

**NON-COMMUNICABLE
DISEASES AND INJURIES:
BASELINE FINDING OF A RISK-
EPIDEMIOLOGICAL STUDY**

NOOR HASSIM BIN ISMAIL
MOHD HASNI BIN JA'AFAR
ZALEHA BINTI MD ISA

PENERBIT UNIVERSITI KEBANGSAAN MALAYSIA
BANGI • 2024
www.ukm.my/penerbit

Cetakan Pertama / *First Printing*, 2024
Hak Cipta / *Copyright* Universiti Kebangsaan Malaysia, 2024

Hak cipta terpelihara. Tiada bahagian daripada terbitan ini boleh diterbitkan semula, disimpan untuk pengeluaran atau ditukarkan ke dalam sebarang bentuk atau dengan sebarang alat juga pun, sama ada dengan cara elektronik, gambar serta rakaman dan sebagainya tanpa kebenaran bertulis daripada Penerbit UKM terlebih dahulu.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopy, recording, or any information storage and retrieval system, without permission in writing from Penerbit UKM.

Diterbitkan di Malaysia oleh / *Published in Malaysia by*
PENERBIT UNIVERSITI KEBANGSAAN MALAYSIA
43600 UKM Bangi, Selangor Darul Ehsan, MALAYSIA
www.ukm.my/penerbit
e-mel: penerbit@ukm.edu.my

Penerbit UKM adalah anggota / *is a member of the*
MAJLIS PENERBITAN ILMIAH MALAYSIA /
MALAYSIAN SCHOLARLY PUBLISHING COUNCIL
PERSATUAN PENERBIT BUKU MALAYSIA /
MALAYSIAN BOOK PUBLISHERS ASSOCIATION
No. Ahli / *Membership No.* 198302

Atur huruf oleh / *Typeset by*
PENERBIT UNIVERSITI KEBANGSAAN MALAYSIA
43600 UKM Bangi, Selangor Darul Ehsan, MALAYSIA

Dicetak di Malaysia oleh / *Printed in Malaysia by*
MASSA CREATIVE ENTERPRISE
Back side of GF-03A, Menara Paragon, Persiaran Bestari,
Cyber 11, 63000 Cyberjaya, Selangor Darul Ehsan, MALAYSIA



Cataloguing-in-Publication Data
Perpustakaan Negara Malaysia
A catalogue record for this book is available
from the National Library of Malaysia

ISBN 978-629-486-353-8

Contents

List of Tables & Figures ... 9

Preface ... 13

CHAPTER 1 The Prospective Urban and Rural Epidemiological Study
(PURE) ... 15

Noor Hassim Ismail, Mohd Hasni Ja'afar & Zaleha Md Isa

CHAPTER 2 Prevalence and Associated Factors of Non-fatal Injuries due
to Road Traffic Accidents ... 26

*Zaleha Md Isa, Noor Hassim Ismail, Rosnah Ismail, Azmi
Mohd Tamil, Mohd Hasni Ja'afar, Nafiza Mat Nasir,
Maizatullifah Miskan, Najihah Zainol Abidin, Nurul Hafiza
Ab Razak & Khairul Hazdi Yusof*

CHAPTER 3 Prevalence and Factors Associated with Pre-hypertension &
Hypertension ... 35

*Rosnah Ismail, Noor Hassim Ismail, Azmi Mohd Tamil,
Mohd Hasni Ja'afar, Zaleha Md Isa, Nafiza Mat Nasir,
Suraya Abdul-Razak, Najihah Zainol Abidin, Nurul Hafiza
Ab Razak, Khairul Hazdi Yusof & Aziemah Zulkifli*

CHAPTER 4 Prevalence and Associated Factors of Prediabetes and
Diabetes ... 49

*Rosnah Ismail, Noor Hassim Ismail, Azmi Mohd Tamil,
Mohd Hasni Ja'afar, Zaleha Md Isa, Farnaza Ariffin, Anis
Safura Ramli, Najihah Zainol Abidin, Nurul Hafiza Ab
Razak, Khairul Hazdi Yusof & Aziemah Zulkifli*

CHAPTER 5 Macronutrients Intake among Type 2 Diabetes Mellitus Patients ... 61

Zaleha Md Isa, Noor Hassim Ismail, Azmi Mohd Tamil, Mohd Hasni Ja'afar, Rosnah Ismail, Nor Ashikin Mohamed Noor Khan, Nafiza Mat Nasir, Nurul Hafiza Ab Razak, Najihah Zainol Abidin, Khairul Hazdi Yusof & Aziemah Zulkifli

CHAPTER 6 Legumes (Fabaceae sp.) Daily Intake in Malaysia ... 71

Mohd Hasni Ja'afar, Noor Hassim Ismail, Rosnah Ismail, Zaleha Md Isa, Azmi Mohd Tamil, Mazapuspavina Md Yasin, Nafiza Mat Nasir, Nurul Hafiza Ab Razak, Najihah Zainol Abidin & Khairul Hazdi Yusof

CHAPTER 7 Hand Grip Strength (HGS) as the Predictive Factor of Lung Function ... 80

Mohd Hasni Ja'afar, Rosnah Ismail, Noor Hassim Ismail, Zaleha Md Isa, Azmi Mohd Tamil, Nafiza Mat Nasir, Tengku Saifudin Tengku Ismail, Nurul Hafiza Ab Razak, Najihah Zainol Abidin & Khairul Hazdi Yusof

CHAPTER 8 Normative Reference Values and Predicting Factors of Hand Grip Strength ... 89

Mohd Hasni Ja'afar, Rosnah Ismail, Noor Hassim Ismail, Zaleha Md Isa, Azmi Mohd Tamil, Nafiza Mat Nasir, Ng Kien Keat, Nurul Hafiza Ab Razak, Najihah Zainol Abidin & Khairul Hazdi Yusof

CHAPTER 9	Depressive Symptoms and Its Associated Factors ... 98
	<i>Azmi Mohd Tamil, Noor Hassim Ismail, Mohd Hasni Ja'afar, Zaleha Md Isa, Rosnah Ismail, Nafiza Mat Nasir, Maizatullifah Miskan, Najihah Zainol Abidin, Nurul Hafiza Ab Razak & Khairul Hazdi Yusof</i>
CHAPTER 10	Prevalence and Associated Factors of Self-Reported Bone Fractures ... 111
	<i>Zaleha Md Isa, Noor Hassim Ismail, Azmi Mohd Tamil, Mohd Hasni Ja'afar, Rosnah Ismail, Hasidah Abdul-Hamid, Razif Dasiman, Najihah Zainol Abidin, Nurul Hafiza Ab Razak & Khairul Hazdi Yusof</i>
	<i>References ... 123</i>
	<i>List of Contributors ... 147</i>
	<i>Index ... 149</i>

Preface

Alhamdulillah, praise to Allah swt because of His grace and guidance, we were able to complete the writing of this scientific book. This book is very important and meaningful as it reports the status of non-communicable diseases and injuries in Malaysia using a large scale community-based study, which is a sub-study under the Prospective Urban Rural Epidemiology (PURE) study conducted among adults aged 35 – 70 years old. The book content is delivered in the form of infographics, diagrams and texts for easy understanding. This study has enrolled 15,378 Malaysian adults at the baseline phase. The PURE study involved 27 countries, including Malaysia, that focused on the impact of societal influences on the prevalence of selected non-communicable diseases. Following the publication of this book, it is hoped that the shared information will benefit the community in their development of health knowledge and education in this country.

The book *Non-Communicable Diseases and Injuries: Baseline Findings of a Risk-Epidemiological Study* was published with the aim of sharing the latest research findings with a wide audience, including the general community, researchers, academicians, and students. By presenting these findings in book form, the intention is to increase public awareness regarding the factors that contribute to non-communicable diseases in the local community, promoting the adoption of healthier daily lifestyles. Additionally, the publication of this cohort study's baseline findings serves as a valuable reference for academics and researchers, stimulating further high-quality research in the field of non-communicable diseases.

We would like to thank the Hamilton Health Sciences Research Ethics Board (PHRI; grant no. 101414) Canada, the Research and Ethics Committee of Universiti Kebangsaan Malaysia (UKM) Medical Center (project code: PHUM-2012-01) and the Research Ethics Committee of Universiti Teknologi MARA (UiTM) for approving the study. We also would like to thank all PURE staff members at PHRI for continuous staff training and data management support. The authors are also grateful for the dedication and commitment of RESTU research assistants from UKM and UiTM which had involved in the data collection process. The voluntary participation of all respondents is highly appreciated.

Noor Hassim Bin Ismail
Mohd Hasni Bin Ja'afar
Zaleha Binti Md Isa