



MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

COMPENDIUM

THE AMNE SALIM COVID-19 RESEARCH FUND DISSEMINATION SYMPOSIUM



DATE:
TUESDAY, 21.03.2023



TIME:
9:00AM-1:00 PM



At CHPE Building Main Hall, Muhimbili Campus,
Dar es salaam.

GUEST OF HONOR

H.E. Dr. Hussein Ali Mwinyi

The President of Zanzibar and Chairman of Revolutionary Council.



PREAMBLE

Coronavirus disease-2019 (COVID-19) is one of the most devastating pandemics in recent times since it was first diagnosed in Wuhan, China, in late December 2019. Since then, it has infected more than 650 million people and claimed the lives of 6.7 million globally. The outbreak has affected the global economy and disrupted lives and livelihoods worldwide. Like many other countries worldwide, Tanzania faced health, economic, social, and developmental challenges emanating from the pandemic. Health system preparedness and response including stewardship and governance, health promotion, service delivery processes, suitability and adequacy of human resource for health were all severely tested during the pandemic and varied widely between economic, regional and geographic contexts. Due to the severity and rapidly evolving nature of the pandemic, availability of real-time, relevant, and local data becomes an indispensable tool for informing policy and decision-making. Scientifically sound and locally driven research to generate evidence is crucial for provision of informed, context-specific interventions. For this to be possible, resources are needed, in the form of human resource, enabling administrative frameworks and funding. For resource-constrained countries like Tanzania, insufficient availability of funding is a significant drawback due to the high dependency on external collaborators.

Local philanthropists are key stakeholders in bridging the funding gap and enhancing national ownership of the research processes and outcomes. The family of Dr. Salim Ahmed Salim, the former Prime Minister of Tanzania and Secretary General of the Organization of African Unity (OAU) has served as an exemplary local philanthropist to this end. To honor the late Amne Salim, who unfortunately succumbed to COVID-19, the family of Salim Ahmed Salim donated One Hundred Million Tanzanian Shillings (TZS 100,000,000/=) to the Muhimbili University of Health and Allied Sciences (MUHAS) in support of COVID-19 research work through evidence generated locally by local scientists. Other local philanthropists, including the Karimjee Jivanjee Foundation, donated an additional USD 5,000 to the Amne Salim COVID-19 fund to support additional research and dissemination activities. The fund's primary objective was to support clinical and scientific research on COVID-19 in Tanzania.

Following the commitment, on October 20th, 2021, MUHAS announced a competitive call for research proposals through social media and the official MUHAS website from October 26th to November 26th, 2021. A total of 24 research proposals were submitted for consideration of funding. The MUHAS management appointed an independent Technical Grants Review Committee comprising senior research scientists, faculty, and administrators. The committee was responsible for reviewing the twenty-four (24) submitted proposals objectively and transparently and recommending awardees by assigning each submission to a primary and secondary reviewer based on their areas of expertise. Among the twenty-four submitted and reviewed proposals, eight (8) were selected based on their scientific merit for funding support

The committee was responsible for reviewing the twenty-four (24) submitted proposals objectively and transparently and recommending awardees by assigning each submission to a primary and secondary reviewer based on their areas of expertise. Among the twenty-four submitted and reviewed proposals, eight (8) were selected based on their scientific merit for funding support from the Amne Salim COVID-19 Research Fund. The names of the awardees were announced on February 3rd, 2022. As part of the oversight of the Amne Salim COVID-19 Research Fund, the MUHAS management established a Steering Committee to oversee the management of the fund. The committee comprised of three members: Professor Muhammad Bakari (Chair), Professor Febronia Kahabuka, and Dr. Maryam Amour. The Steering Committee scrutinized the implementation of the research activities through periodic technical and financial reports. The committee also liaised between the Family of Amne Salim, the Directorate of Research of Publications, University Management, and all fund beneficiaries to promote effective grant management for the desired impact.

The Amne Salim Fund for COVID-19 Research allowed MUHAS scientists to conduct relevant research in a range of clinical, laboratory, biomedical, epidemiological, and socio-behavioral topics that can help provide much-needed evidence to guide interventions in Tanzania and globally with regard to the COVID-19 pandemic and future outbreaks. The funded proposals provide evidence around the COVID-19 vaccine hesitancy and information access, myths and perceptions on vaccines, mental health challenges among Health care workers while caring for COVID-19 patients, utilization of traditional remedies for COVID-19, antibody responses after natural infection and on clinical profile of COVID-19 among children. Today, the research findings will be disseminated to policy and decision-makers within the country for their reference and action. Furthermore, this comprehensive symposium will also be an opportunity for dissemination of these findings to the local and international research community.

The University is immensely thankful to the family and friends of the late Amne Salim for this exceptional and ground-breaking research support. We invite other local philanthropists to partner with us in supporting research activities within the country to address local needs.

Prof. Andrea B. Pembe
Vice-Chancellor MUHAS

ABSTRACTS

1. Profiling neutralizing antibodies against selected SARS-CoV-2 variants among infected and infected-vaccinated individuals in Tanzania

Authors: L. Nkinda¹, G. Barabona², I. Ngare², E. Osati¹, E. Nkuwi², D. Kamori¹, S. Mbazi³, S. Mfinanga³, T. Ueno², E. Lyamuya¹, E. Balandya¹.

Affiliations

¹School of Medicine, Muhimbili University of Health and Allied Sciences, PO box 65001 Dar es Salaam, Tanzania.

²Joint Research Centre for Retrovirus Infection, Kumamoto University Japan

³National Institution for medical Research, Muhimbili Tanzania

Background: Community-level immunity acquired through natural infection or vaccination is necessary for control of the virus. However, neutralization capacity of the mounted antibodies after infection or vaccination among the Tanzanian population is not known.

Objective: To profile neutralizing antibodies against selected SARS-CoV-2 variants among infected and infected-vaccinated individuals in Tanzania.

Methodology: A cross-sectional study was conducted amongst participants from Muhimbili National Hospital and Aga-khan hospital in Dar-es-salaam, Tanzania. The recruited participants were categorized as; infected-unvaccinated, vaccinated-uninfected, and infected-vaccinated individuals. Blood samples were taken, and laboratory analyses conducted at Kumamoto University, Japan. Neutralizing antibodies were measured by challenging the participants' plasma with SARS-CoV-2 pseudo viruses (wild-type, Delta and Omicron [BA.1 and BA.2]). Neutralization titers are reported in median (IQR) and were compared between groups using Wilcoxon rank sum test. Two-tailed p-values <0.05 were considered statistically significant.

Results: The findings reported are for the subpopulations infected-unvaccinated and infected-vaccinated individuals (n=50). The median (IQR) age was 47(32, 61) years and 51% (25/50) were females. About 53% (26/50) were infected-unvaccinated, 46% (23/50) had at least one chronic disease and 48% (24/50) were overweight/obese. Among those vaccinated, the majority 78% (18/24) received the Jansen vaccine, and 42% (10/24) got breakthrough infection. Upon combined analysis of both the infected-unvaccinated and infected-vaccinated individuals, the median neutralization capacity significantly declined with each consecutive variant from the wild-type (WT; 1695), compared to the Delta (589; p - 0.049), Omicron BA.1 (516; p – 0.047), Omicron BA.2 (212; p – 0.002). When comparing infected-unvaccinated and infected-vaccinated groups; the WT neutralization capacity was higher among infected-vaccinated 2255 (1412, 4186) compared to infected-unvaccinated 1006 (414, 1856), p = 0.010. However, neutralization capacity for Delta variant was comparable in the two groups 637 (345, 1185) vs. 549.6 (148, 1635), p = 0.6.

Conclusion: SARS-CoV-2 neutralization potency decreased significantly with each consecutive variant and was lowest for Omicron. Vaccination appeared to boost the neutralization potency for the WT strain. However, there was no difference with the consecutive variants.

Recommendations: Further studies should evaluate the extent of cross-reactive T-cell memory responses to SARS-CoV-2 to provide insights on immune protection following infection and vaccination in Tanzania.

2. Title: Access to COVID-19 vaccine information among rural communities in Tanzania: A case of Geita region.

Authors: Godwin Pancras, Baraka Morris, Renatha Joseph, Emmy Metta, Nathaniel Sirili

Affiliations

Department of Bioethics and Health Professionalism

Background: To ensure successful mass vaccination against COVID-19 pandemic, community sensitization and advocacy campaigns are under way in Tanzania. However, it is uncertain how communities residing in rural areas will be able to timely access COVID-19 vaccine information. Therefore, the study aimed to explore access to COVID-19 vaccine information among people residing in selected rural areas in Tanzania, taking Geita region as a case.

Methodology: An exploratory case study design employing qualitative techniques was used. Community health workers (CHW), healthcare workers (HCW), local leaders (designated as the supply side) and influential people (designated as demand side) were purposively sampled from two selected villages in Geita region and interviewed individually. Data was analyzed thematically with aid of MAXQDA software. The study took place between June and November 2022.

Results: Twenty people were interviewed in total, and 35% (n=7) of whom were females. The mean age of participants was 41.8 years. The findings were categorized into three broad areas: Approachability, availability and acceptability of COVID-19 vaccine information in Geita rural settings. Approachable information was based on outreach modalities, information shared and the timing to conduct advocacy. The availability of information was based on media outlets within reach of the village. Most people relied on radio and less on TV or visual media for COVID-19 vaccine information. Acceptability on the other hand was troubled by opposing political stances and myths evolving around COVID-19 vaccination.

Conclusion: Access to COVID-19 vaccine information requires due consideration of rural-community tailored outreach activities, information and media outlets. Moreover, a political consensus ought to be attained to limit disinformation or counteracting information shared in rural settings. It is to be noted that, most communities would follow their leader's word or stance, similar to reluctance to COVID-19 vaccination.

3. Title: Seroprevalence of COVID-19 antibodies among women of reproductive age in Unguja and Pemba Island populations of Tanzania: A pilot study.

Authors: Karim Manji, Sunil Sazawal, Mayassa Salum Ally, and Said Mohammed Ali

Affiliations

Department of Pediatrics and child health

Background: Community antibody testing is a powerful tool to understand community transmission patterns of COVID-19. In the context of Maternal, Neonatal, and Child Health (MNCH), this information is crucial to inform evidence-based policy.

Aim: To collect preliminary data on COVID-19 seroprevalence from the two island populations of Zanzibar, Tanzania

Materials and methods: This cross-sectional, facility-based pilot study obtained a random sample of 504 women of reproductive age visiting 25 randomly collected Primary Health Care Units (PHCUs) from Unguja and Pemba. Venous blood was collected after consent and a questionnaire related to the recent history of COVID-19-like symptoms was filled out at enrolment. The blood samples were processed for obtaining serum, which was evaluated for IgG and IgM antibodies at the PHI-CPHK laboratory in Pemba Island.

Results: Overall there is widespread exposure to the SARS-2 virus (IgG at 80%) and also a simmering acute infection (IgM at 1.7%). There is a minor non-significant difference in exposure between Unguja and Pemba despite the large differences in tourist inflow. The severity profile and mortality experience are substantially lower in both the islands of Zanzibar. The prevalence of vaccine uptake in the community is low (30%) and disinformation seems to be the main cause rather than reluctance. There is no significant relation between symptomatology, seropositivity, or vaccination status.

Conclusions: Seroprevalence is very high from previous exposure and there are signs of low-level prevalence of acute infection. The vaccine uptake is low (30%) and attributed to misinformation.

Recommendations: The population in Zanzibar has been exposed to COVID-19 leading to community transmission. Effective deployment of vaccine strategy and routinization of seroprevalence surveillance as a public health tool needs to be implemented to prevent morbidity in a vulnerable population.

POLICY BRIEF

Asymptomatic community transmission of COVID-19 in Zanzibar: a rallying cry to continue protecting the vulnerable

Key points:

- Very high seroprevalence rates (80%) indicating widespread previous community exposure.
- Indications of lingering ongoing infections in the community (2% prevalence of acute infections)
- Low vaccine uptake (30%) driven by misinformation

Executive summary:

Antibodies are produced over days to weeks after infection with the SARS Cov-2 virus. The strength of antibody response depends on several factors, including age, nutritional status of the host, severity of disease, and certain medications or infections like HIV that suppress. Most COVID-19 patients develop antibody response only in the second week after onset of symptoms. The main antibodies detected, IgG and IgM can be used to determine the previous and active exposure, respectively. Our findings revealed high levels of previous exposure to SARS Cov-2 virus. Furthermore, a small proportion of participants (2%) had immunological evidence of active COVID-19 infection. Despite the high level of previous exposure, vaccine uptake was low (30%) with disinformation identified as the major cause.

Overview of research:

We did a cross-sectional, facility-based pilot study involving a random sample of 504 women of reproductive age visiting Primary Health Care Units (PHCUs) from Unguja and Pemba.

What is the problem:

Most of the immediate responses globally have focused on the diagnosis and management of severe cases. Public health policy is needed to inform evidence-based policy in addressing rates of morbidity, risk factors of illness, severity and outcomes of influenza-like illness in Maternal, Neonatal, and Child Health (MNCH). Community antibody testing is the right tool to understand seroprevalence, extent of virus spread in households, communities and specific settings and the proportion of population still susceptible to infection.

Our findings:

Antibody testing from collected blood samples showed previous exposure to the SARS-2 virus (IgG at 80%) and a simmering acute infection (IgM at 1.7%). The vaccine uptake in the community is as low as 30% with misinformation as the main culprit.

Policy recommendations:

- Strengthening capability of the country to conduct seroprevalence surveys as an important tool for detection of ongoing community transmissions
- Enhancing vaccination uptake through targeted debunking of the prevalent misinformation
- Continued protection of the elderly and other susceptible population groups

References:

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4. Title: Myths and Perception on COVID-19 Vaccination among adult population: A case of Ilala District in Dar es Salaam region and Moshi District in Kilimanjaro region.

Authors: Leonida Simon Kanyuma¹, Lazaro Solomon Haule², Ramla Adam Chamvanga¹
Rehema Chande-Mallya

Affiliations

¹Directorate of Library Services, Muhimbili University of Health and Allied Sciences.

²Department of Bioethics and Professionalism School of Public Health, Muhimbili University of Health and Allied Sciences

Background: Currently the Corona virus disease 2019 (COVID-19) vaccine is available across various countries worldwide. Several myths and negative perceptions pertaining to the COVID-19 vaccine have emerged hindering the national administration of vaccine and rollouts.

Objective: To explore the myths and perception on COVID-19 vaccination among adults in Dar es Salaam and Kilimanjaro, Tanzania.

Methodology: An exploratory case design was used employing a qualitative approach to gather in-depth and detailed information for the study. Unvaccinated adults were purposively sampled from Karume and Mbuyuni markets in Ilala and Moshi districts. In-depth interviews were conducted between September and October 2022. Data were analyzed through Inductive Thematic Analysis (ITA) approach, which yielded five themes.

Results: A total of thirty adults were interviewed, whereby 63% (N=19) were male, and 37% (N=11) were female. The mean age of participants was 38.2 years old. Regarding to education the highest percentage of participants 40% (N=12) were primary education, while the lowest was 3.3% (N=1) vocational training education. Fear of being vaccinated was one of the most reported barriers by respondents. The most common sources of fear were potential reactions and side-effects of the COVID-19 vaccine which included; the possibility of death, dizziness, shortness of breathes after vaccine. The most troubling side-effects reported included fertility issues and blood clots. Most respondents said that, they would rather delay vaccination for COVID-19 at the moment to be sure about safety and effectiveness of vaccine. COVID-19 vaccine hesitancy and refusal, in some instances, participants mentioned that they do not believe on the existence of COVID-19 disease so there is no need to vaccinate. Some respondents believe that vaccine is just for business from western countries but not health implications.

Conclusion: The study provides an understanding of how COVID-19 vaccine hesitation could be tackled; and this calls to design an intervention that supports individuals by ensuring the correct information is provided to allow people to make decisions. Recognizing and focusing on the barriers revealed by this study can contribute to increasing COVID-19 vaccine acceptance and uptake in Tanzania and possibly elsewhere.

5. Title: Mental health challenges and its associated factors among healthcare workers during COVID-19 pandemic in Dar Es Salaam, Tanzania.

Authors: Alphoncina Kagaigai¹, Bwire Nicolaus Bwire¹, Samuel Likindikoki² and Nathanael Sirili¹

Affiliations

¹Department of Development Studies

²Department of Psychiatry and Mental health

Background: Healthcare workers (HCWs) are frontline workers in fighting the COVID-19 outbreak in saving lives and are faced with extreme workloads, difficult decisions, long shifts, lack of physical or psychological safety, moral conflicts, lack of social support, inadequate personal protective equipment, lack of transparency, financial insecurity, and stigmatization. There have been anecdotal reports of mental health challenges to HCWs associated with the COVID-19 pandemic outbreak in Tanzania.

Aim: To explore the magnitude of mental health challenges and associated risk factors associated with the COVID-19 pandemic.

Methodology: The study was conducted in Dar es Salaam, Tanzania due to the presence of an international airport, tourism activities and large business activities. A cross-sectional study employed a mixed method to collect retrospective data from hospital in-charges and healthcare workers. Multi-stage purposive sampling was employed to obtain the target and study population. Trained health personnel conducted a total of 8 In-depth interviews with hospital in-charges plus 347 questionnaires to HCWs in the selected hospitals in the region. In addition, analysis was carried out through descriptive analysis and Logistic regression technique for quantitative data and thematic analysis employing an inductive approach was used to analyze results from an in-depth interview.

Results: 347 healthcare workers (40% male and 60% female) were interviewed, Majority had a first degree (31%) and only 4% had a master's degree. 52% of the respondents were nurses while 19% were clinicians and 80% of the healthcare workers worked as frontline workers. The study further revealed that healthcare workers in Dar es Salaam experienced different mental health challenges during COVID-19 such as anxiety (89.9%), depression (15.2%) and stress (53.3%). The determinants of mental health challenges include sex, cadre, job comorbid disease, management of patients diagnosed with COVID-19, and location.

Recommendation: The study recommends that there should be tailored psychological coping training for all the cadres to assist them to withstand the mental health challenges at workplaces even at times without the pandemics.

6. Title: Community Experiences and Practices on the Use of Traditional Medicine in Management of Covid-19 in Tanzania

Authors: Mourice N. Mbunde¹, Jackson T Mollel², Ashabilah Ebrahim³, Magreth T. Mwakilasa⁴, Sylvia Mganga⁴, Aneth Kavuraya², Edmund Kayombo⁴.

Affiliations

¹Department of Natural Products Development and Formulation

²Department of Biological and Pre-Clinical Studies,

³Department of Physiology

⁴Department of Medical Botany, Plant Breeding and Agronomy

Background: In addition to conventional WHO-recommended measures, the use of traditional medicine was equally emphasized to combat COVID-19 in Tanzania. This shift from the conventional medical practices to traditional medicine went unmonitored with respect to user experiences and practices regarding the safety, efficacy, acceptability, adherence, improper administration of dosage, and self-prescription.

Aim of the study: To explore community experiences and practices on the use of traditional medicine in Management of Covid-19 in Tanzania.

Materials and methods: A phenomenological qualitative study was conducted from individuals aged 18 years and above who used traditional remedies to manage COVID-19 from 2020 to date. Data were collected using in-depth interviews (IDIS) and focus group discussions (FGDs) in two selected representative regions: Dar es Salaam (Ilala and Ubungo district) and Mwanza (Nyamagana and Magu district) region. Purposive sampling was used to select study participants for IDIs and FGDs from selected villages in the respective districts. Interviews from IDIs and FGDs were digitally recorded and subsequently transcribed verbatim. Responses were grouped into categories then coded in Microsoft Excel using principles of thematic analysis in discussion with expert in qualitative analysis. The coded data were organized using NVivo 11 software to identify themes and conceptual categories and subcategories in the participants' responses.

Findings: The Tanzanian community used traditional medicine as one of management approaches to counteract COVID-19 related infections. Thematic analysis revealed that traditional therapeutic options deployed by most participants were steaming therapy, medicinal herbs and intake of healthy local food while adhering the recommended WHO COVID-19 measures. Most study participants acknowledged that traditional medicines were beneficial especially in the treatment and control of COVID-19 symptomatic conditions. Majority of the study participants perceived traditional medicines as safe and reliable for management of COVID-19.

7. Title: Epidemiological, clinical profile and outcomes of children with COVID-19 in Dar es Salaam, Tanzania; a retrospective study.

Author: Obrey Harold Urrio¹, Samafilan Ainan¹

Affiliations

¹Department of Paediatrics and Child Health

Background: Presentation of COVID-19 in children and adults differ and unlike adults, children are more likely to present with less severe form of the disease. There is paucity of data on presentation and outcomes of COVID-19 in Tanzania, particularly from paediatric population.

Objectives: To determine demographic, clinical characteristics and immediate outcomes of children with COVID 19 in Dar es Salaam, Tanzania

Methodology: A retrospective descriptive study was conducted from six selected referral hospitals in Dar es Salaam. All children who were suspected to have COVID 19 and whose nasopharyngeal swabs were sent to the National Public Health Laboratory for confirmation were recruited in this study. Demographic and clinical data was retrieved and abstracted into a checklist from the patients' medical records.

Results: This interim report presents findings from three out of six study sites. Records from a total of 127 children who were suspected of COVID-19 and underwent RT PCR test for SARS-CoV-2 were analyzed. Most of the suspected children (75.6%) were above five years of age. About 25% of the suspects were confirmed to have COVID-19 by RT PCR with fever, cough and fatigue being the main symptoms. More than half (59%) of children with COVID-19 had underlying comorbidities including cardiac diseases, malignancies, and HIV/AIDS and 78% required oxygen therapy. Among all children with COVID-19, 43% required ICU care ultimately. The overall mortality rate among confirmed cases was 25%.

Conclusion: Majority of children with COVID-19 presented with fever, cough and difficulty breathing mimicking other common respiratory infections which otherwise frequently occur in children. Early diagnosis of COVID-19 and prompt supportive care should be emphasized especially among children with comorbidities.

8. Title: COVID-19 vaccine hesitancy among pregnant women attending public antenatal clinics in Dar es Salaam, Tanzania.

Authors: Zainab Hassan Yussuph¹, Fadhlun M Alwy Al-beity¹, Furaha August¹, Amani Anaeli²

Affiliations:

¹Department of Obstetrics and Gynecology, School of Medicine, Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam, Tanzania.

² Department of Development Studies, School of Public Health and Social Sciences, Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam, Tanzania.

Background: The development and use of COVID-19 vaccines is a key strategy in reducing the burden of disease. However, there is a public hesitancy on the vaccine uptake, including pregnant women who are at high risk of severe forms of the disease and death when infected with the virus.

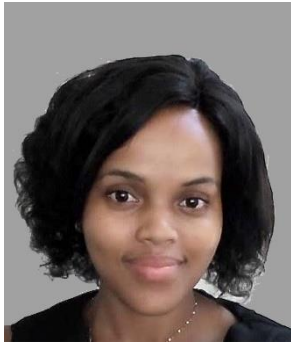
Objectives: To determine the magnitude of hesitancy towards COVID-19 vaccines and the associated factors among pregnant women attending public antenatal clinics in Dar es Salaam.

Materials and Methods: This was a cross-sectional analytical study conducted among 896 pregnant women attending antenatal clinics at public health facilities in Dar es Salaam. A structured interviewer-based questionnaire, in an electronic form, was used. The questionnaire was used to collect socio-demographic and obstetric factors, knowledge and attitudes toward the COVID-19 vaccine, and behavioral factors. The analysis was done by a multivariable linear regression model using STATA 16 to obtain factors associated with vaccine hesitancy, and $P < 0.05$ was considered significant.

Results: The proportion of pregnant women with vaccine hesitancy was 45%. Hesitancy was higher among unemployed pregnant women (AOR 2.22 (95% CI 1.40-3.53) and the self-employed group (AOR 1.61 (95% CI 1.06-2.44) compared to the employed group. It was also higher among pregnant women with poor attitudes to COVID-19 vaccines (AOR 2.45 (95% CI 1.77-3.40) and women who had low perceived benefits of vaccines than those who perceived vaccines to be beneficial (AOR 2.55 (95% CI 1.82-3.58)

Conclusion: COVID-19 vaccine targeted interventions should aim at the provision of knowledge on COVID-19 and the COVID-19 vaccine and address poor attitudes and perceptions that pregnant women have on these vaccines.

BIBLIOGRAPHIES



Ms. Lilian Nkinda

BSc MSc

Lilian is an assistant Lecturer at the department of Microbiology and Immunology at Muhimbili University of Health and Allied Sciences (MUHAS) in Tanzania, where she is involved in teaching, research and consultancy. Con-currently she has also served as a laboratory manager at the MUHAS Clinical research laboratory from 2015-2016 and a laboratory quality assurance manager for the HIV vaccine trial phase III in 2021. In-terms of research, her interests and previous experiences are on the immunology of infectious diseases such as Corona virus disease, mumps and HIV related inflammation as a risk for non-communicable diseases. Moreover, Lilian has also conducted research projects on antimicrobial resistance and drivers of resistance, which is a silent pandemic that will claim more lives than all infectious diseases combined. In addition, as an upcoming scientist, Lilian has won a number of small to medium grants including a competitive Swedish International Development Agency (Sida) grant 2019/2020 and Amne-Salim COVID 19 grant in 2021/2022. Also, she was a co-principle investigator for the UNICEF Tanzania project looking at drivers for irrational antimicrobial use for children from 2020-2022. Currently, she is working on analyzing immune response against Corona virus after infection and vaccination, for her Doctor of Philosophy degree (Ph.D.), this project is supported by the prestigious CAFE-SEA award (Capacity building for Female Scientist in East Africa, which is a project under the Eastern Africa Consortium for Clinical Research (EACCR); an EDCTP-funded network of excellence. She firmly believes, “Education is sought to improve the lives of others”



Prof. Karim P. Manji.

(MBBS, MMED, MPH, FTAAS, FRCP, FRCPCH)

Prof. Manji is a professor at the Department of Paediatrics and child health at the Muhimbili University of Health and Allied Sciences and serves as a Neonatal and Pediatrics care specialist consulting at Muhimbili National Hospital, Temeke and Amana hospital. He completed his MBBS in Orissa, India, in 1986 and MMED in Pediatrics and Child Health at Muhimbili university college of health sciences, the University of Dar-es-Salaam, in 1991. Between 1993-1994 he completed his Fellowship in Neonatal Medicine and Pediatrics at Hammersmith Hospital. Prof. Manji attended Harvard School of Public Health, where he attained training in Epidemiology and Biostatistics and a Master’s in Public Health in 2001 and 2002. Prof. Manji is also a recognized provider of Neurodevelopment Training: Griffith, Bailey, East African Neurodevelopment Tool, Malawi Development Assessment Tool, IYCD, and CREDI. IMCI (WHO) Trainer of Trainers.

At MUHAS, he has impacted knowledge across different academic levels, from undergraduates to Ph.D. He has supervised over 45 Master's Thesis (4 ongoing) and 6 Ph.D. candidates (2 ongoing). He has over 200 publications in peer-reviewed journals, 3 Professorial Lectures, Breastfeeding and Mother-Child Transmission of HIV 2011, Severe Acute Malnutrition and Sepsis 2017, and Autism in Tanzania 2017. He has published two books on Situation Analysis of Newborn (2008) and HIV management in Children (2004). With the WHO, he has collaborated in developing two manuals; Prevention and control of childhood pneumonia and diarrhea (2021) and Guidelines in the Care of Small and Preterm Infants. Revised Guidelines (2022): Lancet. His work has earned him recognition, including the Fellowship Award of the Tanzania Academy of Sciences (2012), Best Employee Academic Staff (2013/2014 and 2021) at MUHAS, Best Health Research Scientist in Tanzania, 2016- NIMR Award (October 2016), fellowship Award of the Royal College of Physicians, London (May 2017, Fellowship Award of the Royal College of Pediatrics and Child Health (London) (Nov 2017), International Excellence in Patient Care Award- RCP London (22nd May 2019), Award of appreciation for Pioneering Rare Disease awareness in Tanzania (Feb 2021) by President of United Republic of Tanzania, H.E Dr. Mama Samia S. Hassan. And in February 2022, he was awarded the Amne Salim Grant for COVID-19.



Ms. Alphoncina Kagaigai

(BA, MA)

Alphoncina Kagaigai works as an Assistant Lecturer at Muhimbili University of Health and Allied Sciences (MUHAS) at the School of Public Health and Social Sciences. She holds a master's degree in Economics and a bachelor's degree in Economics and Statistics from the University of Dar Es Salaam. Currently, she is pursuing her PhD in Health Economics at the University of Oslo, Norway.

She is currently working on her PhD project titled "Towards Universal Health Coverage: determinants and effectiveness of improved community health fund in Tanzania" and she is also working on her two won research grants awarded by MUHAS under SIDA and AMNE-SALM COVID-19 projects respectively. Alphoncina has experience from various private and public institutions. Before joining MUHAS, she worked as a tax consultant with Ernest & Young, as an Internal Auditor with Tanzania Revenue Authority (TRA) and as an Economist (performance auditor) at the National Audit Office (NAOT). Her research interests include healthcare financing, economic evaluation of healthcare intervention programs and Behavioral economics. Alphoncina is a visiting young research fellow at the Health Economics Research Center (HERC) at the University of Oxford and she is a member of the Norwegian Research School of Global Health (NRS GH).



Dr Mourice N. Mbunde

(BSC., MSC, PhD)

Dr. Mbunde is a Lecturer at the department of Natural Products Development and Formulation, Institute of Traditional Medicine, Muhimbili University of Health, and Allied Sciences (MUHAS). He holds a bachelor's degree in wildlife Management and MSc in Natural Products Technology and Value Addition from Sokoine University of Agriculture and PhD degree from MUHAS. His professional interests dwell in Natural Product Chemistry, One Health, Antimicrobial Resistance, Infectious diseases, and Natural products toxicology.

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A Tribute to Amne Rifai Salim.

In 1965, one of the most iconic political figures in history visited what was then Tanganyika, including a trip to Zanzibar.

Ernesto ‘Che’ Guevara, the Argentinean revolutionary and key member of the Cuban revolution visited Zanzibar near the tail end of his political and personal struggle, two years before his assassination. His visit included a dinner engagement with a young family whose own political journey was about to begin. This visit marked the beginning of an interesting arch for a political couple who at the time had no idea what their future would mean for Tanzania or Africa.

Che had significant interests in Sub-Saharan Africa. He and his Cuban ties to Zanzibar and Tanganyika ran deep. A cohort of African freedom fighters were trained in Cuba during the sixties, an era of African liberation movements. The Zanzibar revolution took place in January 1964. Some of these comrades, as they were known then, such as Abdul Rahman Mohammed popularly known as ‘Babu’ visited Havana in August 1964 to attend the 11th anniversary of Fidel Castro’s revolutionary movement. Babu spent time with Che. Che visited Zanzibar the following year.

That young political couple, Amne and Salim, hosted Che for dinner. A symbolic moment given that prior to Che’s visit, Amne and Salim were the first couple to be married after the Zanzibar Revolution, marking a new era for the island. At the wedding, Amne probably had more comrades than family members in attendance, such was going to be her life.

Ches’ visit to Zanzibar was Amne’s first introduction to the global liberation struggle, a crash course to the life that she would live for decades. At the age of 19, Amne had to adapt and become a diplomat on the fly. The story of how Amne met Salim and how they got married was perhaps not the most romantic. It was an arranged marriage that was a matter of necessity

for Salim at the time; who was selected to be Zanzibar's top diplomat in Egypt at the merely 22. He was told he had to get married before his posting.

Though not romantic, one consistent story of how Amne caught the eye of Salim, aside from how beautiful and charming she was, was related to the kaymatishe made. Those kaymatis (a syrup infused crispy donut) were locally made but would soon become international. When Che visited Zanzibar, she helped prepare a meal at the request of one of her closest friends, Ashura Duale. Ashura had to quickly prepare a meal for her fellow Comrade Che, and had only one friend to call who could support her. Kaymatis were on the table.

Amne's story as Salim's wife began after she married him, but her life as a humanitarian had already begun. During the Zanzibar Revolution, a challenging and complicated period in Tanzania's history, many young children and individuals who were fearful for their lives hid at various schools in Zanzibar. Amne, with a few others, made sure that those seeking refuge at the school were fed and protected. She played host and protector, at a tender age, something that she would continue to do for the rest of her life, effortlessly and gracefully.

History will remember Salim.

He is a revolutionary politician, a diplomat, and a pan-Africanist. However, history will not remember the woman by his side, Amne, because narratives of heroism, revolutions and struggles remain dominated by men. While men wrote history, women made it.

When the partners of African leaders are profiled, the focus tilts towards their expensive taste in fashion or negative political ambitions; not on how they helped their partners hold steady on decisions that shaped their political careers.

Before she was married to Salim, Amne worked as a secretary for Zanzibar News Agency which was run by Babu. Soon after marrying Salim, Amne was aboard her first international flight to Egypt—the new wife of an ambassador.

There are a lot of things we aspire to achieve by the time we hit our 20's. Being an integral part of your young country's political and diplomatic space is perhaps the greatest honor. But here was Amne; stepping up to the challenge in one of the most important African nations- Egypt, during the Cold War, led by none other than General Gamal Abdel Nasser.

That young couple in Egypt ended up serving Tanzania in India, China, and the United Nations in New York.

Those years were teaching moments for Amne. She had to grow a thick skin all while becoming the steady and trusted counsel for Salim, who became the head of the Organization of African Unity (OAU)—now African Union—between 1989–2001. This cemented Amne's role as the first lady of Africa, she carved out a role for herself as someone who was not just the wife of a famous diplomat, but a strong independent woman—the anchor to her family, the supportive and caring weaver of the Tanzanian and broader African community in Addis Ababa, the epicenter and host to African nations. The broader African liberation movement lived in her

sitting room. Her home belonged to the entire continent, and her role as host helped shape the continent we have today.

Every Eid, every Christmas, Ethiopian New Year and national day, Amne, with her charm, warmth and meticulous attention to detail, created a home that was welcoming to anyone who visited. It was a place of celebration, comfort, counsel, comradeship and the soul of Africa's conscious intellectuals and freedom fighters.

She noticed what others didn't and made sure to make them feel at ease in the presence of others, with an encouraging word and her comforting and reassuring calm presence.

People visited the Salim residence as strangers but left, thinking and wondering where the time went and hoping they would be welcomed back.

But that was Amne. She wanted everyone to have a piece of 'home' with them wherever they were and to always have a good time. Home and family were always important to Amne, perhaps on an equal footing of representing her country and Africa with the highest level of dignity and patriotism.

Amne was notorious for getting on a plane for any and every milestone for her family.

She'd be there for the down moments. Her comforting reassurance a perpetual presence for those she cared for in Tanzania, in Ethiopia, Oman wherever they were on earth.

But she'd relish the opportunity for the moments she wouldn't forget. Jumping on a plane for a wedding, a graduation, welcoming a new baby or grandchild. Or simply attending a basketball or baseball game of her kids and grandkids. She wanted her presence to be felt to mark the warmth and support we pray family provides. She was the answer to that prayer.

That was Amne. Selfless, perhaps to a fault.

For every milestone in African and Tanzanian history, Amne was there. For every transcendent moment in global politics, Amne was there. More importantly, she was by Salim's side; his advisor; counselor and anchor for the moments that would shake him and test him. She was his true north and his solace.

The perception of women like Amne and many before, and after her, are that they are witnesses of history by the default position of being spouses to influential men. Bystanders. There needs to be recognition, that women like Amne are an integral part of bringing history to life. While their contribution may not be in public narratives, their sacrifices deserve recognition, remembrance and respect.

Amne's activism and intellect allowed her to be a comrade in solidarity for Africa's liberation struggles including Mozambique, Angola and South Africa. Amne, like Salim, was an active supporter of the liberation struggle and symbolically, they were exactly what the world expected Tanzania and Tanzanians to be; a nation and people that laid the groundwork towards

liberation. During the liberation struggle, Tanzania represented strength, diplomacy and the fortitude to push forth the vision of a new and free Africa. Tanzania was the foundation builder and partners in the struggle who were dedicated, strategic and trusted, the big brother who helped to knead an African continent dripping with the sweetness of freedom; much like those kaymatis.

Amne was a comrade and pan-africanist.

Many will remember Amne for her composure and most importantly her generosity throughout the various struggles she endured juggling these different roles.

Amne was a quiet philanthropist; supporting various initiatives, she financed schools, advocating for mammogram screening, and donating for Mosque renovations to name a few. She never publicized it and many of us weren't even aware of it until her passing.

There is an expectation that women like Amne are one dimensional. There is a challenge to accept the complexity of their identity. If they have a sense of fashion, then they are frivolous, and if they are comrades then they must look like the world weighs on their face, beaten and downtrodden. But Amne has taught me that women can be whatever they want, and the key is to work on the struggle not wear the struggle.

What will always be synonymous with Amne is how classy, elegant and regal she looked.

Her shoes. Her sunglasses. Her Afro. The scarfs and shawls. Amne's attention to detail was unmatched. She always made sure she looked stylish and put together, but what made her stand out was how she sought to elevate those around her; she made sure they felt seen and made sure they got the best.

She wouldn't directly call you out if you looked bad or dressed terribly, but would hit you with a 'Shall we go to the hairdresser?' or 'You are going out like that?' but it was done politely and diplomatically.

Even in her last few months, when she didn't go out as much, or frequent lunches with friends, she still dressed up at home- just because life itself is an occasion. Amne was the epitome of sophistication and iconic fashion. And just like her sense of fashion, she presented her style much like she presented her views, with calm and grace.

In her last few hours on that fateful morning of October 19th, she picked her outfit before going to the hospital.

Which, in retrospect, is exactly how she wanted to leave us, on her own terms, with class and dignity.

Activist. Comrade. Daughter. Sister. Wife. Bibi. Aunty. Mom.

