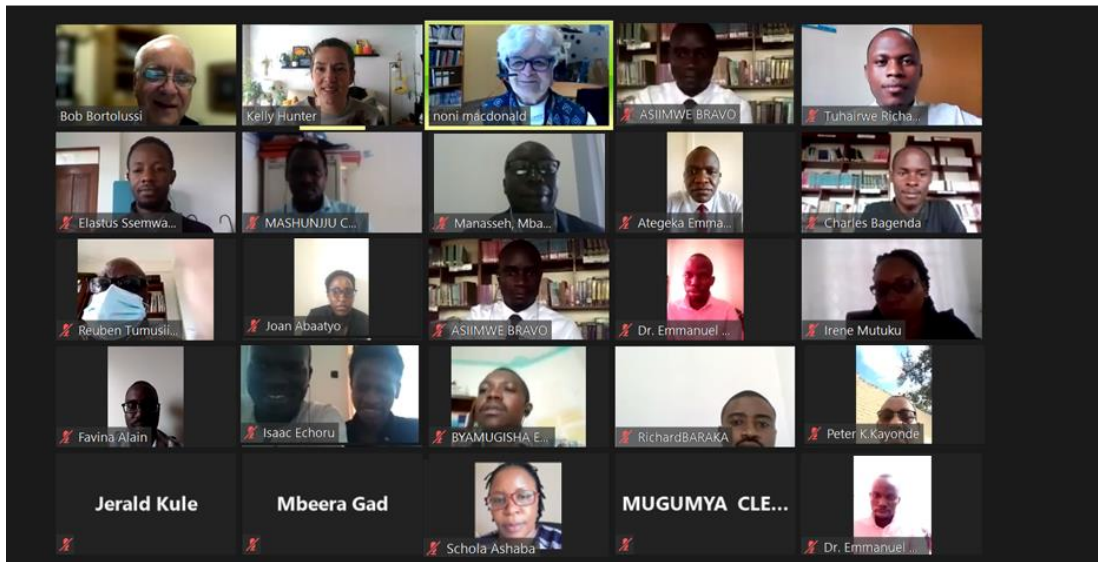




MicroResearch Virtual Workshop Report
 Maternal Neonatal Child Health Institute
 Mbarara University of Science and Technology

Participants, coaches and facilitators from the virtual MUST Workshop



Building capacity for community focused health research

April 25-May 5, 2022



A. Organizers

The 14th MicroResearch (MR) training program for the Maternal, Newborn and Child Health Institute (MNCHI) site at Mbarara University of Science and Technology (MUST) in Mbarara, Uganda was held virtually from April 25 - May 5, 2022. The main organizers for this virtual workshop were

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B. FACILITATORS, GUEST LECTURERS & COACHES

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C. Introduction and Objectives

The 14th MicroResearch (MR) training program for the Maternal, Newborn and Child Health Institute (MNCHI) site at Mbarara University of Science and Technology (MUST) in Mbarara, Uganda was from April 25 to May 5 2022. Due to COVID-19 this was held virtually.

The class comprised of participants from multiple sites in Uganda with coaches and co-teachers in Mbarara and in Canada. PowerPoint presentations were projected to the participants in Mbarara using the Zoom video conferencing platform. Lectures were all recorded and posted to a private YouTube channel, to which participants were given access. Participants also had access to the PowerPoint presentations and supporting educational materials on the private MicroResearch curriculum website.

This workshop involved initially 7 teams, which were collapsed into 6. Participants were recruited from five different sites (Kampala International University (KIU), Kabale University, Ibanda University, two teams from Mayanja Memorial Training Institute, and Mbarara University of Science and Technology (MUST) in Uganda. MUST has acted as the host for all local institutions (see Appendix 1 for a list of participants).

The key objectives for the participants of the MR Virtual Workshop:

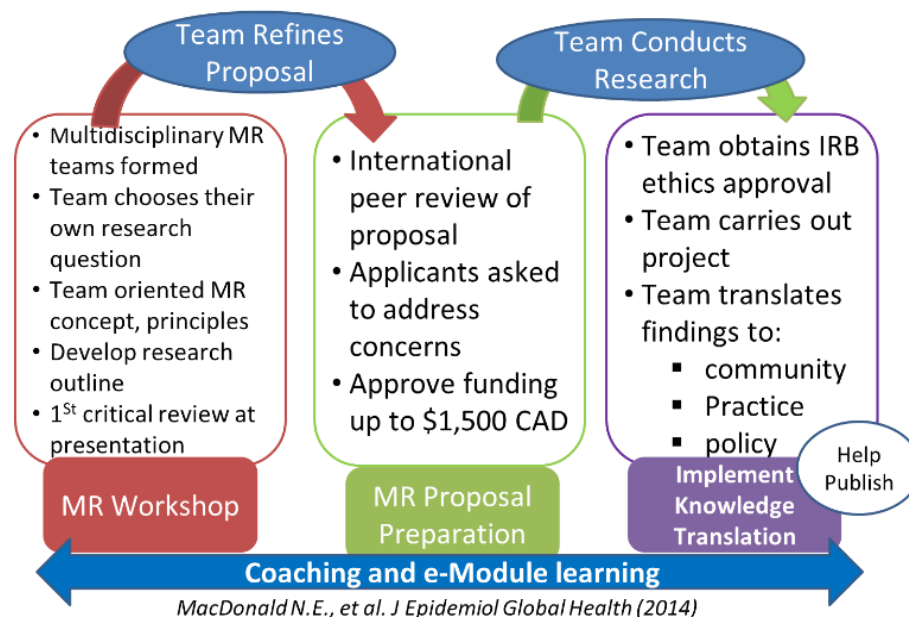
- to develop skills needed for community focused research,
- to develop skills to work in a multidisciplinary group and to become a team, and
- to write a successful community focused research proposal overview.

D. Background

Resource limited countries bear 25% of the globe’s disease burden yet the healthcare professional workforce is less than 1%. Furthermore, these low-income countries obtain only 2% of global research funds. In 2015, the *Sustainable Development Goals* (SDGs) were initiated as a program to build and extend the achievements of the United Nation’s *Millennium Development Goals* (MDG) initiative. Encouraging national support for research infrastructure and developing local capacity to address complex health problems, remains a priority of the SDGs.

MicroResearch (<http://microresearch.ca>) is an innovative strategy aimed at building the capacity of local health care professionals to better address community health care problems by finding local solutions for local problems. The program began in 2008 as a collaboration between faculty at Mbarara University of Science and Technology (Jerome Kabakyenga) and Dalhousie University (Robert Bortolussi and Noni MacDonald). Since then, the research capacity building workshops have been held in 9 countries with 1,143 participants. As of January 2022, 126 locally driven research projects have been funded and launched with 50 completed, with results published in peer reviewed international health journals.

MicroResearch Process



As shown in the figure above, the MicroResearch process advances in three phases: (i) Training Workshops are the first phase in the process. (ii) Teams formed during the workshops are then able refine and improve their research ideas for a grant submission to MicroResearch and review by an international panel of research experts from Canada and Africa. Once the research teams have responded to the reviewer recommendations with changes to their proposal, approval is given on scientific merit. (iii) Teams are then able to submit their proposal to their local Research Ethics Committee (REC or IRB) for approval and carry out their research. They are also encouraged to bring their findings back to the community through a Knowledge Translation plan. MR successful proposals at MUST have been funded through a local and international Rotary partnership. Given the different teams here, more work is needed to have more local Ugandan Rotary clubs participate as well as more Rotary clubs in Atlantic Canada and beyond.

E. Workshop Events and Outputs

Participants were recruited through word-of-mouth at MUST and Mbarara Regional Referral Hospital, as well as from direct requests from teams from the other 4 sites. The program was again shortened to 9 days, with the Career Planning and Time Management lecture being excluded. The 31 participants included a wide range of disciplines and professions including medicine, nursing,

midwifery, laboratory sciences, epidemiology, accounting, public health, social work, and counselling.

The pre-workshop assessment was completed by 24 of the 31 participants (77%). As shown in the Pre-Workshop evaluation, 21 participants had previous research experience; 12 as study participants, 9 as research assistants, 3 as site investigators and 4 as principle investigator.

The nine-day workshop combined lectures and daily small group interdisciplinary, interactive working sessions. Many of the lectures, support materials and tool kits were recently updated and refreshed in 2021 to include new slides on using the internet, principles in clinical research challenges in research, ethics, knowledge translation, budget, research to policy, and how to get published. Session lectures began at 4:00 PM local time in Uganda. Session lectures were followed by guided interactive small group discussions with the coaches for each team for and planning until the end of the day (7:30 to 8:30 PM local time). Of note the break out rooms for the groups did not always work so a “WhatsApp” was used for at least one group. The lectures, exercises, and group work over the eight days led the participants step-by-step through the development of a research proposal overview. Participants moved from formulating an idea to the development of the research question, to the selection of methods to fit the questions taking into account the budget available and the formulation of the overview of a knowledge translation plan and determination of what communities to engage, when and how. Daily workshop attendance ranged from 80% to 100%.

There were internet connectivity issues on the final day, which resulted in only two teams being able to present. An additional session for final presentations was scheduled for the following week on May 12. Over the two days, each of the 6 teams made a PowerPoint presentation to summarize their planned research question, proposal, budget, methods and knowledge translation plan. Three local reviewers (see below) were present to provide feedback and constructive criticism.

F. Team Proposals

As in previous workshops, the major educational component was centred on the proposal overview development in the interdisciplinary groups. There was a significant amount of content on Day 1 to orientate and allow participants to develop their own ideas into a research question based on their own experiences. On Day 2, the collaboration began when participants were divided into five groups, each group representing a different. Working in breakout rooms, the groups then discussed each member’s question and applied the FINER criteria (discussed during the lecture on Day 2) and selected the “best” one to develop into a research proposal throughout the rest of the workshop. On Day 3, a spokesperson for each group presented the topics to the class and noted the question selected by the group and the rationale for its selection. The questions selected on Day 3 were:

- Group 1 MUST - Knowledge, attitudes and perceptions on telemedicine in delivering health services among adolescents in Southwestern Uganda-
- Group 2 KIU - What are the proportions of common cervical lesions and associated factors among women aged 21 years up to 65 years in a refugee camp?
- Group 3 Kabaale - Why do mothers prefer traditional therapeutic cuts and uvulectomy in children <5 years with common respiratory illnesses in Kabale RRH?-

Group 4 Ibanda - To what extent has COVID-19 contributed to the rise of contagion in infants?

Group 5 MMMTI -What are the factors associated with teenage pregnancy in post COVID era among the rural youth in Bwizibwera subcounty Mbarara District?

Group 6 MMMTI - What is the Prevalence of self-medication and contributing factors among students of Mayanja Memorial Medical Training Institute?

A discussion followed each group's presentation, with emphasis on importance of narrowing and refining each question.

The series of lectures that followed provided knowledge and skills needed to develop these questions into research proposal overviews, including knowledge translation, ethical issues, community engagement and budget development. All the lectures included core elements to the MR concept, which were essential in preparation for the presentation on the final day.

Throughout the workshop, each group became a team, working together on their proposals, guided by their coach.

G. Workshop Partners

This workshops and projects emerging as a result are supported by partners including:

- Maternal Neonatal Child Health Institute
- Mbarara University of Science and Technology
- Healthy Child Uganda, Mbarara, Uganda (Technical support)
- Kabale University
- Kampala International University
- Ibanda University
- Mayanja Memorial Medical Training Institute
- Dalhousie Medical School, Dalhousie University (Volunteer teachers)
- IWK Health (Volunteer teachers)
- MicroResearch private donors
- Academics without Borders
- Rotary International and Rotary Clubs in Atlantic Canada

H. Final Days

Over the two final sessions (May 5 and May 12), each team presented the overview of their proposal in a ten-minute presentation to a panel of three local experts. The two session were needed because internet issues on May 5 did not support concurrent sessions. The review panel, along with the two Canadian facilitators, adjudicated each team's presentation and suggested how the proposals might be further strengthened.

The local review panel for May 5th included:

- Dr. Samuel Maling – Associate Professor of Psychiatry, Mbarara University of Science and Technology

- Dr. Jonans Tusiimire - Senior Lecturer Department of Pharmacy, Deputy Dean Faculty of Medicine, Mbarara University of Science and Technology
- Dr. Charles Mucunguzi – Senior Lecturer Faculty of Interdisciplinary Studies, Mbarara University of Science and Technology

The local review panel for May 12th included:

- Dr. Jonans Tusiimire - Senior Lecturer Department of Pharmacy, Deputy Dean Faculty of Medicine, Mbarara University of Science and Technology
- Dr. Charles Mucunguzi – Senior Lecturer Faculty of Interdisciplinary Studies, Mbarara University of Science and Technology
- Dr. Jerome Kabakyenga - Director, MNCHI; Co-Founder, MicroResearch International, Mbarara University of Science and Technology

Review Panels General Comments

The local experts noted that all teams had clearly worked hard and presented their proposal overviews well. The reviewers were impressed by the professional presentations of the PowerPoints.

They noted that each research question was relevant, but they all need some refining. They suggested that each team needs to dig deeper into background to provide a stronger rationale connected to the available literature. When answered, these questions could lead to potential changes in practice or policy and/or a better understanding of why certain problems are occurring within the communities. A few of the teams need to consider the ethical implications of doing research within vulnerable populations and should consider recruiting an additional member with specific expertise on the topic.

I. Workshop Evaluation

An assessment of the workshop by participants as well as how well their team functioned was obtained using structured evaluation forms submitted anonymously with 27/31 (87%) of participants completing the form.

Overall, the workshop was highly regarded by participants and the virtual program was well accepted, although several felt more time was needed to work through the vast amount of information (particularly if they were new to research) and additional training for data analysis:

- *“Think about how to use more time than 10 days. The course covers good topics which need more time to be explored before and after each homework.”*

Lectures that participants indicated were particularly helpful included research methods, how to develop a research question, knowledge translation, how to get published, and oral/poster presentations.

Most participants responded in their evaluation that working as a team enhanced their research and the workshop experience stimulated their interest in research. Several indicated that they will use what they learned to help teach their students or fellow colleagues:

- *“This was a unique opportunity to interact with high level and high quality teaching materials and teams in the international standards.”*
- *“This was the great opportunity to learn more about micro research especially for me being from a limited resources country such DRC with few or even no partnership with the international university and Medical journal.”*

J. Recommendations and Comments

1. Improving Participant/Teacher Communication:

- Conducting a virtual workshop makes it difficult to for teachers and trainees to communicate in a traditional manner. Thus learning opportunities may be lost. This was especially apparent with one group who kept losing connectivity. A WhatsApp group was set up instead.
- Keeping video cameras on did not work well for those with low-connectivity, reducing visual interaction with teachers and coaches. We recommend that more thought and resources go into ensuring better internet connections.
- Need to determine how breakout rooms can run more effectively. Having one team who could not stably connect meant loss of time in preparing their proposal overview. There is a need for better connectivity and more rapid assessment of who had dropped off.
- Teams were formed pre-workshop according to their site. However, too many teams were initially formed, with multiple teams having too few members. Given connectivity issues, teams of three will not likely be viable since MR grant criteria requires a minimum of 3 members (with certificates) and 3 different professions
- Teams of four, five or six are preferred. Seven teams does not work well in the virtual format. Having too many teams reduces the amount of time each group is able to interact with the facilitators, and is also an unmanageable amount for the final day of presentations. Therefore, it is recommended that there be a minimum of five per group and no more than four teams total.
- The first presentation on Day 1 should include a mini-orientation on how to access the online curriculum and basics of how to use Zoom and breakouts. This could also be done by the local site a week before the workshop. It will help to confirm if their internet access is adequate and provide an opportunity to outline the expectations of the workshop, e.g. attendance and participation requirements. We recommend new participants attend a short pre-workshop, mini orientation session to ensure Zoom and Curriculum connections are established.

2. Combat virtual viewing fatigue:

- Long virtual sessions can be tiring and may minimize learning potential.
- Schedule 5 minute breaks for stretch and bathroom needs.
- Ensure sessions start on time as to reduce fatigue and not run late.

3. Program Observations and Suggested Changes

- Some lectures ran overtime - this limited time for group work. Facilitators need to be more clear to presenters that MR is NOT intended to present extensive details as there are materials in curriculum site for more depth and importance of protected group work time

- The site should plan to have the program run for at least 4 hours each day to ensure there is enough time for both lectures and group work
- The Research Ethics lecture should be revised and shortened
- Lectures should be reviewed to see how to incorporate more interactive exercises, such as done in the Research to Policy presentation. This is especially important in virtual workshops where interactions are more limited
- Recording each session is important, especially the final day as it is helpful to provide participants with a recording of the judges' comments.
- More effort needed to secure gender equity in future workshops. (This one was predominantly male)

4. Final Day Presentations:

- Having pre-recorded final day team presentations is helpful in virtual workshop to help stay on time. Instructions on how the team can do this and IT support is necessary to make this happen.
- Remind judges to offer helpful constructive insights and to limit discussion time, i.e. all judges' comments should take no more than 30 minutes per team.
- For 9-day workshops, consider having a break between the final day of presentations (e.g. one day). This will allow teams time to prepare their presentation with help from their coach.

5. New Program

- Given the success of initiating the Strengthening Engineering Research program supported by AWB and modelled on MicroResearch, the Business School at MUST indicated a similar need for multi-site program to further develop the research in Business faculties. This is especially important given the need to innovate and grow the economy and job opportunities for young people. An application needs to be made to AWB. Dr Manasseh will prepare this with help from MR International.

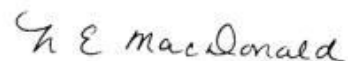
Respectfully submitted,



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