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Out-of-Pocket Expenditure (OOPE) on Healthcare: Impact on the Vulnerable

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Abstract:

Out-of-pocket expenditure (OOPE) on healthcare has continued to be a prevalent health financing method in most low- and middle-income countries, especially in Sub-Saharan Africa, where fragile insurance systems and insufficient government funding still prevail. The current narrative review will explore effects of OOPE on vulnerable populations, specifically in Nigeria and other similar settings. It integrates evidence on conceptual foundation, patterns, determinants and consequences of OOPE, and how it influences healthcare access, utilization and outcomes. Evidence shows that high OOPE is a major cause of disastrous health spending and household poverty, particularly in low-income populations, rural populations, and the chronically ill. It also results in poor adherence to treatment, low use of preventive services and delayed care-seeking, thus exacerbating health outcomes. The review also illustrates a cyclic nature between OOPE, poverty, and ill health that strengthens socioeconomic inequalities. The identified policy responses, including the increased spending on the public health, the increase in insurance coverage, and the targeted social protection programmes, are deemed as the critical measures to address OOPE. All in all, OOPE reduction is crucial to improving financial protection, equitable access to healthcare, and making strides towards universal health coverage in resource-limited environments.

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Introduction

Out of pocket expenditure (OOPE) on healthcare can be defined as direct payments by individuals or households at the time of service use without insurance or government schemes reimbursement. It is still one of the most retrogressive healthcare financing, especially in low- and middle-income countries (LMICs), where prepayment and risk-pooling systems are typically weak or poorly developed. In these environments, OOPE takes up a high percentage of total health expenditure, which puts households particularly vulnerable groups at risk of financial strains and in the worst scenario, poverty.

Healthcare financing systems aim to provide equitable access and financial security across the globe, but the continued existence of high OOPE contradicts these aims. In Sub-Saharan Africa, Nigeria being one of them, OOPE represents a large proportion of total health expenditure, which in some cases is more than 60-70%. Such dependency indicates the systemic problem of insufficient funding by the state, insufficient health insurance coverage, and health system governance inefficiencies (Onwujekwe et al., 2019). As a result, people are forced to shoulder the financial burden of consultations, medications, diagnostics, and hospitalizations directly, at times at the cost of other necessities.

The vulnerability aspect lies at the core of the discussion of OOPE. The most at risk are vulnerable groups such as low-income families, rural residents, informal sector workers, women, the elderly, and people with chronic illnesses. These groups are generally financially weak and more prone to catastrophic health expenditure (CHE) which is described as spending on health that is a significant percentage of household income. There is evidence of how such spending may drive households below the poverty threshold or add to existing poverty (Aregbeshola and Khan, 2018).

This is especially worrisome in Nigeria because of the structural disparities and healthcare funding gaps. Even with policy initiatives like the National Health Act and strategic health development plans, the OOPE burden is still high, indicating that social health insurance plans are covered poorly and that universal health coverage (UHC) strategies are not implemented (Federal Ministry of Health, 2018). Empirical research shows that households tend to use coping strategies like borrowing, selling off property, or not getting care at all, and thus increase health inequities (Adesina & Ogaji, 2020).

This narrative review is a critical review of the effect of OOPE on vulnerable populations by synthesizing the evidence in various settings with special attention to Sub-Saharan Africa and Nigeria. It discusses the determinants, trends and implications of OOPE especially how it has contributed to the perpetuation of poverty and restricting access to healthcare. Policy responses are also questioned by the review and it identifies ways of improving healthcare financing systems to be more equitable and sustainable

Concept of Out-of-Pocket Expenditure in Healthcare

Out-of-pocket expenditure is a fundamental measure of health economics and policy analysis, which describes the degree to which individuals fund healthcare directly as opposed to pooled funding mechanisms like taxation or insurance. In theory, OOPE incorporates all household payments to purchase health services at the point of care, without any reimbursement. Such payments usually include consultations, medications, laboratory tests, hospitalization and in some cases informal payments in health systems. Theoretically, OOPE falls under the broader health financing frameworks, which focus on three main functions: generation of revenue, risk pooling, and service purchases. OOPE is an ineffectiveness or

inefficiency of the risk-pooling role, since individuals have the entire financial burden of sickness. Even in well-operating health systems, prepayment systems like taxes or insurance diversify this risk among populations hence cushioning individuals against financial shocks. In most LMICs, however, the institutional capacity is weak and the systems of health financing are fragmented, which leads to the excessive dependence on OOPE (Gupta et al., 2002).

Catastrophic health expenditure (CHE) is a concept that is closely related to OOPE. CHE arises when healthcare expenditures surpass a specified amount of household income or consumption, usually 10 percent or 25 percent. These spending can affect consumption habits in households compelling families to compromise basic human needs like food, education and shelter. There is systematic evidence that CHE is common in Sub-Saharan Africa, and this is mostly due to high OOPE and low income (Chuma et al., 2021). The other closely related is impoverishment due to health spending, which arises when OOPE forces household below the poverty line. Empirical research in Africa has shown that there is a close relationship between high OOPE and poverty levels. An example is that OOPE has been found to worsen poverty in Nigeria and other LMICs, especially when it comes to disadvantaged populations that are already disadvantaged (Aregbeshola and Khan, 2018). On the same note, cross-country studies indicate that an increased OOPE is linked to poor socioeconomic status and decreased welfare (Voto et al., 2025).

The composition and structure of OOPE is also quite different in diverse contexts. A significant percentage of OOPE in many developing countries is expended on drugs, indicating inefficiencies in pharmaceutical supply chains and poor access to subsidized drugs. Also, informal payments, which are usually unregulated and undocumented, may add to the financial pressure of households. Such payments can be as a result of shortages, corruption or systemic inefficiencies in healthcare systems. Critically, OOPE does not only represent a financial measure, but also an equity and access indicator in health systems. High OOPE means that the access to healthcare depends on the capacity to pay, thus compromising the principle of equity. This is especially a problem to vulnerable populations who tend to postpone or forego care because of financial limitations. Both developed and developing contexts provide evidence that high OOPE is linked to decreased healthcare use, worse health outcomes, and higher health disparities (López-López et al., 2021).

In Nigeria, OOPE is still the prevailing method of healthcare financing with a significant percentage of the overall health expenditure. This is indicative of systemic issues, such as low government expenditure on health, low insurance coverage, and resource allocation inefficiency. Although there are policy measures to increase the coverage of health insurance, the informal sector, which constitutes a big percentage of the population, is still left out, and this continues to perpetuate dependence on OOPE (Onwujekwe et al., 2019). This conceptual framework is important in understanding OOPE in order to design effective policy interventions. It highlights the importance of enhancing risk-pooling mechanisms, augmenting the amount of money spent by the population on health, and the necessity of tackling the structural inefficiencies within health systems. In the absence of such reforms, OOPE will remain a major impediment to healthcare and financial security, especially to vulnerable groups.

Patterns and Trends of OOPE in Sub-Saharan Africa and Nigeria

The trends and dynamics of out-of-pocket expenditure (OOPE) in Sub-Saharan Africa show that there is an ongoing and alarming trend of direct payments on healthcare services. In the

region, OOPE represents a significant proportion of total health expenditure, which is usually above the recommended levels of financial protection. The trend indicates structural flaws in health financing systems such as low government expenditure, poor insurance coverage, and high informality in economic activities. In Sub-Saharan Africa, empirical data show that OOPE continues to be a major source of healthcare funding even as the world engages in the global health coverage (UHC) pledges. Research indicates that direct expenditures by households in the area are often high, with medicines and outpatient care consuming the biggest portion of the expenditure (Chuma et al., 2021). This is worsened by the fact that income inequality and poverty restrict the ability of households to absorb such expenses without reducing their welfare.

Nigeria is no exception, and OOPE represents a significant share of total health spending. The data and studies conducted at the national level are constantly pointing to the fact that most healthcare payments are directly made by households at the point of service. This dependence is mainly explained by the lack of sufficient funds to finance public health and a narrow scope of health insurance programs. Although the National Health Insurance Scheme (NHIS) was introduced, coverage is still low, especially in the informal sector workers, who form a high percentage of the population (Federal Ministry of Health, 2018).

Recent research also highlights the unjust allocation of OOPE in Nigeria. To illustrate, a study of urban slum residents in Southeast Nigeria indicates that there are considerable inequalities in healthcare expenditures, and poorer households have an unequal burden (Ozor et al., 2025). These disparities are motivated by income disparities, access to services, and health seeking behavior, and thus point to the interplay between socioeconomic status and healthcare financing. The effect of external shocks, including the COVID-19 pandemic, has also impacted OOPE trends. The evidence of various countries suggests that pandemic-related health expenditure shock caused higher OOPE and financial susceptibility of households (Mpuuga et al., 2025; Muriithi et al., 2025). Low income and more medical requirements in most instances increased the financial strain especially among the vulnerable groups.

Moreover, the cross-country studies indicate that high OOPE correlates with poor health and high poverty levels. The connection between OOPE and poverty in Sub-Saharan Africa is firmly grounded, and research indicates that a rise in health expenditure may result in major losses in welfare (Voto & Ngepah, 2025). This highlights the fact that policy interventions are necessary to reduce the level and distribution of OOPE. Systemic issues with financing healthcare are observed in the patterns and trends of OOPE in Sub-Saharan Africa and Nigeria. The high dependence on direct payments and low financial protection measures still put households at a high risk of economic vulnerability. To overcome these issues, it is necessary to implement extensive reforms that would help to decrease OOPE and increase equity in healthcare access.

Determinants of Out-of-Pocket Expenditure in Healthcare

Knowledge of the determinants of out-of-pocket expenditure (OOPE) is essential in establishing the structural and contextual determinants that are driving financial vulnerability in healthcare systems. OOPE does not occur randomly, but is determined by a multifaceted interaction of socioeconomic, health system, and demographic factors which disproportionately impact vulnerable populations. Income level and socioeconomic status is one of the main determinants of OOPE. The low-income households have a higher likelihood of facing greater relative OOPE burdens due to the lack of financial buffer and access to

alternative financing mechanisms like insurance. In Nigeria, empirical data reveal that poorer households spend a higher percentage of their income on healthcare than wealthier households, thus putting poorer households at risk of catastrophic spending (Aregbeshola & Khan, 2018). Likewise, the research in Sub-Saharan Africa shows that income disparity has a profound effect on healthcare expenditure habits, and poorer populations experience a higher burden (Voto et al., 2025).

The characteristics of the health system are also important determinants of OOPE levels. Poor financing of the public health may result in a lack of necessary medications, medical supplies, and staff in the state hospitals, requiring patients to turn to the services of the private health care provider or to buy drugs on their own. High OOPE in Nigeria is caused by inefficiency in the health system, such as resource allocation and poor governance (Onwujekwe et al., 2019). Also, the lack or inadequate coverage of health insurance schemes increases the dependence on direct payments. Though programs like the National Health Insurance Scheme (NHIS) are in place, they are still limited especially to the informal sector workers. Another important determinant is geographical location. Rural communities usually experience an elevated OOPE because of the absence of medical services, making transportation more costly and depending on the services of privatized services. On the other hand, urban populations especially slum dwellers might also have high OOPE because of poor living standards and exposure to health hazards. The case of the Southeast Nigeria shows that the urban slum residents experience high levels of inequities in OOPE, which are fuelled by socioeconomic and environmental forces (Ozor et al., 2025).

Additional factors affecting OOPE are disease burden and type of illness. Chronic illnesses like diabetes, high blood pressure and cancer involve long-term effects and continuous medication that puts financial strain on households. Also sudden and high spending can be caused by acute conditions especially those that require hospitalization. As an example, in the COVID-19 pandemic, the OOPE of patients was high because of the cost of treatment, particularly in an environment with a low insurance coverage (Kamath et al., 2025). Such health shocks are usually associated with financial distress especially to those households that lack savings or have no credit access. Demographic characteristics like age, gender, and household size are also factors that lead to OOPE patterns. Older people and children tend to spend more money on healthcare services, which boosts household spending. Women, especially the reproductive age group, incur extra healthcare expenses in regard to maternal and reproductive health services. The cumulative healthcare costs are likely to be higher in larger households, but the effect can be alleviated by economies of scale in the allocation of resources.

The determinants of education and health literacy are also very crucial. With increased education, people will be more likely to pursue prompt healthcare services and use preventive services, which may lower the cost in the long-term. They can however increase their OOPE through increased use of formal healthcare services. On the other hand, poor health literacy may contribute to late-seeking of care, which translates to worse health outcomes and increased treatment expenses. Summing up, OOPE is determined by a complex of determinants, which interact to influence healthcare financing outcomes. These determinants need to be dealt with in a holistic manner that involves enhancing health systems, increased insurance cover and dealing with socioeconomic disparities. In the absence of such interventions, OOPE will keep on impacting vulnerable populations.

Impact of OOPE on Household Poverty and Catastrophic Health Expenditure

The economic effects of out-of-pocket spending (OOPE) are not just limited to direct healthcare expenses but in most cases have long-term socioeconomic impacts on families. Among the greatest effects of OOPE is the fact that it has led to the catastrophic health expenditure (CHE) and consequently, the risk of becoming poor, especially by the vulnerable groups. Catastrophic health spending occurs when health spending is a significant percentage of income or consumption by a household usually 10 or 25%. These types of expenditures may have devastating impacts on the financial stability of households compelling families to shift resources to other things that are not necessities like food, education and shelter. The rates of CHE in Sub-Saharan Africa are too high, and this tendency is mainly fueled by the pre-eminence of OOPE in the sphere of healthcare funding (Chuma et al., 2021). This is especially high in case of Nigeria where people have little mechanisms of financial protection which further worsens the household burden.

Empirical research always indicates that there is a close relationship between OOPE and poverty. Aregbeshola and Khan (2018) in Nigeria discovered that OOPE has a significant contribution to the occurrence and severity of poverty among households. In a similar vein, a study in Burkina Faso shows that high OOPE impairs poverty alleviation by making households more financially vulnerable and decreasing their welfare (Diarra et al., 2021). These results are supported by cross-country studies, which indicate that the higher the OOPE, the higher the poverty rates in low- and middle-income countries (Idris et al., 2024). The processes by which OOPE results in impoverishment are complex. Some of the coping mechanisms that are usually embraced by households in order to meet healthcare costs include borrowing of money, the sale of assets or even cutting back on the consumption of basic commodities. Although such strategies could be considered a short-term relief, they can lead to a negative long-term outcome, such as a decrease in the asset ownership, a higher debt, and lower quality of life. In the worst-case scenario, families can skip the need to access health care altogether, which results in deteriorated health conditions and economic difficulties (Adesina & Ogaji, 2020).

The effects of OOPE on poverty are not evenly spread among the population; but instead, it is more likely to impact vulnerable groups. The poor, rural and uninsured households are especially vulnerable to CHE and poverty. The urban slums in Nigeria have provided evidence of the high inequities in OOPE as poor households have a disproportionately higher burden (Ozor et al., 2025). This highlights the impact of socioeconomic inequality in determining the healthcare financing outcomes. Pandemic or major illness shocks in health spending also contribute to the effect that OOPE has on poverty. The COVID-19 pandemic has caused large rises in healthcare expenditure, resulting in increased financial vulnerability among many households (Mpuuga et al., 2025). The shocks tend to be in situations where there are poor or absent social safety nets, which increases their effects on the welfare of the households.

In addition, there is a two-way relationship between OOPE and poverty. Although poverty is a possible result of high OOPE, the prevalence of poverty also heightens the chances of high OOPE. The poor households are also prone to poor health conditions as a result of poor nutrition, poor living conditions and inaccessibility to preventive services. This forms a vicious cycle that perpetuates poverty and ill health and reinforces the other as they perpetuate inequality and reduce socioeconomic mobility. Macroeconomically, there can also be more far-reaching economic implications of high OOPE. It has the potential of lowering the

aggregate demand by shifting household expenditure to other sectors thus influencing the economic growth. It may also overburden the public health systems as it may raise the need of subsidized services by the poor populations.

To sum up, the effects of OOPE on poverty in households and disastrous health spending are immense and extensive. Not only does it compromise financial protection, but it also contributes to social economic inequalities and the impediment of the progress towards universal health coverage. To tackle this issue, there must be extensive policy measures to lessen OOPE and improve financial protection measures.

Impact of OOPE on Healthcare Access and Service Utilization

Out-of-pocket spending (OOPE) directly and significantly affects the healthcare access and use of services particularly by vulnerable households. The decision to seek care is usually influenced by financial capacity in addition to the perceived need, in a health system where direct payment at the point-of-care is still the dominant method. This leaves healthcare as a market good instead of a social right, thus compromising equity and slowing down treatment and increasing the burden of disease among disadvantaged groups. Delayed care-seeking is one of the most evident effects of high OOPE. People who expect to pay high medical expenses might delay the use of health care facilities until such symptoms are serious. This latency is especially prevalent in low-income households, informal workers, uninsured groups, and they have to trade healthcare costs against other competing household demands, including food, rent, transportation, and school fees. In practice, cost barrier minimizes the access to timely consultation, diagnostics, medications and follow-up care. This dynamic is quite applicable to Nigeria, where OOPE is a prevailing financing method of healthcare and where most households lack financial resilience. The refusal to obtain care is also economically rational in these situations, even in cases that are medically detrimental (Adesina & Ogaji, 2020).

The type of healthcare services used is also influenced by high OOPE. Financially strained households might turn to less expensive and less quality options, such as self-medication, informal drug dealers, traditional healers, or partial care by unregulated providers. Although these options might seem cheap in the short run, they can cause more health complications in the long-term owing to incorrect treatment, misdiagnosis or delayed referral. This issue can be exacerbated by the poor primary healthcare infrastructure and lack of trust in government facilities in Nigeria and other such environments, where households might not seek care at all or only seek care when the disease is already severe. As a result, OOPE not only stifles utilization, but also distorts utilization patterns in a manner that compromises quality, continuity, and safety of care.

OOPE burden is especially evident in the use of maternal, child and preventive health services. The first type of service to be compromised in times of financial stress among households is usually preventive care as the benefits of preventive care are not instantly apparent as opposed to curative care. The screening, immunization, antenatal follow-ups, and the regular monitoring of chronic diseases can thus be postponed or dropped. These are the very services which decrease long term morbidity and costs. Beyond financing literature evidence indicates that an increased strength of the public health expenditure can enhance access and utilization by decreasing the reliance on point-of-service payment and increasing accessibility of preventive and essential services to vulnerable populations (Gupta et al., 2002; Kofi Boachie et al., 2018). On the other hand, in places where OOPE prevails, care-seeking is episodic and reactive, but not preventive and ongoing.

One more useful utilization effect is related to the adherence to treatment. This may disrupt treatment even when the patients first seek healthcare because the prolonged expense of medicines, laboratory tests, transportation, and follow-ups can disrupt treatment. This particularly becomes a problem in chronic diseases like hypertension, diabetes, renal disease and cancer where treatment involves spending on a regular basis over a period of time. The economic strain posed by OOPE may cause patients to miss appointments, ration treatment, cut down doses, or even quit treatment. These trends are especially threatening to vulnerable populations who are already disadvantaged structurally in terms of income, education and access to information. Not only does it lead to poorer health but also to subsequent increase in care costs in case of development of avoidable complications.

The COVID-19 era also demonstrated the vulnerability of health financing which may lower the use of services (Ogunrinde & Gbenga-Epebinu 2020). The pandemic had combined shocks of income loss and increased health care costs on households in a number of African countries, which led to a decrease in access to healthcare and changed service seeking behavior. Kenyan evidence indicates that COVID-19 vulnerability financing had a negative impact on utilization and required policies to safeguard human capital by ensuring a higher level of financial risk protection (Osakinle et al., 2021; Muriithi et al., 2025). Equally, expenditure shock due to pandemic in Uganda exacerbated financial barriers to care and revealed the extent to which households can become vulnerable when they depend largely on OOPE (Mpuuga et al., 2025). These experiences prove that OOPE does not work alone, its impact on utilization is multiplied in times of health emergencies and economic turmoil.

There is a strong mediation of the relationship between OOPE and utilization through insurance status. When people have an effective insurance program, they will visit the doctor sooner and utilize relevant services, since the short-term financial risk is less. In comparison, uninsured populations encounter direct price signals that deter consumption of services. Kamath et al. (2025) demonstrated that OOPE in COVID-19 patients varied by insurance coverage, demonstrating the protective effect that a coverage can have in minimizing financial exposure. In many parts of Sub-Saharan Africa, though, insurance is still not well-developed and is usually restricted to the formal sector workers. According to Patel and Kumar (2021), inclusive insurance systems, which are strong enough to cover poor and informal populations, are critical to financial protection in the region since otherwise, they are exposed to the deterrent effect of OOPE.

On the systems level, high OOPE also compromises the aim of universal health coverage by establishing unequal usage. Services are not equally used by people with similar health needs due to the de facto gatekeeper of ability to pay. This creates horizontal inequity where less needy households, but with lower income, consume less healthcare. This is even worse in the urban slums and other deprived environments. In Southeast Nigeria, it has been evidenced that inequities in OOPE among slum residents in urban areas are significant, which means that service use is influenced by poverty and place-based disadvantage (Ozor et al., 2025). Therefore, OOPE does not only affect access in an individual way but also in a profoundly social and spatial manner. To conclude, OOPE influences access to and use of healthcare by increasing the time to seek care, reducing the demand of services needed, promoting poorer quality of treatment options, disrupting the adherence to treatment, and expanding disparities in the use of services. The most affected are the vulnerable as they are least able to absorb the cost of health and have the highest chances of need not being met. Minimizing

OOPE is both necessary to protect finances and enhance use of healthcare in a timely, appropriate and equitable manner.

OOPE and Health Outcomes among Vulnerable Populations

Out-of-pocket expenditure (OOPE) directly and indirectly relates to health outcomes. Immediately, high OOPE limits the capacity of households to access the required healthcare timely and satisfactorily. Indirectly, it also leads to delayed treatment, disruption of treatment, psychosocial stress, nutritional compromise and deprivations related to poverty, which deteriorates health in the long run. These pathways are particularly harmful to vulnerable populations since they exist in pre-existing low income, low social protection and disease burden contexts. Consequently, OOPE is not an issue of financing, but a determinant of morbidity, mortality, and general wellbeing. Among the shortest-term outcomes of OOPE is decreased access to early diagnosis and timely treatment. In cases where families are unable to pay the consultations, laboratory tests, medications or even hospitalization, diseases may develop without treatment or be treated incompetently. Relatively minor conditions that may be handled at an early stage may end up to be severe and complicated when treated late. This has a specific implication on infectious diseases, maternal illnesses, childhood illnesses and non-communicable diseases which need follow-up. Under those conditions, OOPE acts as a protective mechanism that makes conditions that can be treated into more severe health risks. The poor households bear the brunt of this burden since they are likely to be in a more disease prone environment with less ability to afford effective disease care.

Chronic diseases are particularly vulnerable to the impact of OOPE on the outcome. Examples of the diseases include diabetes, high blood pressure, kidney disease, cancer and chronic respiratory diseases, which involve long-term treatment. Repeated consultations, diagnostic follow up, prolonged drug use, and the occasional hospitalization may be expensive. Inability to sustain continuity of care in households leads to poor disease control, increased likelihood of complications, and poor long-term outcomes. This is part of why high OOPE is often related to a greater load of morbidity that can be prevented in low-resource contexts. It also describes why vulnerable populations, especially the aged, those with chronic illnesses, and larger households with several dependents are affected by compounded disadvantage as the financing systems rely on direct payment.

There is a wider range of evidence which indicates that health financing composition is important to population health outcomes. The public health expenditure is more likely to increase the outcome by increasing access, increasing preventive services and lowering cost barriers to treatment. In Ghana, Kofi Boachie et al. (2018) discovered that public health expenditure is linked to better health outcome whereas Nwosu and Nwosu (2020) found that both public and private health expenditure affect health status in Sub-Saharan Africa but the impacts vary depending on the context and efficiency. Similar arguments were made by Gupta et al. (2002) who also asserted that government expenditure on health can be effective in enhancing welfare in the developing countries when well spent. Such results suggest that in areas with insufficient funding of the population and with OOPE being high, the population health outcomes are bound to be poor, particularly those that are already on the socioeconomic fringes.

The coping strategies embraced by households to react to OOPE also influence health outcomes. The effects of the illness go beyond the episode when families borrow money, use productive resources, or lower food intake or drop out of school to cover medical expenses.

Unhealthy eating, less access to education and ongoing financial instability are all health-related in the long-term. Therefore, OOPE has the potential to create cumulative disadvantage by undermining the overall social determinants of health. Anyanwu and Erhijakpor (2020) prove that government spending on health helps to alleviate poverty in Sub-Saharan Africa, which supports the argument that financial protection cannot be seen without health enhancement. The households can have a better chance to maintain the conditions needed to sustain health and human development when they are not exposed to high medical costs.

These effects are felt more by the vulnerable since they usually have higher health risk bases. The disadvantages of women, children, older adults, persons with disabilities, informal workers and slum or rural community residents are often overlapping. To these groups, even small medical costs will result in delayed treatment, reduced medicine compliance, or partial recovery. In the slum areas of the cities, such as in overcrowded environments, or where there are environmental risks, and where livelihoods are unstable, health needs might be high, but the financial resources to access the care are low. Ozor et al. (2025) report the disparities in household OOPE among urban slum residents in southeast Nigeria, which suggests that the health outcomes of direct spending are also most likely to be unequal. Effectually, high OOPE transforms social vulnerability to poor health outcomes.

The COVID-19 experience also helped to further explain the correlation between OOPE and health outcomes. Households had their healthcare needs and incomes increased and decreased during the pandemic. To the patients who are not insured, the direct expense of testing, treatment, transportation and hospitalization might be significant. Kamath et al. (2025) discovered that OOPE varies among COVID-19 patients based on insurance status, and that coverage of financial status can affect the burden of illness. Poverty: In Kenya and Uganda, households were vulnerable to pandemic-related funding, which caused households to face economic and health shocks, and service continuity and recovery implications (Muriithi et al., 2025; Mpuuga et al., 2025). These trends indicate that in the situations where the systems are heavily relying on OOPE, the health emergencies may quickly expand disparities in the outcomes.

Another significant macro-level correlation is between the patterns of expenditure and the performance of the health system in general. In his argument, Vărzaru (2025) states that spending patterns in healthcare systems are directly related to health outcomes, implying that the health outcomes are affected by the funding design, both in terms of efficiency and equity. Similarly, Voto and Ngepah (2025) indicate that government and external health spending have a role to play in determining OOPE in Sub-Saharan Africa. In cases where public and pooled expenditure is inadequate, the onus is placed on households, undermining financial protection, and consequently the health benefits that can otherwise be realized with stronger systems. Sirag and Mohamed Nor (2021) also show that the correlation between OOPE and poverty can have a threshold nature, such that at some point, direct spending can be particularly devastating to the welfare of households, and is prone to undermine health outcomes.

Essentially, high OOPE exacerbates the health outcomes by reducing access to care in good time, breaking continuity of care, increasing poverty and strengthening the social conditions that generate ill health. The most affected groups are the vulnerable populations since they are most incapable of absorbing the health costs and are most likely to have high health

needs. Any serious attempt to enhance the health of the population in LMICs should therefore consider reduction of OOPE as a key health outcome policy, and not as a financing reform.

Policy Responses and Financial Protection Mechanisms to Reduce OOPE

To tackle the burden of out-of-pocket expenditure (OOPE), the policy needs to be carefully and consistently intervened with the aim of enhancing financial protection, equity, and access to healthcare. In low- and middle-income countries (LMICs), a number of policy mechanisms have been suggested and put in place to counter the negative impacts of OOPE with mixed degrees of success. These involve increasing public health funding, enhancing health insurance, enhancing efficiency in resource distribution and focusing on the vulnerable population with social protection programmes. One of the main policy reactions to high OOPE is the increase of the public health spending. Another way to decrease the use of direct payments is to increase the amount of government expenditure on healthcare, which will subsidize the necessary services, enhance the infrastructure, and make medicine and staff available. There are indications that the increased spending on the public health is linked to increased access to healthcare and improved health outcomes (Gupta et al., 2002; Kofi Boachie et al., 2018). In Sub-Saharan Africa, public health expenditure is however very low in comparison to the global standards and this restricts its ability to lower OOPE. In Nigeria, the implementation gaps and budget constraints still remain in the way of achieving financial protection despite such strategic frameworks as the National Strategic Health Development Plan (Federal Ministry of Health, 2018).

Another important tool of decreasing OOPE is the health insurance schemes. Insurance systems can cushion individuals against financial shocks of illnesses by sharing the risks with the populations. Theoretically, universal health coverage (UHC) models highlight the importance of prepayment and risk pooling in the equitable access. Yet, practically, the majority of African nations, such as Nigeria, have difficulties with increasing the insurance coverage, especially among the employees of the informal sector. Patel and Kumar (2021) emphasize that inclusive insurance systems, which go beyond the formal employment framework, are the key to effective financial protection in Sub-Saharan Africa. In the absence of such inclusivity, big portions of the population will continue to be exposed to high OOPE.

Community-based health insurance (CBHI) plans have been suggested as a method of covering the underserved groups. In these schemes, which are usually targeted to rural or informal sector communities, the objective is to offer cheap and easy to access healthcare financing schemes. Although CBHI has performed well in certain settings, factors like inadequate risk pooling, lack of enrolment and the issue of sustainability have limited its effectiveness. Onwujekwe et al. (2019) also state that systemic changes are necessary to enhance the efficiency of health financing systems in Nigeria, such as enhanced incorporation of CBHI in national systems. The other policy strategy is the targeted subsidies and social protection programmes to the vulnerable groups. These can be waivers of fees, conditional cash transfers and free or subsidized services to certain groups such as pregnant women, children and the elderly. This type of intervention can lessen the financial barriers to care and enhance health outcomes in high-risk groups. Their success however relies on their proper targeting, sufficient funding and effective implementation. The intended benefits of such programmes can be jeopardized in most instances by weak administrative systems and corruption.

The efficiency gains in health systems are also important towards minimizing OOPE. The cost of healthcare can be raised by inefficiencies like wastage, duplication of services and bad procurement practices which are all transferred to the patients. These inefficiencies can be mitigated by strengthening governance, better supply chain management and better accountability mechanisms. Vărzaru (2025) discusses how system design has contributed to the optimization of health expenditure and outcomes and how the financial burden on households can be decreased by managing resources better. In other situations, external funding and donor support have also helped in the reduction of OOPE especially on certain diseases like HIV/AIDS, tuberculosis and malaria. Nonetheless, the dependency on outside sources poses sustainability and national priorities issues. According to Voto and Ngepah (2025), the only way to have sustainable health financing is to have a mix of both mobilization of domestic resources and external assistance.

The use of digital health innovations and financial technologies is becoming a possible solution to enhance healthcare financing and decrease OOPE. Access, transparency, and efficiency can be improved with the help of mobile health insurance platforms, digital payment systems, and data-driven policy tools. Nevertheless, such innovations need to be supported with the infrastructure, regulatory frameworks, and digital literacy to be effective especially in rural and underserved regions. Lastly, the social determinants of health need to be tackled in order to mitigate OOPE in the long term. The lack of financial capacity to access care and poor health outcome are due to poverty, unemployment and low levels of education. Indirectly, the burden of OOPE can be mitigated through policies that enhance socioeconomic conditions (e.g., by creating more employment opportunities, improving education, and increasing social welfare programmes) to increase household resilience.

Overall, OOPE minimization would necessitate a complex policy that would involve higher government expenditure, greater insurance cover, social protection focused, enhance system efficiency and wider socioeconomic development. In the absence of such holistic plans, OOPE will be perpetuating health inequity and financial security.

Conclusion

Out-of-pocket expenditure (OOPE) on healthcare is among the most significant challenges to fair access to healthcare and economic security in health systems, especially those of low- and middle-income countries. As shown in this review, OOPE is not just a financing tool but a structural cause of health disparity, with a disproportion of vulnerable groups (such as low-income households, informal workers, rural inhabitants, women, and those with chronic health conditions) bearing the burden of this disparity. The way it persists indicates systemic health financing vulnerabilities, such as insufficient government spending, insurance, and governance inefficiencies in the health system.

Synthesized evidence in this review indicates that high OOPE is a leading contributor to disastrous health spending and family impoverishment that in many cases compels families to use detrimental coping mechanisms that include borrowing, depleting assets, and low consumption of basic commodities. Such financial strains not only undermine short-term well-being, but also have a long-term impact on the development of human capital and socioeconomic mobility. In addition, OOPE has far-reaching consequences on access and use of healthcare resulting in delayed care-seeking, less use of preventive care, and poor adherence to treatment, which all lead to poor health outcomes.

The cyclical nature of OOPE, poverty and poor health is also highlighted in the review. Vulnerable groups have a higher likelihood of having increased health demands and decreased financial ability, which leads to a vicious cycle where poor health and poverty support one another. This is also enhanced by the external shock that includes pandemics which reveal the vulnerability of health financing systems that are largely dependent on direct payments.

Policy actions to OOPE should thus be holistic and situational. Increasing public health spending, enhancing health insurance coverage, and adopting special social protection initiatives are key measures towards minimizing financial access to care. It is also vital to work towards enhancing efficiency in health systems and deal with the social determinants of health in general. Successful efforts to make significant changes in OOPE will demand high political will, long-term investments, and good governance.

Finally, the elimination of OOPE is a key to the universal health coverage and the accessibility, affordability and equity of healthcare among everyone. Unless action is taken, OOPE will still be perpetuating health disparities and sabotaging efforts towards global health and development objectives.

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