

Editors ROSLINA ABDUL RAHIM AHMAD FAIDZAL OTHMAN MOHD NAZLI KAMARULZAMAN



Editors ROSLINA ABDUL RAHIM AHMAD FAIDZAL OTHMAN MOHD NAZLI KAMARULZAMAN



Gombak • 2023

First Print, 2023 ©IIUM Press, IIUM

IIUM Press is a member of the Majlis Penerbitan Ilmiah Malaysia – MAPIM (Malaysian Scholarly Publishing Council) Persatuan Penerbit Buku Malaysia – MABOPA (Malaysian Book Publishers Association) Membership No. 201905

All rights reserved. No Part of this publication may be reproduced, stored in retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without any prior written permission of the publisher.

Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Roslina Abdul Rahim

Transforming Medical Healthcare Through Research / Roslina Abdul Rahim, Ahmad Faidzal Othman, Mohd Nazli Kamarulzaman e-ISBN 978-967-491-316-8

- e-ISBN 978-907-491-510-8
- 1. Medical care--Research
- 2. Health care reform
- I. Ahmad Faidzal Othman
- II. Mohd Nazli Kamarulzaman
- III. Title

362.1072 RA440.85

> Published in Malaysia by IIUM Press International Islamic University Malaysia P.O. Box 10, 50728 Kuala Lumpur, Malaysia

CONTENTS

Tablesxi
Figuresxiii
Prefacexvii
Acknowledgementsxix
Introductionxxi
Roslina Abdul Rahim, Ahmad Faidzal Othman and Mohd Nazli Kamarulzaman
PART 1: BASIC MEDICAL SCIENCES RESEARCH1
Chapter 1: Effect of Climate Variability on Dengue Cases in Pahang
Chapter 2: The Impact of Spousal Support on Mental and Maternal Healthcare of Postpartum Patients in the Gombak District
Chapter 3: The Effects of Tualang Honey on Sperm Profile and Follicular- Stimulating Hormone in High Cholesterol Diet-Induced Animal Model29 Sakiinah Hasan, Roslina Abdul Rahim, Mohd Afzal Alias, Naznin Muhammad, Nor Zamzila Abdullah, Redzuan Nul Hakim Abdul Razak and Faridah Ismail.
Chapter 4: The Effect of Transient Receptor Potential Vanilloid 4 (TRPV4) Ligands on Fatty Acid-Binding Protein 4 (FABP4) Adipocytes Signalling in Different Duration of Differentiation
Chapter 5: Road Construction Workers' Safety Performance as a Risk Factor for Workplace Accidents in Developing Countries: A Systematic Review58 Mohd Faiz Itam, Lina Farhana Ramli, Nik Qistina NAR, Mohd Rafee Baharudin, Ahmad Azuhairi Ariffin and Anita AR
PART 2: CLINICAL RESEARCH91
Chapter 6: Placenta Accreta Spectrum Disorder in a Tertiary Referral Centre in Malaysia: A Six-Year Review

in the Vascular Tertiary Center During Covid-19 Pandemic103

Muhammad Shamil Suhaimi, Muhammad Irfan Mohamad Salmi, Syaza

Chapter 7: Telemedicine in the Management of Outpatient Clinic: Experience

Putri Zainudin, Muhammad Afiq Kodiron, Muhammad Abdul Jaafar, Azuwairie Amir, Sanjay Dev Singh Dharshan Singh, Mohd Norhisham Azmi Abdul Rahman and Ahmad Faidzal Othman	
Chapter 8: The Association of Anthropometric Characteristics, Hormonal Alterations and Ovarian Volume with Polycystic Ovarian Syndrome10 Sumayyah Mohammed Faridz, Zalina Nusee, Nor Faiza Mohd Tohit, Hamizah Ismail, Nurkhairulnisa Abu Ishak, Roslina Abdul Rahim and Nor Zamzila Abdullah	9
Chapter 9: Factors of Elective Daycare Cancellation in Tertiary Vascular Center12 Muhammad Shamil Suhaimi, Muhammad Irfan Mohamad Salmi, Syaza Putri Zainudin, Muhammad Afiq Kodiron, Muhammad Abdul Jaafar, Azuwairie Amir, Sanjay Dev Singh Dharshan Singh, Mohd Norhisham Azmi Abdul Rahman and Ahmad Faidzal Othman	2
PART 3: CASE SERIES12	7
Chapter 10: Bowel Ischaemia in a Post-Covid-19 Infection12 Harjit Singh Chaal and Tony Yong Yee Khong	B
Chapter 11: A Case Report of Elevated Beta Human Chorionic Gonadotrophin: Doctor, Am I Pregnant?	7
Chapter 12: Extramammary Paget's Disease of Scrotum : A Rare Encounter Lesion	4
Chapter 13: Cupping Therapy: A Misadventure14 Muhammad Shamil Suhaimi, Muhammad Irfan Mohamad Salmi, Syaza Putri Zainudin, Muhammad Afiq Kodiron, Muhammad Abdul Jaafar, Azuwairie Amir, Sanjay Dev Singh Dharshan Singh, Mohd Norhisham Azmi Abdul Rahman and Ahmad Faidzal Othman	9

Chapter 15: Heel Reconstruction with Free Osteofasciocutaneous Flap of Deep Circumflex Iliac Artery: A Report of Two Cases Mohd Ariff Sharifudin , Wan Faisham Wan Ismail , Nor Azman Mat Zin and Sahran Yahaya	.164
Conclusion Roslina Abdul Rahim, Ahmad Faidzal Othman and Mohd Nazli Kamarulzaman	. 173
Contributors	. 177
Index	. 181

TABLES

Table 1.1	Poisson generalized linear model coefficients for dengue cases (Lag 0-month) in the selected district in Pahang	8
Table 2.1	Spousal support in MHC during antenatal, intrapartum, and postpartum.	18
Table 2.2	The association of Spousal support and risk of PPD.	19
Table 2.3	Respondents' factors associated with PPD	20
Table 2.4	Spouse's factors associated with PPD.	21
Table 5.1	The methodological quality of cross-sectional study.	69
Table 5.2	Characteristics of risk factors for road construction accidents among workers in developing countries.	73
Table 5.3	Characteristics of risk factors on road construction accidents among workers in developing countries according to the Construction Accident Causation elements.	76
Table 6.1	Demographics and Obstetric Characteristics of Women with PAS.	94
Table 6.2	Diagnosis of Placental Invasion at Prenatal Ultrasound, Intraoperative, and Histopathology in PAS Women Who Had Hysterectomy.	95
Table 6.3	Intrapartum Procedures and Surgical Modalities for PAS.	96
Table 6.4	Maternal Morbidity Following Primary PAS Surgery.	97
Table 7.1	Telemedicine Satisfaction Questionnaire Item (Addopted from Yip et al., 2003).	104
Table 8.1	Comparison of studied parameters between PCOS and Non-PCOS groups.	112
Table 8.2	Comparison of studied parameters to BMI between PCOS and non-PCOS groups.	112
Table 8.3	Correlation between studied parameters to the HOMA-IR in PCOS and non-PCOS groups.	113
Table 9.1	Demographic data of cancellation on vascular daycare surgery.	123
Table 14.1	Patients' characteristics predictive of GC.	161

FIGURES

Figure 1.1	Association between climate variables and dengue cases by the district in Pahang.	7
Figure 3.1	The level of follicular-stimulating hormone (FSH) in the high cholesterol diet group.	34
Figure 3.2	The sperm parameters in the high cholesterol (H1) diet groups.	35
Figure 3.3	The level of follicular-stimulating hormone (FSH) in the high cholesterol diet groups.	36
Figure 3.4	The sperm parameters in the high cholesterol diet groups.	37
Figure 4.1	Results of <i>Fabp4</i> gene expression from primary rat adipocytes treated with TRPV4 agonist and antagonist at (a) day 5 and (b) day 9 differentiation.	48
Figure 4.2	Results of FABP4 protein expression (CL) and secretion (CM) from primary rat adipocytes treated with TRPV4 agonist/antagonist obtained from (a) day 5 and (b) day 9 differentiation.	49
Figure 4.3	Day 5 differentiation.	50
Figure 4.4	Day 9 differentiation.	50
Figure 5.1	The Construction Accident Causation Framework. (Adapted from Beqiri, 2020)	63
Figure 5.2	Flow chart showing articles search, inclusion criteria, and selection process.	66
Figure 5.3	The risk factors of road construction accidents in developing countries (adaptation of the ConAC Framework).	72
Figure 5.4	Characteristics of workers' safety performance as risk factors for road construction accidents in developing countries (adaptation of the ConAC Framework).	72
Figure 7.1	Patient's satisfaction with using telemedicine.	105
Figure 7.2	Diseases of patients interviewed during the telemedicine.	105
Figure 7.3	Patients satisfaction with using telemedicine.	106
Figure 8.1	Correlation between Insulin and HOMA-IR in the PCOS group.	114
Figure 8.2	Correlation between Insulin and HOMA-IR in the non-PCOS group.	114
Figure 8.3	Correlation between HOMA- β and HOMA-IR in the PCOS group.	115

Figure 8.4	Correlation between $\text{HOMA-}\beta$ and HOMA-IR in the non-PCOS	
	group.	115
Figure 9.1	Type of cases for vascular surgery.	124
Figure 9.2	Reasons for cancellation of the surgery.	124
Figure 10.1	Bowel ischaemia of terminal ileum to rectosigmoid (completion subtotal colectomy specimen from the second surgery). The previous ileocolic anastomosis was gangrenous.	131
Figure 10.2	Gallbladder with patchy necrotic spots.	131
Figure 10.3	Multiple thrombotic spots are seen throughout the small bowel.	132
Figure 10.4	Perforation more than 50% circumference of Jejunum, 30 cm from the duodenojejunal junction.	133
Figure 11.1	Intraoperative finding: Enlarged stomach due to presence of a retroperitoneal tumour.	139
Figure 11.2	EUS finding: A: heterogeneous lesion extending from the head to the body of the pancreas. B: The presence of portal hepatic causing distorted SMA and Celiac trunk.	139
Figure 12.1	Image of tumour after excision done.	144
Figure 12.2	Tumour over left scrotal involving penile shaft with erythematous lesion.	146
Figure 12.3	Post excision and reconstruction surgery.	147
Figure 13.1	Cupping therapy	150
Figure 13.2	Swelling over the back with skin changes.	151
Figure 13.3	Incision and drainage of back abscess.	152
Figure 14.1	Section of the gallbladder shows extensive mucosal ulceration with transmural necrosis of the gallbladder wall (H&E 40x).	156
Figure 14.2	Absence of mucosa and muscular layer was replaced by necrotic material, neutrophils, and granulation tissue (H&E 400x).	156
Figure 14.3	CT image shows an irregular thickened wall of GB with wall discontinuity and subhepatic collection, suggesting perforation.	158
Figure 14.4	CT image shows multiple GB calculi, markedly thickened GB wall measuring 10mm, surrounding pericholecystic fluid, with splenomegaly.	160
Figure 15.1	(A and B) Degloving injury of the right heel with comminuted calcaneal fracture and massive bone loss. (C) The wound healing well with healthy granulation tissue. (D and E) Heel reconstruction and flap coverage with an osteofasciocutaneous flap of the DCI). (F	

and G) Plain radiographs show stable fixation with a cross ankle external fixator and screw.

- Figure 15.2 (A) The gross defect after total calcanectomy. (B) Resected chondroblastoma of the right calcaneum. (C) Composite iliac bone flap with dual supply (deep and superficial circumflex iliac vessels). (D) The iliac bone graft was placed into the defect and fixed to the talus bone with screws. (E and F) Radiographic images at 2- and 5 months post-reconstruction showing bony union and good contour restoration. 168
- Figure 15.3 (A) The patient was able to fully weight bear at 7 months postsurgery. (B) He was also able to tip toe indicating that the bone and soft tissue integration was strong and functional.

169

166

PREFACE

All praise to Him, that with His blessing, the inaugural research book from our Medical Research Symposium is finally published. Transforming Medical Healthcare Thorugh Research is a research book that compiles the findings from studies that have been presented during the virtual MRS 2021.

The research book contains an introduction, fifteen research chapters that being divided into three parts and overall conclusion as the final chapter of this book. There are three major parts of this book which are the Basic medical science research, clinical research and case series. All chapters are peer-reviewed and carefully selected by the expertise of each area. The research work that is highlighted in this book spans the spectrum of medical sciences, from fundamental to clinical, to case series and all these research work being carried out during the pandemic. All the images describe in this book are obtained with consent from the patients and it help explaining the research works. This book is written and edited in a such way that is simple and easy for the readers to understand on how the research work being conducted and all the scientific findings were clearly explained.

It is hopeful that the work would contribute and support the transformation of healthcare, especially in this post-pandemic era. In the spirit of knowledge sharing, open access and sustainable and responsible research, we hope that the addition information to the body of knowledge could further enhance and encourage further research likewise.

Thank you.

ROSLINA ABDUL RAHIM AHMAD FAIDZAL OTHMAN MOHD NAZLI KAMARULZAMAN

ACKNOWLEDGEMENTS

Alhamdulillah, Praise be to Allah S.W.T. Most Gracious and Most Merciful. The editorial board and authors would like to thank the honourable Rector of the International Islamic University Malaysia, Tan Sri Prof. Emeritus Dzulkifli Abdul Razak, the honourable Deputy Rector of Responsible Research and Innovation of International Islamic University Malaysia Prof. Dr. Ahmad Hafiz Zulkifly, the honourable Dean of Kulliyyah of Medicine, Prof. Dr. Jamalludin Ab. Rahman, esteemed reviewers and expert panels, and all who have contributed to the publication of this research book.

The editorial board would also like to thank Asst. Prof. Dr Nour El Huda Abd. Rahim, Asst. Prof. Dr. Wan Muhamad Salahudin Wan Salleh, Asst. Prof. Dr. Wan Fatein Nabeila Wan Omar and Asst. Prof. Dr. Hidayatul Radziah Ismawi and Sr Majdiah Che Othaman for their contributions in developing this research book.

We hope to be able to emulate and practice all that we have learned as we strive to fulfil our roles as responsible, dedicated, and ethical researchers who will continue to contribute to the sustainability of beneficial knowledge in our respective fields.

CONTRIBUTORS

Ahmad Azuhairi Ariffin Department of Community Health, Faculty of Medicine and Health Sciences, UPM

Ahmad Faidzal Othman Department of General Surgery, SASMEC, IIUM

Akmal Azim Ahmad Alwi Department of General Surgery, SASMEC, IIUM

Andrew John Bennett School of Biomedical Science, University of Nottingham, UK

Anita Abdul Rahman Department of Community Health, Faculty of Medicine and Health Sciences, UPM

Azuwairie Amir Department of General Surgery, SASMEC, IIUM

Edre Mohammad Aidid Department of Community Medicine, Kulliyyah of Medicine, IIUM

Faridah Ismail Department of Basic Medical Science, Kulliyyah of Medicine, IIUM

Hamizah Ismail Department of Obstetrics and Gynaecology, SASMEC IIUM

Harjit Singh Chaal Hospital Tengku Ampuan Rahimah, Klang

Hazulin Mohd Radzuan Department of Basic Medical Science, Kulliyyah of Medicine, IIUM

Islah Munjih Abdul Ab Rashid Department of General Surgery, SASMEC, IIUM

Isnizam Sapuan Department of Community Medicine, Kulliyyah of Medicine, IIUM

Contributors

Izzni Adilah Dzulkifli Department of Obstetrics and Gynaecology, SASMEC IIUM

Junaini Kasian Department of General Surgery, SASMEC, IIUM

Karimah Hanim Abd Aziz Department of Community Medicine, Kulliyyah of Medicine, IIUM

Khairunisa Ahmad Affandi Department of Pathology and Laboratory Medicine, SASMEC, IIUM

Lina Farhana Ramli Ministry of Health, Putrajaya, Malaysia

Mark A. Cole School of Life Sciences, University of Nottingham, UK

Mat Salleh Sarif Department of General Surgery, SASMEC, IIUM

Mohd Afzal Alias Department of Basic Medical Science, Kulliyyah of Medicine, IIUM

Mohd Ariff Sharifudin Department of Orthopaedics, UNISZA

Mohd Azam Mohd Yusoff Department of Obstetrics and Gynaecology, SASMEC IIUM

Mohd Fahmi Abd Aziz Department of General Surgery, SASMEC, IIUM

Mohd Faiz Itam Ministry of Health, Putrajaya, Malaysia

Mohd Nazli Kamarulzaman Department of General Surgery, SASMEC, IIUM

Mohd Norhisham Azmi Abdul Rahman Department of General Surgery, SASMEC, IIUM Contributors

Mohd Rafee Baharudin Department of Community Health, Faculty of Medicine and Health Sciences, UPM

Muhammad Abdul Jaafar Department of General Surgery, SASMEC, IIUM

Muhammad Afiq Kodiron Department of General Surgery, SASMEC, IIUM

Muhammad Irfan Mohamad Salmi Department of General Surgery, SASMEC, IIUM

Muhammad Shamil Suhaimi Department of General Surgery, SASMEC, IIUM

Nadirah Hassan Department of General Surgery, SASMEC, IIUM

Naznin Muhammad Department of Pathology and Laboratory Medicine, SASMEC, IIUM

Nik Qistina Nik Abdul Rahim Ministry of Defence, Putrajaya, Malaysia

Nor Adibah Mohd Kusni Department of Obstetrics and Gynaecology, SASMEC IIUM

Nor Azman Mat Zin Department of Orthopaedics, USM

Nor Faiza Mohd Tohit Department of Community Medicine, Kulliyyah of Medicine, IIUM

Noraihan Mohd Nordin Department of Obstetrics and Gynaecology, Hospital Tunku Azizah Kuala Lumpur

Norhana Mohd Kasim Department of Obstetrics and Gynaecology, Hospital Sungai Buloh

Norzamzila Abdullah Department of Pathology and Laboratory Medicine, SASMEC, IIUM

Contributors

Noor Artika Hassan Department of Community Medicine, Kulliyyah of Medicine, IIUM

Nurkhairulnisa Abu Ishak Department of Obstetrics and Gynaecology, SASMEC IIUM

Razman Mohd Rus Department of Community Medicine, Kulliyyah of Medicine, IIUM

Redzuan Nul Hakim Abdul Razak Department of Basic Medical Science, Kulliyyah of Nursing, IIUM

Roslina Abdul Rahim Department of Basic Medical Science, Kulliyyah of Medicine, IIUM

Sahran Yahaya Department of Orthopaedics, USM

Sakiinah Hasan Department of Basic Medical Science, Kulliyyah of Medicine, IIUM

Sanjay Dev Singh Dharshan Singh Department of General Surgery, SASMEC, IIUM

Siti Kamariah Che Mohamed Department of Radiology, SASMEC, IIUM

Sumayyah Mohammed Faridz Department of Obstetrics and Gynaecology, SASMEC IIUM

Syaza Putri Zainudin Department of General Surgery, SASMEC, IIUM

Tony Yong Yee Khong Hospital Tengku Ampuan Rahimah, Klang

Wan Faisham Wan Ismail Department of Orthopaedics, USM

Zalina Nusee Department of Obstetrics and Gynaecology, SASMEC IIUM

180

INDEX

A

accidents, 58, 60-62, 64-68, 71-73, 76, 78, 84 acute cholecystitis, 154-155, 158-159, 162 acute respiratory distress syndrome, 128, 133 adipocytes, 44 adipogenic, 52 Aedes mosquito, 9 appendicitis, 130 atherosclerotic diseases, 44

В

Beta hCG, 137, 140 biopsy, 144, 146, 148, 160, 167 breastfeeding, 15, 17, 19, 22-24 burning sensation, 145

С

caesarean, 92-93, 95, 98-99 calcaneal, 164, 166-169 Calcium signalling, 50-51 cancer, 44, 137, 139, 141-142, 145 child's vaccination, 17 childbirth, 15, 17 chi-square test, 18 complications, 15, 97, 99-100, 149, 152, 154-155, 161-163, 168, 170 COVID-19, 17, 19, 25, 103, 128, 132-135, 154-155, 157, 162 cross-sectional, 16, 66, 68-69, 83-84, 110, 117 cross-sectional study, 16, 66, 69, 83, 117 CRP, 134, 155-157, 159, 161 CT scan, 130, 139, 149 Cupping, 149-150, 152 CXR, 155, 158 cytokine, 128

D

dengue, 2
depression, 17, 22-24
developing countries, 59, 64, 66, 68, 71-73, 76-77, 83-85
diabetes, 111, 123, 128-129, 149, 151-152, 154, 156-157, 159, 161-162

Ε

elective daycare, 123 emotional stress, 122 endoscopy, 138 epidemiology, 3 epigastric pain, 138, 140

F

fatal, 58, 61, 73 fatty acid-binding protein 4 (FABP4), 44 fever, 2 follicular-stimulating hormone (FSH), 29, 34, 36

G

gallbladder, 130, 154-155, 156-157 Gangrenous cholecystitis, 154 ghrelin, 109-111, 116 glucose, 40, 44, 109, 111, 116, 159

Н

high cholesterol diet (HCD), 29, 31 histological, 98, 138 Hypercholesterolaemia, 29, 38 hyperglycaemic, 152 hypertension, 15, 123, 128-129, 150, 154, 157 hypothyroidism, 111 hysterectomy, 92, 94-100

I

ICU, 92, 97, 130, 132, 159-160, 162 infertility, 29 insulin, 45, 109-111, 115-116, 118, 156-157, 159 insulin resistance, 109-111, 115-116, 118 ischaemia, 130-131, 134

J

jaundice, 15, 138, 140, 154, 159

L

laparoscopic, 138, 157, 162 leptin, 109-111, 116, 118

Μ

major depressive disorder (MDD), 24 maternal healthcare, 15 maternal morbidity, 92, 96 mental, 15 metabolic syndrome, 44, 109, 115 metastatic, 147 monsoon, 5 mortality, 24, 60, 92, 98, 128, 163 mosquito-borne viral infection, 2

Ν

necrotic, 130-131, 134, 155-156

0

occupational injuries, 58 ovarian volume, 109-111, 117-118

Ρ

Pahang, 2-12 pain, 96, 129-130, 132, 134, 138, 145, 149-152, 154-157, 159, 167-168, 170 pandemic, 17, 19, 25, 103-104, 106-107, 117, 128, 135.154 Peninsular Malaysia, 2, 116 placenta accreta, 92 placenta accreta spectrum disorder, 92 placenta praevia, 93, 98 pneumonia, 128-129, 132-133, 155, 158-159, 162 polycystic ovarian syndrome, 109, 115 postpartum depression, 15 pregnancy, 15 pregnant, 15, 137, 141 prevention, 3 prognosis, 141, 147

R

rainfall, 2-6, 9, 11 reconstruction, 147, 164-166, 168-170 retrospective, 5, 92, 99-100, 134, 146 road construction, 60, 64-68, 71-73, 76, 78-79, 84 road construction workers', 58

S

safety education, 78 safety performance, 58 scrotum, 144-145, 147 sepsis, 96, 99, 149, 152, 161-162 sperm concentration, 32 sperm morphology, 33 sperm motility, 32 sperm profile, 29, 38, 40 *sperm viability*, 32 spousal support, 15 staphylococcus aureus, 149, 151 streptococcus, 151 stroke, 149, 151 swelling, 149

Т

tachycardic, 129, 157, 159 tachypnoeic, 157 telemedicine, 103-104, 106 temperature, 4 temperature-mortality, 4 tenderness, 145, 158-159 Transient Receptor Potential Vanilloid 4 (TRPV4), 44 Tualang Honey (TH), 29 tumor, 145, 147

U

ultrasound, 17-19, 21, 95-96, 98, 100, 110, 118, 134, 141 utero-placental, 95

V

vascularised, 164, 167

W

WBC, 155-159, 161 weather, 4 workplace accidents, 58 World Health Organization (WHO), 2 wound healing, 166

Transforming medical healthcare through research is a research book that comprises of three major parts which are the Basic medical sciences research, clinical research, and case series. All these authors have participated in our Medical Research Symposium 2021 which was conducted online due to the pandemic. It highlights the latest scientific research findings in each area of expertise.

This e-book is published to embrace the concept of open access to knowledge and sustainability by compiling the results of their resilience and dedication to be shared with the academic community. All articles were selected by experts in the field and peer reviewed.

We really hope that this e-book would benefit other academicians, researchers, clinicians, and both undergraduate and postgraduate students for future reference in their research work in medical and health sciences.



IIUM Press (603) 6421 5014 / 5018 iiumbookshop@iium.edu.my iiumbookshop.com www.facebook.com/iiumpress www.instagram.com/iium_press https://twitter.com/pressIium



Press