \(https://sciprofiles.com/profile/1447140\)](https://sciprofiles.com/profile/1447140)

Editorial Board Member

Department for Sport and Exercise Sciences, Musculoskeletal Science and Sports Medicine Research Centre, Manchester Metropolitan University, Manchester M15 6BH, UK

Interests: assessment and development of strength, power, multidirectional speed; injury mitigation; ACL injury

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Dr. Norca Maritza Dowling

[Website \(https://nursing.gwu.edu/n-maritza-dowling\)](https://nursing.gwu.edu/n-maritza-dowling) [SciProfiles \(https://sciprofiles.com/profile/2538874\)](https://sciprofiles.com/profile/2538874)

Editorial Board Member

1. Department of Acute & Chronic Care, School of Nursing, George Washington University, Washington, DC 20006, USA

2. Department of Epidemiology, George Washington University, Washington, DC 20006, USA

Interests: alzheimer's disease and related dementias; health disparities and health outcomes in older adults; methods to strengthen causal inference in observational research; longitudinal data analysis; latent variable modeling; population heterogeneity

Prof. Dr. Isabelle S. Durand-Zaleski

[Website \(http://recherche-innovation.aphp.fr/urc-eco/\)](http://recherche-innovation.aphp.fr/urc-eco/) [SciProfiles \(https://sciprofiles.com/profile/2214701\)](https://sciprofiles.com/profile/2214701)

Editorial Board Member

AP-HP, Health Economics Research Unit, 75004 Paris, France

Interests: spinal muscular atrophy; health-related quality of life; economic burden; cost-of-illness; europe; informal care

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Timothy Dvonch

[Website \(https://sph.umich.edu/faculty-profiles/dvonch-jtim.html\)](https://sph.umich.edu/faculty-profiles/dvonch-jtim.html) [SciProfiles \(https://sciprofiles.com/profile/96695\)](https://sciprofiles.com/profile/96695)

Editorial Board Member

Department of Environmental Health Sciences, University of Michigan, Ann Arbor, MI 48109, USA

Interests: exposure assessment and health effects of air pollution; atmospheric transport and fate of mercury and other trace metals; receptor modeling and source apportionment of atmospheric pollutants

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Helen Edwards

[Website \(https://staff.qut.edu.au/staff/h.edwards\)](https://staff.qut.edu.au/staff/h.edwards) [SciProfiles \(https://sciprofiles.com/profile/1335889\)](https://sciprofiles.com/profile/1335889)

Editorial Board Member

School of Nursing and Midwifery, Queensland University of Technology, Brisbane, QLD 4001, Australia

Interests: wound management; evidenced based practice; older people's health; implementation science



Dr. Frank Eves

Website (<https://www.birmingham.ac.uk/staff/profiles/sportex/eves-frank.aspx>) **SciProfiles** (<https://sciprofiles.com/profile/829577>)

Editorial Board Member

School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham, Birmingham B15 2TT, UK

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Interests: health psychology; environmental psychology; lifestyle physical activity; physical activity interventions

Prof. Dr. Núria Fabrellas

Website (http://www.ub.edu/infermeria_recerca/en/fitxes-pdi/fabrellas-padres) **SciProfiles** (<https://sciprofiles.com/profile/1680785>)

Editorial Board Member

School of Nursing, University of Barcelona, 08036 Barcelona, Spain

Interests: primary care; primary care nursing



Prof. Dr. Alesia Ferguson

Website (<https://www.ncat.edu/employee-bio.php?directoryID=100953105>) **SciProfiles** (<https://sciprofiles.com/profile/215800>)

Editorial Board Member

Built Environment Department, College of Science and Technology, North Carolina Agricultural and Technical State University, Greensboro, NC 27411, USA

Interests: risk assessment and dermal adherence and exposures; human activity patterns and exposures; outreach and education focused on exposure in and around the home; occupational exposure in the service industries

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Prof. Dr. Maria Beatriz Duarte Gavião

Website (<https://www.fop.unicamp.br/index.php/pt-br/administracao-fop/novo-docentes/item/810-maria-beatriz-gaviao.html>)

SciProfiles (<https://sciprofiles.com/profile/2123457>)

Editorial Board Member

Department of Health Sciences and Pediatric Dentistry, Piracicaba Dental School, University of Campinas, Piracicaba 13414-903, Brazil

Interests: quality of life; oral physiology; salivary biomarkers; sleep

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Dr. Emma Godfrey

Website (<https://www.kcl.ac.uk/people/emma-godfrey>) **SciProfiles** (<https://sciprofiles.com/profile/2599889>)

Editorial Board Member

Department of Psychology, Institute of Psychiatry, Psychology and Neuroscience (IoPPN), King's College London, London SE5 8AF, UK

Interests: health psychology; chronic musculoskeletal pain; adherence to exercise

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Dr. Susan Griffin

Website (<https://www.york.ac.uk/che/staff/research/susan-griffin/>)

Editorial Board Member

Centre for Health Economics, University of York, York, UK

Interests: health economics; economic evaluation; health inequalities; value of information; cost-effectiveness; decision-analytic models



Dr. Jennifer M. Grossman

Website (<https://www.wcwoonline.org/Active-Researchers/jennifer-m-grossman-phd>) **SciProfiles** (<https://sciprofiles.com/profile/361173>)

Editorial Board Member

Wellesley Centers for Women, Wellesley College, Wellesley, MA 02481, USA

Interests: adolescent development; sexual risk and prevention; family sexuality communication; teen-family relationships; evaluation of preventive programs; qualitative and mixed-methods approaches

Special Issues, Collections and Topics in MDPI journals






Prof. Dr. Xihui Gu

Website (https://grzy.cug.edu.cn/guxihui/zh_CN/index.htm)

Editorial Board Member

Department of Atmospheric Science, School of Environmental Studies, China University of Geosciences, Wuhan 430074, China

Interests: climate change; climate change and human health; climatic and hydrological extremes; urban climate; extreme events prediction and projection

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Prof. Dr. Christos Hadjichristodoulou

Website (<http://www.med.uth.gr/en/DepDetailsEN.aspx?id=100>) **SciProfiles** (<https://sciprofiles.com/profile/20637>)

Editorial Board Member

Laboratory of Hygiene and Epidemiology, Faculty of Medicine, University of Thessaly, 41222 Larissa, Greece

Interests: infectious diseases; epidemiology; surveillance; infection prevention and control; environmental health and hygiene; points of entry; cross-border health threats; maritime health

Special Issues, Collections and Topics in MDPI journals

Dr. Chanita Hughes Halbert

Website (<https://uscnorriscancer.usc.edu/chanita-hughes-halbert-phd/>) **SciProfiles** (<https://sciprofiles.com/profile/2714200>)

Editorial Board Member

Department of Population and Public Health Sciences, University of Southern California, Los Angeles, CA 90032, USA

Interests: public health; health inequality; cancer prevention; cancer health disparities; health ethnic



Prof. Dr. Gregory W. Heath

Website1 (<https://www.utc.edu/health-education-and-professional-studies/health-and-human-performance/graduate-programs/master-of-public-health/faculty-and-staff>) **Website2** (<https://www.researchgate.net/profile/Gregory-Heath>)

SciProfiles (<https://sciprofiles.com/profile/2206953>)

Editorial Board Member

Department of Health and Human Performance, University of Tennessee at Chattanooga, Chattanooga, TN 37403, USA

Interests: physical activity epidemiology; NCD prevention; physical activity interventions

Special Issues, Collections and Topics in MDPI journals



Prof. Dr. Michael Hendryx

Website (<https://publichealth.indiana.edu/research/faculty-directory/profile.html?user=hendryx>)

SciProfiles (<https://sciprofiles.com/profile/479174>)

Editorial Board Member

Department of Environmental and Occupational Health, Indiana University, Bloomington, IN 47405, USA

Interests: health disparities; environmental justice; environmental exposures; Appalachia; public health effects of coal mining



Dr. Kevin A. Henry

Website (<https://liberalarts.temple.edu/academics/faculty/henry-kevin>) **SciProfiles** (<https://sciprofiles.com/profile/235701>)

Editorial Board Member

Geography and Urban Studies, Temple University, Philadelphia, PA 19122, USA

Interests: geospatial approaches to cancer control; life course epidemiology; cancer prevention; vaccination; health disparities; spatial statistics; health care access

Prof. Dr. Moonseong Heo

Website (<https://www.clemson.edu/cbshs/about/profiles/index.html?userid=mheo>) **SciProfiles** (<https://sciprofiles.com/profile/2398536>)

Editorial Board Member

Department of Public Health Sciences, Clemson University, Clemson, SC 29631, USA

Interests: clinical trial design and analysis; obesity epidemiology; opioid use disorder epidemiology and associated infectious diseases; pediatric quality improvement



Dr. Wen-Che Hou

Website (<https://researchoutput.ncku.edu.tw/zh/persons/wen-che-hou>) **SciProfiles** (<https://sciprofiles.com/profile/1801191>)

Editorial Board Member



Prof. Dr. Gordon Huang

Website (<http://www.jeionline.org/huangg/research.html>) **SciProfiles** (<https://sciprofiles.com/profile/214602>)

Editorial Board Member

Faculty of Engineering and Applied Science, University of Regina, Regina, SK, Canada

Interests: waste management; site remediation; and risk assessment; simulation and optimization of hydrological and environmental systems; modeling of energy and environmental management systems; climate modeling; impact assessment; adaptation planning

Special Issues, Collections and Topics in MDPI journals



Dr. Po-Chin Huang

Website (https://www.researchgate.net/profile/Po_Chin_Huang/research) **SciProfiles** (<https://sciprofiles.com/profile/1206262>)

Editorial Board Member

National Institute of Environmental Health Sciences, National Health Research Institutes, Miaoli 350, Taiwan

Interests: environmental epidemiology; exposure science; biomonitoring; risk assessment; oxidative stress biomarkers; thyroid hormones homeostasis

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Prof. Dr. Andrew S. Hursthouse

Website (<https://research-portal.uws.ac.uk/en/persons/andrew-hursthouse>) **SciProfiles** (<https://sciprofiles.com/profile/123544>)

Editorial Board Member

School of Computing, Engineering and Physical Sciences, University of the West of Scotland, Paisley PA1 2BE, UK

Interests: environmental geochemistry and health; behavior and transport of pollutants in atmospheric, aquatic, and terrestrial environments; policy related to environmental regulation (waste and environmental management); contaminated land risk and remediation; urban management; environmental and public health

Special Issues, Collections and Topics in MDPI journals



Dr. Tomohiko Isoke

Website (<https://www.nies.go.jp/researchers/200326.html>) **SciProfiles** (<https://sciprofiles.com/profile/1028490>)

Editorial Board Member

Japan Environment and Children's Study Programme Office, Health and Environmental Risk Division, National Institute for Environmental Studies, Tsukuba 305-0053, Ibaraki, Japan

Interests: development of analytical method for environmental contaminants in biological/environmental matrices; human biomonitoring of environmental contaminants; quality control and quality assurance of exposure assessment

Special Issues, Collections and Topics in MDPI journals



Dr. Mirosław Janik

Website (<https://www.researchgate.net/profile/Mirosław-Janik/5>) **SciProfiles** (<https://sciprofiles.com/profile/424914>)

Editorial Board Member

The National Institutes for Quantum and Radiological Science and Technology (QST), Center for Advanced Radiation Medicine, Chiba 263-8555, Japan

Interests: radon; thoron; alpha spectrometry; machine learning; quality assurance; radiation protection

Special Issues, Collections and Topics in MDPI journals



Dr. Leonid Kalichman

Website (<https://cris.bgu.ac.il/en/persons/leonid-kalichman>) **SciProfiles** (<https://sciprofiles.com/profile/2371533>)

Editorial Board Member

Department of Physical Therapy, Recanati School for Community Health Professions, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel

Interests: musculoskeletal medicine; manual therapy; orthopedic physical therapy and rehabilitation; pelvic floor physical therapy; musculoskeletal pain and sexual dysfunctions



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Prof. Dr. Arata Katayama

Website (http://www.er.imass.nagoya-u.ac.jp/AKLab_En/index.html) **SciProfiles** (<https://sciprofiles.com/profile/526481>)

Editorial Board Member

Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya 464-8603, Japan

Interests: Bioremediation; soil and water; anaerobic microorganisms; bioelectrochemical system; humic substances; bioelectrochemical synthesis; modeling of biological activity; composting; reclamation of solid organic wastes



Prof. Dr. Qiang Kong

Website (<https://www.sdnu.edu.cn/info/1130/9768.htm>) **SciProfiles** (<https://sciprofiles.com/profile/2503603>)

Editorial Board Member

College of Geography and Environment, Shandong Normal University, Shandong 250358, China

Interests: wastewater treatment; microbial community; constructed wetland; microbial fuel cell; antibiotic-resistance genes



Prof. Dr. Peter C. Konturek

Website (<https://www.thueringen-kliniken.de>) **SciProfiles** (<https://sciprofiles.com/profile/930484>)

Editorial Board Member

Thuringia Clinic Saalfeld, Teaching Hospital of the University of Jena, 07318 Saalfeld, Germany

Interests: irritable bowel syndrome; gut microbiota; food intolerance

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Naresh Kumar

Website (<http://biostat.med.miami.edu/people/secondary-faculty/naresh-kumar-ph.d/>)

Editorial Board Member

Department of Public Health Sciences, University of Miami, Miami, FL 33136, USA

Interests: health effects of environment; time-space modeling of the health effects of air pollution; climate mediated health effects of air pollution; optimal spatiotemporal sampling; personalized real-time health risk surveillance; personalize real-time air pollution monitoring; Time-space Kriging



Prof. Dr. Thomas Küpper

Website (<https://www.ukaachen.de/kliniken-institute/institut-fuer-arbeits-sozial-und-umweltmedizin/institut/team/wissenschaftliche-mitarbeiter/thomas-kuepper/>) **SciProfiles** (<https://sciprofiles.com/profile/2328011>)

Editorial Board Member

Institute of Occupational & Social Medicine, RWTH Aachen University, 52074 Aachen, Germany

Interests: travel medicine; hypoxia; high altitude; exercise physiology; acclimatization; expedition medicine; human performance; aviation medicine; arctic/polar medicine; diving medicine

Prof. Dr. Michael Langston

Website (<http://web.eecs.utk.edu/~mlangsto/>) **SciProfiles** (<https://sciprofiles.com/profile/532949>)

Editorial Board Member

Department of Electrical Engineering and Computer Science, University of Tennessee, Knoxville, TN 37996, USA

Interests: artificial intelligence; big data analytics; computer and data science; graph theoretical algorithms; life science applications; public health

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Dr. Michaël R. Laurent

Website (<https://ectsoc.org/dr-michael-r-laurent/>) **SciProfiles** (<https://sciprofiles.com/profile/954839>)

Editorial Board Member

Centre for Metabolic Bone Diseases, University Hospitals Leuven, 3000 Leuven, Belgium

Interests: geriatrics; metabolic bone diseases; molecular and cellular endocrinology; medical informatics

Special Issues, Collections and Topics in MDPI journals



Prof. Dr. Changsoo Lee

Website (<http://ablelab.unist.ac.kr/>) **SciProfiles** (<https://sciprofiles.com/profile/336237>)

Editorial Board Member

School of Urban and Environmental Engineering, Ulsan National Institute of Science and Technology (UNIST), 50 UNIST-gil, Ulsu-gun, Ulsan 44919, Korea

Interests: waste-to-energy biotechnologies; biochemical waste/wastewater treatment; bioelectrochemical systems; direct interspecies electron transfer; microalgal cultivation and wastewater treatment; nutrient removal; environmental microbial ecology



Prof. Dr. Shoou Yih Daniel Lee

Website (<https://ha.chp.vcu.edu/staff/shoou-yih-daniel-lee-phd.html>) **SciProfiles** (<https://sciprofiles.com/profile/2726291>)

Editorial Board Member

Department of Health Administration, College of Health Professions, Virginia Commonwealth University, Richmond, VA 23298, USA

Interests: health services research; health care management; organizational studies; organizational resilience



Prof. Dr. Peter Lercher

Website (<https://graz.pure.elsevier.com/en/persons/peter-lercher>)

Editorial Board Member

Institute for Highway Engineering and Transport Planning, Graz University of Technology, 8010 Graz, Austria

Interests: combined environmental exposures (noise, vibration, air-pollution, good neighbourhood environments); health of children and adults methodological issues in environmental epidemiology

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Jonathan Levy

Website (<http://www.bu.edu/sph/profile/jonathan-levy/>)

Editorial Board Member

Department of Occupational and Environmental Health, Hudson College of Public Health, The University of Oklahoma Health Sciences Center, Oklahoma, OK 73104, USA

Interests: air pollution exposure assessment; health risk assessment



Prof. Dr. Peiyue Li

★ (<https://clarivate.com/highly-cited-researchers/2022>) **Website** (<https://js.chd.edu.cn/hjkxygcxy/lpy/list.htm>)

SciProfiles (<https://sciprofiles.com/profile/53520>)

Editorial Board Member

School of Water and Environment, Chang'an University, Xi'an 710054, China

Interests: hydrogeology; groundwater quality; hydrochemistry; groundwater pollution; groundwater-surface water interaction; groundwater modeling and groundwater resources

Special Issues, Collections and Topics in MDPI journals



Dr. Sha Liang

Website (<http://ese.hust.edu.cn/info/1216/4015.htm>)

Editorial Board Member

School of Environmental Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

Interests: solid waste recycling; sewage sludge treatment and disposal; sludge pyrolysis; phosphorus recovery; biochar



Dr. Boqiang Lin

★ (<https://clarivate.com/highly-cited-researchers/2022>) **Website** (<https://cicep.xmu.edu.cn/info/1033/1533.htm>)

SciProfiles (<https://sciprofiles.com/profile/453049>)

Editorial Board Member

Collaborative Innovation Center for Energy Economics and Energy Policy, China Institute for Studies in Energy Policy, School of Management, Xiamen University, Xiamen 361005, China

Interests: energy economy; energy policy; echnical economy

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Prof. Dr. Shang-Lien Lo

Website (<http://enve.ntu.edu.tw/disPageBox/giee/GieeCP.aspx?ddsPageID=GIEETCFULL&dbid=3234561903>)

SciProfiles (<https://sciprofiles.com/profile/33924>)

Editorial Board Member

Graduate Institute of Environmental Engineering, National Taiwan University, 71 Chou-Shan Rd., Taipei 106, Taiwan

Interests: drinking water treatment; river and groundwater pollution; interaction at sediment-water interfaces; physicochemical processes; microwave-induced technologies; enhanced sonochemical technology; wastewater/sludge treatment; environmental nanomaterials; resource recycling of heavy metal-containing sludge; environment and ecosystem management

Dr. Fortunato Lombardo

Website (<https://www.unime.it/it/persona/fortunato-lombardo/curriculum>) **SciProfiles** (<https://sciprofiles.com/profile/1105730>)

Editorial Board Member

Department of Human Pathology in Adult and Developmental Age "Gaetano Barresi", University of Messina, Via Consolare Valeria 1, 98124 Messina, Italy

Interests: pediatric diabetes; type 1 diabetes; monogenic diabetes; technology and diabetes

Special Issues, Collections and Topics in MDPI journals

Prof. Dr. Daniela Lucini

Website (<https://www.unimi.it/it/ugov/person/daniela-lucini>) **SciProfiles** (<https://sciprofiles.com/profile/982616>)

Editorial Board Member

Department of Medical Biotechnology and Translational Medicine, University of Milan, 20135 Milan, Italy

Interests: autonomic nervous system; lifestyle

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Prof. Dr. Tao Luo

Website (<https://jzxy.fzu.edu.cn/info/1041/1652.htm>) **SciProfiles** (<https://sciprofiles.com/profile/337003>)

Editorial Board Member

School of Architecture and Urban-Rural Planning, Fuzhou University, Fuzhou 350108, China

Interests: rural/vernacular landscape; landscape dynamic/evolution; landscape spatial analyse; in human-settlement science: rural settlement and environment, urbanisation process, regional characteristic, place identity; in planning science: sustainable development, territorial spatial planning, landscape evaluation and planning



Prof. Dr. Chuanxin Ma

Website (<https://seer.gdut.edu.cn/info/1029/1056.htm>) **SciProfiles** (<https://sciprofiles.com/profile/1508115>)

Editorial Board Member

Key Laboratory for City Cluster Environmental Safety and Green Development of the Ministry of Education, School of Ecology, Environment and Resources, Guangdong University of Technology, Guangzhou 510006, China

Interests: engineered nanoparticles; heavy metals; biochar; plant stress physiology; nano-enabled agriculture; biogeochemistry; nanotoxicity; phytoremediation; environmental soil chemistry

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Prof. Dr. Gerardo Maupomé

Website (<https://fsph.iupui.edu/about/directory/maupome-gerardo.html>) **SciProfiles** (<https://sciprofiles.com/profile/517526>)

Editorial Board Member

Richard M. Fairbanks School of Public Health, Indiana University, 1050 Wishard Blvd., suite R6054, Health Sciences Building, Indianapolis, IN 46202, USA

Interests: oral health; dental epidemiology; health services research; minority health; immigrant health; health disparities; social-behavioral sciences

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Dr. Peter Memiah

Website (<https://www.medschool.umaryland.edu/profiles/Memiah-Peter/>) **SciProfiles** (<https://sciprofiles.com/profile/1647018>)

Editorial Board Member

Division of Epidemiology and Prevention, Institute of Human Virology, University of Maryland Baltimore, Baltimore, MD 21201, USA

Interests: quality improvement; HIV; adolescent health; non communicable diseases

Dr. Paola Michelozzi

Website (<https://www.deplazio.net/en/staff/47>) **SciProfiles** (<https://sciprofiles.com/profile/322157>)

Editorial Board Member



Prof. Dr. Mori Mitsuru

[Website \(https://researchmap.jp/read0043653\)](https://researchmap.jp/read0043653)

Editorial Board Member

Hokkaido Chitose College of Rehabilitation, Satomi 2-10, Chitose, Hokkaido 066-0055, Japan

Interests: health promotion of the older persons; prevention of cancer and other diseases; stress management of workers

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Prof. Dr. Masaaki Miyata

[Website \(https://ris.kuas.kagoshima-u.ac.jp/html/100004926_en.html\)](https://ris.kuas.kagoshima-u.ac.jp/html/100004926_en.html) [SciProfiles \(https://sciprofiles.com/profile/2604896\)](https://sciprofiles.com/profile/2604896)

Editorial Board Member

Graduate School of Health Sciences, Kagoshima University, 8-35-1, Sakuragaoka, Kagoshima 890-8544, Japan

Interests: atherosclerosis; coronary artery disease; hypertension; dyslipidemia; health promotion

Prof. Dr. Joshua Muscat

[Website \(https://cancer.psu.edu/researchers/individual/-/researcher/5B6500F63D2538DBE0540010E056499A/joshua-muscat-phd-mph\)](https://cancer.psu.edu/researchers/individual/-/researcher/5B6500F63D2538DBE0540010E056499A/joshua-muscat-phd-mph)

[SciProfiles \(https://sciprofiles.com/profile/2024180\)](https://sciprofiles.com/profile/2024180)

Editorial Board Member

Department of Public Health Sciences, College of Medicine, Penn State University, Hershey, PA 17033, USA

Interests: tobacco products; smokers; smoking; odds ratio; confidence intervals; head and neck neoplasms; lung neoplasms; neoplasms; tobacco; epidemiology



Dr. Masatoshi Nakamura

[Website \(https://researchmap.jp/masatoshi-nakamura\)](https://researchmap.jp/masatoshi-nakamura) [SciProfiles \(https://sciprofiles.com/profile/281609\)](https://sciprofiles.com/profile/281609)

Editorial Board Member

Department of Physical Therapy, Faculty of Rehabilitation, Niigata University of Health and Welfare, 1398 Shimamicho, Kitaku, Niigata 950-3198, Japan

Interests: muscle-tendon adaptation; flexibility; stretching; resistance training; ultrasound; muscle stiffness; eccentric contraction; cross-education effect; delayed onset muscle soreness

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Prof. Dr. Long D. Nghiem

[Website \(https://www.uts.edu.au/staff/duclong.nghiem\)](https://www.uts.edu.au/staff/duclong.nghiem) [SciProfiles \(https://sciprofiles.com/profile/440247\)](https://sciprofiles.com/profile/440247)

Editorial Board Member

Centre for Technology in Water and Wastewater, University of Technology Sydney, Sydney, Ultimo, NSW 2007, Australia

Interests: membrane technology; desalination technology; anaerobic digestion; molecular biology; urban water management

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Prof. Dr. K. Daniel O'Leary

[Website \(https://www.stonybrook.edu/commcms/psychology/faculty/faculty_profiles/doleary\)](https://www.stonybrook.edu/commcms/psychology/faculty/faculty_profiles/doleary)

Editorial Board Member

Department of Psychology, Stony Brook University, Stony Brook, NY 11794, USA

Interests: marital therapy; the relationship between marital and child problems; the etiology and treatment of spouse abuse; the alcohol abuse/partner abuse link

Dr. Antonio G. Oliveira

[Website \(http://lattes.cnpq.br/0119633997550691\)](http://lattes.cnpq.br/0119633997550691) [SciProfiles \(https://sciprofiles.com/profile/2303158\)](https://sciprofiles.com/profile/2303158)

Editorial Board Member

Pharmacy Department, Universidade Federal do Rio Grande do Norte, Natal 59012-570, Brazil

Interests: biostatistics; epidemiology; meta-analysis; clinical trials; design of experiments; clinical questionnaire development and validation

Dr. Vincenzo Ostilio Palmieri

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Website (<https://persone.ict.uniba.it/rubrica/vincenzoostilio.palmieri>)

Editorial Board Member

Department of Precision and Regenerative Medicine and Jonic Area, University of Bari Aldo Moro, 70121 Bari, Italy

Interests: liver physiopathology; metabolic syndrome; autoimmune diseases of liver and related organs; primitive tumors of the liver; COVID 19 infection; post-COVID diseases



Dr. Chi Peng

Website (http://faculty.csu.edu.cn/pengchi/zh_CN/index.htm) **SciProfiles** (<https://sciprofiles.com/profile/1811451>)

Editorial Board Member

School of Metallurgy and Environment, Central South University, Changsha 410083, China

Interests: trace metals; risk assessment; soil contamination

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Dr. Annalisa Pinsino

Website (<https://publications.cnr.it/authors/annalisa.pinsino>) **SciProfiles** (<https://sciprofiles.com/profile/1498237>)

Editorial Board Member

Institute of Translational Pharmacology (IFT), National Research Council (CNR), Via Ugo La Malfa 153, 90146 Palermo, Italy

Interests: nanotoxicology; immunology; innate immunity; cell biology; molecular biology; proxy to human model; environmental risk

Special Issues, Collections and Topics in MDPI journals

Dr. Adília O. Pires

Website (<http://www.cesam.ua.pt/index.php?tabela=peessoadetail&menu=82&user=361>) **SciProfiles** (<https://sciprofiles.com/profile/1860092>)

Editorial Board Member

Department of Biology & CESAM, University of Aveiro, Campus de Santiago, 3810-193 Aveiro, Portugal

Interests: ecotoxicology; environmental sciences; climate change; contaminants; trace elements; polychaetes; stressors effects on biodiversity; biomarkers; biological conservation; molecular genetics



Dr. Prisco Piscitelli

Website (<http://www.isbem.it>) **SciProfiles** (<https://sciprofiles.com/profile/1104368>)

Editorial Board Member

Euro Mediterranean Scientific Biomedical Institute (ISBEM), Via Reali di Bulgaria, Mesagne (Brindisi), Italy

Interests: epidemiology; preventive medicine; occupational medicine; environmental medicine; global health; air pollution; indoor pollution; radon; infectious diseases

Special Issues, Collections and Topics in MDPI journals

Dr. Dietrich Plaß

Website (https://www.researchgate.net/profile/Dietrich_Plass) **SciProfiles** (<https://sciprofiles.com/profile/157177>)

Editorial Board Member

Section Exposure Assessment and Environmental Health Indicators, Federal Environmental Agency, Berlin, Germany

Interests: burden of disease; environmental burden of disease; comparative risk assessment; ambient air pollution; exposure assessment; exposure modelling; infectious diseases



Prof. Dr. Kinga Polańska

Website

(http://www.imp.lodz.pl/home_en/dep/department_of_environmental_epidemiology/children_s_environmental_health_unit/about_unit/)

SciProfiles (<https://sciprofiles.com/profile/213414>)

Editorial Board Member

1. Department of Environmental and Occupational Health Hazards, Nofer Institute of Occupational Medicine, 91-348 Lodz, Poland

2. Department of Hygiene and Epidemiology, Medical University of Lodz, 90-419 Lodz, Poland

Interests: environmental exposure; pregnancy; birth outcomes; child health; child neurodevelopment

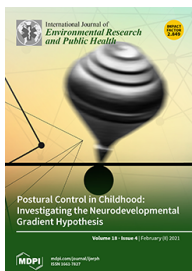
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Int. J. Environ. Res. Public Health, Volume 18, Issue 4 (February-2021) – 836 articles



Cover Story ([view full-size image \(/files/uploaded/covers/ijerph/big_cover-ijerph-v18-i4.png\)](#)): Difficulties in integrating multisensory inputs in childhood may translate in a less efficient postural control, with important implications for the ability to adapt and to self-manage in the face of social, physical, and emotional challenges. According to the “neurodevelopmental gradient hypothesis”, those who suffer from a neurodevelopmental disorder may present with different degrees of impairments in a number of individual assets, depending on the severity of the condition. This article suggests that, in terms of postural control, autism is the most severely impaired neurodevelopmental condition, followed by attention-deficit hyperactive disorder and Tourette syndrome, in line with predictions from the gradient hypothesis. Poor postural control may therefore be a useful biomarker for risk assessment during neurodevelopment. [View this paper. \(https://www.mdpi.com/1660-4601/18/4/1693\)](https://www.mdpi.com/1660-4601/18/4/1693)

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[Mental Health Status of Healthcare Professionals and Students of Health Sciences Faculties in Kuwait during the COVID-19 Pandemic \(/1660-4601/18/4/2203\)](#)





by [Zahra Alsaifari \(https://sciprofiles.com/profile/1467118\)](https://sciprofiles.com/profile/1467118), [Abdallah Y. Naser \(https://sciprofiles.com/profile/1486555\)](https://sciprofiles.com/profile/1486555), [Fatimah M. Alsaleh \(https://sciprofiles.com/profile/1647938\)](https://sciprofiles.com/profile/1647938), [Abdelmoneim Awad \(https://sciprofiles.com/profile/1495312\)](https://sciprofiles.com/profile/1495312) and [Zahraa Jalal \(https://sciprofiles.com/profile/573214\)](https://sciprofiles.com/profile/573214)

Int. J. Environ. Res. Public Health **2021**, *18*(4), 2203; <https://doi.org/10.3390/ijerph18042203> (<https://doi.org/10.3390/ijerph18042203>) - 23 Feb 2021







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Abstract Objectives: This study aimed to assess the impact of the COVID-19 pandemic on the mental health status of healthcare professionals (HCPs) and undergraduate students in the health sciences center (HSCUs). In addition, it explored the factors associated with the increased levels of mental [...]
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Analysis of the Cause of Household Carbon Lock-In for Chinese Urban Households (/1660-4601/18/4/2201)

by  [Lingyun Mi \(https://sciprofiles.com/profile/150451\)](https://sciprofiles.com/profile/150451),
 [Yuhuan Sun \(https://sciprofiles.com/profile/author/bjhqUHp0SnzanVNMng4WjJSdFVkJ1JlQklrS3Y2cWhmMTBjd3lCbIE3TT0=\)](https://sciprofiles.com/profile/author/bjhqUHp0SnzanVNMng4WjJSdFVkJ1JlQklrS3Y2cWhmMTBjd3lCbIE3TT0=),
 [Lijie Qiao \(https://sciprofiles.com/profile/author/aWRac0VJUVpZRIhVl3J0VDFCS2NRMm9HaGdISDIwBS9reGVtd0IGSGJXRT0=\)](https://sciprofiles.com/profile/author/aWRac0VJUVpZRIhVl3J0VDFCS2NRMm9HaGdISDIwBS9reGVtd0IGSGJXRT0=),
 [Tianwen Jia \(https://sciprofiles.com/profile/author/dzJlSHRHaGdCTnFpSjNqZ0lrdWd6aXpITnM0ckFtVktqeFdWQ3VPRlppQT0=\)](https://sciprofiles.com/profile/author/dzJlSHRHaGdCTnFpSjNqZ0lrdWd6aXpITnM0ckFtVktqeFdWQ3VPRlppQT0=),
 [Yang Yang \(https://sciprofiles.com/profile/author/Um92TjdJZktxSzZhbzg3OXJQYk1ySVRLdlRneTF0d2l1enp0bi9oWnA0WT0=\)](https://sciprofiles.com/profile/author/Um92TjdJZktxSzZhbzg3OXJQYk1ySVRLdlRneTF0d2l1enp0bi9oWnA0WT0=) and
 [Tao Lv \(https://sciprofiles.com/profile/155358\)](https://sciprofiles.com/profile/155358)

Int. J. Environ. Res. Public Health **2021**, *18*(4), 2201; <https://doi.org/10.3390/ijerph18042201> (<https://doi.org/10.3390/ijerph18042201>) - 23 Feb 2021

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Abstract Household energy conservation is an important contributor to achieve the carbon emission reduction target. However, the actual energy-saving effect of Chinese households is under expectation. One reason for this is because household energy consumption is locked in at a certain level, which has [...]
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Comparison of the Effect on Fetal Growth of a Mixture of Atrazine and Nitrates in Drinking Water and of Active Tobacco Exposure during Pregnancy (/1660-4601/18/4/2200)

by  [Camille Carles \(https://sciprofiles.com/profile/1134272\)](https://sciprofiles.com/profile/1134272),  [Marion Albouy-Llaty \(https://sciprofiles.com/profile/1379478\)](https://sciprofiles.com/profile/1379478),
 [Antoine Dupuis \(https://sciprofiles.com/profile/184022\)](https://sciprofiles.com/profile/184022),
 [Sylvie Rabouan \(https://sciprofiles.com/profile/author/YnoxQTK2L09vamhpakFjYjBzQkt5N2h2R29MKzRVMTCrR04zYndQTCs4Yz0=\)](https://sciprofiles.com/profile/author/YnoxQTK2L09vamhpakFjYjBzQkt5N2h2R29MKzRVMTCrR04zYndQTCs4Yz0=) and
 [Virginie Migeot \(https://sciprofiles.com/profile/author/aUFtSGRLUFdTN211d2VpbkczbVh6R0o2Z1pQUIF1VXFCaC9aOVhJU0l3WT0=\)](https://sciprofiles.com/profile/author/aUFtSGRLUFdTN211d2VpbkczbVh6R0o2Z1pQUIF1VXFCaC9aOVhJU0l3WT0=)

Int. J. Environ. Res. Public Health **2021**, *18*(4), 2200; <https://doi.org/10.3390/ijerph18042200> (<https://doi.org/10.3390/ijerph18042200>) - 23 Feb 2021


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Abstract Active tobacco exposure during pregnancy is a known determinant of fetal growth. Nitrates and atrazine metabolites in drinking water may affect fetal growth as a mixture of endocrine disruptors (ED). We aimed to determine whether EDC have an additional effect on fetal growth [...]
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Scientific Mobility, Training and Entrepreneurial Skills in Health Sciences: The Spanish Case (/1660-4601/18/4/2195)

by  [Pedro Aceituno-Aceituno \(https://sciprofiles.com/profile/1133137\)](https://sciprofiles.com/profile/1133137),
 [Joaquín Danvila-del-Valle \(https://sciprofiles.com/profile/author/c2pXZUtMny9hSUTlNVdzc1kveDNwWwrvZDM1UE5UcVFQK3dwS2hJZ00vZz\)](https://sciprofiles.com/profile/author/c2pXZUtMny9hSUTlNVdzc1kveDNwWwrvZDM1UE5UcVFQK3dwS2hJZ00vZz)

 [Abel González García \(https://sciprofiles.com/profile/author/aHc1L3JaUnJXNS8xNjZQWErOGVsU0o0RzdhcFVvafFsb1RRbVRiaUdFbz0=\)](https://sciprofiles.com/profile/author/aHc1L3JaUnJXNS8xNjZQWErOGVsU0o0RzdhcFVvafFsb1RRbVRiaUdFbz0=) and
 [Carlos Bousoño-Calzón \(https://sciprofiles.com/profile/author/K2JFOVlPdVppWk1NNGw2L2RWdTVDMjFZZDcrVnIUUtReFpleHcwSHg5QT0=\)](https://sciprofiles.com/profile/author/K2JFOVlPdVppWk1NNGw2L2RWdTVDMjFZZDcrVnIUUtReFpleHcwSHg5QT0=)

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Abstract The activity of scientists promotes medical research in health services. However, on many occasions, these professionals do not know how to transfer their research results to the market. Therefore, it is worth providing data on aspects such as training in entrepreneurship and scientific [...]
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Determinants of Pain Intensity in Physical Education Teachers Focusing on Dance Teachers: A Cross-Sectional Study (/1660-4601/18/4/2193)

by  [Eileen M. Wanke \(https://sciprofiles.com/profile/1138917\)](https://sciprofiles.com/profile/1138917),  [Jasmin Haenel \(https://sciprofiles.com/profile/1485015\)](https://sciprofiles.com/profile/1485015),
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 [David A. Groneberg \(https://sciprofiles.com/profile/author/Njd4Y0lvanJzL1J2ZUthK0ZhaGkzUUZNbW9ucEczcVVFc0ZBcGITTmVQTT0=\)](https://sciprofiles.com/profile/author/Njd4Y0lvanJzL1J2ZUthK0ZhaGkzUUZNbW9ucEczcVVFc0ZBcGITTmVQTT0=)

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Abstract (1) Background: Dance teachers (DT) are dependent on their functional body. Pain can hardly be avoided during the professional practice of dance. Pain can become so intense that it impairs, or even prevents, the professional practice. The aim of this study was to [...] [Read more](#).

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Spontaneous Pneumothorax in COVID-19 Patients Treated with High-Flow Nasal Cannula outside the ICU: A Case Series (/1660-4601/18/4/2191)

by [Magdalena Nalewajska](https://sciprofiles.com/profile/1343438) (<https://sciprofiles.com/profile/1343438>), [Wiktoria Feret](https://sciprofiles.com/profile/1483060) (<https://sciprofiles.com/profile/1483060>), [Łukasz Wojczyński](https://sciprofiles.com/profile/1500924) (<https://sciprofiles.com/profile/1500924>), [Wojciech Witkiewicz](https://sciprofiles.com/profile/1490690) (<https://sciprofiles.com/profile/1490690>), [Magda Wiśniewska](https://sciprofiles.com/profile/author/M1pIWDFvK1BKMkNlzfUuVtQU5QVUN3RmdJVC9YSHBHaTR1UXZUdCthYz0=) (<https://sciprofiles.com/profile/author/M1pIWDFvK1BKMkNlzfUuVtQU5QVUN3RmdJVC9YSHBHaTR1UXZUdCthYz0=>) and [Katarzyna Kotfis](https://sciprofiles.com/profile/656508) (<https://sciprofiles.com/profile/656508>).

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Abstract The coronavirus disease 2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has become a global pandemic and a burden to global health at the turn of 2019 and 2020. No targeted treatment for COVID-19 infection has been identified so [...] [Read more](#).

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Cluster Analysis of the Combined Association of Sleep and Physical Activity with Healthy Behavior and Psychological Health in Pregnant Women (/1660-4601/18/4/2185)

by [Hyejung Lee](https://sciprofiles.com/profile/author/b1A3VEhHZFkxQVlibk1XWWNmYkVxZz09) (<https://sciprofiles.com/profile/author/b1A3VEhHZFkxQVlibk1XWWNmYkVxZz09>), [Ki-Eun Kim](https://sciprofiles.com/profile/1448151) (<https://sciprofiles.com/profile/1448151>), [Mi-Young Kim](https://sciprofiles.com/profile/1079088) (<https://sciprofiles.com/profile/1079088>) and [Chang Gi Park](https://sciprofiles.com/profile/author/WDJSenoxS1F0bnlxUU5FSU5IMGFGQT09) (<https://sciprofiles.com/profile/author/WDJSenoxS1F0bnlxUU5FSU5IMGFGQT09>)

Int. J. Environ. Res. Public Health **2021**, *18*(4), 2185; <https://doi.org/10.3390/ijerph18042185> (<https://doi.org/10.3390/ijerph18042185>) - 23 Feb 2021

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Abstract The purposes of the study were to (1) identify clusters based on patterns of sleep quality and duration and physical activity levels of healthy Korean pregnant women, and (2) subsequently investigate the association of identified clusters with pre-pregnancy healthy behaviors, depressive symptoms, and [...] [Read more](#).

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EU's Ordering of COVID-19 Vaccine Doses: Political Decision-Making under Uncertainty (/1660-4601/18/4/2169)

by [Werner Gleißner](https://sciprofiles.com/profile/author/RkpvM3F3WDRTYUhQdVBkWTRIUTIYb3ZxQVJ3bW9BRk1aM1BITUxYREQwMD0=) (<https://sciprofiles.com/profile/author/RkpvM3F3WDRTYUhQdVBkWTRIUTIYb3ZxQVJ3bW9BRk1aM1BITUxYREQwMD0=>), [Florian Follert](https://sciprofiles.com/profile/1319340) (<https://sciprofiles.com/profile/1319340>), [Frank Daumann](https://sciprofiles.com/profile/1977782) (<https://sciprofiles.com/profile/1977782>) and [Frank Leibbrand](https://sciprofiles.com/profile/author/Sy9kYjczb01OVnlpSWZRN0RnSWNNZngzVXNqYlplcTJJeIMyU0hBZ2Vhaz0=) (<https://sciprofiles.com/profile/author/Sy9kYjczb01OVnlpSWZRN0RnSWNNZngzVXNqYlplcTJJeIMyU0hBZ2Vhaz0=>)

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Abstract Worldwide, politicians, scientists, and entrepreneurs are operating under high uncertainty and incomplete information regarding the adequacy of measures to deal with the COVID-19 pandemic. It seems indisputable that only widespread and global immunity can bring normalization to social life. In this respect, the [...] [Read more](#).

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Serum Free Amino Acid Profiling in Differential Diagnosis of Ovarian Tumors—A Comparative Study with Review of the Literature (/1660-4601/18/4/2167)

by [Agnieszka Horala](https://sciprofiles.com/profile/1301372) (<https://sciprofiles.com/profile/1301372>), [Szymon Plewa](https://sciprofiles.com/profile/920279) (<https://sciprofiles.com/profile/920279>), [Pawel Dereziński](https://sciprofiles.com/profile/author/aTVzZ0p2U29nUFRKdityWmJFenZpRFI3Q0IzBhZd3dQcJyVYRGZQSXNqbz0=) (<https://sciprofiles.com/profile/author/aTVzZ0p2U29nUFRKdityWmJFenZpRFI3Q0IzBhZd3dQcJyVYRGZQSXNqbz0=>), [Agnieszka Klupczynska](https://sciprofiles.com/profile/404567) (<https://sciprofiles.com/profile/404567>), [Jan Matysiak](https://sciprofiles.com/profile/110816) (<https://sciprofiles.com/profile/110816>), [Ewa Nowak-Markwitz](https://sciprofiles.com/profile/author/N0hYcE85aisxWkhJK05oeVhXS0xvY1F6V2h3eEwrd2RqbJR3SHFXcTg1TT0=) (<https://sciprofiles.com/profile/author/N0hYcE85aisxWkhJK05oeVhXS0xvY1F6V2h3eEwrd2RqbJR3SHFXcTg1TT0=>) and [Zenon J. Kokot](https://sciprofiles.com/profile/author/a3BNUZ2azFGajFMVnNjUm05R25XQ2tsN3JkNVc0MGmzdHfKVVVn1cVV5WT0=) (<https://sciprofiles.com/profile/author/a3BNUZ2azFGajFMVnNjUm05R25XQ2tsN3JkNVc0MGmzdHfKVVVn1cVV5WT0=>)

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Abstract Proper preoperative ovarian cancer (OC) diagnosis remains challenging. Serum free amino acid (SFAA) profiles were investigated to identify potential novel biomarkers of OC and assess their performance in ovarian tumor differential diagnosis. Serum samples were divided based on the

Post-Traumatic Growth among Patients after Living and Cadaveric Donor Kidney Transplantation: The Role of Resilience and Alexithymia ([1660-4601/18/4/2164](#))

by

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Abstract The aim of this study was to determine the role of resilience and alexithymia in the post-traumatic growth as a response to extreme stress in patients after kidney transplantation and to determine whether there are differences in the level of posttraumatic growth in [...] [Read more.](#)

Identifying and Analyzing Health-Related Themes in Disinformation Shared by Conservative and Liberal Russian Trolls on Twitter ([1660-4601/18/4/2159](#))

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[Robert McKeever](#) (<https://sciprofiles.com/profile/715486>)

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Abstract To combat health disinformation shared online, there is a need to identify and characterize the prevalence of topics shared by trolls managed by individuals to promote discord. The current literature is limited to a few health topics and dominated by vaccination. The goal [...] [Read more.](#)

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The Prevalence and Determinants of Being Offered and Accepting Operational Management Services—A Cohort Study ([1660-4601/18/4/2158](#))

by [Adrian Loerbroks](#) (<https://sciprofiles.com/profile/1178386>), [Jessica Scharf](#) (<https://sciprofiles.com/profile/557601>),

[Peter Angerer](#) (<https://sciprofiles.com/profile/472973>),

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Abstract In Germany, employers are obliged to offer “operational integration management” (OIM) services to employees returning from long-term sick leave. OIM aims to improve employees’ workability and to prevent future sick leave or early retirement. This study examined (i) to what extent OIM services [...] [Read more.](#)

Changes in Prehospital Stroke Care and Stroke Mimic Patterns during the COVID-19 Lockdown ([1660-4601/18/4/2150](#))

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Abstract The impact of COVID-19 lockdown on prehospital stroke care is largely unknown. We aimed to compare stroke care patterns before and during a state-wide lockdown. Thus, we analysed prospective data of stroke alerts referred to our stroke centre between 1 December 2019 and [...] [Read more.](#)

(This article belongs to the Special Issue **Prevention and Treatment of Cerebrovascular Diseases** ([/journal.ijerph/special_issues/cerebrovascular_diseases](https://journal.ijerph/special_issues/cerebrovascular_diseases)))

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Hand Hygiene Knowledge and Self-Reported Hand Washing Behaviors among Restaurant Kitchen Chefs in Jiangsu Province, China ([/1660-4601/18/4/2149](https://doi.org/10.3390/ijerph18042149))

by [Bin Cui](https://sciprofiles.com/profile/780615) (<https://sciprofiles.com/profile/780615>),

[Shao Ying Li](https://sciprofiles.com/profile/author/SWNQb2V6TFVHeKlweJR1UzNPdGZpQjByanBUZXNHRExKdHHZm9nT1Z6ND0=) (<https://sciprofiles.com/profile/author/SWNQb2V6TFVHeKlweJR1UzNPdGZpQjByanBUZXNHRExKdHHZm9nT1Z6ND0=>),

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Abstract Inadequate hand washing among chefs is a major contributor to outbreaks of foodborne illnesses originating in restaurants. Although many studies have evaluated hand hygiene knowledge (HHK) and self-reported hand washing behaviors (HWBs) in restaurant workers in different countries, little is known about HHK [...] [Read more](#).

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Burnout and Cognitive Performance ([/1660-4601/18/4/2145](https://doi.org/10.3390/ijerph18042145))

by [Panagiota Koutsimani](https://sciprofiles.com/profile/1385374) (<https://sciprofiles.com/profile/1385374>), [Anthony Montgomery](https://sciprofiles.com/profile/2319859) (<https://sciprofiles.com/profile/2319859>),

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Abstract The aim of this study was to investigate the relationship between burnout and cognitive functioning. The associations of depression, anxiety and family support with burnout and cognitive functioning were also examined both independently and as potential moderators of the burnout–cognitive functioning relationship. Seven [...] [Read more](#).

(This article belongs to the Special Issue **Job Burnout: A Deep-Rooted Issue in Ever-Changing Workplaces** ([/journal.ijerph/special_issues/Job_Burnout](https://journal.ijerph/special_issues/Job_Burnout)))

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Metabolic Syndrome: Prevalence and Risk Factors among Adolescent Female Intermediate and Secondary Students in Saudi Arabia ([/1660-4601/18/4/2142](https://doi.org/10.3390/ijerph18042142))

by [Areej Alowfi](https://sciprofiles.com/profile/1134719) (<https://sciprofiles.com/profile/1134719>),

[Sumayah Binladen](https://sciprofiles.com/profile/author/Skk1TEZ3QzllSWtqWlg1eS84V0FvazRubHFIn0NsQ0pSVXBqa2hVQ25RUT0=) (<https://sciprofiles.com/profile/author/Skk1TEZ3QzllSWtqWlg1eS84V0FvazRubHFIn0NsQ0pSVXBqa2hVQ25RUT0=>),

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Int. J. Environ. Res. Public Health **2021**, *18*(4), 2142; <https://doi.org/10.3390/ijerph18042142> (<https://doi.org/10.3390/ijerph18042142>) - 22 Feb 2021

Cited by 5 ([/1660-4601/18/4/2142#metrics](https://doi.org/10.3390/ijerph18042142#metrics)) | Viewed by 2124

Abstract Background: Metabolic syndrome (MS) has become one of the major challenges to public health worldwide due to its significant association with increased risk of developing type 2 diabetes and cardiovascular disease (CVD) among children and adolescents. Therefore, this study aims to determine the [...] [Read more](#).

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Foreign Medical Students in Eastern Europe: Knowledge, Attitudes and Beliefs about Medical Cannabis for Pain Management ([/1660-4601/18/4/2137](https://doi.org/10.3390/ijerph18042137))

by [Vsevolod Konstantinov](https://sciprofiles.com/profile/408882) (<https://sciprofiles.com/profile/408882>), [Alexander Reznik](https://sciprofiles.com/profile/2610137) (<https://sciprofiles.com/profile/2610137>),

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Abstract Objective: To assess the knowledge, attitudes, and beliefs of foreign students toward the use of medical cannabis (MC) for pain management. Methods: This study uses data collected from 549 foreign students from India ($n = 289$) and Middle Eastern countries mostly from [...] [Read more.](#)

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Coastline Levels of Dissolved Heavy Metals in the Estuarine Water–System of Vigo (/1660-4601/18/4/2136)

by [Benita Pérez-Cid](https://sciprofiles.com/profile/1457250) (<https://sciprofiles.com/profile/1457250>), [Elena Falqué](https://sciprofiles.com/profile/126421) (<https://sciprofiles.com/profile/126421>) and [Jesus Simal-Gandara](https://sciprofiles.com/profile/39954) (<https://sciprofiles.com/profile/39954>)

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Abstract Limited attention has been directed toward the effects of maritime traffic on heavy metals and metalloids in seawater. Water samples were collected from the estuary of Vigo Ría in the summer of 2018. The chemical distribution of ten dissolved trace metals and metalloids [...] [Read more.](#)

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Effectiveness of Food Fortification in Improving Nutritional Status of Mothers and Children in Indonesia (/1660-4601/18/4/2133)

by [Nikmah Utami Dewi](https://sciprofiles.com/profile/1299959) (<https://sciprofiles.com/profile/1299959>) and [Trias Mahmudiono](https://sciprofiles.com/profile/388761) (<https://sciprofiles.com/profile/388761>)

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Abstract Food fortification programs have been conducted in several countries to overcome micronutrient deficiency and related problems with various degrees of effectiveness. Available information regarding the success of food fortification programs in some developing countries, including Indonesia, is still limited. Thus, this study conducts [...] [Read more.](#)

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Evaluation of the Use of Shared Decision Making in Breast Cancer: International Survey (/1660-4601/18/4/2128)

by [Marta Maes-Carballo](https://sciprofiles.com/profile/1471762) (<https://sciprofiles.com/profile/1471762>),

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Abstract Objectives: To assess shared decision-making (SDM) knowledge, attitude and application among health professionals involved in breast cancer (BC) treatment. Materials and Methods: A cross-sectional study based on an online questionnaire, sent by several professional societies to health professionals involved in BC management. There [...] [Read more.](#)

(This article belongs to the Special Issue **Patient and Consumer Engagement in Health Care and Wellbeing: Challenges and Opportunities for a Participatory Health Approach** (/journal/ijerph/special_issues/consumer_engagement))

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The Outbreak of the COVID-19 Pandemic and its Social Impact on Education: Were Engineering Teachers Ready to Teach Online? (/1660-4601/18/4/2127)

by [Víctor Revilla-Cuesta](https://sciprofiles.com/profile/942473) (<https://sciprofiles.com/profile/942473>), [Marta Skaf](https://sciprofiles.com/profile/438149) (<https://sciprofiles.com/profile/438149>),

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[Vanessa Ortega-López](https://sciprofiles.com/profile/2632940) (<https://sciprofiles.com/profile/2632940>)

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Abstract The major impacts of the COVID-19 pandemic are still affecting all social dimensions. Its specific impact on education is extensive and quite evident in the adaptation from Face-to-Face (F2F) teaching to online methodologies throughout the first wave of the pandemic and the strict [...] [Read more.](#)

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Community Resilience Governance on Public Health Crisis in China ([/1660-4601/18/4/2123](#))

by [Chao Wang](#) (<https://sciprofiles.com/profile/1440436>), [Xuan Dong](#) (<https://sciprofiles.com/profile/1440437>), [Yan Zhang](#) (<https://sciprofiles.com/profile/1245249>) and [Yiwen Luo](#) (<https://sciprofiles.com/profile/1440438>)

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Abstract The COVID-19 pandemic has immensely affected economic and social order in not only China but the entire world, seriously threatening peoples' lives and property. In China's fight against COVID-19, the community is at the front line of joint prevention and control of the [...] [Read more](#).

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12-Year Trends in Active School Transport across Four European Countries—Findings from the Health Behaviour in School-Aged Children (HBSC) Study ([/1660-4601/18/4/2118](#))

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[Zdenek Hamrik](#) (<https://sciprofiles.com/profile/author/cXRTZHFhN0xoRjNTSuthS1RnNERHUHdJR2pQeEpleDIUMVZrYTZuek9Fcz0=>),

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[Frida Kathrine Sofie Mathisen](#) (<https://sciprofiles.com/profile/author/STIIZXg4N2o4eFF0WUJXVzRpOEEdpdytiWXRwK3hKdGRibGwwTE1LZUN=>)

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Abstract Active school transport (AST) is a source of daily physical activity uptake. However, AST seems to have decreased worldwide over recent decades. We aimed to examine recent trends in AST and associations with gender, age, family affluence, and time to school, using data [...] [Read more](#).
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Serving Children and Adolescents in Need during the COVID-19 Pandemic: Evaluation of Service-Learning Subjects with and without Face-to-Face Interaction ([/1660-4601/18/4/2114](#))

by [Li Lin](#) (<https://sciprofiles.com/profile/1431005>) and [Daniel T. L. Shek](#) (<https://sciprofiles.com/profile/1043695>)




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Abstract The coronavirus disease (COVID-19) outbreak has posed a great challenge to teaching and learning activities in higher education, particularly for service-learning subjects that involve intensive human interaction. Although service-learning may be transformed to a virtual mode in response to the pandemic, little is [...] [Read more.](#)

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The Role of Traditional Acupuncture in Patients with Fecal Incontinence—Mini-Review (/1660-4601/18/4/2112)

by  [Agne Sipavičiute](https://sciprofiles.com/profile/1468232) (<https://sciprofiles.com/profile/1468232>),  [Tomas Aukstikalnis](https://sciprofiles.com/profile/1469848) (<https://sciprofiles.com/profile/1469848>),
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Abstract Objective: Fecal incontinence affects up to 15% of the general population, with higher rates of incidence among women and the elderly. Acupuncture is an old practice of Traditional Chinese Medicine that might be used to treat fecal incontinence. The aim of this mini [...] [Read more.](#)



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Relationships among Affect, Hardiness and Self-Efficacy in First Aid Provision by Airline Cabin Crew (/1660-4601/18/4/2108)

by  [Yi-Chen Yu](https://sciprofiles.com/profile/1419315) (<https://sciprofiles.com/profile/1419315>) and  [Jyh-Chong Liang](https://sciprofiles.com/profile/1419294) (<https://sciprofiles.com/profile/1419294>)

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Abstract Cabin crews being first responders, passengers' health assurance is also one of their main responsibilities. This study explored the association among first aid affect, work-related hardiness and self-efficacy of first aid, as well as the mediation role of work-related hardiness in airline cabin [...] [Read more.](#)

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Responses of Runoff and Soil Loss to Rainfall Regimes and Soil Conservation Measures on Cultivated Slopes in a Hilly Region of Northern China (/1660-4601/18/4/2102)

by  [Haiyan Fang](https://sciprofiles.com/profile/1236541) (<https://sciprofiles.com/profile/1236541>)

Int. J. Environ. Res. Public Health **2021**, *18*(4), 2102; <https://doi.org/10.3390/ijerph18042102> (<https://doi.org/10.3390/ijerph18042102>) - 21 Feb 2021



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Abstract Cultivated land plays an important role in water and soil loss in earthy/rocky mountainous regions in northern China, however, its response to soil conservation measures and rainfall characteristics are still not fully understood. In the present study, 85 erosive rainfall events in 2011–2019 [...] [Read more.](#)

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Awareness and Performance towards Proper Use of Disinfectants to Prevent COVID-19: The Case of Iran (/1660-4601/18/4/2099)

by  [Zahra Safari](https://sciprofiles.com/profile/1332346) (<https://sciprofiles.com/profile/1332346>),  [Reza Fouladi-Fard](https://sciprofiles.com/profile/1332476) (<https://sciprofiles.com/profile/1332476>),



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


Abstract This study aimed to assess the awareness and performance of Qom citizens towards using disinfectants and compared its relationship with geographical distribution of COVID-19 outbreak in Qom, Iran. The study was conducted by a researcher-made questionnaire during April and May, 2020.

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Analgesic Opioid Misuse and Opioid Use Disorder among Patients with Chronic Non-Cancer Pain and Prescribed Opioids in a Pain Centre in France ([/1660-4601/18/4/2097](https://doi.org/10.3390/ijerph18042097)).

by  [Morgane Guillou-Landreat](https://sciprofiles.com/profile/1008952) (<https://sciprofiles.com/profile/1008952>),  [Bertrand Quinio](https://sciprofiles.com/profile/author/RTV6ckRDTENoVz1KzRTcE44UHBhbmR4c1RxbiR0b0cvWmVXQ1aV09GWT0=) (<https://sciprofiles.com/profile/author/RTV6ckRDTENoVz1KzRTcE44UHBhbmR4c1RxbiR0b0cvWmVXQ1aV09GWT0=>),  [Jean Yves Le Reste](https://sciprofiles.com/profile/1490060) (<https://sciprofiles.com/profile/1490060>),  [Delphine Le Goff](https://sciprofiles.com/profile/2683177) (<https://sciprofiles.com/profile/2683177>),  [Jérôme Fonseca](https://sciprofiles.com/profile/1487283) (<https://sciprofiles.com/profile/1487283>),  [Marie Grall-Bronnec](https://sciprofiles.com/profile/992379) (<https://sciprofiles.com/profile/992379>) and  [Antoine Dany](https://sciprofiles.com/profile/2354744) (<https://sciprofiles.com/profile/2354744>).

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Abstract (1) Background: Chronic non-cancer pain (CNCP) remains a public health challenge around the world. Opioids (PO) have been increasingly used in the treatment of CNCP in the last 20 years. This study aimed to assess the prevalence of opioid misuse and prescribed-opioid use [...] [Read more.](#)




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Designing a Transportation-Strategy Decision-Making Process for a Supply Chain: Case of a Pharmaceutical Supply Chain ([/1660-4601/18/4/2096](https://doi.org/10.3390/ijerph18042096)).

by  [Afaf Haial](https://sciprofiles.com/profile/1417055) (<https://sciprofiles.com/profile/1417055>),  [Loubna Benabbou](https://sciprofiles.com/profile/1084414) (<https://sciprofiles.com/profile/1084414>) and  [Abdelaziz Berrado](https://sciprofiles.com/profile/1128568) (<https://sciprofiles.com/profile/1128568>)

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Abstract Including an active participation of stakeholders along the transportation decision-making process is increasingly recognized as a necessary condition for reaching successful and high-quality decisions. This paper presents a framework for deciding on the appropriate transportation strategy for a supply chain from a multistakeholder [...] [Read more.](#)

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Review

Effectiveness of Food Fortification in Improving Nutritional Status of Mothers and Children in Indonesia

Nikmah Utami Dewi ^{1,*} and Trias Mahmudiono ^{2,*}

¹ Department of Nutrition, Faculty of Public Health, University of Tadulako, Palu 94148, Indonesia

² Department of Nutrition, Faculty of Public Health, University of Airlangga, Surabaya 60115, Indonesia

* Correspondence: nikmah@untad.ac.id (N.U.D.); trias-m@fkm.unair.ac.id (T.M.)

Abstract: Food fortification programs have been conducted in several countries to overcome micronutrient deficiency and related problems with various degrees of effectiveness. Available information regarding the success of food fortification programs in some developing countries, including Indonesia, is still limited. Thus, this study conducts a systematic review of the effects of food fortification of mothers and children using biochemical and anthropometric measures focusing on linear growth. Three databases were used in the literature search, namely PubMed, Science Direct and Google Scholar. Fifteen articles were included for analysis from 517 studies found consisting of Indonesian and English articles published from 2000 to June 2020. Fortification of iron, vitamin A, and iodine can increase the level of hemoglobin, serum ferritin, and serum retinol and median urine iodine excretion, especially in toddlers and schoolchildren. However, multivitamin fortification interventions were associated with various effects on hemoglobin, serum ferritin, and serum retinol but a positive association was found with linear growth indicators in the form of body length for age. The effectiveness of food fortification in reducing the prevalence of stunting still needs more and stronger evidence through studies with large sample size and longer duration.



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Keywords: fortification; Indonesia; nutritional status; stunting

1. Introduction

Hidden hunger is a form of micronutrient deficiency that is still experienced by various developing countries, including Indonesia [1]. In Indonesia, in 2018, the percentage of children with anemia was 38.5%, which increased by 10.4% compared with that in 2013 [2,3]. The percentage of individuals with anemia among pregnant women was much higher, 37.1% in 2013, and increased to 48.9% in 2018 [2,3]. The high prevalence of anemia in Indonesia is mostly related to low iron intake or infectious diseases that increase iron loss from the body, leading to iron deficiency [4–7]. Iron deficiency is a major cause of anemia [2,3] and a risk factor for zinc deficiency that can result in stunting [8,9].

One of the biggest nutritional problems in Indonesia is stunting. Although the prevalence of stunting among children under 5 years old in Indonesia has decreased from 37.2% to 30.8% [2,3], the number of cases still raises a public health concern [10]. The serious implications of stunting experienced by children and its impact on Indonesia's development have made stunting reduction a national priority with a target of decreasing it to 19% by 2024 [11].

A program aiming to reduce community nutritional problems, including stunting, should be multisector and consistent with specific and sensitive programs [12]. Specific programs include short-term interventions for which results can be recorded in a relatively short time using activities performed by the health sector, whereas sensitive programs are long-term interventions in the form of activities that are mostly macro and performed across institutions [12]. Food fortification programs are an example of sensitive programs conducted in several countries [12]. Food fortification programs conducted worldwide included fortification of vitamin A in cooking oil, margarine, and sugar; vitamin D in milk

and margarine; folic acid in flour; iodine in salt; iron in milk, corn flour, beans, pearl millet, and wheat flour [13–16]. In Indonesia, the most critical fortification interventions are iodine in salt and iron fortification of wheat flour, whereas the fortification of vitamin A in cooking oil was optional, but now compulsory since 2020 [17–19].

Food fortification in several countries is associated with different effects on nutritional status or the reduction of the prevalence of nutritional problems. Iron fortification in foodstuffs is associated with increased hemoglobin and serum ferritin levels and decreased the prevalence of anemia in children, pregnant women, adolescents, and adults [16,20,21]; however, it was not positively related to a decrease in stunting and malnutrition in children under 5 years old [22]. Fortification of vitamin A in oil, margarine, sugar, and processed foods increased serum retinol levels [23–25], whereas fortification of vitamin A in staple foods showed the opposite result [26]. Fortification of salt decreased the prevalence of goiter and cretinism and increased the median urinary excretion of iodine [27], whereas fortification of foods other than salt increased urinary excretion of iodine but not height growth based on child age [28].

We are focusing on the fortification of micronutrients, namely, vitamin A, iron, and iodine, in a single food or with other micronutrients. These micronutrients were the focus of fortification in Indonesia until 2020 to reduce the prevalence of vitamin A deficiency, anemia, disorders due to iodine deficiency (IDD), and stunting [29]. In Indonesia, several studies have been conducted to examine the correlation between food fortification and nutritional status [30–41]. However, a meta-analysis or systematic review has never been conducted. We systematically reviewed the literature from the past 20 years published in English and Bahasa Indonesia to determine the association between food fortification programs in Indonesia and improvement of nutritional status in mothers and children using biochemical and anthropometric measures related to stunting.

2. Materials and Methods

This was an unregistered systematic review aimed to assess the effects of food fortification of mothers and children using biochemical and anthropometric measures focusing on stunting. Literature was searched using the PubMed and ScienceDirect databases for English-language studies and Google search engine for Indonesian-language studies. The keywords used were “fortification,” “Indonesia,” “nutrition,” “anemia,” “vitamin A,” “iron,” “iodine,” “malnourished,” and “stunting.” Articles used only in English and Indonesian. Using these keywords, we obtained 517 articles on PubMed search, 179 articles in ScienceDirect, and 339 articles in Google including Google Scholar. In addition, article searches were performed on the selected article bibliography to ensure that all relevant articles had been included in the review list.

Articles were assessed by title and abstract based on certain inclusion and exclusion criteria. The identification of titles and abstracts was performed to see the suitability of the data presented with the stated objectives. The results of food fortification studies using nutritional status as the dependent variable were included in the review. The fortification included were vitamin A, iron, and iodine, into a single food or with other micronutrients. Nutritional status included anthropometry consisting of weight, height/body length, weight for age, height/body length for age, birth weight, knee height, and biochemical measures consisting of hemoglobin, serum retinol, serum ferritin, urine iodine excretion, and hematocrit. The studies were published from 2000 to June 2020 involving study samples consisting of groups of children, women and pregnant women with their babies. The research designs of the studies reviewed consisted of cross-sectional, cohort, quasi-experimental, randomized controlled trial (RCT), and nonrandomized controlled trial (Non-RCT) designs. Articles not in English nor Indonesian and those that did not study anemia, vitamin A deficiency, and iodine deficiency were excluded from this review. The articles were also excluded if they did not contain nutritional status measurements. Articles with conference abstracts, not original studies and containing information similar to the

other articles were also excluded (Figure 1). Home fortification involving the use of Sprinkle was not included in this review because it was not conducted on the same type of food.

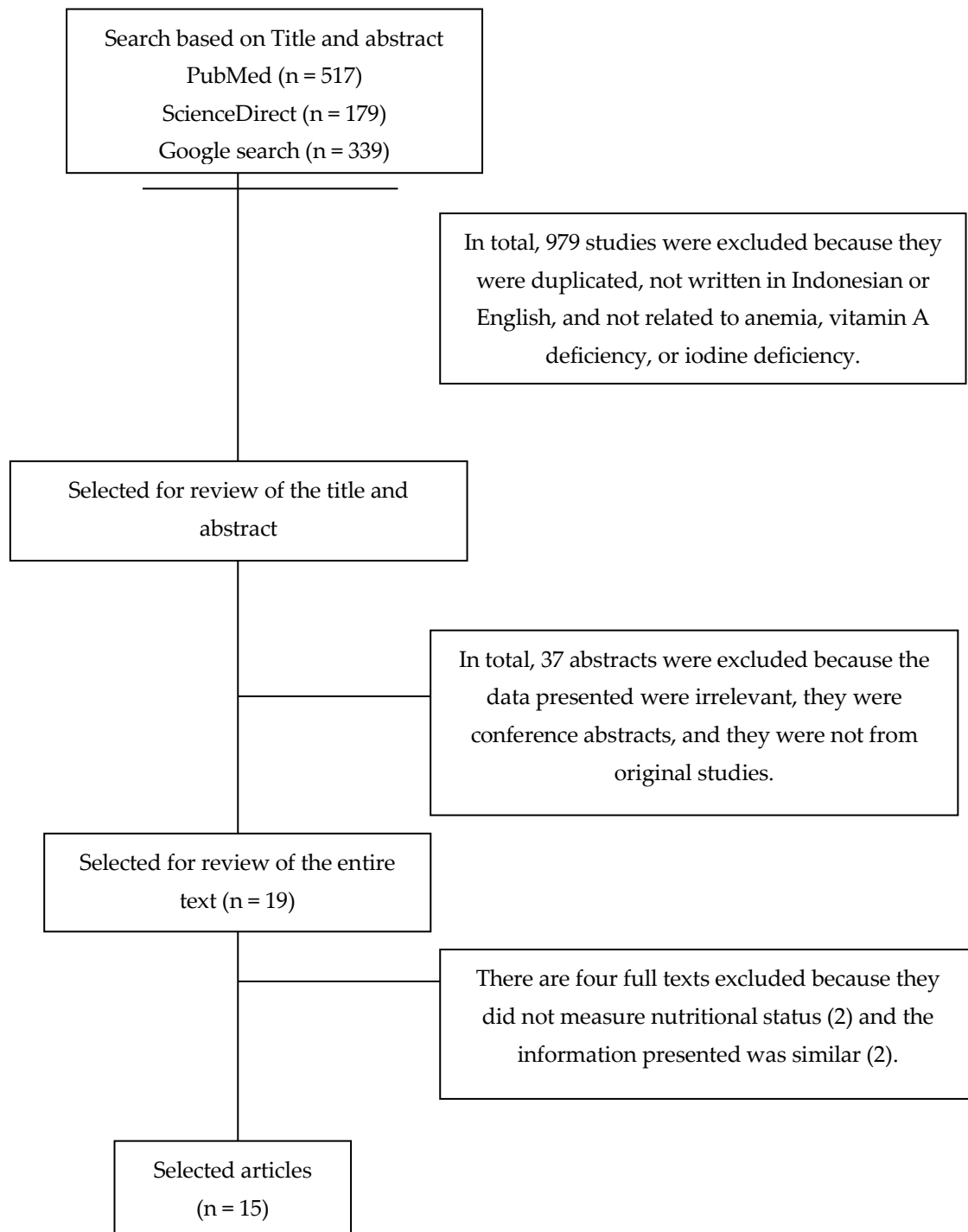


Figure 1. CONSORT diagram of the literature search and determination.

The articles that met the inclusion criteria were coded and are summarized in Table 1, including information on the study design, sample size, and participants, and Table 2, including duration, intervention, control provided, and the results obtained. In total, 15 articles were included according to the criteria used in this review.

Table 1. Studies on the relationship between food fortification and nutritional status.

No.	Reference	Year	Study Design	Sample Amount (n)	Group	Location (Province)	Duration (Days)
Iron							
1.	Sari [30]	2001	RCT	132	4–6 years old	Jakarta	21
2.	Diana [31]	2017	Cohort	190	6 months followed up to 12 months old	West Java	84
Vitamin A							
1.	Achadi [32]	2010	Quasi-experimental	394	8–9 years old	South Sulawesi	84
2.	Sandjaja [33]	2015	Quasi-experimental	Breastfeeding mother: 335, 12–59 months old: 477, 5–9 years old: 186, woman 15–29 years old: 171	Breastfeeding mother, baby aged 6–11 months, children aged 12–59 months, children aged 5–9 years, women aged 15–29 years	West Java	336
3.	Sudikno [34]	2017	Cohort	126	Children of poor family, 6–59 months old	West Java	336
Iodine							
1.	Kasmawati [35]	2015	Non-RCT	26	10–12 years old with urinary iodine excretion value of <100 µg/L	South Sulawesi	10
2.	Samsudin [37]	2015	Quasi-experimental	160	4–9 years old	Central Java	168
3.	Samsudin [36]	2016	RCT	176	6–12 years old	Central Java	168
Multinutrient							
1.	Widayanti [38]	2007	RCT	70	≤5 years old	West Java	112
2.	Prihananto [39]	2007	RCT	210	Pregnant mothers	West Java	168
3.	Saragih [40]	2007	Cohort	120	Pregnant mothers with babies up to 6 months old	West Java	336
4.	Saragih [41]	2012	Cohort	120	Pregnant mothers with babies up to 6 months old	West Java	336
5.	Kurnia [43]	2010	Quasi-experimental	91	≤5 years old	Central Java	84
6.	Semba [44]	2011	Cross-sectional	302,190	6–59 months old	West Sumatera, Lampung, Banten, Jakarta, West Java, Central Java, East Java, West Nusa Tenggara, South Sulawesi	-
7.	Diana [31]	2017	Cohort	190	6 months followed up to 12 months old	West Java	84
8.	Toruntju [42]	2017	RCT	80	Boys, 12–15 years old, with Hb concentration of 8–12 mg%	West Java	168

Table 2. Type and level of fortification and food vehicle.

Study	Type and Level of Fortification	Food Vehicle
Iron Sari [30] Diana [31]	Iron 30 mg, weekly dose Iron	Candies Baby food
Vitamin A Achadi [32] Sandjaja [33] Sudikno [34]	Vitamin A: 13.6 mg retinol/kg Vitamin A: 13.6 mg retinol/kg Vitamin A: 13.6 mg retinol/kg	Cooking oil Cooking oil Cooking oil
Iodine Kasmawati [35] Samsudin [37] Samsudin [36]	Iodine: 0.4 mg/kg KIO3 Iodine: ≥30 mg/kg KIO3 Iodine: 15–55 mg/kg KIO3	Eggs Salt Salt
Multinutrient Widayanti [38]	235.65 µg of vitamin A and 4.17 mg of iron/100 g of biscuits. 76 g in a week	Biscuits
Prihananto [39], Saragih [40], Saragih [41]	<ul style="list-style-type: none"> Biscuit/100 g: iron: 16 mg; iodine: 36.76 mcg; zinc: 6.3 mg; folic acid: 66.72 mcg; vitamin A: 345.76 RE; vitamin C: 46.39 mg Vermicelli/100 g: iron: 4.4 mg; iodine: 18.27 mcg; zinc: 4.4 mg; folic acid: 159.56 mcg; vitamin A: 494.906 RE; vitamin C: 45,27 mg Milk/100 g: iron: 22.58 mg; iodine: 58.40 mcg; zinc: 3.29 mg; folic acid: 48.55 mcg; vitamin A: 468.19 RE; vitamin C: 127.2 mg 	Vermicelli, milk, biscuits
Kurnia [43]	Iron and zinc 10 mg/100 g biscuits. 300 g in a week	Tempeh rice-bran biscuits
Semba [44]	Vitamin A, vitamin C, vitamin D, vitamin E, vitamin K, vitamin B12, thiamine, and riboflavin	Milk and instant noodles
Diana [31]	Vitamin B6, niacin, folic acid, and iron.	Baby food
Toruntju [42]	Iron, zinc, calcium, vitamin A Iron, Zn, vitamin B1, vitamin B3, folic acid, and vitamin B12	Rice

3. Results

The 15 studies consisted of five RCTs [30,36,38,39,42], four quasi-experimental studies [32,33,37,43], four cohort studies [31,34,40,41], one cross-sectional study [44], and one non-RCT [35]. Most studies were conducted in the West Java region [31,34,38–42,44]. Three studies were conducted in Central Java [36,37,43], two studies in South Sulawesi [32,35], and one study in Jakarta City [30] and one used single samples from several cities in Indonesia [44] (Table 1).

Two studies assessed the effectiveness of iron fortification [30,31], three studies assessed the effectiveness of vitamin A fortification [32–34], three studies assessed iodine fortification [35–37], and eight studies assessed multinutrient fortification, including the effectiveness of iron fortification with the addition of other nutrients [31,38–44]. Fortified food ingredients included oil [32–34], candies [30], biscuits [38–41,43], vermicelli [39–41], instant noodles [44], milk [39–41,44], rice [42], salt [36,37], eggs [35], and baby food [31] (Table 2). Anthropometric research parameters were body weight [43], birth weight [39], body weight based on age [31], body weight based on body length [31,38], height or length based on body weight [31,41,44], and knee height. The biochemical nutritional status measurements included albumin level [43], serum retinol [32–34,38,39], hemoglobin [30,32,34,38,39,41], hematocrit [41], serum ferritin [30,39], and urine iodine excretion (UIE) [35–37]. The duration of the interventions or the length of the studies varied from 10 days to 1 year.

As seen in Table 2, iron fortification in candies at a dose of 30 mg per week for 3 weeks increases hemoglobin and serum ferritin levels in children aged 4–6 years old [30]. The assessment of vitamin A fortified cooking oil in two provinces found different results. Studies have reported a significant increase in serum retinol levels, especially in the groups of toddlers and children aged 6–59 months and 5–9 years, respectively, in West Java after fortification [30,40]. In a study conducted in Makassar City, no difference in serum retinol level was found between groups with and without the consumption of Vitamin A-fortified cooking oil [32]. Fortification of iodine in eggs for 10 days significantly increased the median UIE in children aged 10–12 years with iodine deficiency [35], whereas the fortification of iodine in salt for 6 months increased the median UIE but not significantly in children aged 6–12 years in Central Java [36]. A quasi-experimental study in Central Java showed a decrease in UIE after 6 months of fortification of iodine in salt in children aged 4–9 years [37].

Multinutrient fortification interventions were associated with varied results on nutritional status. Vitamin A and iron-fortified biscuit consumption increased the hemoglobin and serum retinol levels in children under 5 years old in a study conducted in Bogor Regency [38]; however, a study conducted in Semarang showed that iron and zinc fortification in tempeh rice-bran biscuits were associated with increased albumin levels and body weight, that were not significantly different from those of the control group [43]. A study conducted in Bogor District on pregnant women showed that the fortification of multinutrients in biscuits, vermicelli, and milk increased the hemoglobin levels but not the mothers' serum ferritin levels [39]. In addition, there was no significant association found between the hemoglobin levels and fortified food in the babies born to mothers with and without fortified food [41].

Regarding linear growth, a study reported that iron fortification in foods in a 9-month-old baby for 84 days (3 months) were associated with increased height for age at 12 months [31]. Among 6-month-old infants, the body lengths and body length gains were significantly higher in the group whose mothers were given multiple-nutrients-fortified foods compared to those in the control group [40]. Studies on children under 5 years old consuming fortified foods showed that foods fortified with multinutrients can increase the body length for age to prevent stunting [31,44] (Table 3).

Table 3. Fortification outcome in several studies.

Study	Outcome			
	Nutritional Status		Prevalence (%)	
	Nonfortification Group	Fortification Group	Nonfortification Group	Fortification Group
Iron				
Sari [30]	↑4.0 (95%CI: 2.0–6.0)	ΔHb (g/L) ↑10.2 (95%CI: 8.3–12)	Anemia (Hb < 11 g/dL) ↓16.6	↓48.9 *
Diana [31]	↑28%	SF (μg/l) ↑71%	ID (SF < 12 μg/L) ↓35.1	↓13.4
		BL/A Iron: β = 0.22; 95% CI: 0.01–0.44 Others: β = 0.29; 95%CI: 0.09–0.48	n/a	
		W/BL (kg/cm) Iron: β = −0.22; 95%CI: −0.42–0.00 Others: β = −0.09; 95%CI: −0.29–0.11		
		W/A Iron: β = −0.03; 95%CI: −0.15–0.10 Others: β = 0.14; 95%CI: 0.02–0.26		
Vitamin A				
Achadi [32]	23	SR (μg/dL) 22.2	Anemia (Hb < 11.5 g/dL) 21.8	11.6
			VAD (SR < 20 ug/dL) 38.4	38.8
				≥12 weeks: 26.6% <12 weeks: 42%
Sandjaja [33]		ΔSR (μg/dL) 6–11 months: 12.3 ** 12–23 months: 2.2 24–59 months: 6.4 5–9 years: 14.9 ** Breastfeeding mother: 13.1 ** Nonbreastfeeding mother aged 15–29 years: 19.1 **	KVA (SR < 20 ug/dL) 6.5–18	0.6–6 *
Sudikno [34]	29.36 ± 1.07	ΔSR (μg/dL) 35.19 ± 0.89 **	VAD (SR < 20 ug/dL) 19.0	5.6 *
	11.18 ± 0.12	ΔHb (g/L) 11.59 ± 0.14	Anemia (Hb < 11 g/dL) 43.7	28.6 **
Iodine				
Kasmawati [35]	6.38	ΔUIE (μg/L) 12.4 **	n/a	
Samsudin [37]	Coastal: 191 Noncoastal: 96	UIE (μg/L) Coastal: 148* Noncoastal: 83	ID (UIE < 100μg/L) Coastal: 10.4 Noncoastal: 51.8	Coastal: 28.6 Noncoastal: 60.2
Samsudin [36]	222	UIE (μg/L) 238	ID (UIE < 100μg/L) 14	13
	1.9(0.5–4.0)	TSH (μIU/mL) 1.8 (0.2–5.9) Multinutrient		
Widayanti [38]	↑0.17 ± 1.05	ΔHb (g/L) ↑0.67 ± 1.11 **	Anemia (Hb < 11 g/dL) ↓20	↓22.8
	↑8.27 ± 4.55	ΔSF (μg/L) ↑11.43 ± 4.47 **	IDA (SF < 12μg/L) ↓2.9	↓17.2
	↑4.38 ± 7.72	ΔSR (μg/dL) ↑10.12 ± 7.84 **	VAD (SR < 20 ug/dL) ↓22.6	↓44.1
	−0.07 ± 0.66	ΔW/L (kg/cm) −0.01 ± 1.07	Wasting 14.3	5.7
Prihananto [39]	PI: ↓1, C: ↓1.1	ΔHb (g/L) ↓0.2 *	Anemia (Hb < 11 g/dL) PI: 77.6, C: 86.2	48.3 *
	PI: ↓0.25, C: ↓0.32	ΔSF (μg/L) 0.23 a	ΔIDA (SF < 12μg/L) PI: ↑71.7, C: ↑63.3	↑39.4
	PI: 3.06 ± 0.34, C: 2.98 ± 0.32	BW (kg) 3.01 ± 0.27	VAD (SR < 20 ug/dL) PI: 20.3, C: 39.7	17.2
			LBW (BW < 2.5 kg) PI: 5.3, C: 3.6	0

Table 3. Cont.

Study	Nutritional Status		Prevalence (%)	
	Nonfortification Group	Fortification Group	Nonfortification Group	Fortification Group
Saragih [40]	Pl: 16.41 ± 1.41 C: 15.76 ± 1.70	ΔBL (cm)	n/a	
		17.94 ± 1.83 *		
	Pl: −0.26 ± 0.88 C: −0.52 ± 1.16	ΔBL/A	0.50 ± 0.92 *	
Pl: 4.02 ± 0.71 C: 3.80 ± 0.74		ΔKH (cm)	4.47 ± 0.64	
Saragih [41]	Pl: 83.0–123.2 C: 70.6–120.3	Hb (g/L)	Anemia (Hb < 11 g/dL)	
			95.7–120.0	Pl: 44.4 C: 63.9
Kurnia [43]	Pl: 1.09 ± 1.38 C: 0.92 ± 0.41	Albumin (g/dL)	Anemia (Ht < 33%)	
		0.95 ± 0.50	Pl: 30.6 C: 38.9	27.8
Semba [44]	Pl: 0.99 ± 1.45 C: 0.24 ± 0.65	W (kg)	n/a	
		0.61 ± 2.34		
Toruntju [42]	↑0.7	Milk		
		Stunting	Village 56.2 City 53.7	Village 43.4 ** City 42.8 **
		Noodles	Village 53.6 City 51.5	Village 45.6 ** City 45.9 **
		ΔHb (g/L)	n/a	
Sudikno [34]	↑0.77	ΔSF (μg/L)		
		↓9.94		
	29.36 ± 1.07	ΔSR (μg/dL)	VAD (SR < 20 ug/dL)	19.0
11.18 ± 0.12	35.19 ± 0.89 **	ΔHb (g/L)	Anemia (Hb < 11 g/dL)	
		11.59 ± 0.14	43.7	28.6 **

* $p < 0.05$ between the fortification and nonfortification group, ** $p < 0.001$ between fortification and nonfortification group. ^a $p < 0.05$ between fortification and placebo. IDA, iron deficiency anemia; ID, iodine deficiency; BW, birth weight; BL, body length; LBW, low birth weight; BL/A, body length for age; W/BL, weight for body length; W/A, weight for age; HB, hemoglobin; SR, serum retinol; SF, serum ferritin; UIE, urine iodine excretion; Ht, hematocrit; KH, knee height; Pl, placebo group; C, control group.

4. Discussion

This review involved 15 studies conducted in the past 20 years. Most studies were conducted in Java Island, especially in the West Java region. West Java Province is the region with the largest population in Indonesia [45]. The longest study duration was 1 year. The average sample size of the studies reviewed was 100–200 individuals, with the largest study sample of 302,190 individuals in one study [44]; therefore, the large number of samples in this study could affect the power of the study [45]. Most studies assessed the effectiveness of multinutrient fortification using dairy as the most widely used food vehicle. The most widely performed biochemical parameters were hemoglobin and serum retinol, whereas the main anthropometric measure was height or body length for age.

Our review revealed that food fortification is effective in increasing hemoglobin and serum ferritin levels and decreasing the prevalence of anemia in infants, children, and toddlers [20,46]. In pregnant women, iron fortification could reduce the risk of preterm birth and giving birth to babies with low birth weight [21]. An RCT in Jakarta revealed that iron fortification in foodstuffs can increase the hemoglobin and serum ferritin levels of children aged 4–6 years with a weekly dose of 30 mg of iron for 3 weeks [30]. However, studies in West Java showed that fortified rice with an iron dose of >50 mg/kg could not increase the hemoglobin and serum ferritin levels in schoolchildren aged 12–15 years [42]. The results of RCTs are often different from those of effectiveness studies. Thus, these results

need to be interpreted carefully, especially in evaluating the success of iron fortification of food, which is practiced in large scale. In Indonesia, iron fortification of wheat flour became mandatory starting in 2001, whereas iron-fortified rice began to be promoted by BULOG in 2019 [18]. The required dosage of flour fortification according to the Presidential Regulation of the Republic of Indonesia is at least 50 mg/kg of iron along with a minimum of 30 mg/kg of zinc, 2.5 mg/kg of thiamine, 4 mg/kg of riboflavin, and 2 mg/kg of folic acid [47].

Regarding anthropometric outputs, iron deficiency is closely related to the incidence of stunting. Iron functions in skeletal growth through the formation of collagen and metabolism of vitamin D which is required in bone formulations [48,49]. Iron deficiency impacts bone homeostasis through disruption of osteoclast and osteoblast activity and differentiation [50]. One study showed that iron fortification of infant foods could increase the body length based on the age of 12-month-old infants [31]. Studies conducted in other countries have revealed that iron fortification may improve iron status in the body but not body length for age [51–53] and may increase height for age but not significantly [54]. The effect of fortification was greater in subjects with anemia at baseline than that in those with normal condition [55].

Another form of food fortification found in Indonesia based on the results of our review was a nutrient improvement in cooking oil through vitamin A fortification. The effectiveness of vitamin A fortification in improving vitamin A status in Indonesia was evaluated in two studies. An evaluation study of the use of fortified cooking oil in Makassar City, South Sulawesi, for 3 months did not show changes in serum retinol in the intervention group [32]. However, this study showed that the prevalence (26.6%) of vitamin A deficiency was lower in children who consumed fortified oil for ≥ 12 weeks compared to children who consumed fortified oil for less than 12 weeks (42%) [32]. A study involving infants, girls, and breastfeeding mothers in West Java for 1 year at a dose of 13.6 mg retinol/kg of food vehicle showed that vitamin A-fortified cooking oil significantly increased serum retinol [33]. The longer duration of fortified oil consumption affects the storage of vitamin A in the body, thus increasing vitamin A status [56]. Positive results have been also found in several countries regarding the effects of fortification of food with vitamin A in increasing serum retinol levels [26].

Another nutrient that was widely used in food fortification was Iodine. Iodine fortification in Indonesia began during the Dutch occupation era in 1927, stopped in 1945, and restarted in 1976 [57]. Moreover, the Urine Iodine Excretion (UIE) of schoolchildren increased from 164.8 $\mu\text{g/L}$ in 1995 to 330.2 $\mu\text{g/L}$ in 1997 and 306.0 $\mu\text{g/L}$ in 1999 [57]. The schoolchildren in only one province showed UIE of $<100 \mu\text{g/L}$ in 1999 [57]. A quasi-experimental study in Central Java in 2015 was not associated with an increase in median UIE or a decrease in the prevalence of iodine deficiency of $<100 \mu\text{g/L}$ UIE in children aged 4–9 years [37]. RCTs in different parts of central Java using fortified iodine doses of 15–55 mg/kg increased the UIE in children 6–12 years, but this did not reach statistical significance [36]. One study in South Sulawesi showed that the fortification of eggs with iodine for 10 days at a fortification dose of 0.4 mg/kg significantly increased the median UIE in children aged 10–12 years [35]. Quasi-experimental studies and RCTs conducted in Central Java found that the consumption habits of iodine sources were significantly different between groups [36,37], thus potentially affecting the results obtained.

The multi-micronutrient interventions in this review showed various results in improving the biochemical nutritional status in mothers and children. Vitamin A- and iron-fortified biscuits could increase the hemoglobin and serum retinol levels in toddlers [38], whereas the fortification of biscuits, vermicelli, and milk with multinutrients could increase the hemoglobin but not serum ferritin levels of mothers and showed no effect on the hemoglobin levels of babies [39,40]. In pregnant women, the phenomenon of decreasing serum ferritin may occur due to the use of ferritin in increasing the mass of maternal blood cells [58]. In studies conducted in various countries, the provision of multinutrient-fortified foods has a positive effect on reducing the prevalence of anemia and iron deficiency in

mothers [59]. Two studies indicated that multinutrient fortification interventions had a significant positive influence on the body length growth and the z score for body length based on infant age [31,40]. In addition, a study showed that multinutrient fortification interventions reduced the prevalence of stunting in toddlers [44]. The effectiveness of multinutrient fortification on improving the linear growth in Indonesia can be explained by the pre-existing multinutrient deficiencies that may be experienced by individuals in the population [60]. Since macronutrient deficiencies such as wasting and underweight remain a major public health problem in Indonesia [2], protein and energy malnutrition likely affect the body's physiological functions [61]. Lack of these nutrients causes rapid growth failure because micronutrients cannot be of maximum benefit according to their function in linear growth [61,62].

Multinutrient fortification had a positive impact on the linear growth although the impact is still insignificant in children [63,64]. Nevertheless, the statistically insignificant result does not mean that the change was not biologically significant to the health of the individuals, particularly with respect to children. The difference in results from those found in Indonesia could be due to differences in the duration of the intervention performed [54,55], the type of vehicle used [51,54], the target group in the study [54], or pre-existing micronutrient deficiency conditions that were unknown at the start of the study [55].

Although food fortification in Indonesia showed promising results in improving nutritional status and decreasing the prevalence of anemia, iron deficiency, and vitamin A deficiency, various studies with longer durations of body height escalation assessment involving large study samples are needed to discover the effectiveness of food fortification on body height escalation and the reduction of stunting prevalence. In addition, this study did not evaluate the types of fortification methods used due to the lack of information available from the studies reviewed. To the best of our knowledge, this study is the first systematic review describing the effectiveness of nutrient fortification in food in improving the nutritional status in children and pregnant women in Indonesia.

5. Conclusions

The effectiveness of food fortification in reducing micronutrient deficiency problems in Indonesia presents promising results; however, the effectiveness of food fortification in reducing the prevalence of stunting still needs more and stronger evidence, although several studies have indicated positive results. Nonetheless, this review might be a starting point for a sound strategy for future studies pertaining to the level and duration of food fortificant used.

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