

COMMENTARY

# Taking up from COP26 going forward: contribution of the Book "Survival:One Health, One Planet, One Future by George R. Lueddeke"

# Eliudi Saria Eliakimu<sup>1</sup> and Linda Mans<sup>2,3</sup>

 <sup>1</sup>Health Quality Assurance Unit, Ministry of Health; Dodoma, Tanzania
 <sup>2</sup>An Independent Consultant and Researcher in Support of Healthy People and a Healthy Planet, Manskracht; Nijmegen, Netherlands
 <sup>3</sup>Policy Officer Science and Knowledge Development Healthcare at the Netherlands Institute for Health Services Research (Nivel); Utrecht, Netherlands

Corresponding author: Eliudi Saria Eliakimu, (MD, MPH) Ministry of Health, Health Quality Assurance Unit, NHIF Building 05<sup>th</sup> Floor, 2 Ukaguzi Road, P. O. Box 743, Dodoma, Tanzania. +255 754361400 Email: <u>eliakimueliudi@yahoo.co.uk</u> AND <u>eliudi.saria@afya.go.tz</u>



### Abstract

Since its publication in 2019, the book "Survival: One Health, One Planet, One Future", written by George R. Lueddeke, has proven to be timely and useful in these uncertain and tense ("rattling" – Lueddeke's word) times we are experiencing. Indeed, we have had (and still are experiencing) the COVID-19 pandemic and the war between Russia and Ukraine that was started early 2022. In this article, we recall the urgency of climate action, the goals of COP26 (that took place from 31st October to 12th November 2021) and provide suggestions for topics that might deserve a place in a possible update of the book. These topics include (i) a critical analysis of the effects of Russia and Ukraine War and lessons from the perspective of One Health and Wellbeing; (ii) progress in various countries in using the One Health approach to address issues that affect the health and wellbeing of population (equity), the environment and ecosystems in general (including global trends in non-communicable diseases and antimicrobial resistance); and (iii) look at the current global governance systems in relation to how they can better function proactively to prevent future wars (interconnected challenges).

**Keywords**: Climate Change, Conference of Parties 26, One Health Approach, COVID-19, and Russia and Ukraine War.

**Acknowledgements**: We acknowledge the work of the President of COP26 and the Secretariat for the draft decision document that has been one of our foundational references. We also thank all the authors of the references cited in our paper for their wonderful work.

Source of funding: No funding was received for this work.

Conflicts of interest: The authors declare that there is no any conflict of interest.

**Disclaimer**: The authors alone are responsible for the views expressed in this publication, and they do not represent views of their organisations.



### Introduction

The coronavirus disease 2019 (COVID-19) pandemic has affected the life of populations globally both socially and economically causing deaths of millions of people globally in a way that has even challenged our capacity for deaths registration (1). The pandemic has also led to a consecutive two-years (2020-2022) the in progress retardation of implementation of the Sustainable Development Goals (SDGs) (2); hence, affecting well-being of people in terms of mental health (3). COVID-19 has also exposed vulnerabilities in health systems in High Income Countries (HICs) (4), as well as in Low- and Middle-Income Countries (LMICs) including countries in sub-Saharan Africa (5). As much as countries around the world have been struggling with COVID-19. another challenge of climate change effects has also been reported in various countries in both HICs and LMICs settings such as: floods in South Africa in which 400 people died, destroyed more than 12,000 houses and forced about 40,000 people from their homes (6); wild fires in United Sates (7); and heat waves in India during the period of March - May, 2022 (8). All these challenges have demonstrated the need for the world to come together to put strategies that can ensure we minimize the effects of climate change (9); and also, to have health systems that are more resilient, sustainable and well prepared against future pandemics (10). Sadanandan (2022) has documented lessons from the COVIDpandemic for policy makers on 19 management of pandemics which can help decision makers to perform better in future pandemics (11).

One of the key instruments for tackling climate change is "The United Nations Framework Convention on Climate Change (UNFCCC)" which entered into force on 21<sup>st</sup> March 1994 and as of 25 June 2022, its status showed that it has 165 Signatories and 197 Parties. All the

countries that have ratified the Convention are called "Parties to the Convention" (12, 13). Each year since 1997 the "Parties to Convention" meet annually for the meetings that are commonly named as "Conference of Parties (COP)". On 31st October-12<sup>th</sup> November 2021 the 26<sup>th</sup> Conference of Parties (COP26) was held in Glasgow, Scotland (12). The COP26 had four goals namely "mitigation, adaptation, finance and collaboration". From a public health perspective, a broad approach to health was discussed, which considered socio-economic and environmental determinants, health and equity (14).

The COP26 draft decision proposed by the President (15), focused on the following eight key areas (as quoted from the draft decision): "(i) Science and urgency importance of science for effective climate change action and policy; (ii) Adaptation urged Parties to further integrate adaptation into local, national and regional planning; (iii) Adaptation finance -"urged developed country Parties to increase their provision of climate finance, technology transfer and capacity-building, financial institutions and private sector to mobilize funds; (iv) Mitigation - Parties to consider further actions to reduce by 2030 non-carbon dioxide greenhouse gas emissions, including methane; accelerate the development, deployment and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems; and protecting, conserving and restoring nature and ecosystems, including forests and other terrestrial and marine ecosystems; (v) Finance, technology transfer and capacity-building for mitigation and adaptation emphasizing the on importance of strengthening cooperative action on technology development and for the implementation transfer of mitigation and adaptation action; (vi) Loss and damage - The importance of partnerships strengthening between developing and developed countries,



funds, technical agencies, civil society and communities to enhance understanding of how approaches to averting, minimizing and addressing loss and damage can be improved; (vii) Implementation importance of protecting, conserving and restoring ecosystems in which Parties need to take an integrated approach for protecting, conserving and restoring ecosystems in national and local policy and planning decisions; and to ensure just transitions that promote sustainable development and eradication of poverty; (viii) Collaboration – taking up key issues that will ensure: meaningful youth participation and representation in multilateral, national and local decisionmaking processes, including under the Convention and the Paris Agreement; important role of indigenous peoples' and local communities' culture and knowledge in effective action on climate change, and Parties actively involve urges to indigenous peoples and local communities in designing and implementing climate action; and to increase the full, meaningful and equal participation of women in climate action and to ensure genderresponsive implementation and means of implementation, which are vital for raising ambition and achieving climate goals" (15).

Against that background, in addressing the climate change and other emerging challenges, we aimed to explore the contribution of the book "Survival: One Health, One Planet, One Future" by George R. Lueddeke. Routledge Taylor and Francis Group Abingdon – Oxon, London and New York, First published 2019; eBook ISBN 9780429444081. 254 Pages.

*DOI*: <u>https://doi.org/10.4324/978042944</u> 4081.

# Methods

A narrative analysis of the content of the book was done taking into account the goals of the COP26; and reviewed literature on climate change and other issues related to content of the book. Based on the analysis, highlights of some actions that need to be taken are presented in the discussion section under sub-section "going forward". The conclusion section includes suggestions for topics that might deserve a place in a possible update of the book.

# Results

The book brings to our attention the need for "changing the way we relate to the planet and to one another and confronting how we use technology (dataism) for the benefit of both humankind and the planet". The author George R. Lueddeke (who is an educational advisor in higher and medical education and chairs the global One Health Education Task Force for the One Health Commission and the One Health Initiative) has been able to touch broadly around key topics related to protection of our environment, humanity, and the ecosystem in general, while focusing on the future with a special eye on young generations (which he refers to as Generation Z) in terms of their education and their relation with the fast growing technology.

The author introduced the book well and organized it into three parts. Part one highlighted on challenges we face as we strive to protect well-being of people and the planet including: urbanization; climate change and SDGs focusing as well on Non-Communicable Diseases (NCDs) and Antimicrobial Resistance (AMR); technology and our lives; increasing population and the problem of overconsumption; and capitalism including issues that require attention in twenty-first century. Part two delt with war and peace; projections into 2050 in terms of shifting global economic powers. automation effects to society, corruption, democracy and decision making in twentyfirst century; shaping the society for a



sustainable future with a note on dangers such as endless new weapon systems; growing antagonism among nations; the poison in our politics; and climate change; and One Health approach. Part three of the book mainly focused on how to create a more just, sustainable and peaceful world touching on global education as a way of building foundations for future; detailed description of key leading global and national organizations in the area of One and Well-Being Initiatives: Health challenges faced in leadership in an era of *"uncertainty,"* upheaval and anxiety" probably pointing to a "new world order"; defined Generation Z and the and challenges they are likely to face including the technological as well as socioeconomic challenges that leaders in the twenty-first century need to be aware of, and engage the Generation in finding appropriate solutions that are tailored to their context and aspirations.

#### Discussion

The book has pointed out broadly on many of the issues that were also focused in the COP26 meeting including: protection of nature and ecosystems with a look on effects of overpopulation and overconsumption; ensuring just transition that will enable sustainable development and eradication of poverty; meaningful participation and involvement of young generations in protection of our planet to ensure a better and safer future; and the use of technology for betterment but also potential effects of technological use if not well managed depending on how the young generation (referred to in the book as Generation Z) is prepared to cope with the technological era (fourth industrial revolution). The book has further looked at the topics that affect the health of population which require a multi-sectoral approach in addressing them such as NCDs and AMR. These are among the major challenges that are likely to overwhelm global and national health

systems and ultimately affecting the life of populations. The challenge of overpopulation has also been noted by Mackenbach (2022) regarding the need for using persuasive interventions on top of the usual public health interventions and family planning measures in order to address people reproductive preferences (16).

The recent global report on global burden of bacterial AMR in 2019 has shown that "AMR is a leading cause of death around the world, with the highest burden in lowresource settings" (17). Therefore, as noted by Weldon, et al, (2022) it is important to strengthen governance of AMR globally drawing on lessons from the Paris Climate Agreement (18). The challenge of NCDs require multisectoral actions at national and global level (19); and also, it requires incorporation of behavioural medicine strategies in policies and intervention frameworks (20). The book also touched on social, political, and economic determinants of health such as poverty, inequality, war and peace, corruption, democracy, and decision making in the twenty-first century. The ongoing war between Russia and Ukraine is a testimony on why we need to focus on peace and avoid wars given the fact that the war has already affected the whole causing: exacerbation of the world worsening economies that had already been weak due to the COVID-19 pandemic; shortages of food supply globally pushing populations into famine; increase in oil and gas prices as well as other commodities prices; and pushing millions of Ukrainian people into refugee situation (21). Democracy has been shown to have impact on health outcomes. For countries with democratic instance: governance had better responses to the COVID-19 leading to a decrease in "excess mortality" (22); and improvement in democracy has contributed to increase in life expectancy and decrease in infant



mortality in the "*post-communist states*" (23).

The One Health approach is the cornerstone for addressing global health challenges that transcend the boundaries of health sector. As noted by Ghebrevesus, et al, (2022), "issues beyond the health sector such as changing demographic patterns, climate change, changing land use, de-forestation and increased animalhuman proximity, coupled with increasing population density and globalization are increasing the likelihood of further pandemics or other crises. Now is the time for all sectors to work together on health" (24). One Health is also a critical element in surveillance of infectious diseases (25. 26), and for tackling zoonotic diseases (27). For One Health to achieve this all stakeholders and various sectors need to come together and work in partnerships *"accommodating"* competing political perspectives and include flexibility to allow multisector partnerships to respond to changing external dynamics" (28). There is a need for a more strengthened One Health to expand its ethical considerations for animals and the environment for it to be more useful in addressing the current global health challenges and threats (29). One health also needs to harness and promote its growing component - "planetary health" (30); and also consider possibility of integration of principles of ecological economics and pluralist economic thinking (31).

# Going forward

The author (George R. Lueddeke) has rightly put it that there is a need to put efforts in "shaping the society for a sustainable future and address the ongoing dangers such as endless new weapon systems; growing antagonism among nations; the poison in our politics; and climate change"; this is the time to stop and take concrete actions. The war

between Russia and Ukraine is more than an alarm that our future is in great danger. Ongoing wars and armed conflicts will exacerbate inequalities and affect the chances for the world (and affected countries) to achieve the SDGs. We need to keep focus on children, youths, and women by involving them in all actions for addressing climate change and achieving a green, healthy and just transition, while avoiding war and upholding peace. In this, there is a room for bringing in Psychologists to assist us with "the language of the psychology of survival" in what is referred to as *"planetary* psychology to try to address the planetary context of the individual psyche" (32). Also, community involvement, e.g., by recognising and establishing a variety of trusted community members as change agents and involving populations in marginalized positions in climate action will help to ensure we have a just transition towards sustainable development. To this end, we need to work on strengthening efforts to track effects of climate change on human health and the environment so that we can design effective strategic interventions (33). Global food systems must be strengthened, and further studies need to be done drawing on lessons from various disruptions (including COVID-19; and the Russia and Ukraine War) taking into account roles of social scientists including economists (34). There is also a need for equipping next generation of Public Health Professionals with knowledge and skills necessary for addressing the climate challenge (as an important competency for them) (35). Ministries responsible for health in various countries need to take concrete actions that will improve health

and equity, following example from actions put forward by the United States' Department of Health and Human Services after participating in the COP26 (36). Growing hate behaviour in various countries leading to violence such as gun



violence in United States of America (37), point to a gloomy future if we are not able to address the situation. Also, racism is becoming a threat to wellbeing of clients of health facilities as it may affect the quality of services provided (38). As put forward by Bailey, et al, (2021), there is a need for tackling racism by focusing on structural issues (such as laws, rules, and practices) in government structures at all levels, economic systems, and in social and cultural norms (39). In order to address this from the public health perspective, it requires capacitating public health professionals with knowledge and skills on the "critical race theory" to help them in preventing racism in health systems and uphold public health (40).

# Conclusion

Apart from the challenge of climate change; wars, conflicts, and violence are imminent threats to the wellbeing of humanity and environment. The effects of COVID-19 and the Russia and Ukraine War are likely to have very severe effects on the progress towards attainment of the SDGs targets and implementation of agreed actions to tackle climate change.

We suggest future editions of the book to include the following three areas: (i) a critical analysis of the effects of Russia and Ukraine War and lessons from the perspective of One Health and Wellbeing approach; (ii) progress in various countries in using the One Health approach to address issues that affect the health and wellbeing of population (equity), the environment and ecosystems in general (including global trends in NCDs and AMR); and (iii) look at the current global governance systems in relation to how they can better function proactively to prevent future wars (interconnected challenges).

# References

1. COVID-19 Excess Mortality Collaborators. Estimating excess mortality due to the COVID-19 pandemic: a systematic analysis of COVID-19-related mortality, 2020-21. Lancet 2022; 399:1513-36. DOI: <u>10.1016/S0140-</u> <u>6736(21)02796-3</u>.

- Sachs J, Lafortune G, Kroll C, Fuller G, Woelm F. (2022). From Crisis to Sustainable Development: the SDGs as Roadmap to 2030 and Beyond. Sustainable Development Report 2022. Cambridge: Cambridge University Press. Available from: <u>https://s3.amazonaws.com/sustaina</u> <u>bledevelopment.report/2022/2022-</u> <u>sustainable-development-report.pdf</u> Accessed on 21<sup>st</sup> June, 2022
- 3. Aknin LB, De Neve J-E, Dunn EW, Fancourt DE, Goldberg E, Helliwell JF, et al. Mental Health During the First Year of the COVID-19 Pandemic: A Review and Recommendations for Moving Forward. Perspect Psychol Sci 2022; 17: 915-36. DOI: <u>10.1177/1745691621102996</u> <u>4</u>.
- 4. Organisation for Economic Cooperation and Development (OECD). The impact of COVID-19 on health and health systems. Available from: <u>https://www.oecd.org/health/covid-19.htm</u> Accessed on 21<sup>st</sup> June, 2022.
- 5. Amu H, Dowou RK, Saah FI, Efunwole JA, Bain LE, Tarkang EE. COVID-19 and Health Systems Functioning in Sub-Saharan Africa Using the "WHO Building Blocks": The Challenges and Responses. Front Public Health 2022; 10:856397. DOI: <u>10.3389/fpubh.2022.856397</u>.



- 6. Tandon A. Climate change made extreme rains in 2022 South Africa floods 'twice as likely'. Published by Carbon Brief Ltd. Company No. 07222041. Data as of 13<sup>th</sup> May 2022 at 12:00pm. Available from: https://www.carbonbrief.org/climat e-change-made-extreme-rains-in-2022-south-africa-floods-twice-aslikely/ Accessed on 21<sup>st</sup> June, 2022.
- 7. Sherfinski D. US wildfires threaten nearly 80 million properties as climate risks grow. Published on 19 May 2022, by the author who is a U.S Correspondent, Thomas Reuters Foundation. World Economic Forum in collaboration with <u>Thomson Reuters Foundation</u> trust.org. Available from: https://www.weforum.org/agenda/2 022/05/us-wildfire-properties-climate-risks/ Accessed on 25<sup>th</sup> May, 2022.
- 8. Marar A, Harigovind A. Explained: How heatwave is sweeping across India, again. The Indian Express [P] Ltd. 2022. Edited by Explained Desk | New Delhi, Pune | Updated: May 17, 2022 11:14:03 am. Available from: <u>https://indianexpress.com/article/ex</u> <u>plained/explained-how-heatwaveis-again-sweeping-across-india-7919613/</u> Accessed on 21<sup>st</sup> June, 2022.
- 9. Fawzy S, Osman AI, Doran J. Rooney DW. Strategies for mitigation of climate change: a review. Environ Chem Lett 2020; 18:2069–94. DOI: <u>https://doi.org/10.1007/s10311-</u> <u>020-01059-w</u>
- 10. Alami H, Lehoux P, Fleet R, Fortin JP, Liu J, Attieh R, et al. How Can

Health Systems Better Prepare for the Next Pandemic? Lessons Learned From the Management of COVID-19 in Quebec (Canada). Front Public Health 2021; 9:671833. DOI: <u>10.3389/fpubh.2021.671833</u>.

- Sadanandan R. Managing the next pandemic: Lessons for policy makers from COVID-19. Indian J Public Health 2022; 66:77-9. DOI: <u>10.4103/ijph.ijph\_1699\_21</u>.
- 12. United Nations Climate Change. What is the United Nations Framework Convention on Climate Change? Available from: https://unfccc.int/process-andmeetings/the-convention/what-isthe-united-nations-frameworkconvention-on-climate-change. Accessed on 25<sup>th</sup> June, 2022.
- 13. United Nations Treaty Section-Office of Legal Affairs. United Nations Treaty Collection Depositary, Chapter XXVII: Environment (Status as at: 25-06-2022 09:15:48 EDT); 7. United Nations Framework Convention on Climate Change, New York, 9 May 1992. Available from: https://treaties.un.org/Pages/ViewD etailsIII.aspx?src=IND&mtdsg\_no =XXVII-7&chapter=27&Temp=mtdsg3&cl ang=\_en Accessed on 25<sup>th</sup> June, 2022.
- 14. Organised by: EuroHealthNet, Moderator: Caroline Costongs (EuroHealthNet). Climate change, justice and public health. European Journal of Public Health 2021; Volume 31, Issue Supplement\_3, ckab166.004. DOI: <u>https://doi.org/10.1093/eurpu</u> b/ckab166.004



- 15. President COP26. Draft COP26 decision proposed by the President: DRAFT TEXT on Decision 1/CP.26 Version 13/11/2021 08:00. Draft COP decision proposed by the President. Available from: https://unfccc.int/sites/default/files/ resource/Overarching\_decision\_1-CP-26\_1.pdf Accessed on 25<sup>th</sup> June, 2022.
- Mackenbach JP. The elephant in the room of 'planetary health. Eur J Public Health 2022; 32:173. DOI: <u>10.1093/eurpub/ckac012</u>.
- 17. Antimicrobial Resistance Collaborators. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. Lancet 2022; 399:629-55. DOI: 10.1016/S0140-6736(21)02724-0.
- Weldon I, Rogers Van Katwyk S, Burci GL, Giur D, de Campos TC, Eccleston-Turner M, et al. Governing Global Antimicrobial Resistance: 6 Key Lessons From the Paris Climate Agreement. Am J Public Health 2022; 112:553-7. DOI: <u>10.2105/AJPH.2021.306695</u>.
- 19. Asadi-Lari M, Ahmadi Teymourlouy A, Maleki M, Afshari M. Opportunities and challenges of global health diplomacy for prevention and control of noncommunicable diseases: a systematic review. BMC Health Serv Res 2021; 21:1193. DOI: <u>10.1186/s12913-</u> <u>021-07240-3</u>.
- 20. Odukoya O, Fox RS, Hayman LL, Penedo FJ. The International Society for Behavioral Medicine (ISBM) and the Society of

Behavioral Medicine (SBM) advocate for the inclusion of behavioral scientists in the implementation of the Global Action Plan for the prevention of non-communicable diseases (NCDs) in low- and middle-income countries. Transl Behav Med 2021; 11:1286-8. DOI: 10.1093/tbm/ibaa128.

- 21. Georgieva K, Gopinath G, Pazarbasioglu C. Why We Must Resist Geoeconomic Fragmentation – And How. IMFBlog Insights & Analysis on Economics & Finance; May 22, 2022. Available from: <u>https://blogs.imf.org/2022/05/22/w</u> <u>hy-we-must-resist-geoeconomicfragmentation-andhow/?utm\_medium=email&utm\_so</u> <u>urce=govdelivery</u> Accessed on 26<sup>th</sup> June, 2022.
- 22. Jain V, Clarke J, Beaney T. Association between democratic governance and excess mortality during the COVID-19 pandemic: an observational study. J Epidemiol Community Health, Published Online First: 29 June 2022. DOI: 10.1136/jech-2022-218920.<u>http://dx.doi.org/10.1136/je</u> ch-2022-218920
- 23. Nazarov Z, Obydenkova A. Public Health, Democracy, and Transition: Global Evidence and Post-Communism. Soc Indic Res 2022; 160:261–85. DOI: <u>https://doi.org/10.1007/s11205-</u> 021-02770-z
- 24. Ghebreyesus TA, Jakab Z, Ryan MJ, Mahjour J, Dalil S, Chungong S, et al. WHO recommendations for resilient health systems. Bull



World Health Organ 2022; 100:240–240A. DOI: <u>http://dx.doi.org/10.2471/BLT.22.2</u> <u>87843</u>.

- 25. Saha S, Davis WW. The need for a One Health approach for influenza surveillance. Lancet Glob Health 2022; 10:e1078-9. DOI: <u>10.1016/S2214-109X(22)00240-6</u>.
- 26. Sharma AK. One health paradigm: Challenges and opportunities for mitigating vulnerabilities associated with health of living beings. Indian J Public Health [serial online] 2021 [cited 2022 Jun 26]; 65:93-5. Available from: https://www.ijph.in/text.asp? 2021/65/2/93/318364
- 27. Bhatia R. Addressing challenge of zoonotic diseases through One Health approach. Indian J Med Res 2021; 153:249-52. DOI: <u>10.4103/ijmr.IJMR\_374\_21</u>.
- Abbas SS, Shorten T, Rushton J. Meanings and mechanisms of One Health partnerships: insights from a critical review of literature on cross-government collaborations. Health Policy Plan 2022; 37:385-399. DOI: 10.1093/heapol/czab134
- 29. Coghlan S, Coghlan BJ, Capon A, Singer P. A bolder One Health: expanding the moral circle to optimize health for all. One Health Outlook, 2021; 3:21. DOI: <u>10.1186/s42522-021-00053-8</u>
- 30. Hancock T, IUHPE's Global Working Group on Waiora Planetary Health. Towards healthy One Planet cities and communities: planetary health promotion at the local level. Health Promot Int

2021; 36, Supplement\_1:i53-i63. DOI: <u>10.1093/heapro/daab120</u>.

- 31. Brand-Correa L, Brook A, Büchs M, Meier P, Naik Y, O'Neill DW. Economics for people and planet moving beyond the neoclassical paradigm. Lancet Planet Health 2022; 6: e371–79. DOI: <u>https://doi.org/10.1016/S2542-5196(22)00063-8</u>
- 32. Dunk J. Psychology as if the whole earth mattered: Nuclear threat, environmental crisis, and the emergence of planetary psychology. Hist Psychol 2022; 25:97-120.
  DOI: 10.1037/hop0000208.
- 33. Di Napoli C, McGushin A, Romanello M. Ayeb-Karlsson S, Cai W, Chambers J, et al. Tracking the impacts of climate change on human health via indicators: lessons from the Lancet Countdown. BMC Public Health 2022; 22:663. DOI: <u>https://doi.org/10.1186/s12889-022-13055-6</u>
- 34. Fan S, Headey D, Rue C, Thomas T. Food Systems for Human and Planetary Health: Economic Perspectives and Challenges. Annual Review of Resource Economics, 2021; 13:131-156. <u>https://doi.org/10.1146/annurevresource-101520-081337</u>
- Magaña L, Biberman D. Training the Next Generation of Public Health Professionals. Am J Public Health 2022;112:579-581. DOI: <u>10.2105/AJPH.2022.306756</u>.
- 36. Balbus JM, McCannon CJ, Mataka A, Levine RL. After COP26 Putting Health and Equity at the



Center of the Climate Movement. N Engl J Med 2022; 386:1295-7. DOI: <u>10.1056/NEJMp2118259</u>.

37. Frieden J. Surgeons Call for Action to Reduce Gun Violence. Washington Editor, MedPage Today June 2, 2022. Available from: https://www.medpagetoday.com/su rgery/generalsurgery/99022?xid=nl \_mpt\_DHE\_2022-06-02&eun=g1334223d0r&utm\_sourc e=Sailthru&utm\_medium=email& utm\_campaign=Daily%20Headline s%20Evening%202022-06-02&utm\_term=NL\_Daily\_DHE\_d ual-gmail-definition Accessed on 16<sup>th</sup> July, 2022.

38. Findling MG, Zephyrin L, Bleich SN, Tosin-Oni M, Benson JM, Blendon RJ. Does racism impact healthcare quality?
Perspectives of Black and Hispanic/Latino Patients. Healthc (Amst) 2022;10:100630.
DOI: <u>10.1016/j.hjdsi.2022.100630</u>.

- 39. Bailey ZD, Feldman JM, Bassett MT. How Structural Racism Works — Racist Policies as a Root Cause of U.S. Racial Health Inequities. N Engl J Med 2021; 384:768-73. DOI: <u>10.1056/NEJMms2025396</u>.
- 40. Champine RB, McCullough WR, El Reda DK. Critical Race Theory for Public Health Students to Recognize and Eliminate Structural Racism. Am J Public Health 2022; 112:850-2. DOI: <u>10.2105/AJPH.2022.306846</u>.

© 2022 Eliakimu et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.