International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

The Impact of Economic Sanctions on Health in Africa: A Literature Review, 2010–2024

Authors:

Mosa Nkoko, PhD
International Centre of Nonviolence, Durban University of Technology, Durban, South Africa

Abstract:

Anecdotal evidence suggests that health and well-being are often threatened in nations subjected to sanctions; however, the causal link remains complex and indirect. This paper examines the impacts of economic sanctions on the overall health and well-being of African countries, specifically Sudan and Libya. Using a literature review design, the study draws from peer-reviewed publications, grey literature, and institutional reports to assess how sanctions interact with pre-existing structural and political challenges. The analysis reveals that while sanctions have contributed to worsening humanitarian conditions, their effects are largely exacerbating rather than causal. In both Sudan and Libya, decades of conflict, governance fragility, and underinvestment in health infrastructure remain the principal determinants of deteriorating health outcomes. Sanctions amplify these pre-existing challenges by impeding trade, restricting financial transactions, and complicating access to essential medicines and medical equipment. Consequently, it becomes difficult to attribute the decline in health systems solely to sanctions. The study concludes by underscoring the need to review sanction regimes to ensure that humanitarian exemptions and international collaboration mechanisms are effectively implemented to protect civilian health and uphold human rights in sanctioned states.

Keywords:

Economic Sanctions, Boycott, Libya, Sudan, Health

Submitted: 2025-11-10. Revised: 2025-12-16. Accepted: 2025-12-25.

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

Introduction

Throughout recorded history, economic sanctions have involved trade barriers, embargoes, import and export restrictions, tariffs, asset freezes, travel bans, and other financial restrictions designed to exert economic pressure on a target country's government. In the 21st century, sanctions remain a preferred alternative to warfare and are widely used as a coercive tool to achieve political, economic, and security objectives. Economic sanctions, sometimes referred to as boycotts or embargoes, involve the withdrawal of customary trade and financial relations for foreign- and security-policy purposes (Masters, 2024; Smeets, 2018).

Sanctions may be comprehensive or targeted. Comprehensive sanctions prohibit virtually all transactions with a sanctioned country, while targeted sanctions focus on specific individuals or entities (Columbia Research, 2024; Ogbonna, 2016). They may also take the form of trade, financial, or travel sanctions, all of which are designed to exert economic pressure on targeted states. Sanctions can further be imposed unilaterally by a single state or multilaterally through international bodies such as the United Nations (UN) and the European Union (EU) (Zveriev, 2024; Garfield et al., 1995).

Although the effectiveness of sanctions in changing state behaviour remains debated, there is broad agreement that sanctions generate significant unintended economic and social consequences, including reduced trade, slowed economic growth, increased poverty, rising inequality, and harm to civilian populations (Neuenkirch & Neumeier, 2015; Afesorgbor & Mahadevan, 2016; Peksen, 2019). One of the most critically affected sectors is the health sector. Garfield et al. (1995) posit that threats to health resulting from sanctions are seldom direct and may become apparent only after years of resource shortages. This suggest that economic crises caused by sanctions can significantly have an impact on health, but the effects often emerge gradually. Data on key indicators of health effects are often missing or unavailable from these sanctioned states. there are at least eight countries that are facing some form of economic sanctions due to political instability, civil unrest, or violations of international law, namely Zimbabwe, Libya, Sudan, Eritrea, Niger, the Central African Republic (CAR), the Democratic Republic of Congo (DRC), Somalia and Burkina Faso. Given the growing use of sanctions and their potential long-term consequences, it is essential to examine their implications for population health.

Nonetheless, this study aims to assess the impact of economic sanctions on health and well-being in Sudan and Libya. Specifically, it examines the effects of sanctions on key health indicators, namely child mortality, access to essential medicines, prevalence of malnutrition, and immunisation coverage, due to their sensitivity to healthcare disruptions. The study further seeks to generate evidence that can inform sanction-imposing bodies on how to design policies that minimise harm to civilian populations.

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

Literature Review

Sanctions can impact health both directly and indirectly. Policies that contribute to poverty and perpetuate wealth inequality pose significant risks to population health, and economic sanctions are a notable example of such policies. Reductions in trade can depress export demand and revenues, raise production costs, and reverberate across domestic sectors, leading to economic contraction and adverse health outcomes.

One key pathway through which sanctions affect health is by impairing access to healthcare and essential medicines. In Iran, sanctions increased the costs of essential procedures and drugs such as chemotherapy and cancer diagnostics (Yazdi-Feyzabadi et al., 2024). Restrictions on Iran's Central Bank severely affected the country's ability to import medicines, pharmaceutical equipment, and hospital machinery (Financial Times, 2012; Borger & Dehghan, 2013). Similar licensing and insurance barriers contributed to severe drug shortages and limited access to cancer treatment (Hassani, 2018; Ameri et al.,2018; Aloosh, 2018). Le Monde (2012) further reported sharp price increases in locally produced medicines, increasing dependence on smuggled and potentially unsafe pharmaceuticals (Moret, 2014).

In Syria, EU and UN sanctions led to the collapse of local manufacturing and a 50% increase in medicine prices between 2018 and 2020, alongside frequent shortages of essential medicines for noncommunicable diseases (Ravinetto & Aljahdeeah, 2023). Sanctions may also increase vulnerability to infectious disease through economic crises. Transitions in Central and Eastern Europe during the 1990s were associated with increased tuberculosis mortality and drug-resistant strains (Suhrcke et al., 2011; Farmer, 2001; Dye, 2001). Economic crises further exacerbated HIV/AIDS vulnerabilities through failing health systems and increased drug use (Donoghoe et al., 2005). In Syria, sanctions disrupted vaccination and disease surveillance systems (Coutts et al., 2013), while refugees experienced severe psychological distress, inadequate sanitation, and limited access to food and medicine (Al Faisal et al., 2012).

The U.S. embargo on Cuba similarly produced severe health consequences, including blindness linked to nutritional deficiencies, Guillain-Barré syndrome due to lack of chlorination chemicals, and lye ingestion outbreaks from soap shortages (Barry, 2000). Cross-country studies find that UN and U.S. sanctions significantly reduce life expectancy and increase under-five mortality (Peksen, 2011; Gutmann et al., 2021; Pinna-Pintor et al., 2023). Country-level studies document increased undernutrition in Burundi (Bundervoet & Verwimp, 2005), infant mortality in the DRC (Parker, 2016), under-three mortality in Haiti (Reid et al., 2007), and early-age mortality in Iraq (Ascherio, 1992; Daponte & Garfield, 2000). In Haiti, maternal mortality rose by 29% between 1989 and 1994, largely due to worsening nutrition, limited emergency services, and poverty-related abortions (Gibbons & Garfield, 1999).

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

Therefore, sanctions significantly constrain governments' ability to maintain public health services, particularly through financial restrictions that limit access to medical supplies.

Country Case Studies

The imposition of economic sanctions on countries may have adverse health consequences, often crippling the health sector. However, assessing the full impact of sanctions on health in embargoed nations is difficult, as their effects only become clear over time. Hence, assessing the health status indicators is crucial to measure the impact of economic sanctions on health. This section examines the effects of economic sanctions on health care systems in Sudan and Libya from 2010-2024. These countries were chosen because of their extended exposure to economic sanctions, fragile healthcare infrastructures and dependency on external medical assistance. By assessing key health indicators, this section investigates the degree to which sanctions have influenced healthcare challenges in each country and measures the effects on the health and well-being of the civilians.

Sudan

The history of sanctions on Sudan dates to 1993 when the United States designated the country as a state sponsor of terrorism based on concerns regarding Sudan's Islamist links with international terrorist organisations (USDS, 2008; Siddig, 2010). The sanctions included a broad-based trade embargo, freezing of government assets, and restrictions on Sudan's ability to transact in U.S. dollars (Clinton, 1997; Verjee, 2018). Although sanctions were permanently lifted in 2017, Sudan remains on the State Sponsor of Terrorism list, which continues to restrict access to international financial systems. These sanctions have kept the country in a prolonged state of economic distress, which has been regarded as a key source of its violent past (Malik & Malik, 2015).

Following the outbreak of large-scale armed conflict on 15 April 2023 between the Sudanese Armed Forces and the Rapid Support Forces, Sudan's health system has deteriorated rapidly. Approximately 61% of health facilities have been destroyed, leaving only 16% operating optimally in Khartoum (Musa et al., 2024). By October 2024, nearly 11 million people had been displaced internally or into neighbouring countries, while nearly 26 million faced acute hunger, more than half the population (World Bank, 2024). Sanctions, combined with political instability and armed conflict, have severely constrained food systems, humanitarian access, and the delivery of medical aid (Taha, 2023).

Despite persistent instability, life expectancy in Sudan increased from 62.48 years in 2010 to 66.30 years in 2024 (World Bank, 2024). However, this progress remains fragile due to the country's vulnerability to non-communicable diseases, droughts, floods, and recurring outbreaks of violence (Ebrahim, 2017). Maternal mortality also declined from 383 deaths per 100,000 live births in 2010 to 114 per 100,000 in 2024 (WHO, 2013; Doctors Without Borders, 2024). Nevertheless, Doctors Without Borders (2024)

caution that the near collapse of healthcare services has resulted in alarming increases in preventable deaths among pregnant women and newborns, driven by limited emergency care, long-distance travel to facilities, and unsafe home deliveries (UNFPA, 2023; Olaleye, 2023).

Similarly, infant mortality decreased from approximately 51 deaths per 1,000 live births in 2010 to 37 deaths per 1,000 in 2024. However, malnutrition remains a major threat, with one-third of children under two acutely malnourished in parts of South Darfur in 2024 (Reuters, 2024). Sanctions have further restricted access to critical health technologies, including HIV-testing equipment for newborns, while prolonged Treasury licensing procedures for importing medical equipment have resulted in avoidable deaths (Malik & Malik, 2015).

Access to essential medicines has also been severely compromised. By 2022, 74% of healthcare facilities were unable to provide essential services, while out-of-pocket health expenditure accounted for over 75% of total health spending (Hassnain et al., 2022). The closure of airports and destruction of hospitals during the conflict completely disrupted medication imports, with dialysis centres and hospitals either destroyed or closed (Hemmeda et al., 2024). Although humanitarian assistance has offered temporary relief, ongoing insecurity continues to obstruct effective delivery of medical supplies.

Infectious and non-communicable diseases remain significant contributors to Sudan's disease burden. Weak laboratory capacity, antimicrobial resistance, inadequate sanitation, and water insecurity continue to exacerbate disease transmission (Charani et al., 2019; Berger, 2017; Bürgmann et al., 2019). Combined, sanctions, armed conflict, and prolonged economic collapse have severely weakened Sudan's capacity to sustain population health.

Libya

Economic sanctions on Libya began in 1986 and intensified in 1992 through United Nations air embargoes and financial asset freezes, which severely disrupted socioeconomic development and weakened the health sector (WHO, 2002; United Nations, 1996). The health sector experienced significant losses in both human and material resources, with UN mission reports documenting widespread disruptions to health service delivery. Following the 2011 uprising, additional UN Security Council sanctions were imposed due to systematic human rights violations, leading to further shortages of essential medicines and vaccines, increased stillbirths and maternal mortality, restrictions on air evacuation of critically ill patients, and the mass departure of medical specialists (UNICEF, 2022; United Nations, 2018).

Although unilateral U.S. sanctions were partially offset by continued trade with other countries (Mejia-Prieto, 2019), the combined effects of air embargoes and frozen state assets significantly weakened the capacity of Libya's health sector to meet routine and emergency healthcare needs. Ongoing civil conflict

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

has further disrupted health programmes, damaged health infrastructure, displaced populations, and reduced budgetary provisions for medicines and supplies (WHO, 2017).

Life expectancy in Libya reached 72.59 years in 2024, representing a slight increase from 2010 (Macrotrends, 2025). Nevertheless, mortality patterns remain dominated by non-communicable diseases, which accounted for 63% of deaths in 2021 (WHO, 2022). Maternal mortality shows a worsening trend, rising from 57 deaths per 100,000 live births in 2010 to 72 per 100,000 by 2020, a 26% increase that exceeds the Sustainable Development Goal threshold (World Bank Group, 2024; World Population Review, 2025; United Nations, 2024).

Infant mortality, by contrast, declined from 16.62 deaths per 1,000 live births in 2010 to 8.74 per 1,000 in 2024 (Macrotrends, 2025). While this improvement may reflect better maternal and neonatal care, it remains vulnerable to conflict-related disruptions. At the same time, access to essential medicines continues to deteriorate. The SARA Libya Report (2017) indicates that most Libyans lack access to quality healthcare due to facility closures, inequitable distribution of services, and workforce shortages. Conflict-related attacks on healthcare workers, including detention and intimidation, have further restricted service delivery (El-Mogassabi et al., 2025; United Nations, 2024).

Communicable diseases account for approximately 9.8% of Libya's disease burden, while non-communicable diseases continue to rise due to changing lifestyles and prolonged instability (WHO, 2017). Thus, while selective improvements in health indicators are evident, sanctions and persistent conflict continue to exert significant pressure on Libya's already fragile healthcare system.

Methodology

This study used a database from 2010 to 2024. Within this timeframe, this study examined the impacts of economic sanctions in Africa, particularly in Sudan and Libya. Given the substantial differences across the economic sanctions of the chosen country case studies in terms of type, duration, intensity, and variations in baseline socio-economic conditions, a meta-analysis was not possible. Because various metrics were used in relevant studies to assess economic sanctions and outcome indicators, it was impossible to extract effect-size estimates. Additionally, the limited availability of data concerning the two selected countries further constrained the feasibility of a systematic or scoping review. As a result, a comprehensive literature review was chosen as the most suitable approach to synthesise and analyse the available research. The researcher included peer-reviewed publications, reports, case studies and working papers from UN agencies and research institutions, prioritising published versions. For data analysis, a thematic analysis approach was used to synthesise various sources, with a focus on the health and well-being impacts of economic sanctions on Sudan and Libya. The extracted data were then

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

coded based on recurring themes and evidence patterns, including child mortality, maternal mortality, access to essential medicines and non-communicable disease.

Results

This section presents the empirical findings derived from the reviewed literature and available health indicators relating to the impact of economic sanctions on health and well-being in Sudan and Libya. The findings align with documented trends reported in peer-reviewed studies, institutional reports, and international datasets. Table 1 provides a comparative overview of key health outcomes and health system impacts observed in Sudan and Libya during periods of sanctions, conflict, and political instability.

Health Indicator	**Sudan**	**Libya**
Life expectancy	Increased modestly from approximately 62 years in 2010 to about 66 years by 2024, but progress remains fragile and uneven	Increased slightly to approximately 72 years by 2024, reflecting modest gains over time
Maternal mortality	Declined overall, but recent conflict has contributed to rising preventable deaths due to healthcare service collapse	Increased between 2010 and 2020, exceeding Sustainable Development Goal targets
Infant mortality	Declined from approximately 51 to 37 deaths per 1,000 live births, but remains high with widespread malnutrition	Declined substantially from approximately 16.6 to 8.7 deaths per 1,000 live births
Access to essential medicines	Severe and persistent shortages linked to sanctions, financial barriers, airport closures, and conflict-related disruptions	Widespread shortages associated with sanctions, conflict, and attacks on healthcare workers
Infectious disease	Increased vulnerability due to disruptedvaccination programmes, weakened	Ongoing risks linked to conflict-related disruptions to public

	disease surveillance, poor sanitation, and shortages of medical supplies	health programmes and weakened healthcare delivery

Table 1: Health Indicators in Sudan and Libya under Economic Sanctions

The studies included in this paper investigated the impact of economic sanctions on the overall health and well-being of the populations of the targeted countries, and the effects varied from one country to another. Analysis of the reviewed literature and available health indicators shows that both Sudan and Libya have experienced major strain on their healthcare systems during periods of sanctions, political instability, and armed conflict.

In Sudan, since April 2023, the escalation of armed conflict has led to widespread displacement, destroyed more than half of the country's health facilities, and left only a fraction fully operational (Majid, 2024; Wang, Alfakiali, & Niu, 2025). According to Dafallah (2023), the ongoing armed conflict in Sudan has led to a deepening humanitarian crisis, significantly impacting the country's healthcare system and posing a risk of potential collapse. Less than one-third of hospitals in conflict zones are operational, with 70% out of service (Sudan Doctors Trade Union, 2023). Dafallah (2023) further reports that, of the 59 hospitals out of service in conflict zones, 17 were attacked by artillery and 20 were evacuated, of which 12 were forcibly militarised and converted into barracks by the RSF. The remaining hospitals suspended services due to power outages, shortages of fuel for generators, lack of medical supplies, and critical shortages of health workers.

Despite these disruptions, earlier decades under sanctions showed modest improvements in indicators such as life expectancy and infant mortality. This indicates that sanctions did not prevent all long-term improvements in certain health outcomes. However, recent data show that conflict-related destruction, displacement, and service paralysis now dominate health system decline.

In Libya, evidence similarly shows that prolonged conflict and state fragmentation have coincided with major disruptions to healthcare delivery. Allen et al. (2022) note that conflict indirectly damages health through disruptions to supply lines, human resources deployment, fractured financing, and the provision of healthcare services (Mandhari et al., 2021). These outcomes have been directly observed in Libya (ReliefWeb, 2021; WHO EMRO, 2017). Despite sanctions during parts of this period, Libya recorded a substantial reduction in infant mortality between 2010 and 2024. However, maternal mortality increased over the same period, indicating differential impacts across health indicators. These findings reflect mixed health trends under conditions of sanctions and conflict.

Across both countries, the evidence shows that access to healthcare services has been severely affected, with service availability, referral systems, medical supply chains, and workforce stability being

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

particularly compromised. Sanctions are associated with obstacles to the importation of medicines and medical equipment, contributing to delays and increased costs in sustaining healthcare services.

Discussion

The results indicate that the decline in healthcare systems and overall population well-being in Sudan and Libya cannot be solely attributed to the imposition of economic sanctions. Instead, it becomes evident that conflict, governance fragility, and decades of underinvestment in health infrastructure constitute the primary drivers of poor health outcomes. Sanctions have generally acted as an additional stressor, amplifying the difficulties that already existed, rather than serving as the root cause of the crises in either country (Rodríguez, 2024).

In Sudan, although sanctions were historically in place, earlier decades experienced modest improvements in life expectancy and infant mortality. This suggests that sanctions alone do not fully explain long-term health outcomes. Instead, the sharp deterioration observed since 2023 is closely associated with violent conflict, logistical disruptions, and the militarisation and destruction of health facilities (Majid, 2024; Dafallah, 2023). These findings align with broader conflict-health literature showing that warfare undermines healthcare delivery through displacement, infrastructure collapse, and workforce depletion.

Libya presents a similar pattern. Although sanctions affected financial flows and access to medical supplies, the results show that conflict and state fragmentation have been decisive in shaping health outcomes. The reduction in infant mortality despite sanctions suggests that sanctions did not uniformly depress population-level health indicators. In contrast, the rise in maternal mortality highlights specific vulnerabilities within emergency and referral-based healthcare services, which are particularly sensitive to insecurity and service breakdown. This supports existing research showing that conflict disrupts healthcare provision through fractured financing, supply chain failures, and attacks on infrastructure (Mandhari et al., 2021; WHO EMRO, 2017).

The comparison between the two countries emphasises that sanctions generally operate through indirect channels, most notably by creating obstacles to the importation of medicines, technologies, and medical equipment. These challenges increase costs and delays in sustaining already fragile services. However, such difficulties become particularly consequential in environments where conflict has already compromised local production, disrupted supply chains, and weakened institutional capacity. Clarinval and Biller-Andorno (2022) similarly argue that economic sanctions are subject to criticism due to their unintended collateral consequences, including disruptions to global food and financial systems, as evidenced by concerns raised by the African Union regarding the exclusion of Russian banks from the SWIFT payment system.

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

At the same time, important uncertainties remain. The analysis is constrained by limited availability of reliable, up-to-date health data from both Sudan and Libya, particularly during periods of intense conflict. This limits the ability to establish precise causal relationships between sanctions and specific health outcomes. In several instances, available data is fragmented, delayed, or derived from humanitarian surveillance rather than national health information systems. As a result, while associations between sanctions, conflict, and health system decline are evident, the magnitude of sanctions' independent effects remains difficult to quantify with certainty.

Therefore, further empirical research is needed to isolate the direct health effects of sanctions using disaggregated longitudinal data, particularly at sub-national levels. More comparative studies is also required to distinguish the health effects of sanctions from those of armed conflict, political instability, and economic collapse. Such evidence is essential for improving humanitarian exemption policies and protecting civilian populations.

Finally, the findings of this study suggest that policy discussions should refrain from portraying sanctions as the sole or primary determinant of declining health outcomes in Sudan and Libya. Instead, greater emphasis should be placed on reducing the humanitarian impact of conflict and strengthening the effectiveness of sanction exemptions and humanitarian access to essential healthcare services.

Conclusion

In this paper, an attempt is made to analyse the impacts of economic sanctions on countries, specifically Sudan and Libya. Generally, sanctions are imposed to influence a target country to change its political behaviour and comply with international laws. Although there is limited published evidence on case studies of countries such as Sudan and Libya and on how economic sanctions have impacted their overall health and well-being, there is substantial evidence of the adverse effects of economic sanctions on the health and well-being of civilians. Therefore, it is undeniable that economic sanctions, which may take the form of embargoes, boycotts, or interruptions of financial and investment flows, depending on the specific country, have tremendous negative impacts on the health of vulnerable populations. This fact alone justifies the need to re-evaluate the effectiveness and methods of imposing sanctions on countries. Hence, more research must be conducted on African countries to better understand the relationship between health status and circumstances that foster peace and security, as well as those that do not. The results should be analysed thoroughly to assess the health and human welfare implications of sanctions in affected countries.

Theoretical Implications:

- This study demonstrates that economic sanctions rarely function as isolated determinants of health outcomes, but instead operate through indirect pathways shaped by conflict, governance fragility, and institutional breakdown.
- By adopting a political economy of health perspective, the paper shows how external economic coercion interacts with domestic instability to reproduce systemic vulnerabilities within healthcare systems.
- The findings advance health-in-conflict theory by conceptualising sanctions as a risk multiplier that intensifies pre-existing weaknesses in health systems rather than acting as a singular causal driver of health decline.
- By focusing on Sudan and Libya, the study strengthens the limited African empirical base within the broader global literature on sanctions and population health.

Practical and Policy Implications:

- There is need for an international code of conduct which outlaws economic sanctions that directly hinder access to essential medicines, medical products, and health-related technologies.
- There is need for a sanctions watchdog to monitor the effects of broader sanctions, particularly those that hinder access to foreign exchange, which may have negative indirect effects on a country's health system, and to recommend appropriate modifications to their scope and implementation.
- When sanctions come to an end, it is important for the international community to recognise the longer-term effects sanctions may have had on a country's health system and to target development assistance accordingly.

References

Afesorgbor, S.K and Mahadevan, R. (2016). The impact of economic sanctions on income inequality of target states. World Development 83 1-11. https://doi.org/10.1016/j.worlddev.2016.03.015

Allen, L. N., Aghilla, M., Kak, M., Loffreda, G., Wild, C. E. K., Hatefi, A., et al. (2022). Conflict as a macro-determinant of non-communicable diseases: The experience of Libya. BMJ Global Health, 7, e007549. https://doi.org/10.1136/bmjgh-2021-007549

Aloosh, M. (2018). How economic sanctions compromise cancer care in Iran. Lancet Oncol ;19:e334.

Al Faisal, W., Al Saleh, Y., and Sen, K.(2012). Syria: public health achievements and sanctions. The lancet, 379 (9833), 2241

Ameri A, Barzegartahamtan M., Ghavamnasiri M, Mohammadpour R, Dehghan H, Sebzari A. (2018). Current and future challenges of radiation oncology in Iran: a report from the Iranian society of clinical oncology. Clinical oncology (Royal College of Radiologists (Great Britain).

Ascherio, A., Chase, R., Coté, T, et al.(1992) Effect of the Gulf war on infant and child mortality in Iraq. N Engl J Med 1992;327:931–6.

Barry, M. (2000). Effect of the US embargo and economic decline on health in Cuba. Annals of internal medicine, 132(2), 151-154.

Berger, S. (2017). Infectious diseases of Sudan and South Sudan. Gideon Informatics.

Borger, J. and Dehghan, S.K. (2013). Iran unable to get life-saving drugs due to International Sanctions.(https://www.theguardian.com/world/2013/jan/13/iran-lifesaving-drugs-international-sanctions (Retrieved 16 December, 2025)

Bürgmann, H., Frigon, D., Gaze, W., Manaia, C., Pruden, A., Singer, A. C., Smets, B. F., & Zhang, T. (2018). Water and sanitation: An essential battlefront in the war on antimicrobial resistance. FEMS Microbiology Ecology, 94(11), fiy166. https://doi.org/10.1093/femsec/fiy166

Bundervoet T. and Verwimp P. (2005) Civil war and economic sanctions: an analysis of anthropometric outcomes in Burundi. Brighton: University of Sussex, 2005.

Columbia Research. (2024). Economic Sanctions and Restricted Parties. https://research.columbia.edu. (Retrieved November 27, 2024).

Coutts, A., McKee, M., and Stuckler D. (2013). The emerging Syrian health crisis. The Lancet, http://dx.doi.org/10.1016/50140-6736(13)60053-7

Charani, E., Cunnington, A. J., Yousif, A. H. A., Ahmed, M. S., Ahmed, A. E. M., Babiker, S., Badri, S., Buytaert, W., Crawford, M. A., Elbashir, M. I., Elhag, K., Elsiddig, K. E., Hakim, N., Johnson, M. R., Miras, A. D., Swar, M. O., Templeton, M. R., & Taylor-Robinson, S. D. (2019). In transition: Current health challenges and priorities in Sudan. BMJ Global Health, 4, e001723. https://doi.org/10.1136/bmjgh-2019-001723

Clarinval, C., & Biller-Andorno, N. (2014). Challenging Operations: An Ethical Framework to Assist Humanitarian Aid Workers in their Decision-making Processes. PLoS currents, 6, ecurrents.dis.96bec99f13800a8059bb5b5a82028bbf. https://doi.org/10.1371/currents.dis.96bec99f13800a8059bb5b5a82028bbf

Clinton, J.W. (1997). Executive Order 13067—Blocking Sudanese Government Property and Prohibiting Transactions with Sudan," November 3, www.presidency.ucsb.edu/ws/index.php?pid=53505. (Retrieved March 23, 2025)

Daponte, B.O. and Garfield, R. (2000). The effect of economic sanctions on the mortality of Iraqi children prior to the 1991 Persian Gulf War. Am J Public Health ,90:546–52.

Doctors Without Borders. (2024). Shocking number of maternal and child deaths in South Darfur, Sudan. https://www.doctorswithoutborders.org/latest/shocking-number-maternal-and-child-deaths-south-darfur-sudan (Retrieved 10 February, 2024).

Dafallah, A., Elmahi, O. K. O., Ibrahim, M. E., & others. (2023). Destruction, disruption and disaster: Sudan's health system amidst armed conflict. Conflict and Health, 17, 43. https://doi.org/10.1186/s13031-023-00542-9

Donoghoe, M. C., Lazarus, J. V., & Matic, S. (2005). HIV/AIDS in the transitional countries of Eastern Europe and Central Asia. Clinical medicine 5(5), 487–490. https://doi.org/10.7861/clinmedicine.5-5-487

Dye, C. (2001). The resurgence of tuberculosis in Russia. Philos Trans R Soc Lond B Biol Sci 356: 1069–1075.

Ebrahim, E. M. A. (2017). "Health Care System in Sudan: Review and Analysis of Strength, Weakness, Opportunity, and Threats (SWOT Analysis)", Sudan Journal of Medical Sciences, 12(3), pp. 133–150. doi: 10.18502/sjms.v12i3.924.

El-Mogassabi, A., & Kaziri, I. G. (2025). The impact of conflict on cancer care in Libya. Journal of cancer policy, 43, 100528. https://doi.org/10.1016/j.jcpo.2024.100528

Farmer, P. (2001). Infections and inequalities: the modern plagues. University of California Press.

Financial Times. (2012). Iran's seriously ill suffer as US sanctions hit medical supplies. Financial Times, 5 Sept., p. 7.

Garfield, R., Devin, J., & Fausey, J. (1995). The health impact of economic sanctions. Bulletin of the New York Academy of Medicine, 72(2), 454–469.

Gibbons, E., & Garfield, R. (1999). The impact of economic sanctions on health and human rights in Haiti, 1991-1994. American journal of public health, 89(10), 1499–1504. https://doi.org/10.2105/ajph.89.10.1499

Gutmann J, Neuenkirch M, and Neumeier F. (2021). Sanctioned to death? The impact of economic sanctions on life expectancy and its gender gap. J Dev Stud 57:139–62.

Hassani, M. (2018). Impact of sanctions on cancer care in Iran. Archives Bone Joint Surg.;6(4):248.

Hassanain, S. A., Eltahir, A., & Elbadawi, L. I. (2022). Freedom, Peace, and Justice: A new paradigm for the Sudanese health system after Sudan's 2019 Uprising. Economic Research Forum (ERF).

Hemmeda, L., Tiwari, A., Kolawole, B. O., Ayoobkhan, F. S., Fatima, K., Shabani, M. M., Kundu, M., Anugu, N. R., Richard, R. M., Ibrahim, D., & Ahmed, K. A. H. M. (2024). The critical pharmaceutical situation in Sudan 2023: A humanitarian catastrophe of civil war. International journal for equity in health, 23(1), 54. https://doi.org/10.1186/s12939-024-02103-9

Macrotrends (2025). Libya Life Expectancy (1950-2025). https://www.macrotrends.net/global-metrics/countries/lby/libya/life-expectancy (Retrieved September 23, 2025)

Majid, S. H. (2024). Implications of Sanctions on Local Populations in Africa: a Case Study of United States of America's Sanctions Against Sudan (Doctoral dissertation, University of Nairobi).

Malik M, and Malik M. (2015). The Efficacy of United States Sanctions on the Republic of Sudan, Journal of Georgetown University-Qatar Middle Eastern Studies Student Association 2015:7 http://dx.doi.org/10.5339/messa.2015.7

Masters, J. (2024). What are Economic Sanctions? Council on Foreign Relations. https://www.cfr.org/backgrounder/what-are-economic-sanctions (Retrived September 1, 2024).

Mejia-Prieto, M.J. (2019). The Impact and Effectiveness of Economic Sanctions: Libya as a Case Study. Canadian Forces College. https://share.google/DnBEANAED3tT2pzfV (Retrieved October 11, 2025)

Moret, E. S. (2014). Humanitarian impacts of economic sanctions on Iran and Syria. European Security, 24(1), 120–140. https://doi.org/10.1080/09662839.2014.893427

Musa, M. K., Eshun, G., Modber, M. A. A., Haruna, U. A., Abdulsalam, A., Zailani, A. S., Zakariya, F., Adamu, N. A., Musa, M. B., & Biney, G. K. (2024). Public health consequences of armed conflict in Sudan in the face of global donor fatigue. Public health challenges, 3(1), e156. https://doi.org/10.1002/puh2.156

Neuenkirch, M., and Neumeier, F. (2016). The impact of US sanctions on poverty. Journal of Development Economics, 121, 110–119.

Olaleye, S. O. (2023). Sudan's maternal health needs urgent attention amid armed conflict. The Lancet, 402(10405), 848–849. https://doi.org/10.1016/S0140-6736(23)01788-1

Ogbonna, C. C. (2016). Targeted or restrictive: Impact of US and EU sanctions on education and healthcare of Zimbabweans. African Research Review, 11(3), 31-41.

Parker D.P, Foltz J.D and Elsea D. (2016). Unintended consequences of sanctions for human rights: conflict minerals and infant mortality. The Journal of Law and Economics, 59:731–74.

Peksen, D. (2019). When do imposed economic sanctions work? A critical review of the sanctions effectiveness literature. Defence and Peace Economics, 30(6), 635–647.

Peksen D. (2011) Economic sanctions and human security: the public health effect of economic sanctions. Foreign Policy Analysis,7:237–51.

Pinna-Pintor, M., Suhrcke, M., & Hamelmann, C. (2023). The impact of economic sanctions on health and health systems in low-income and middle-income countries: a systematic review and narrative synthesis. BMJ global health, 8(2), e010968. https://doi.org/10.1136/bmjgh-2022-010968

Ravinetto, R., & Singh, J. A. (2023). Responsible dissemination of health and medical research: some guidance points. BMJ evidence-based medicine, 28(3), 144–147. https://doi.org/10.1136/bmjebm-2022-111967

Reid, B.C, Psoter W.J, Gebrian B., Wang M.Q (2007). The Effect of an International Embargo on Malnutrition and Childhood Mortality in Rural Haiti. International Journal of Health Services. 2007;37(3):501-513. doi:10.2190/MR65-2605-1285-0406

ReliefWeb. (2021). Libya: Health sector bulletin. https://reliefweb.int/report/libya/libya-health-sector-bulletin-august-2021 (Retrieved September 15, 2025)

Reuters. (2024). Conflict drives surge in maternal deaths in Sudan's South Darfur https://www.reuters.com/world/africa/conflict-drives-surge-maternal-deaths-sudans-south-darfur-msf-says-2024-09-25/. Retrieved 10 February, 2024

Rodríguez, F. (2024). The human consequences of economic sanctions. Journal of Economic Studies, 51(4), 942-963.

SARA Libya Report. (2017). Service Availability and Readiness Assessment of the Public Health Facilitation in Lybia. https://share.google/0myXL3omjuUb7yYwg (Retrieved October 05, 2025)

Siddig, K. (2010). Economic sanctions and trade diversions in Sudan. China-USA Business Review, 9(12), 13.

Suhrcke M, Stuckler D, Suk JE, Desai M, Senek M, McKee M, (2011). The impact of economic crises on communicable disease transmission and control: a systematic review of the evidence. PLOS ONE 2011;6(6):e20724.

Smeets, M. (2018). Can Economic Sanctions be effective? Staff Working Paper ERSD-2018-03. Economic Research and Statistics Division. World Trade Organisation.

Taha, A.E. (2023). The state of health and health services in Sudan as a result of the war. Afr J Prm Health Care Fam Med. 2023;15(1), a4260. https:// doi.org/10.4102/phcfm. v15i1.4260

UNICEF. (2022). "Sudan Demographic, Health and Infant Mortality" 14 June 2021, https://data.unicef.org/country/sdn/ (Retrieved, September 23, 2015)

United Nations. (2024). Goal 3. Department of Economic and Social Affairs. https://sdgs.un.org/goals/goal3 (Retrieved 21 March 2025)

United Nations. (2018). "Libya: Healthcare under Attack," (2018). Available: https://www.ohchr.org/sites/default/files/Documents/Countries/LY/21052018_Attacks_on_Health_Care_EN.pdf (Retrieved February 26, 2025)

United Nations. (1996). Impact of the UN sanctions against Libya. Excerpts from the report transmitted to the Secretary-General by the Libyan Mission to the UN, 1996.

USDT. (2009). Effectiveness of U.S. economic sanctions with respect to Sudan. Retrieved June 24, 2009, from http://www.treas.gov/offices/enforcement/ofac/programs/sudan/sudan_report_030509' (Retrieved 28 October,2024).

Verjee, A. (2018). Sudan After Sanctions: Sudanese views of Relations with United states. Institute of Peace. Speacial Report. www.usip.org (Retrieved 11 October 2025).

Wang, Y., Alfakiali, A. Y., & Niu, Y. (2025). Why Sanctions Termination Doesn't Put an End to Humanitarian Crises: The Case of Sudan. Journal of Asian and African Studies, 60(3), 1471-1483.

World Population Review. (2025). Maternal Mortality Rate by Country. https://worldpopulationreview.com/country-rankings/maternal-mortality-rate-by-country (Retrieved March 27, 2025)

World Health Organization (2022) Libya: Health at a glance. World Health Organization. Available at: https://share.google/N55fhogTdH1myG4v0 (Retrieved September 30, 2025)

World Health Organization, (2017). Regional Office for the Eastern Mediterranean. Libya health profile 2015. https://www.emro.who.int/images/stories/libya/sara_3__service_availability_and_readiness_assessment_final.pdf?ua=1 (Retrieved March 29, 2025)

World Health Organization. (2012). Trends in maternal mortality: 1990 to 2010 -- WHO, UNICEF, UNFPA and The World Bank estimates. https://www.who.int/reproductivehealth/publications/monitoring/9789241503631/en/. (Retrieved December 16, 2024)

World Health Organization, Regional Office for the Eastern Mediterranean (WHO EMRO). (2017). Service availability and readiness assessment (SARA) report. Available from http://www.emro.who.int/lby/libya-infocus/service-availability-and-readiness-assessment-sara-report.htm (Retrieved September 30, 2025)

International Journal of Applied Research in Business and Management (ISSN: 2700-8983)
an Open Access journal by Wohllebe & Ross Publishing, Germany.
Volume: 07 Issue: 01 Year: 2026
https://doi.org/10.51137/wrp.ijarbm.432

World Bank Group. (2024). Sudan Overview: Development news, research data. https://www.worldbank.org/en/country/sudan/overview (Retrieved October 28, 2024).

World Health Organization. (2002). Technical Discussion. Health under difficult circumstances: The impact of war, disasters and sanctions on the health of populations (No. EM/RC49/Tech. Disc. 1).

Yazdi-Feyzabadi, V., Zolfagharnasab, A., Naghavi, S., Behzadi, A., Yousefi, M. and Bazyar, World bank Group. (2024). Libya. https://genderdata.worldbank.org/en/economies/libya (Retrieved March 29, 2025).

Zveriev, O. (2024). Nature of Economic Sanctions and Reasons for their Application: Economy of Ukraine, 67(1(746), pp. 40–53. doi: 10.15407/economyukr.2024.01.040.