

Faculty of Pharmaceutical Sciences      Research Report

**UCSI University**

Volume **01**

Editors

Anand Gaurav | Mogana Sundari Rajagopal

Published in 2021 by **UCSI Press**

UCSI Heights, 1, Jalan Puncak Menara Gading,  
Taman Connaught, 56000 Cheras,  
Wilayah Persekutuan Kuala Lumpur

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

eISBN 978-967-2782-16-2

# Contents

**Preface** 3

## **Investigation of the Psychological Impact of**

**COVID-19 Pandemic in Malaysia** 4-5

*Fazlollah Keshavarzi, Everness Lau Yuan Yuan, Eileen Lau*

*Xin Yi, Eileen Natty Anak Jeply, Gan Jia Yi*

## **COVID-19-Related Factors Associated with Sleep**

### **Disturbance and Suicidal Thoughts among Malaysian**

**Public** 6-7

*Fazlollah Keshavarzi, Kevin Pek Yu Meng, Khoo Jia Wei, Koh*

*Xin Yue, Kong Chui Ping, Lang Wei Pei*

## **Public View of Community Pharmacists' Roles during**

### **COVID-19 Pandemic: A Cross-Sectional Study in**

**Malaysia** 8-9



## **Preface**

Pharmaceutical Sciences is a broad discipline that supports a thriving profession and a vital Industry i.e., the pharmacy profession and the pharmaceutical industry. According to a report released by the IQVIA Institute for Human Data Science, it has been projected that the global spending on medicines will grow at 3-6% CAGR through 2025, reaching approximately \$1.6 trillion by 2025, excluding spending on COVID-19 vaccines.

The scale and the importance of this industry clearly make this one of most significant industries globally; thus, the industry's sustainability and success are crucial. The unprecedented rate of growth and the rapid implementation of latest technology makes it extremely important for all the players involved to stay equipped with latest knowledge and expertise to prevail and flourish. With that, the field of academic research

plays an undeniably essential and incredible role in providing useful insights and knowledge to overcome challenges and attaining success.

Considering the research intensive nature of pharmacy profession and the pharmaceutical industry, the Faculty of Pharmaceutical Sciences (FPS), UCSI University, Malaysia decided to publish the Pharmaceutical Sciences Research Reports, a bi-annual publication that focuses on compiling and promoting research (containing but not limited to theoretical, empirical and applied research) on the various disciplines of pharmaceutical sciences (i.e., Pharmaceutical Chemistry, Pharmaceutical Technology, Pharmacology, Clinical Pharmacy, Formulation Sciences, Bio and Chemo Informatics and many more)

The Pharmaceutical Sciences Research Reports is a useful resource for pharmacy professionals and the pharmaceutical industry to acquire knowledge and

understanding of the current and possible future conditions of the industry and thereby assist them in the development of plans and strategies to strive and flourish. Furthermore, this report is beneficial for academics, students and researchers involved in the field of pharmaceutical sciences, serving as a source for knowledge transfer, allowing the identification of knowledge gaps, and providing inspiration for future work in the field.

Finally, this report serves as a medium for UCSI University to showcase the new knowledge in pharmaceutical sciences contributed by academics and collaborators of FPS and other institutions with the goal of benefiting the pharmacy practitioners and the pharmaceutical and allied industry.

*Editors*

Anand Gaurav; Mogana Sundari Rajagopal

November 2021

# **Investigation of the Psychological Impact of COVID-19 Pandemic in Malaysia**

*Fazlollah Keshavarzi\**, Everness Lau Yuan Yuan, Eileen Lau

*Xin Yi, Eileen Natty Anak Jeply, Gan Jia Yi*

*<sup>1</sup>Faculty of Pharmaceutical Sciences, UCSI University, No. 1,  
Jalan Menara Gading, UCSI Heights (Taman Connaught),  
Cheras, 56000 Kuala Lumpur, Malaysia.*

*\*Correspondence: Fazlollah Keshavarzi; Email:  
fazlollahk@yahoo.com; fazlollah@ucsiuniversity.edu.my*



## **Introduction**

The COVID-19 pandemic originated from China in late 2019 and quickly travelled to every corner of the world. Massive incidence, mortality and economic turmoil triggered an unforeseen psychological crisis in most communities. We tried to identify the most vulnerable populations, as well as the most important determinants of the problem in Malaysia.

## **Objectives**

To evaluate the impact of COVID-19 on the indicators of depression, anxiety, and stress among the general public in Malaysia.

## **Methods**

An online cross-sectional survey was conducted, using two different validated and widely used tools: Impact of Event Scale-Revised (IES-R) and the Depression, Anxiety and Stress Scale

(DASS-21). The questionnaires were designed on Google Form and shared with potential respondents via different social media platforms. The data collection period was almost three weeks, from 1 March 2021 to 20 March 2021. The required sample size was calculated to be 395. Statistical Package for the Social Sciences (SPSS), version 22 was used for statistical analysis. The confidence level of 95% was considered for statistical significance.

## **Results**

Of 395 respondents, 23.3% delineated severe psychological impact of the outbreak, 8.6%, 5.3% and 5.6% reported severe stress, anxiety, and depressive symptoms, respectively. High level of IES-R and DASS was reported in females (compared to males), lower educational level, retirees, students, and participants working in medical field. A strong association was observed between experiencing fever and breathing difficulty

with higher IES-R than other symptoms. There was a correlation between practicing protective measures such as frequent washing and disinfecting hands with lower stress, anxiety, and depression symptoms. Over 80% of the respondents demonstrated a good knowledge about the modes of transmission of the virus, where 51% suggested a moderate chance of recovery if they are diagnosed with COVID-19.

## **Conclusion**

More than a quarter of respondents reported moderate to severe psychological impact of COVID-19. The indicators of depression, anxiety and stress show a more critical condition among women, youngsters, healthcare staff and those with lower educational levels. Persistence of the pandemic may cause more social groups and individuals to be the victims of severe psychological disorders. The solutions in both social and individual levels are urgently needed.

# **COVID-19-Related Factors Associated with Sleep Disturbance and Suicidal Thoughts among Malaysian Public**

*Fazlollah Keshavarzi\**, Kevin Pek Yu Meng, Khoo Jia Wei, Koh  
Xin Yue, Kong Chui Ping, Lang Wei Pei

*Faculty of Pharmaceutical Sciences, UCSI University, No. 1,  
Jalan Menara Gading, UCSI Heights (Taman Connaught),  
Cheras, 56000 Kuala Lumpur, Malaysia.*

*\*Correspondence: Fazlollah Keshavarzi; Email:  
fazlollahk@yahoo.com; fazlollah@ucsiuniversity.edu.my*

## **Introduction**

The negative impacts of COVID-19 pandemic on the public lives include a wide variety of serious problems. This study is an attempt to investigate the specific impact of the pandemic on sleep disturbance and suicidal thoughts among the Malaysian adults.

## **Objectives**

To identify the Covid-19 related factors, associated with sleep disturbance and suicidal thoughts during the pandemic in Malaysia.

## **Methods**

An online survey was conducted with 350 participants in Malaysia. Participants were recruited through different online media. A direct Google Form link was generated and posted to popular social media platforms. The participation was voluntary

and survey responses were anonymous. The questionnaire was adopted from previous studies (Li et al. 2020). The first section of the questionnaire was about the demographic data of the participants, followed by the second section that contained questions about sleep disturbance and suicidal thoughts in a 4-point Likert scale format. Participants who rated the items of sleep disturbance and suicidal thoughts  $> 0$  were classified as having sleep disturbance or suicidal thoughts, respectively.

## **Results**

The questionnaire was filled in by 222 male and 128 female respondents. Based on our findings, 275 (78.6%) participants reported sleep disturbance while 79 (22.6%) of them reported suicidal thoughts. The sleep disturbance was significantly associated with the factors such as secondary school level (cOR=14.333,  $p=0.041$ ), severe worry about COVID-19 (cOR=1.099,  $p=0.003$ ), lower perceived social support

(cOR=0.784,  $p < 0.001$ ), lower specific social support against COVID-19 (cOR=0.843,  $p=0.017$ ) and poor self-reported physical health (cOR=0.734,  $p < 0.001$ ). Factors that remain significantly associated with sleep disturbance include severe worry about COVID-19 (aOR=1.088,  $p=0.010$ ), lower perceived social support (aOR=0.830,  $p=0.009$ ) and poor self-reported physical health (aOR=0.824,  $p=0.045$ ).

## **Conclusion**

Several Covid-19 related predictors for sleep disturbance and suicidal thoughts among Malaysians during Covid-19 pandemic were determined in this study. The awareness of undesirable effects on mental health should be raised and deserves support from authorities during the hardship of Covid-19 pandemic. Moreover, studies including more different recruiting sources and more detailed questionnaires designing of mental health

problems can extend further the application of findings in current study.



# **Public View of Community Pharmacists' Roles during COVID-19 Pandemic: A Cross-Sectional Study in Malaysia**

*Omotayo Fatokun\* , Jia Le Lim, Lina Khiing Yu Wei, Jia Yun  
Ling, Sing Rou Ling, Matthew Teo Rui Qin*

*Faculty of Pharmaceutical Sciences, UCSI University, No. 1,  
Jalan Menara Gading, UCSI Heights (Taman Connaught),  
Cheras, 56000 Kuala Lumpur, Malaysia.*

*\*Correspondence: Omotayo Fatokun; Email:  
tayofatokun@gmail.com.my; fatokun@ucsiuniversity.edu.my*

## **Introduction**

The Covid-19 pandemic has caused a substantial increase in global healthcare, burden. Evidently, the battle against the pandemic is an on-going effort and its impact on the population

will be felt even after its eradication. Community pharmacists play a key role to support public health measures during the pandemic. Thus, this study aims to investigate the public perspective on the roles of community pharmacists during COVID-19 Pandemic.

## **Objectives**

To investigate the public perspective on the roles of community pharmacists during COVID-19 Pandemic.

## **Methods**

This study was designed as a cross-sectional study using online questionnaire and printed survey forms. The participants of this study were Malaysian citizens aged 18 years and above. Sample size was determined using Cochran's Formula. The questionnaire was made available in English, Malay, and Chinese languages and disseminated through Google form

platform. The study was conducted between March and April 2021. Statistical analysis was carried out using IBM SPSS Software Version 25. Descriptive statistics and Chi-Square inferential analysis were done. The statistical significance was set at  $p \leq 0.05$ .

## **Results**

A total of 421 participants took part in the survey and the response rate was 100%. The largest demographic group were Chinese (67.5%), female (40.9%), and from Sarawak (41.8%). Most of the participants (41.6%) were aged between 21-30. About 43% of respondents have a degree or higher level of education. About one-third of the participants (31.8%) were students, have a household income of less than RM 4,850 (45.8%), and were not healthcare workers (87.6%). The internet was the most frequently used source of Covid-19 related information. Most respondents visit the community pharmacy

only, when necessary, and the main reason for visiting is to purchase non-prescription medications. A large majority agree that community pharmacists ensure safe medication use, contribute as front liners, and spread health-related information on prevention of COVID-19. The demographic groups that are most likely to have a positive attitude towards community pharmacists were male ( $p<0.001$ ), Indian ( $p<0.001$ ), and age between 41-50 years old ( $p<0.001$ ). These findings were also consistent when assessing attitudes towards community pharmacists providing screening and vaccination for COVID-19.

## **Conclusion**

This study found that the public tends to have a positive attitude towards community pharmacists during the pandemic. However, certain roles and contributions of community pharmacists to the healthcare system are still unclear to the public. The discrepancies in attitude between the demographic groups (e.g.,

gender, age, and race) suggests that certain demographic groups may not have a generally positive attitude towards community pharmacists. The reasons for this may be further studied and strategies can be put in place to promote the role of community pharmacists in the public health response during a pandemic.

# **Suppressive Effect of *Momordica charantia* L. Seeds Oil in A Mouse Model of Acute Inflammation**

*Chuhn Hung Goh<sup>1</sup>, Chau Ling Tham<sup>2</sup>, Gabriel Akyirem Akowuah<sup>1</sup>, Ming Tatt Lee<sup>1,\*</sup>*

*<sup>1</sup>Faculty of Pharmaceutical Sciences, UCSI University, No. 1, Jalan Menara Gading, UCSI Heights (Taman Connaught), Cheras, 56000 Kuala Lumpur, Malaysia.*

*<sup>2</sup>Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43300 Serdang, Selangor.*

*\*Correspondence: Ming Tatt Lee; Email: leemt@ucsiuniversity.edu.my*

## **Introduction**

While acute inflammation initiates defensive mechanism to combat foreign substances and infections, prolonged chronic inflammation may lead to complicated and destructive consequences to the body. Clinically used anti-inflammatory drugs such as NSAIDs and glucocorticoids were reported to inflict serious adverse effects to the patients in prolonged usage. Natural source of potential anti-inflammatory substances, which are believed with have fewer or no adverse effects are of research interest.

## **Objectives**

The present study evaluated the potential anti-inflammatory effect of *Momordica charantia* L. seed oil (MCSO) in mice model of carrageenan-induced acute inflammation.

## Methods

MCSO was extracted from air-dried *Momordica charantia* L. seeds through hexane extraction. The oil extract was tested with ATR FT-IR for preliminary chemical group screening. On the other hand, MCSO was administered to adult male ICR mice increasing doses (3, 10, 30 and 100 mg/kg, p.o.), with saline (10 ml/kg) and aspirin (100 mg/kg, p.o.) as negative and positive controls respectively. One hour after treatment, the mice were challenged with 0.25 ml of 1% carrageenan injection at the peritoneal cavity to induce peritonitis. The mice were sacrificed 4 hours later, and the peritoneal cavity was washed with 3ml of ice-cold PBS to collect the peritoneal fluid. The peritoneal fluid collected was dyed with trypan blue solution and view under light microscope and hemacytometer to count the number of leukocytes present in the peritoneal fluid.



## **Results**

ATR FTIR testing of the MCSO showed the presence of C-O stretch, C=O stretch and C-H stretch but absence of O-H and N-H characteristic bands. Thus, only non-polar compounds were extracted. In the carrageenan-induced acute inflammation test, significant leukocyte migration inhibition was observed in dose-dependent manner.

## **Conclusion**

The present study demonstrated preliminary anti-inflammatory effect of MCSO; further studies are underway to discern the mechanism of actions of MCSO as well as its bioactive constituents.

# **Development of Sunscreen Cream Base using Natural Excipients**

*Brian Alvin Fam Kai Sheng<sup>1</sup>, Shiek Abdul Kadhar Mohamed  
Ebrahim Habibur Rahman<sup>1</sup>, Sinouvassane Djearamane<sup>2</sup>, Ashok  
Kumar Janakiraman<sup>1,\*</sup>*

*<sup>1</sup>Faculty of Pharmaceutical Sciences, UCSI University, No. 1,  
Jalan Menara Gading, UCSI Heights (Taman Connaught),  
Cheras, 56000 Kuala Lumpur, Malaysia.*

*<sup>2</sup>Faculty of Science, Universiti Tunku Abdul Rahman, Kampar  
31900 Perak, Malaysia.*

*\*Correspondence: Ashok Kumar Janakiraman; Email:  
akpharm@gmail.com; ashok@ucsiuniversity.edu.my*

## **Introduction**

The use of sunscreen to avoid exposure to harmful radiation from sun has been in practice for centuries. Traditionally, sunscreens are cosmetically unacceptable due to the presence of zinc oxide and titanium dioxide, which gives the skin a white coating. Sunscreen formulations in the market mainly contain synthetic ingredients that are controversial due to possible toxicity. Research on sunscreen formulated entirely from natural ingredients is getting more attention nowadays.

## **Objectives**

This study was designed to develop a sunscreen cream base using natural excipients and to evaluate the physiochemical properties of the prepared cream.

## **Methods**

The sunscreen cream base was produced by the 'wet gum' emulsification method coupled with high shear homogenization. The composition and concentration of each excipient have been varied to obtain the optimized characteristics. The formulated creams were evaluated for various parameters such as organoleptic characteristics, sun-protective factors (SPF), spreadability, occlusivity, thermal stability, zeta potential, microscopic analysis, pH, antimicrobial activities.

## **Results**

Cinnamon oil and lanolin showed promising sun-protective activity by elevating SPF with the fold of 4 and 3.8 respectively. A cream containing cocoa butter shows the highest occlusivity factors of 57 among all formulations. The cream exhibited zeta potential ranges from -34.67 to -26.6 mV. The pH of the formulations was in the range of 4.58 to 4.89. The spreadability

was found in the diameter range of 2.2 to 2.6 cm. The short-term stability studies suggest that the developed creams are stable without any colour change, liquefaction, and phase separation. Further, long term stability studies and clinical application of the developed sunscreen cream base should be carried out to claim the potential effect of the sunscreen using natural excipients.

## **Conclusion**

The cream sample that meets most of the evaluation criteria has been chosen to be considered as the optimized cream formulation.

Published by  
**UCSI Press**

e ISBN 978-967-2782-16-2

