



Review

Reimagining Sustainability in Global Health: A look at the situation post COVID-19 and Influence of Growing Geopolitical Fragmentation.

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Abstract

Coronavirus disease 2019 (COVID-19) coupled with effects of conflicts and wars has threatened sustainability in global health (GH). This paper discusses sustainability in GH based on core pillars of sustainable development – *economic, social and environmental*.

In the *economic pillar*, we note the needs for: adequate funding to World Health Organization; sustaining global resource sharing and ensuring efficiency in internal resource mobilization; addressing effects of conflicts and war; and solidarity in ensuring GH funding is maintained.

In the *social pillar*, there is a need for: having proper regulatory framework for guiding development and use of artificial intelligence tools; addressing equity issues; strengthening role of women leadership for peace and health systems; improving application of laws, regulations and policies; ensuring health education is delivered in an ethical, transparent and honest way considering use of formats and language suitable for targeted populations; and strengthening health systems to provide quality services to older population.

In the *environmental pillar*: health care workers (HCWs) need to provide counselling to clients on effects of climate change; health systems leaders, planners, and HCWs in general need to ensure healthcare services are provided in a sustainable way; and design and implementation of interventions should uphold human rights taking into account population demographics.

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Introduction



A common definition of global health has been an issue of debate by scholars in global health (1-4). Consensus from the “*Editorial Board Meeting of Global Health Research and Policy, convened in July 2019 in Wuhan, China,*” defined global health as a “*general guiding principle, an organizing framework for thinking and action, a new branch of sciences and specialized discipline in the large family of public health and medicine*” (4). Sewankambo, and colleagues have proposed “*redefining global health as a dignity-based practice*” (5), building on a conceptualization of dignity in health promotion by Sæteren and Nåden (6). As efforts to strengthen global health implementation continues, a movement on “*decolonizing global health*” has emerged (7-9); and its link to quality of care has been documented (10).

Efforts to strengthen global health system in a way that will contribute to sustainability in global health requires that governance function is continuously strengthened (11). Also, the need for considering the governance function to suit governance for sustainable development goals (SDGs) has been noted (12). Past 12 years (in 2010), a need for strengthening country health systems as a way for making progress in global health systems was documented, pointing to the value of nurturing health system leaders with “*strategic vision, technical knowledge, political skills, and ethical orientation*” (13). Coronavirus disease of 2019 (COVID-19) which has caused “*human, economic and social crisis*” (14); has also exposed some malfunction in global health governance in which “*COVID-19 decisions underlying value, although had human right to health at the base, overlooked the concept of health as a global public good and was skewed towards market-oriented values*” (15). While the World Health Organization (WHO) on 05th May 2023 declared that the COVID-19 is no longer a global health emergency (16, 17); reflecting on its effects in global health offers some insights with regard to the way forward with sustainability in global health.

Disease outbreaks have been shown to have profound economic and social impacts which has highlighted on the need to invest in strengthening health systems in a way that will ensure sustainability of preparedness and response efforts to manage future outbreaks (18, 19). A WHO report on maternal mortality between 2000 and 2020 revealed that the gains made during the millennium development goals era (2000 – 2015) have faltered in the period of 2016-2020 (20).

The Pillars

This paper discusses the situation of sustainability in global health (in the context of post COVID-19 and raising geopolitical fragmentation and tensions including conflicts and wars) based on the core pillars of sustainable development – namely “*economic, social and environmental*” (21).

The Economic Pillar

The WHO has been noted to be “*uniquely placed among global health organizations to provide the overarching governance of global functions*” (22). However, as the WHO marked 75 years of work on 07th April, 2023, still sustainability of its work has been compromised by inadequate budget (23). Consensus by countries during the 76th-World Health Assembly (76WHA) in May



2023, for a “20% increase in assessed contributions,” sheds some light on improved financing for the work of WHO (24). Low- and middle- income countries (LMICs) especially in sub-Saharan Africa and South Asia have been shown to face a number of challenges towards achievement of universal health coverage (UHC) by 2030, which require improvement in efficiency of internal resource mobilization, as well as international cooperation and resource sharing (25). The increasing tensions between bigger economies, as well as conflicts and wars are posing threats to global financial stability (26); which ultimately will greatly affect sustainability in global health due to effects on commodity prices and supply chains for both food and health commodities. Investments in health could achieve a “*grand convergence*” in global health - a reduction in avertable infectious, maternal, and child deaths down to universally low levels-within a generation” by 2035 (27). Although financing global health during the COVID-19 pandemic (2020 – 2021) showed significant improvement, there is a need for ensuring that the funding is maintained (28); given the observations that global “*multilateralism and solidarity*” showed a failure during the three-years of COVID-19 (29). Also, the economic effects of the COVID-19 pandemic and the Russia – Ukraine war on Central Banks is likely to affect sustainability of global health financing (30). Experts have proposed a need for reforming development assistance funding by ensuring that “*domestic finances are allocated ‘first,’ and aid is allocated as ‘top up’*”, (31). In this view, countries need to explore and utilize the potential corporate taxes in financing health and related sectors (32).

The Social Pillar

In the global digital revolution, use of digital solutions to optimize health services has been making fast progress. One of the areas (in digital revolution) being the development and use of artificial intelligence (AI). Need for a well securitized ethical framework is key to ensure sustained future use and development of various AI’s based health care tools. Exploration of patients’ perspectives by Mikkelsen and colleagues has shown that they prefer implementation of AI to be in a way that preserves the relationship between patient and general practitioner, and that it should be used as a support tool but not replacing general practitioner (33). Exploration by Kamradt and colleagues on “*physician perspectives on using real-world care data for the development of AI-based technologies in health care*” has found that “*physicians would agree to use real-world care data to support the development of AI-based solutions with a clear benefit for daily patient care*” (34). A review of patient perspectives on AI use in radiology has found that patients support use of “*combined human and AI interpretation of imaging over AI acting autonomously*” (35).

Equity gaps exist in global health, which require redressal efforts (36). Strengthening partnerships between health facilities and communities is key to ensure sustained population health (37). During the WHO pandemic treaty negotiation development process, a call for upholding promises of equity has been raised (38). Migrants face challenges to utilize health services in countries of migration due to many system issues, hence there is a need for interventions to address various access barriers to health services by migrants (39). In sub-Saharan Africa, household autonomy of



women in making decisions has been shown to be associated with their enrollment in health insurance, which indicates that efforts on socioeconomic empowerment of women can contribute to attainment of UHC (40). Role of women leadership on peacebuilding in conflict affected countries, as well as in strengthening health systems has been documented, which warrants more investments in the current era of mounting armed conflicts and wars (41).

Also, there is a need to strengthen development, implementation and monitoring of laws, regulations and policies at global, national and subnational level in the spirit of countries cooperation and collaboration for a safe and healthier world (42). The commitment of the “*Intergovernmental Negotiating Body (INB) Bureau members, in facilitating INB negotiation among the 194 countries to reach consensus on the new instrument that provides concrete, timely, and equitable means of preventing, preparing for, and responding to future pandemics*” offers hope for a bright future in global health (43). While globally emphasis to populations of all socio-demographics on the importance of physical activities is made as an intervention to address non-communicable diseases, there is also a need to focus on ethical issues within physical activities as put forward by Esmonde (44).

Education of public on issues that are more specific to global health (for instance: “*maternal and child mortality, major infectious diseases, international organizations, inequality and equity, and the UN Development Goals*”) seem to attract less interest as compared to general issues, which points to a need for tailoring the language and formats for presentation to those that are popular (of interest) to respective community or population (45). Along the lines of ethical communication, ensuring transparency and honesty are of paramount importance (46, 47). Also, a need for more research to understand what content is appropriate for a particular message has been documented (48). Healthcare services to adult population is another aspect which requires attention at most for sustainability in global health. It has been estimated that “*by 2050, one in six people worldwide will be over age 65*” (49).

The Environmental Pillar

Climate change affects communities from heatwaves, heavy rainfalls with floods, to wildfires have had effects on wellbeing of populations. For example, in the United States from 2011 to 2021, exposure to wildfire smoke to socially disadvantaged communities have increased (50). Environmental factors have also been shown to play a role in COVID-19 transmission (51-53). As the burden of COVID-19 increased its effects were felt by the health workforce who also suffered a lot of morbidity and mortality (54,55). This indicates the need to ensure that health care workers are well protected during epidemics and pandemics so as to effectively maintain health care services delivery to populations.

With increasing disasters and weather emergencies contributed by climate change, health workers need to utilize avenues of caring for their clients to provide knowledge on how to cope with such



situations. A study by Meeker and colleagues in the United States has noted that healthcare providers have not provided emergency preparedness counseling to their clients citing barriers such as lack of time and knowledge (56). Also, climate change has been shown to affect young women decision on getting pregnancy and childbearing (57). Health systems leaders, planners, and health care workers in general need to ensure that health care is delivered in sustainable way to minimize its impact on environment in a balance way (win-win) in order not to compromise health care services delivery (58). Using a “*socio-legal lens*”, Van Hout has raised an important issue based on rights to health with regard to the environment in detention spaces for immigration detainees. This is essential in ensuring that they are kept safe and healthy while other legal procedures follow appropriate steps (59). Likewise, in the efforts to address climate change, there is a need to take into account human rights and promote social justice (60, 61); and accommodate population demographics - youths, older people, and other vulnerable groups (62-65). Also, a need for “*influential global institutions*” to uphold human rights principles as their guide has been noted (66).

In addressing the growing danger of nexus between climate change, emerging infectious diseases, and food security, Trivellone and colleagues have suggested for application of “*Stockholm paradigm and the document-assess-monitor-act protocol*” which can enable protection of “*human rights, supporting food security, access to nutritious food, health interventions and environmental integrity*” (67). Moving forward past COVID-19, Özdemir has proposed use of an innovative governance framework (“*One Nature*”) for future sustainability of biodiversity and ecosystem (68).

Water, sanitation, and hygiene (WASH) interventions used by communities and populations were essential in the fight against COVID-19 (69). Given the fact that compliance to these interventions is mainly behavioral, it is critical to ensure that strategies that facilitate availability and accessibility to WASH services and interventions are maintained since WASH interventions have also benefits to other infectious diseases (70).

Discussion

Given the rising global health challenges, actors and stakeholders at global, national and sub-national levels need to embrace the “*systems thinking approach*” to designing of solution interventions in addressing various challenges and issues. The system thinking approach can be used to address the following global health issues: commercial determinants of health (71); promoting maternal, child and adolescent nutrition (72); ending neglected tropical diseases (73); responding to infectious diseases outbreaks (74); achieving circular economy (75); understanding ways for promoting physical activity in children and adolescents (76); improving implementation of antimicrobial stewardship in primary health care as an important strategy for addressing antimicrobial resistance (77); “*transforming and redesigning Competency-based Medical Education*” (78); implementation of interventions to achieve the “*WHO call to action to eliminate*



cervical cancer by the end of the century” (79); tackling effects of COVID-19 to women and girls in LMICs in a way that will ensure their sustainable development (80); and in strengthening stewardship in the practice of veterinary medicine in order to ensure “*that every resource in livestock production, the land, livestock, and people,*“ is considered (81). Also, systems thinking has been shown to be an essential tool for countries in implementation of various interventions towards attainment of the SDGs by 2030 (82). Thelen and colleagues have developed a useful framework for assisting application of system thinking in designing and implementation of health interventions (83).

As the world continue with efforts to build back better post COVID-19 as well as fighting with the effects of climate change and increased geopolitics that are likely to increase fragmentation and tensions (conflicts and wars), there is a need for reimagining sustainability in global health using “*a big-tent approach*” which will allow and encourage all global health actors to collaborate towards common goals that will ultimately be celebrated as collective achievements (84). Also, experts in behavioral medicine need to work together with experts in climate sciences in order to contribute effectively to efforts for mitigation and adaptation to climate change (85). Governments need to strengthen policy interventions to address poverty as a way of enabling people to afford food, instead of relying on the expanding food banks backed by corporates (86). Also, countries need to reflect on their progress in the SDGs and strategize on improvement ways towards 2030 targets (87,88).

Along with all efforts to improve sustainability in global health, it is important to ensure that we conduct “*policy and implementation research that aims to produce generalizable evidence on what works to implement successful interventions at scale*” (89). The implementation research also needs to focus on health literacy in the young generation in LMICs (90). Also, for a better future, need for studies of the past issues (“*memory studies*”) is imperative (91). In order to ensure that we have a critical number of well-trained global health researchers, use of mentorship is essential (92). Role of the WHO Regional Offices in enhancing collaboration across regions and countries in a way that will help to address trans-regional problems that are not yet at a level of receiving global attention has also been emphasized (93).

Future Directions

Countries need to use the WHO guidance book on antibiotic use (*The WHO AWaRe (Access, Watch, Reserve) antibiotic book*) which aims “*to help reach the WHO target of increasing the proportion of global consumption of Access antibiotics to at least 60% of total consumption*”, and also contribute to achievement of UHC (94); and further strengthen capacity to implement best practices for containment of antimicrobial resistance (95). Countries and global health actors need to design appropriate interventions for addressing the HRH drainage from LMICs exacerbated by the circumstances post COVID-19 (96,97). Commercial determinants of health need to be well conceptualized and appropriate strategic interventions by governments be put in place to save the



future generation (98), taking into account the “*expanded best buys for tackling noncommunicable diseases*” from the 76WHA (99). Studies targeting ways to improve and sustain physical activities in children are critical in order to provide evidence on best strategies for enhancing physical activity (100).

Primary health care services are the foundation for a strong and resilient health system. However, studies on AI-based health care technologies development and use in primary health care have been done more in high-income countries (33,34,101); therefore, there is a need for developing AI-based health care tools based on the LMICs contexts in order to ensure ethical accommodation, transparency, as well as accuracy to the AI-based tools (102,103).

Continued engagement of the global financial institutions (e.g., World Bank, International Monetary Fund) in supporting global health efforts, as well as, building capacity for LMICs to improve efficiency of internal resource mobilization and allocation (25). Also, there is an imperative need for countries to strengthen health system governance based on the five core functions of health system governance (*policy formulation and strategic plans; intelligence; regulation; collaboration and coalition; and accountability*) (104). Countries need to implement primary health care reforms and ensure further strengthening of primary health care in order to be able to care for the aging population (105).

In order to tackle the effects of anti-science culture, Øvretveit has provided a useful list of methodological options that can be used in implementation research (106). Given the importance of social determinants of health (SDOH), it is essential for health facilities globally to address SDOH as part of health services delivery (107). As a way of improving monitoring of key SDGs indicators, health systems in countries in sub-Saharan Africa need to implement interventions that will improve “*data quality and monitoring through the District Health Information System 2 (DHIS2) software*” (108). Health training institutions have a role to play. Therefore, it is recommended to reimagine medical education through incorporation of what Engebretsen and colleagues have called “*critical medical humanities*, which can help to address the current complex challenges (109).

This paper has discussed sustainability based on the three components of sustainability (economic, social, and environmental). However, learning from the disruptions caused by COVID-19 in health systems globally, a proposal by Blanch and Anderson for a fourth component namely “*systems sustainability*” is essential in order to ensure health care delivery sustainability (110). Therefore, it is recommended that future analyses of sustainability need to include systems sustainability.

Conclusions

This paper has provided an insight into sustainability in global health based on the three pillars of sustainable development namely economic, social, and environmental.



In the economic pillar, the paper has noted on need for adequate funding to WHO to fulfil its roles; need for sustaining global resource sharing and ensuring efficiency in internal resource mobilization in LMICs; effects of geopolitical tensions, conflicts and war; and need for solidarity in ensuring that global health funding is maintained.

In the social pillar the following have been noted: role of digital revolution and the need for having proper regulatory framework (especially in LMICs) for guiding development and use of AI tools; addressing equity issues; role of women leadership in building peace and strengthening health systems; role of laws, regulations and policies; need for ensuring that health education to public considers use of formats and language suitable for targeted populations, and that it is delivered in an ethical, transparent and honest way; and strengthening and reforming health systems to be able to provide quality services to older adult population.

In the environmental pillar, the following three points have been highlighted: need for health care workers to provide counselling to their clients on the effects of climate change; need for health systems leaders, planners, and health care workers in general to ensure that health care services are provided in a sustainable way (a win-win way) in order to minimize its impact on environment; and the need for upholding human rights in design and implementation of interventions taking into account population demographics. Looking at the effects of wars and conflicts in global health, it is anticipated that global efforts by members states to work towards peace within and between countries by supporting the WHO-lead peace initiative through “*The Roadmap for the Global Health and Peace Initiative*”, will be able to cooperate in restoring peace globally (111); and by continuing to learn from the “*Faith for Rights*” approach (112). Also, global health strategies need to be crafted with a lens of solidarity and inclusiveness with the aim of reaching everyone regardless of geopolitical location (113).

References

1. Koplan JP, Bond TC, Merson MH, Reddy KS, Rodriguez MH, Sewankambo NK, et al. Towards a common definition of global health. *Lancet* (London, England), 2009; 373(9679), 1993–1995. DOI: [https://doi.org/10.1016/S0140-6736\(09\)60332-9](https://doi.org/10.1016/S0140-6736(09)60332-9)
2. Beaglehole R, Bonita R. What is global health?. *Global health action*, 2010; 3, DOI: 10.3402/gha.v3i0.5142. <https://doi.org/10.3402/gha.v3i0.5142>
3. Taylor S. ‘Global health’: meaning what? *BMJ Global Health*, 2018;3:e000843. <http://dx.doi.org/10.1136/bmjgh-2018-000843>
4. Chen X, Li H, Lucero-Prisno DE, Abdullah AS, Huang J, Laurence C, et al. What is global health? Key concepts and clarification of misperceptions: Report of the 2019 GHRP



- editorial meeting. *Global health research and policy*, 2020; 5, 14. <https://doi.org/10.1186/s41256-020-00142-7>
5. Sewankambo NK, Wallengren E, De Angeles KJC, Tomson G, Weerasuriya K. Envisioning the futures of global health: three positive disruptions. *Lancet (London, England)*, 2023; S0140-6736(23)00513-5. Advance online publication: [https://doi.org/10.1016/S0140-6736\(23\)00513-5](https://doi.org/10.1016/S0140-6736(23)00513-5)
 6. Sæteren B, Nåden D. Dignity: An Essential Foundation for Promoting Health and Well-Being. In: Haugan, G. and Eriksson, M. *Health Promotion in Health Care—Vital Theories and Research*. Springer, Cham, Switzerland. 2021: pp.71-84. https://doi.org/10.1007/978-3-030-63135-2_7
 7. Finkel ML, Temmermann M, Suleman F, Barry M, Salm M, Binagwaho A, et al. What Do Global Health Practitioners Think about Decolonizing Global Health?. *Annals of global health*, 2022; 88(1), 61. <https://doi.org/10.5334/aogh.3714>
 8. Kwete X, Tang K, Chen L, Ren R, Chen Q, Wu Z, et al. Decolonizing global health: what should be the target of this movement and where does it lead us?. *Global health research and policy*, 2022;7(1), 3. <https://doi.org/10.1186/s41256-022-00237-3>
 9. Kunnuji M, Shawar YR, Neill R, Manoj M, Shiffman J. Why 'elevating country voice' is not decolonizing global health: A frame analysis of in-depth interviews. *PLOS global public health*, 2023; 3(2), e0001365. <https://doi.org/10.1371/journal.pgph.0001365>
 10. Yanful B, Kumar MB, Elorrio EG, Atim C, Roder-DeWan S. Decolonisation and quality of care. *BMJ (Clinical research ed.)*, 2023; 380, e071585. DOI: <https://doi.org/10.1136/bmj-2022-071585>
 11. Frenk J, Moon S. Governance challenges in global health. *The New England journal of medicine*, 2013; 368(10), 936–942. <https://doi.org/10.1056/NEJMra1109339>
 12. Marten R, Kadandale S, Nordström A, Smith RD. Shifting global health governance towards the sustainable development goals. *Bulletin of the World Health Organization*, 2018; 96(12), 798–798A. <https://doi.org/10.2471/BLT.18.209668>
 13. Frenk J. The Global Health System: Strengthening National Health Systems as the Next Step for Global Progress. *PLoS Med*, 2010; 7(1):e1000089. <https://doi.org/10.1371/journal.pmed.1000089>



14. Baikady R. Inaugural editorial post COVID-19 global society: issues, challenges and edging forward. *Discov glob soc*, 2023; **1**, 1. DOI: <https://doi.org/10.1007/s44282-023-00001-z>
15. Abu El Kheir-Mataria W, El-Fawal H, Chun S. Global health governance performance during Covid-19, what needs to be changed? a delphi survey study. *Globalization and health*, 2023; *19*(1), 24. <https://doi.org/10.1186/s12992-023-00921-0>
16. Harris E. WHO Declares End of COVID-19 Global Health Emergency. *JAMA*, 2023. DOI: 10.1001/jama.2023.8656. Advance online publication. <https://doi.org/10.1001/jama.2023.8656>
17. Wise J. Covid-19: WHO declares end of global health emergency. *BMJ (Clinical research ed.)*, 2023; *381*, 1041. <https://doi.org/10.1136/bmj.p1041>
18. Onyekuru NA, Ihemezie EJ, Ezea CP, Apeh CC, Onyekuru BO. Impacts of Ebola disease outbreak in West Africa: Implications for government and public health preparedness and lessons from COVID-19. *Scientific African*, 2023; *19*, e01513. <https://doi.org/10.1016/j.sciaf.2022.e01513>
19. Ryan CS, Belizaire MD, Nanyunja M, Olu OO, Ahmed YA, Latt A, et al. Sustainable strategies for Ebola virus disease outbreak preparedness in Africa: a case study on lessons learnt in countries neighbouring the Democratic Republic of the Congo. *Infectious diseases of poverty*, 2022; *11*(1), 118. <https://doi.org/10.1186/s40249-022-01040-5>
20. Moyer CA, Lawrence ER, Beyuo TK, Tuuli MG, Oppong SA. Stalled progress in reducing maternal mortality globally: what next?. *Lancet (London, England)*, 2023; *401*(10382), 1060–1062. [https://doi.org/10.1016/S0140-6736\(23\)00518-4](https://doi.org/10.1016/S0140-6736(23)00518-4)
21. United Nations Economic and Social Council. Sustainable Development, 2020. Available at: <https://www.un.org/ecosoc/en/sustainable-development> Accessed on 24th March 2023.
22. Yamey G, Jamison D, Hanssen O, Soucat A. Financing Global Common Goods for Health: When the World is a Country. *Health systems and reform*, 2019; *5*(4), 334–349. <https://doi.org/10.1080/23288604.2019.1663118>
23. Ghebreyesus TA. Global health past and future: The W.H.O. at 75. *Harvard Public Health Newsletter*, April 5, 2023. Available at: <https://harvardpublichealth.org/global-health/global-health-past-and-future-the-who-at-75/> Accessed on 08th April, 2023.



24. World Health Organization. (2023a). WHO Director – General’s closing remarks at the 76th World Health Assembly – 30 May 2023. Available at: <https://www.who.int/director-general/speeches/detail/who-director-general-s-closing-remarks-at-the-76th-world-health-assembly---30-may-2023> Accessed on 01st June, 2023.
25. Kodali PB. Achieving Universal Health Coverage in Low- and Middle-Income Countries: Challenges for Policy Post-Pandemic and Beyond. Risk Manag Healthc Policy, 2023;16:607-621. <https://doi.org/10.2147/RMHP.S366759>
26. Catalan M, Natalucci F, Qureshi MS, Tsuruga T. Geopolitics and Fragmentation Emerge as Serious Financial Stability Threats. IMF BLOG, Financial Markets, April 5, 2023. Available at: https://www.imf.org/en/Blogs/Articles/2023/04/05/geopolitics-and-fragmentation-emerge-as-serious-financial-stability-threats?utm_medium=email&utm_source=govdelivery Accessed on 08th April, 2023
27. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A, et al. Global health 2035: a world converging within a generation. *Lancet* (London, England), 2013; 382(9908), 1898–1955. [https://doi.org/10.1016/S0140-6736\(13\)62105-4](https://doi.org/10.1016/S0140-6736(13)62105-4)
28. Global Burden of Disease 2021 Health Financing Collaborator Network. Global investments in pandemic preparedness and COVID-19: development assistance and domestic spending on health between 1990 and 2026. *The Lancet. Global health*, 2023; 11(3), e385–e413. [https://doi.org/10.1016/S2214-109X\(23\)00007-4](https://doi.org/10.1016/S2214-109X(23)00007-4)
29. Anderson S. Three Years of the COVID-19 Pandemic: A Failure of Multilateralism and Solidarity Analysis. *Health Policy Watch*, 2023. Available at: <https://healthpolicy-watch.news/three-years-covid-19-pandemic/> Accessed on 13th March, 2023.
30. Gopinath G. Crisis and Monetary Policy. March, 2023. International Monetary Fund – Finance and Development. Available at: https://www.imf.org/en/Publications/fandd/issues/2023/03/crisis-and-monetary-policy-gita-gopinath?utm_medium=email&utm_source=govdelivery Accessed on 15th March, 2023.
31. Drake T, Regan L, Baker P. “Reimagining Global Health Financing: How Refocusing Health Aid at the Margin Could Strengthen Health Systems and Futureproof Aid Financial Flows.” CGD Policy Paper 285. Washington, DC: Center for Global Development, 2023. <https://www.cgdev.org/publication/reimagining-global-health-financing-how-refocusing-health-aid-margin-could-strengthen> Also, available at:



<https://www.cgdev.org/sites/default/files/reimagining-global-health-financing-how-refocusing-health-aid-margin-could-strengthen.pdf> Accessed on 13th March, 2023.

32. Hannah E, O'Hare B, Lopez M, Murray S, Etter-Phoya R, Hall S, et al. How can corporate taxes contribute to sub-Saharan Africa's Sustainable Development Goals (SDGs)? A case study of Vodafone. *Globalization and health*, 2023; 19(1), 17.
<https://doi.org/10.1186/s12992-022-00894-6>
33. Mikkelsen JG, Sørensen NL, Merrild CH, Jensen MB, Thomsen JL. Patient perspectives on data sharing regarding implementing and using artificial intelligence in general practice - a qualitative study. *BMC health services research*, 2023; 23(1), 335.
<https://doi.org/10.1186/s12913-023-09324-8>
34. Kamradt M, Poß-Doering R, Szecsenyi J. Exploring Physician Perspectives on Using Real-world Care Data for the Development of Artificial Intelligence-Based Technologies in Health Care: Qualitative Study. *JMIR formative research*, 2022; 6(5), e35367.
<https://doi.org/10.2196/35367>
35. Hemphill S, Jackson K, Bradley S, Bhartia B. The implementation of artificial intelligence in radiology: a narrative review of patient perspectives. *Future Healthc J*, 2023; 10(1):63-68. DOI: 10.7861/fhj.2022-0097. <https://doi.org/10.7861/fhj.2022-0097>
36. August E, Tadesse L, O'Neill MS, Eisenberg JNS, Wong R, Kolars JC, et al. What is Global Health Equity? A Proposed Definition. *Annals of Global Health*, 2022; 88(1), p.50. DOI: <http://doi.org/10.5334/aogh.3754>
37. Alberti PM, Pierce H. A population health impact pyramid for medicine. *Milbank Q*, 2023; 101(S1): 770- 794. DOI: <https://doi.org/10.1111/1468-0009.12610>
38. The Lancet Global Health. WHO's pandemic treaty: promises of equity should be kept. *The Lancet. Global health*, 2023; 11(4), e475. [https://doi.org/10.1016/S2214-109X\(23\)00121-3](https://doi.org/10.1016/S2214-109X(23)00121-3)
39. Young R, Kennedy CE, Dam A, Nakyanjo N, Ddaaki W, Kiyangi AC, et al. From 'no problem' to 'a lot of difficulties': barriers to health service utilization among migrants in Rakai, Uganda. *Health policy and planning*, 2023; czad019. Advance online publication.
<https://doi.org/10.1093/heapol/czad019>
40. Zegeye B, Idriss-Wheeler D, Ahinkorah BO, Ameyaw EK, Seidu AA, Adjei NK, et al. Association between women's household decision-making autonomy and health insurance



- enrollment in sub-saharan Africa. BMC public health, 2023; 23(1), 610. <https://doi.org/10.1186/s12889-023-15434-z>
41. Meagher K, Khaity M, Hafez S, Rodo M, Achi NE, Patel P. Strengthening health systems and peacebuilding through women's leadership: a qualitative study. Globalization and health, 2023; 19(1), 21. <https://doi.org/10.1186/s12992-023-00920-1>
 42. Gostin LO, Monahan JT, Kaldor J, DeBartolo M, Friedman EA, Gottschalk K, et al. The legal determinants of health: harnessing the power of law for global health and sustainable development. Lancet (London, England), 2019; 393(10183), 1857–1910. [https://doi.org/10.1016/S0140-6736\(19\)30233-8](https://doi.org/10.1016/S0140-6736(19)30233-8)
 43. Driecce RA, Matsoso P, da Silva Nunes T, Soliman A, Taguchi K, Tangcharoensathien V. A WHO pandemic instrument: substantive provisions required to address global shortcomings. Lancet (London, England), 2023; S0140-6736(23)00687-6. Advance online publication. [https://doi.org/10.1016/S0140-6736\(23\)00687-6](https://doi.org/10.1016/S0140-6736(23)00687-6)
 44. Esmonde K. Exercising Caution: A Case for Ethics Analysis in Physical Activity Promotion. *Public Health Ethics*, 2023; phad004. <https://doi.org/10.1093/phe/phad004>
 45. Campbell IH, Rudan I. Analysis of public engagement with ten major global health topics on a social network profile and a newspaper website. Journal of global health, 2020a; 10(1), 010902. <https://doi.org/10.7189/jogh.10.010902>
 46. de Barra M, Brown RCH. Public-health communication should be more transparent. Nature human behaviour, 2023. DOI: 10.1038/s41562-023-01574-0. Advance online publication. <https://doi.org/10.1038/s41562-023-01574-0>
 47. Brown RCH, de Barra M. A Taxonomy of Non-honesty in Public Health Communication. *Public Health Ethics*, 2023; phad003, <https://doi.org/10.1093/phe/phad003>
 48. Campbell IH, Rudan I. Effective approaches to public engagement with global health topics. Journal of global health, 2020b; 10(1), 01040901. <https://doi.org/10.7189/jogh.10.010901>
 49. Lewis TP, Kruk ME, Sharma J, Hou X. “High-Quality Health Systems for an Aging Population: Primary Care Models with Users at the Center” chapter in Silver Opportunity: Building Integrated Services for Older Adults around Primary Health Care. Washington, DC. 2023. World Bank. Hou X., Sharma J., Zhao F. Editors. Pages 23-41. Available at:



<https://documents1.worldbank.org/curated/en/099025503072337503/pdf/P17583208782960a40bf6804d1758e50f1e.pdf> Accessed on 02nd April, 2023.

50. Vargo J, Lappe B, Mirabelli MC, Conlon KC. Social Vulnerability in US Communities Affected by Wildfire Smoke, 2011 to 2021. *American journal of public health*, 2023; 113(7), 759–767. <https://doi.org/10.2105/AJPH.2023.307286>
51. Han J, Yin J, Wu X, Wang D, Li C. Environment and COVID-19 incidence: A critical review. *Journal of environmental sciences (China)*, 2023; 124, 933–951. <https://doi.org/10.1016/j.jes.2022.02.016>
52. Semczuk-Kaczmarek K, Rys-Czaporowska A, Sierdzinski J, Kaczmarek LD, Szymanski FM, Platek AE. Association between air pollution and COVID-19 mortality and morbidity. *Internal and emergency medicine*, 2022; 17(2), 467–473. <https://doi.org/10.1007/s11739-021-02834-5>
53. Zang ST, Luan J, Li L, Yu HX, Wu QJ, Chang Q, et al. Ambient air pollution and COVID-19 risk: Evidence from 35 observational studies. *Environmental research*, 2022; 204(Pt B), 112065. <https://doi.org/10.1016/j.envres.2021.112065>
54. Gómez-Ochoa SA, Franco OH, Rojas LZ, Raguindin PF, Roa-Díaz ZM, Wyssmann BM, et al. COVID-19 in Health-Care Workers: A Living Systematic Review and Meta-Analysis of Prevalence, Risk Factors, Clinical Characteristics, and Outcomes. *American journal of epidemiology*, 2021; 190(1), 161–175. <https://doi.org/10.1093/aje/kwaa191>
55. Bandyopadhyay S, Baticulon RE, Kadhum M, Alser M, Ojuka DK, Badereddin Y, et al. Infection and mortality of healthcare workers worldwide from COVID-19: a systematic review. *BMJ global health*, 2020; 5(12), e003097. <https://doi.org/10.1136/bmjgh-2020-003097>
56. Meeker JR, Simeone RM, Shapiro-Mendoza CK, Snead MC, Hall R, Ellington SR, et al. Counseling women of reproductive age about emergency preparedness - Provider attitudes and practices. *Preventive medicine*, 2023; 170, 107473. Advance online publication. <https://doi.org/10.1016/j.ypmed.2023.107473>
57. Smith DM, Sales J, Williams A, Munro S. Pregnancy intentions of young women in Canada in the era of climate change: a qualitative auto-photography study. *BMC public health*, 2023; 23(1), 766. <https://doi.org/10.1186/s12889-023-15674-z>



58. Nature Sustainability. Sustainable health systems. *Nat Sustain*, 2022; 5,637. <https://doi.org/10.1038/s41893-022-00951-3>
59. Van Hout MC. Environmental Health Rights and Concepts of Vulnerability of Immigration Detainees in Europe Before and Beyond COVID-19. *Journal of Human Rights Practice*, 2023; huac063. <https://doi.org/10.1093/jhuman/huac063>
60. Levy BS, Patz JA. Climate Change, Human Rights, and Social Justice. *Annals of global health*, 2015; 81(3), 310–322. <https://doi.org/10.1016/j.aogh.2015.08.008>
61. Wu CF. Challenges to Protecting the Right to Health under the Climate Change Regime. *Health and human rights*, 2021; 23(2), 121–138. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8694293/pdf/hhr-23-121.pdf>
62. Kaminski I. Does climate change threaten human right to health? *The Lancet Planetary Health*, online first 27th March, 2023. DOI:[https://doi.org/10.1016/S2542-5196\(23\)00058-X](https://doi.org/10.1016/S2542-5196(23)00058-X)
63. Gasparri G, Tcholakov Y, Gepp S, Guerreschi A, Ayowole D, Okwudili ÉD, et al. Integrating Youth Perspectives: Adopting a Human Rights and Public Health Approach to Climate Action. *International journal of environmental research and public health*, 2022; 19(8), 4840. <https://doi.org/10.3390/ijerph19084840>
64. Ayalon L, Keating N, Pillemer K, Rabheru K. Climate Change and Mental Health of Older Persons: A Human Rights Imperative. *The American journal of geriatric psychiatry : official journal of the American Association for Geriatric Psychiatry*, 2021; 29(10), 1038–1040. <https://doi.org/10.1016/j.jagp.2021.06.015>
65. Garnier J, Savic S, Boriani E, Bagnol B, Häslér B, Kock R. Helping to heal nature and ourselves through human-rights-based and gender-responsive One Health. *One health outlook*, 2020; 2(1), 22. <https://doi.org/10.1186/s42522-020-00029-0>
66. Gostin LO, Friedman EA. Global Health: A Pivotal Moment Of Opportunity And Peril. *Health affairs (Project Hope)*, 2017; 36(1), 159–165. <https://doi.org/10.1377/hlthaff.2016.1492>
67. Trivellone V, Hoberg EP, Boeger WA, Brooks DR. Food security and emerging infectious disease: risk assessment and risk management. *Royal Society open science*, 2022; 9(2), 211687. <https://doi.org/10.1098/rsos.211687>



68. Özdemir V. "One Nature": A New Vocabulary and Frame for Governance Innovation in Post-COVID-19 Planetary Health. *Omicron : a journal of integrative biology*, 2020; 24(11), 645–648. <https://doi.org/10.1089/omi.2020.0169>
69. Berendes D, Martinsen A, Lozier M, Rajasingham A, Medley A, Osborne, T., et al. Improving water, sanitation, and hygiene (WASH), with a focus on hand hygiene, globally for community mitigation of COVID-19. *PLOS Water*; 2022; 1(6): e0000027. <https://doi.org/10.1371/journal.pwat.0000027>
70. Wolf J, Hubbard S, Brauer M, Ambelu A, Arnold BF, Bain R, et al. Effectiveness of interventions to improve drinking water, sanitation, and handwashing with soap on risk of diarrhoeal disease in children in low-income and middle-income settings: a systematic review and meta-analysis. *Lancet (London, England)*, 2022; 400(10345), 48–59. [https://doi.org/10.1016/S0140-6736\(22\)00937-0](https://doi.org/10.1016/S0140-6736(22)00937-0)
71. Milsom P, Smith R, Walls H. A Systems Thinking Approach to Inform Coherent Policy Action for NCD Prevention Comment on "How Neoliberalism Is Shaping the Supply of Unhealthy Commodities and What This Means for NCD Prevention". *International journal of health policy and management*, 2020; 9(5), 212–214. <https://doi.org/10.15171/ijhpm.2019.113>
72. Aubel J, Martin SL, Cunningham K. Introduction: A family systems approach to promote maternal, child and adolescent nutrition. *Maternal & child nutrition*, 2021; 17(Suppl 1), e13228. <https://doi.org/10.1111/mcn.13228>
73. Glenn J, Kamara K, Umar ZA, Chahine T, Daulaire N, Bossert T. Applied systems thinking: a viable approach to identify leverage points for accelerating progress towards ending neglected tropical diseases. *Health research policy and systems*, 2020; 18(1), 56. <https://doi.org/10.1186/s12961-020-00570-4>
74. Hassan I, Obaid F, Ahmed R, Abdelrahman L, Adam S, Adam O, et al. A Systems Thinking approach for responding to the COVID-19 pandemic. *Eastern Mediterranean health journal = La revue de sante de la Mediterranee orientale = al-Majallah al-sihhiyah li-sharq al-mutawassit*, 2020; 26(8), 872–876. <https://doi.org/10.26719/emhj.20.090>
75. Iacovidou E, Hahladakis JN, Purnell P. A systems thinking approach to understanding the challenges of achieving the circular economy. *Environmental science and pollution research international*, 2021; 28(19), 24785–24806. <https://doi.org/10.1007/s11356-020-11725-9>



76. Koorts H, Salmon PM, Swain CTV, Cassar S, Strickland D, Salmon J. A systems thinking approach to understanding youth active recreation. *The international journal of behavioral nutrition and physical activity*, 2022; 19(1), 53. <https://doi.org/10.1186/s12966-022-01292-2>
77. Saha SK, Kong DCM, Mazza D, Thursky K. A systems thinking approach for antimicrobial stewardship in primary care. *Expert review of anti-infective therapy*, 2022; 20(6), 819–827. <https://doi.org/10.1080/14787210.2022.2023010>
78. Hassan IS, AbdulKareem AK, Alrabee NHK, Mansour SF, Fadlelmoula SA, Elhassan EA, et al. A Systems Thinking approach for the creation of effective competency-based medical education programs. *The Pan African medical journal*, 2022; 41, 203. <https://doi.org/10.11604/pamj.2022.41.203.28896>
79. Gravitt PE, Silver MI, Hussey HM, Arrossi S, Huchko M, Jeronimo J, et al. Achieving equity in cervical cancer screening in low- and middle-income countries (LMICs): Strengthening health systems using a systems thinking approach. *Preventive medicine*, 2021; 144, 106322. <https://doi.org/10.1016/j.ypmed.2020.106322>
80. Omukuti J, Barlow M, Giraudo ME, Lines T, Grugel J. Systems thinking in COVID-19 recovery is urgently needed to deliver sustainable development for women and girls. *The Lancet Planetary health*, 2021; 5(12), e921–e928. [https://doi.org/10.1016/S2542-5196\(21\)00232-1](https://doi.org/10.1016/S2542-5196(21)00232-1)
81. Stokka GL, Falkner TR. Systems Thinking Perspectives on Stewardship and Our Future. *The Veterinary clinics of North America. Food animal practice*, 2022; 38(2), 201–207. <https://doi.org/10.1016/j.cvfa.2022.02.002>
82. Morton S, Pencheon D, Squires N. Sustainable Development Goals (SDGs), and their implementation: A national global framework for health, development and equity needs a systems approach at every level. *British medical bulletin*, 2017; 124(1), 81–90. <https://doi.org/10.1093/bmb/ldx031>
83. Thelen J, Sant Fruchtman C, Bilal M, Gabaake K, Iqbal S, Keakabetse T, et al. Development of the Systems Thinking for Health Actions framework: a literature review and a case study. *BMJ global health*, 2023; 8(3), e010191. <https://doi.org/10.1136/bmjgh-2022-010191>
84. Galea S, Abdalla SM. The Case for Optimism in Health and Health Care. *JAMA health forum*, 2023; 4(4), e231159. <https://doi.org/10.1001/jamahealthforum.2023.1159>



85. Chevance G, Fresán U, Hekler E, Edmondson D, Lloyd SJ, Ballester J, et al. Thinking Health-related Behaviors in a Climate Change Context: A Narrative Review. *Annals of behavioral medicine : a publication of the Society of Behavioral Medicine*, 2023; 57(3), 193–204. <https://doi.org/10.1093/abm/kaac039>
86. Savage M. Expanding food banks is no substitute for tackling poverty, charities warn. Letter to the Observer signed by experts from around the world says proper government policies are needed. *The Observer Food Banks*, 2023. Available at: <https://www.theguardian.com/society/2023/mar/26/expanding-food-banks-is-no-substitute-for-tackling-poverty-charities-warn> Accessed on 28th March, 2023.
87. Elavarasan RM, Pugazhendhi R, Shafiullah GM, Kumar NM, Arif MT, Jamal T, et al. Impacts of COVID-19 on Sustainable Development Goals and effective approaches to maneuver them in the post-pandemic environment. *Environmental science and pollution research international*, 2022; 29(23), 33957–33987. <https://doi.org/10.1007/s11356-021-17793-9>
88. Martín-Blanco C, Zamorano M, Lizárraga C, Molina-Moreno V. The Impact of COVID-19 on the Sustainable Development Goals: Achievements and Expectations. *International journal of environmental research and public health*, 2022; 19(23), 16266. <https://doi.org/10.3390/ijerph192316266>
89. Kruk ME, Yamey G, Angell SY, Beith A, Cotlear D, Guanais F, et al. Transforming Global Health by Improving the Science of Scale-Up. *PLoS biology*, 2016; 14(3), e1002360. <https://doi.org/10.1371/journal.pbio.1002360>
90. Amanu AA, Birhanu Z, Godesso A. Health Literacy Among Young People in Africa: Evidence Synthesis. *Risk Manag Healthc Policy*; 2023; 16:425-437. <https://doi.org/10.2147/RMHP.S399196>
91. Dreisbach JL. Recognizing the past to navigate the stewardship of public health futures. *Journal of public health (Oxford, England)*, 2023; fdad027. Advance online publication. <https://doi.org/10.1093/pubmed/fdad027>
92. Katz F, Glass RI. Mentorship Training is Essential to Advancing Global Health Research. *The American journal of tropical medicine and hygiene*, 2019; 100(1_Suppl), 1–2. <https://doi.org/10.4269/ajtmh.18-0694>



93. McKee M. Working together across WHO's regions in an increasingly complex world. *Lancet* (London, England), 2023; S0140-6736(23)00512-3. Advance online publication. [https://doi.org/10.1016/S0140-6736\(23\)00512-3](https://doi.org/10.1016/S0140-6736(23)00512-3)
94. Zanichelli V, Sharland M, Cappello B, Moja L, Getahun H, Pessoa-Silva C, et al. *The WHO AWaRe (Access, Watch, Reserve) antibiotic book* and prevention of antimicrobial resistance. *Bulletin of the World Health Organization*, 2023; 101(4), 290–296. <https://doi.org/10.2471/BLT.22.288614>
95. Joshi MP, Alombah F, Konduri N, Ndiaye A, Kusu N, Kiggundu R, et al. Moving from assessments to implementation: promising practices for strengthening multisectoral antimicrobial resistance containment capacity. *One health outlook*, 2023; 5(1),7. <https://doi.org/10.1186/s42522-023-00081-6>.
96. World Health Organization. (2023b). WHO health workforce support and safeguards list 2023. Geneva, Switzerland: World Health Organization. Licence: CC BY-NC-SA 3.0 IGO. Available at: <https://www.who.int/publications/i/item/9789240069787> Accessed on 14th March, 2023.
97. McPake B, Dayal P, Zimmermann J, Williams GA. What steps can improve and promote investment in the health and care workforce?: Enhancing efficiency of spending and rethinking domestic and international financing. Policy Brief 54, 31 March 2023. Policy Brief 54, 31 March 2023. Health Systems and Policy Analysis, World Health Organization, European Observatory on Health Systems and Policies. Available at: <https://eurohealthobservatory.who.int/publications/i/what-steps-can-improve-and-promote-investment-in-the-health-and-care-workforce-enhancing-efficiency-of-spending-and-rethinking-domestic-and-international-financing> Accessed on 03rd April, 2023.
98. Gilmore AB, Fabbri A, Baum F, Bertscher A, Bondy K, Chang HJ, et al. Defining and conceptualising the commercial determinants of health. *Lancet* (London, England), 2023; S0140-6736(23)00013-2. Advance online publication. [https://doi.org/10.1016/S0140-6736\(23\)00013-2](https://doi.org/10.1016/S0140-6736(23)00013-2)
99. World Health Organization. (2023c). Seventy-sixth World Health Assembly – Daily update: 26th May 2023. Note for Media. Available at: <https://www.who.int/news/item/26-05-2023-seventy-sixth-world-health-assembly---daily-update--26-may-2023> Accessed on 01st June, 2023.



100. Srivastav P, Vaishali K, Rajwar E, Broadbent S, Bhat HV. Factors associated with physical activity participation among children: a systematic review protocol. *Systematic reviews*, 2023; 12(1), 70. <https://doi.org/10.1186/s13643-023-02226-0>
101. Buck C, Doctor E, Hennrich J, Jöhnk J, Eymann T. General Practitioners' Attitudes Toward Artificial Intelligence-Enabled Systems: Interview Study. *Journal of medical Internet research*, 2022; 24(1), e28916. <https://doi.org/10.2196/28916>
102. Pujari S, Reis A, Zhao Y, Alsalamah S, Serhan F, Reeder JC, et al. Artificial intelligence for global health: cautious optimism with safeguards. *Bull World Health Organ*, 2023; 101(6)::364–364A. DOI: 10.2471/BLT.23.290215
<http://dx.doi.org/10.2471/BLT.23.290215>
103. Schwalbe N, Wahl B. Artificial intelligence and the future of global health. *Lancet (London, England)*, 2020; 395(10236), 1579–1586. [https://doi.org/10.1016/S0140-6736\(20\)30226-9](https://doi.org/10.1016/S0140-6736(20)30226-9)
104. Debie A, Khatri RB, Assefa Y. Successes and challenges of health systems governance towards universal health coverage and global health security: a narrative review and synthesis of the literature. *Health research policy and systems*, 2022; 20(1), 50.
<https://doi.org/10.1186/s12961-022-00858-7>
105. Hou X, Sharma J, Zhao F, Irwin A. “Chapter 8. Conclusions and Policy Takeaways” chapter in *Silver Opportunity: Building Integrated Services for Older Adults around Primary Health Care*. Washington, DC. 2023. World Bank. Hou X., Sharma J., Zhao F. Editors. Pages 179-192. Available at:
<https://documents1.worldbank.org/curated/en/099025503072337503/pdf/P17583208782960a40bf6804d1758e50f1e.pdf> Accessed on 02nd April, 2023.
106. Øvretveit J. Implementation Methods and Research for a Post-truth World with Growing Inequities. *Global implementation research and applications*, 2022; 1–7. Advance online publication. <https://doi.org/10.1007/s43477-022-00063-2>
107. Bees J. The Difficulty of Addressing Social Needs Through Health Care Alone. *NEJM Catalyst Innovations in Care Delivery*; 2023; 4(4). DOI: 10.1056/CAT.23.0076
<https://catalyst.nejm.org/doi/pdf/10.1056/CAT.23.0076>
108. Farnham A, Loss G, Lyatuu I, Cossa H, Kulinkina AV, Winkler MS. A roadmap for using DHIS2 data to track progress in key health indicators in the Global South: experience from sub-saharan Africa. *BMC public health*, 2023; 23(1), 1030. <https://doi.org/10.1186/s12889-023-15979-z>



109. Engebretsen E, Sharma R, Sandset TJ, Heggen K, Ottersen OP, Clark H, et al. Teaching sustainable health care through the critical medical humanities. *Lancet* (London, England), 2023; S0140-6736(23)00809-7. Advance online publication. [https://doi.org/10.1016/S0140-6736\(23\)00809-7](https://doi.org/10.1016/S0140-6736(23)00809-7)
110. Blanch S, Anderson D. Healthcare Sustainability. American College of Healthcare Executives Blog; 2023. Available at: <https://www.ache.org/blog/2021/designing-for-healthcare-sustainability-a-framework> Accessed on 24th March, 2023.
111. World Health Organization. (2023d). Roadmap for the Global Health and Peace Initiative: Current and Past Drafts; 25 May 2023. Available at: <https://www.who.int/publications/m/item/roadmap-for-the-global-health-for-peace-initiative--draft> Accessed on 02nd June, 2023.
112. Salama I, Wiener M. 'Faith for Rights' in Armed Conflict: Lessons from Practice. *Journal of Human Rights Practice*, 2023; huad015, <https://doi.org/10.1093/jhuman/huad015>
113. Viberg N, Wanyenze R, Nordenstedt H, Gitahi G, Peterson SS. EU Global Health Strategy: what are the challenges?. *European journal of public health*, 2023; ckad081. Advance online publication. <https://doi.org/10.1093/eurpub/ckad081>

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