

Management of comorbidity, the case of hypertension and type-2 diabetes among women in Ghana: a qualitative study

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Research Article

Keywords: Comorbidity, Hypertension, Type 2 Diabetes, Women, Ghana

Posted Date: April 7th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-9161983/v1>

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Additional Declarations: No competing interests reported.

Abstract

Background

The coexistence of hypertension (HTN) and type 2 diabetes (T2D) poses a growing public health challenge in Ghana, where chronic care remains fragmented and single-disease focused. Women living with both conditions face sustained self-management demands that extend beyond clinical treatment. This study explored the lived experiences of women managing comorbid HTN and T2D in Ghana.

Methods

An exploratory qualitative study was conducted across four district hospitals in Ghana. 59 women aged ≥ 30 years with a confirmed diagnosis of both HTN and T2D for at least six months were purposively recruited. Data were collected between September and October 2024 using in-depth interviews guided by the WHO Package of Essential Non-Communicable Disease Interventions (WHO-PEN) framework. Interviews were audio-recorded, transcribed verbatim, and thematically analyzed using Atlas. ti, with independent coding to enhance analytical rigor

Results

Themes that emerged from this study include: psychological distress, treatment burden, economic burden, and physical challenges. Participants reported fear, sadness, confusion, frustration, and loneliness following diagnosis. Treatment burden included lifelong medication use, dietary restrictions, and difficulty sustaining physical activity. Economic challenges involved out-of-pocket medication payments, transport costs, and reduced work productivity. Physical effects such as fatigue, weakness, pain, sleep disturbances, frequent urination, weight loss, and reduced sexual drive.

Conclusion

Women managing comorbid HTN and T2D in Ghana experience multidimensional challenges within a fragmented care system. Therefore, Integrated, patient-centered chronic disease management with strengthened financial and psychosocial support is essential to improve long-term outcomes.

Background

Non-communicable diseases (NCDs), particularly Hypertension (HTN) and Type-2 Diabetes (T2D), are the most prevalent NCDs and major public health burdens globally (1). They are the leading cause of all cardiovascular-related deaths (2). About 1.5 billion adults live with hypertension, and 537 million have diabetes in low and middle-income countries (3). These two conditions often coexist, presenting complex challenges for management and reducing the quality of life. Both conditions share risk factors

such as low physical activity, unhealthy dietary patterns, and obesity (4). Studies have revealed that 80% of adults with diabetes also have hypertension (5).

The dual burden of HTN and T2D increases the risk of complications like stroke, kidney failure, and heart disease compared to either condition alone (6). Individuals with both conditions are more likely to experience frequent unplanned hospital admissions and increased utilization of emergency healthcare services (7). Moreover, the management of both conditions is complex, as patients are prescribed multiple medications, which increases the risk of drug interactions (8). Subsequently, individuals with both conditions rely on family and friends for emotional and economic support (9). This dependence is due to the demanding nature of managing both conditions, which requires regular health facility visits, adherence to medications, lifestyle modifications, and out-of-pocket expenditures for drugs, diagnostics, and transport (10).

In sub-Saharan Africa (SSA), the burden of HTN and T2D is on the rise due to urbanization, aging populations, and lifestyle changes (11). The global burden of HTN and T2D can be attributed to the epidemiological transition from communicable diseases to non-communicable diseases in Africa (12). In Ghana, the prevalence of comorbid HTN and T2D in adults is 58.3% (13). The coexistence of HTN and T2D requires a comprehensive and patient-centered approach to care. However, Ghana's health system does not fully address the complexities of managing both conditions (14). Primary health facilities in Ghana are often under-equipped to provide fully integrated chronic care. Although blood pressure monitors, glucometers, and first-line medications are available, diagnostic capacity and NCD-specific training are limited. Moreover, wellness clinics and district hospitals that provide healthcare services for HTN and T2D usually focus on single-condition care rather than co-management of these conditions (15). Due to this, many patients receive fragmented care.

Ghana's National Health Insurance Scheme (NHIS) usually reimburses only consultation fees and some essential drugs, but out-of-pocket payments remain high, leading to recurring catastrophic health expenditure (16). Furthermore, frequent stockouts force patients to buy drugs outside the health facility, compromising adherence (17). Although there is a broad coverage of Ghana's NHIS in theory, the scheme has not fully adapted to the needs of chronic NCD care (18), leaving a dual disease management gap.

This study reveals the significant burden patients bear in handling the full continuum of care from screening and diagnosis to long-term management. Despite the growing prevalence of comorbid hypertension and diabetes in Ghana, there is limited literature addressing the co-management strategies of these conditions. To address this gap, this study explored the lived experiences of women living with comorbid HTN and T2D in Ghana.

Methods

Study design

A qualitative exploratory design was used. The study was conducted among participants accessing healthcare from the selected district hospitals across four districts in Ghana. These districts were purposively selected based on prior research engagement and existing NCD service delivery infrastructure. Health services in the study areas were provided by district hospitals and health centers, which served as primary care facilities for patients. The selected health facilities provided healthcare services for patients who are diabetic and have hypertension, making them suitable sites for participant recruitment and data collection.

Participant recruitment

A purposive sampling approach was used to select the participants. Eligible participants were adults aged 30 years and above who had been diagnosed with both HTN and T2D for at least six months. Participants were identified and recruited with the assistance of healthcare professionals at the selected facilities.

Data Collection

Data was collected between September and October 2024. Using the WHO-PEN approach, data were collected through in-depth interviews to explore the lived experiences. An in-depth interview guide was used to elicit information on participants’ socio-demographic characteristics and experiences with managing both conditions. Data saturation was achieved with a sample size of (n = 59) across the selected districts, enhancing thematic depth. The WHO-PEN framework was used to guide the development of the interview guide, which was pretested in a non-participatory facility to ensure clarity and relevance. The interviews were conducted in English or local dialects based on participants’ preferences. Each interview lasted between 30 to 45 minutes and was held in a private space to ensure confidentiality. All interviews were audio-recorded with informed consent, transcribed verbatim, and translated into English where necessary. Field notes were also taken to document non-verbal cues and contextual information

Data Analysis

All transcripts were uploaded into Atlas.ti software for analysis. Thematic analysis was used to analyze the data collected. Two researchers from the team independently coded the transcripts, and discrepancies were resolved through discussion and consensus. Themes were organized into categories that addressed the study’s objectives, and representative quotes were used to illustrate key findings.

Results

Table 1 below shows the demographic characteristics of 59 women who took part in the study. Most of the participants were above 50 years old. In terms of marital status, 27 of them were married, 10 were

divorced, and 4 were single. Most of them (45) were Christians, while 14 were Muslims. Regarding the level of education, 20 had no formal education, while 5 of them had either vocational or senior high school education.

Table 1
Participants' socio-demographic characteristics (n = 59)

Variables	Number
Age-group	
Below 50	10
Above 50	49
Marital status	
Single	4
Married	27
Divorced	10
Widowed	18
Religion	
Christian	45
Islamic	14
Educational level	
No Education	20
Basic	25
Vocational Training/SHS	5
Tertiary	9

Themes

The data analysis identified three major themes concerning the management of comorbid hypertension (HTN) and type 2 diabetes (T2D). These themes encompassed the psychological distress linked to coping with both conditions, the burden of treatment, the economic burden involved, and the physical challenges experienced by patients in managing the dual illnesses.

Psychological distress associated with managing both conditions

Participants expressed a complex range of emotions associated with living with comorbid hypertension and diabetes. These emotional responses explained the psychological burden of managing two chronic conditions simultaneously, revealing the depth of fear, sadness, and frustration that accompany their daily lives. Below is Fig. 1 representing all the complex emotions.

Fear

The diagnosis triggered fear of the future, sometimes called anticipatory anxiety. Some participants were anxious about what the future holds. They were worried about the potential complications, financial burden, and lifelong dependency on medication.

"I even become scared when it comes to my mind, one person, I have both conditions, it makes me not to feel good within me." (P24, 61years)

"...if I don't take care of myself, it can kill me" (P25, 42years)

Crying

Crying emerged as a deep emotional response. Most participants described breaking down in tears when they reflect upon their deteriorating condition. Some women revealed that they were unprepared to deal with the new reality of living with these conditions, especially given the lifestyle modifications and responsibilities that come along with managing them.

"I really cry because I know this condition it's those who are grown, those who are rich that get it. So, when they told me I have it, my older sister have it then, and I know the problems she passed through." (P7, 57years)

Confused

Most participants described feeling confused upon receiving their diagnosis. They expressed uncertainty about how they developed them and what is required for effective management. For some, this sense of confusion lingered beyond the initial diagnosis, affecting how they processed medical advice and adjusted to new health routines.

"So, when they told me that I have pressure, I was confused at first" (P29, 35 years)

Surprise_shock

Several participants described a sense of surprise upon being diagnosed with both hypertension and diabetes.

"It hurt me, I was shocked about it. It made me think about it, because I thought it was older people that get it" (P20,52years)

"When I got it, I was surprised because my choice of food was different" (P5, 62years)

Sadness

Participants expressed feelings of sadness as they reflected on how their lives had changed since being diagnosed with both hypertension and diabetes. They described how their diagnosis disrupted their daily routines.

"It has made my life miserable, life doesn't go well for me" (P51, 65 years)

"I'm really suffering" (P41, 53 years)

".... the condition is very hard to deal with, it disturbs your life a lot" (P39, 65years)

"...if they could have say we should stop taking it, it would have been good but they won't say it. But we are always expected to come for it when it finishes. It means, for the hospital drugs, we'll take it till we die" (P32, 73years)

Frustration

Participants described feelings of frustration and emotional exhaustion due to their condition. The chronic nature of both conditions and lifestyle modifications is overwhelming.

"It is burdensome, you always feel tired" (P17, 74years)

"I feel so overwhelmed that everything feels unsteady." (P24,61 years)

"So far, it's not easy because with the hypertension drug, every day you have to be taking it and I'm also taking a diabetes drug. So, waking up every day and taking medication is a bit tedious. I think a lot because of the medications and when I think my BP go up. It's not so comfortable, it's affecting my life" (P6, 45 years)

Loneliness

Participants expressed feeling lonely, especially those lacking support from family or unable to participate in social gatherings due to stigma

"....my children and grandchildren all left me and I was now thinking, crying and talking all by myself." (P3,76years)

Burden of treatment

Participants described the overall management of comorbid HTN and T2D as demanding and overwhelming. Adhering to recommended diets, maintaining consistent medication routines, and incorporating physical activity into their daily lives were perceived as difficult lifestyle adjustments. Figure 2 summarizes the burden of treatment associated with managing both conditions.

Healthy diet

Adhering to a recommended diet was difficult for participants managing both conditions. They said that the high cost of fruits, vegetables, and other recommended foods made it hard to follow the dietary advice. Some explained that even when they knew what to eat, they could not buy it because of limited finances. Besides cost, safety concerns about agricultural chemicals kept some from eating vegetables, though it was available. Participants also had trouble adjusting to smaller portions.

"It's the financial problems that prevents me because now they said I shouldn't eat fresh meat, I shouldn't do this and that, all these things need money to accomplish it." (P48, 51 years)

"The vegetables they said I should be eating, sometimes the way they even produce the vegetables we are scared to take them, because they use a lot of chemicals these days" (P47, 43 years)

"Since this condition has come, they say I should breakdown the level at which I eat fufu and the quantity I take. It has not been easy when I take the quantity they perceive I should take to help me." (P17, 74years)

Medication

The burden of taking pills indefinitely for both conditions each day was overwhelming for participants. The burden extended beyond the physical act of taking medication to a psychological space where illness dominated their sense of self. The daily intake of drugs served as a painful reminder that they were no longer in control of their bodies. For these individuals, the daily burden of taking pills does not symbolize healing but a lifelong sentence rather than a path to recovery.

"You think about it, you have to take this medication throughout your life" (P59, 46 years)

"I'm the type that doesn't like drugs, so it's hard for me" (P32, 73 years)

Physical activity

While physical activity is widely recommended as part of HTN and T2D management, participants rarely integrate it into their daily routines. Although some recalled being advised by healthcare providers to engage in regular exercise, very few followed through consistently. The difficulty lay not just in remembering or understanding the recommendation, but in the physical and motivational challenges of implementing it. Exercise, for many, felt unattainable or overly demanding.

"The doctor advised me to start working out, I dodge because the exercise, it's not easy" (P6, 45 years)

"I have been told to do exercise... but I am not able" (P29, 43 years)

Economic burden

Managing comorbid hypertension and diabetes placed a financial burden on participants. Many reported making regular out-of-pocket payments for medications that were either not covered under the National Health Insurance Scheme. Transport costs to and from health facilities for routine check-ups and medication were a problem, particularly for those residing far from care centers. Additionally, the physical toll of living with both conditions affected participants' ability to engage in work, leading to reduced productivity or withdrawal from income-generating activities. The loss of earnings with ongoing healthcare expenses contributed to a cycle of economic vulnerability that complicated long-term disease management. Figure 3 below shows the economic burden associated with managing both conditions

Reduced work productivity

For individuals living with both conditions, the ability to sustain employment was compromised. The dual burden of illness forced them to abandon their livelihood due to declining physical strength. For others, they continued to work but at a reduced pace with little strength.

"I bake bread, but because of the condition, I can't do it again" (P43, 61 years)

"There is a job somewhere, but I can't do it because of my condition" (P48, 46 years)

"I don't go out to sell as fast as I used to" (P20, 51 years)

Cost of transport to health facility

The burden of transportation made accessing care difficult. Participants reported postponing or missing appointments due to a lack of transportation fare. Transportation expenses competed with their basic needs, such as food and medication.

"Last week I was supposed to go but I didn't have the money for transport" (P33, 74 years)

"If I spend on transport, I can't buy all my drugs" (P44, 52 years)

"The money for my taxi could buy vegetables" (P37, 43 years)

Out-of-pocket costs for medications

Participants frequently reported struggling to afford medications for both hypertension and diabetes. Although some were enrolled in the National Health Insurance Scheme (NHIS), many explained that the scheme did not cover all essential drugs, requiring them to make out-of-pocket purchases outside the health facility.

"Even this medicine, it's difficult to get money to buy it. You have insurance but you will still pay" (P44, 52 years)

"Sometimes they write the drugs for you, and you can't get some of them to buy. Sometimes I struggle and sometimes too the money. Insurance doesn't cover most of my medication. It's not easy getting money to buy my medication" (P45, 57 years)

Physical challenges

Participants described the physical burden of living with both conditions as an ongoing struggle, making their daily lives difficult. Figure 4 below summarizes the physical challenges reported by the participants.

Weight loss

Some participants expressed concern about losing weight after developing both conditions. They described becoming lean, which affected their strength and also drew social attention and stigma.

"I can't even go out, they are always talking about me that I have AIDS because I've grown lean" (P44, 52 years)

"I have lost weight and don't go to public places because they will ask what is wrong with me" (P49, 45 years)

Body Pain

Body pain was described as a distressing aspect of living with both HTN and T2D. Pain affected multiple body parts, especially the legs, feet, knees, waist, and back, limiting mobility and interfering with daily activities.

"My body pains me, my knees and waist too." (P15, 67years)

"I can't walk far again, when I walk small, my leg pains me" (P21, 54 years)

Frequent urination

Frequent urination emerged as a disruptive physical burden associated with the dual burden of HTN and T2D. Participants shared how they constantly have an urge to urinate, particularly at night.

"when I sleep, I cant sleep at night because immediately I try sleeping I have to wake up and go and urinate.(P18, 45years)

"In the night you can urinate till day break"(P9, 43 years)

Weakness

Participants reported a decline in strength associated with living with both conditions, describing how routine tasks that were once manageable had become difficult. This weakness often manifests during routine activities such as walking and completing household chores.

"My strength has reduced, the way I was active, its not like that now" (P11, 40 years)

"I feel very weak. It has affected my work, now I am unable to work" (P23, 58years)

Sleepless nights

Several participants reported difficulty sleeping since they developed both conditions. They revealed struggling to fall asleep and staying asleep through the night.

"You can't sleep in the night" (P48, 46 years)

"In the night you can't sleep, you sweat" (P46, 47 years)

Fatigue

Fatigue emerged as a significant concern, with participants reporting tiredness that affected their ability to manage daily responsibilities.

"When I walk small, then I get tired, when I do something small, I get tired" (P52, 41 years)

"I get tired easily when I walk" (P42, 53 years)

Low sexual drive

Some women described a noticeable decrease in sexual desire or engagement. This was attributed to both physical and emotional disconnection affecting their marital or intimate relationships.

"I did not feel like having any sexual intimacy with my husband, I did not have the urge for that" (P31, 38 years)

"I don't sit and think of him" (P22, 45 years)

"There's no way I can have sex, I don't even feel anything for it" (P36, 51 years)

Discussion

Living with two chronic conditions, such as HTN and T2D, generated a wide range of psychological distress among participants, reflecting the burden of navigating a long-term illness. Patients in our study described feelings of sadness, fear, loneliness, frustration, crying, confusion, surprise, and doubt, often linked to the overwhelming demands of daily self-management. A recurring expression across participants was frustration. Participants often spoke about feeling overwhelmed and drained. These experiences are similar to findings from previous studies, where emotional exhaustion was identified as a common challenge for individuals living with multiple chronic conditions (19). In such contexts, where access to psychosocial support is limited, patients may lack opportunities for processing their emotional distress, leading to withdrawal from care. The coexistence of both conditions led to confusion, fear, and surprise as they struggled to understand and cope with the demands of managing two chronic conditions. For many, the shock of learning they had two chronic conditions unexpectedly was associated with anxiety about the future and complications. This aligns with studies that noted

emotional disruption occurs during the early stages of chronic illness (20). Therefore, we suggest that psychological support should be integrated into the health system to address patients' psychological needs.

This qualitative study reveals the substantial and multidimensional challenges faced by women in Ghana managing both HTN and T2D. The findings show that the burden of these two chronic conditions extends far beyond clinical management, generating significant psychological distress, imposing a heavy treatment and economic burden, and weakening physical well-being. These experiences occur within a health system context characterized by fragmented care and inadequate support mechanisms, highlighting the gap between the idealized model of integrated chronic disease management and the lived experiences of patients.

The psychological distress expressed by participants, encompassing fear, sadness, confusion, frustration, and loneliness, emerged as a core finding. The diagnosis of a dual chronic condition often represented a life-altering shock, resulting in anticipatory anxiety about complications, dependency, and mortality (21). This emotional burden is compounded by the relentless daily demands of self-management, leading to what participants described as overwhelming exhaustion (22). These findings align with the concept of "treatment burden" and the psychological toll of multimorbidity, which is well-documented in global literature but remains critically under-addressed in low-resource primary care settings, such as in Ghana (23). The absence of structured psychosocial support within routine care leaves patients to navigate this distress alone, potentially compromising medication adherence and health-seeking behaviors (24).

The economic burden emerged as a critical barrier, linked to both health outcomes and quality of life. Participants faced a triple financial strain: direct costs for uncovered medications, indirect costs for transportation to facilities, and opportunity costs from reduced work productivity due to illness. This creates a vicious cycle where illness reduces income, and poverty, in turn, constrains the ability to manage the disease (25). The situation is particularly critical for women, who may have less access to financial resources and whose caregiving roles are further strained by their own health needs. This economic vulnerability underscores the need for health financing mechanisms that genuinely protect individuals with chronic conditions from financial hardship. The physical manifestations of these conditions, including weakness, fatigue, body pain, sleep disturbances, and decreased libido, profoundly impacted daily functioning and social identity. Weight loss, for instance, was not merely a clinical symptom but a source of social stigma. These physical burdens, coupled with psychological strain, led to social withdrawal and loneliness, reflecting the holistic impact of comorbidity. This aligns with the biopsychosocial model of illness, emphasizing that effective management must address more than just physiological parameters (26).

Our study argues for a fundamental re-orientation of care from a disease-focused to a sustained, patient-centered, and integrated approach. This requires implementing training and systems for true integrated chronic disease management at the primary care level, utilizing the WHO-PEN framework to co-manage

conditions, introducing routine psychosocial assessment and support as a standard component of NCD care

Strengths and limitations of the study

This study provides in-depth, patient-centered insights using a robust qualitative design. The application of the WHO-PEN framework ensures relevance to primary care in low-resource settings. Conducting interviews in participants' preferred language preserved narrative authenticity. However, the study was conducted among women, and while they provide in-depth insights, it may not fully represent the experiences of men or individuals in underserved areas. Additionally, due to the sensitive nature of some topics, such as sexual health, participants may have underreported or withheld information despite efforts to ensure confidentiality. Moreover, the study relied on self-reported experiences without triangulation from healthcare providers or caregivers, which could have enriched the understanding of the management of both conditions from multiple perspectives.

Practice implication

The findings of this study signify several critical implications for healthcare practice and health policy in Ghana and similar settings. There is an urgent need to transition from fragmented, single-disease care to integrated, patient-centered chronic disease management utilizing frameworks such as WHO-PEN to co-manage hypertension and diabetes. Financial protection must be strengthened by reforming the National Health Insurance Scheme to ensure reliable, comprehensive coverage for essential medications and diagnostics, thereby reducing catastrophic out-of-pocket costs that directly undermine adherence. Moreover, psychosocial support should be formally integrated into routine care through training for healthcare providers to address the profound distress, fear, and isolation reported by patients. Patient education must also be culturally tailored and practical, moving beyond generic advice to empower individuals with actionable strategies for diet, medication, and lifestyle management within their socioeconomic constraints.

Conclusion

This study reveals that the management of comorbid hypertension and type 2 diabetes among women in Ghana is characterized by psychological, treatment-related, economic, and physical burdens. The coexistence of these conditions exposes critical gaps in a health system that remains oriented toward single-disease care, resulting in fragmented services that inadequately address comorbidity. The study is important because it provides in-depth, context-specific evidence on how comorbidity is experienced within primary care settings in Ghana. It also highlights the impact beyond clinical indicators, emphasizing the need to address psychosocial distress, financial vulnerability, and functional limitations as integral components of chronic disease management. These findings are relevant for health policy and practice in Ghana and similar low-resource settings. They support the urgent need for integrated, patient-centered care models at the primary health level, strengthened financial protection for essential medications and diagnostics, and the routine incorporation of psychosocial support into non-

communicable disease services. Addressing comorbid HTN and T2D effectively will require a systemic reorientation toward holistic, coordinated care that aligns service delivery with the complex realities of patients living with these conditions.

Abbreviations

HTN – Hypertension

T2D – Type 2 Diabetes

NCDs – Non-Communicable Diseases

SSA – Sub-Saharan Africa

NHIS – National Health Insurance Scheme

WHO-PEN – World Health Organization Package of Essential Non-Communicable Disease Interventions for Primary Health Care in Low-Resource Settings

UHAS-REC – University of Health and Allied Sciences Research Ethics Committee

BP – Blood Pressure

Declarations

Ethics approval and consent to participate

Ethical clearance for this study was granted by the Research Ethics Committee of the University of Health and Allied Sciences (UHAS-REC). Formal permission was also obtained from the health directorates in the various districts and the participating hospitals. The study was conducted under the ethical principles outlined in the Declaration of Helsinki. All participants provided informed consent before participating in the study.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interest

The authors declare no competing interests

Funding

This study received no funding

Authors' contributions

EEG conceptualized and designed the study, developed the interview guide, led data collection, conducted data analysis, and drafted the manuscript. MKK contributed to the conceptualization of the study and study design, supervised the research process, and critically reviewed and revised the manuscript for important intellectual content. MAA supported the development of the methodology and contributed to data analysis. SA assisted with data collection and transcription and contributed to the interpretation of findings. HF supported participant recruitment and data collection, ET and JOB supported participant recruitment, data collection, and coding of transcripts. All authors read and approved the final version of the manuscript.

Acknowledgements

We acknowledge the municipal and medical health directors and all health workers in the various health facilities. We also acknowledge all the participants who took part in this study.

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Figures

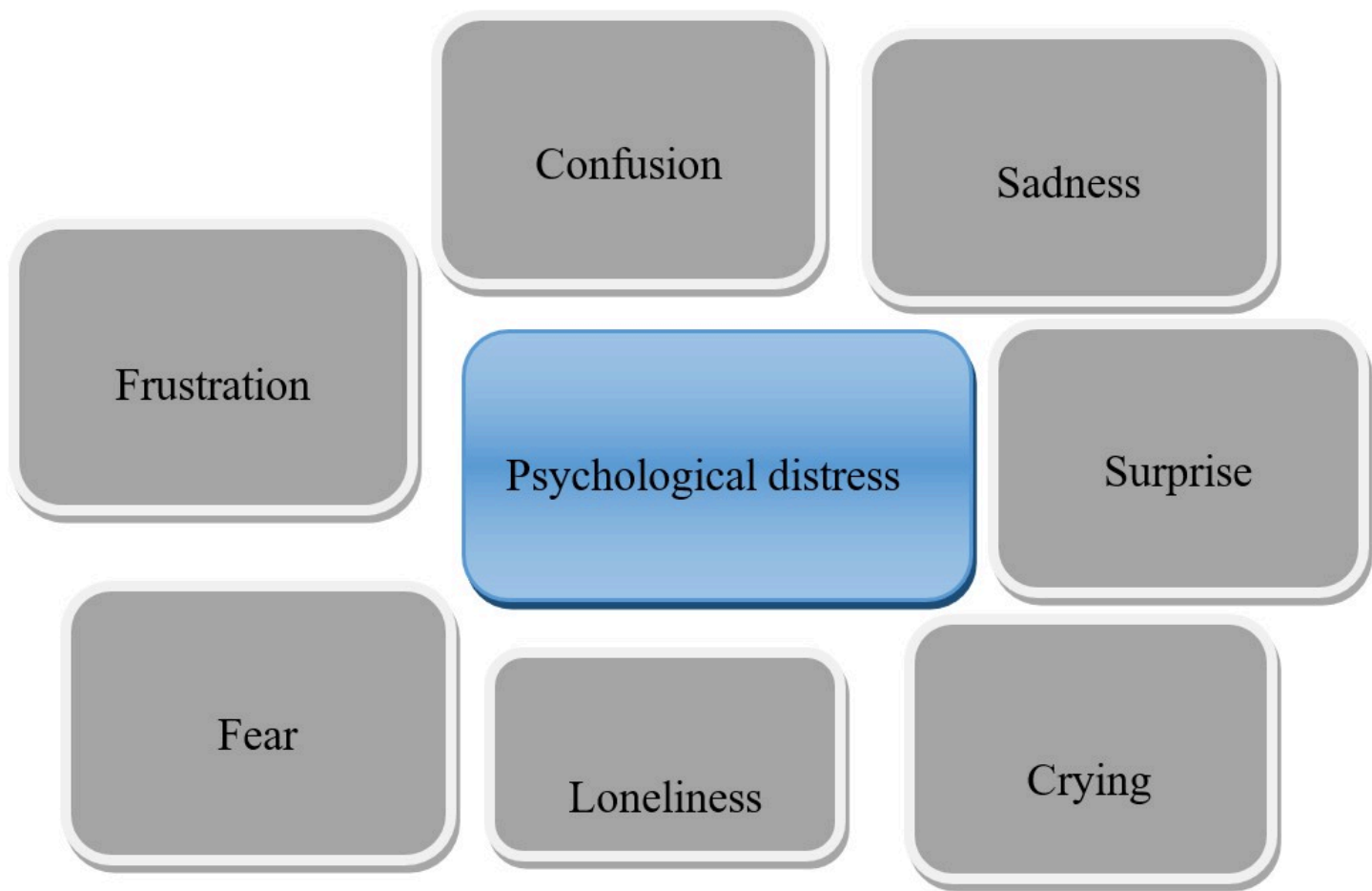


Figure 1

Psychological distress associated with managing both conditions

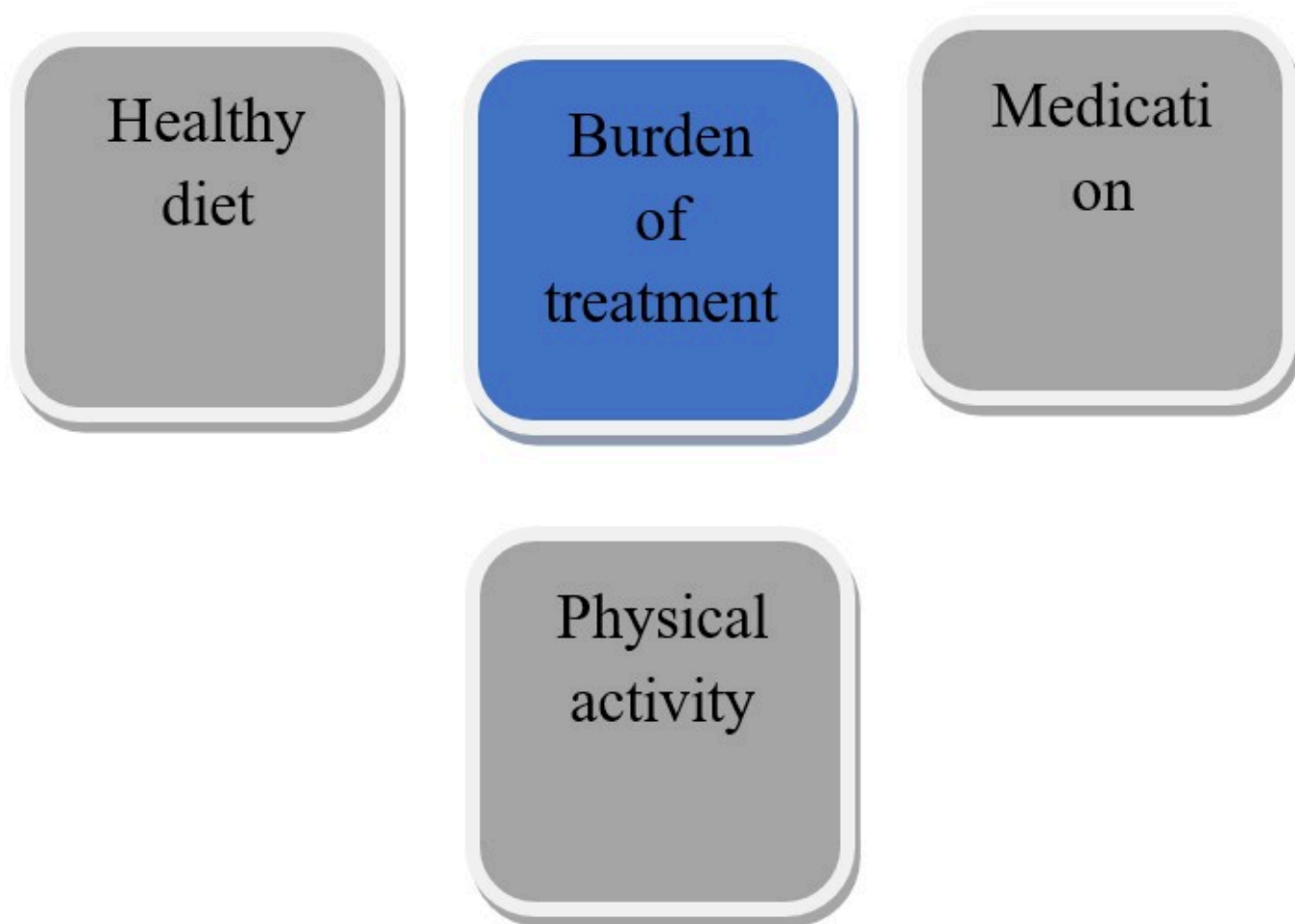


Figure 2

Burden of treatment associated with managing both conditions

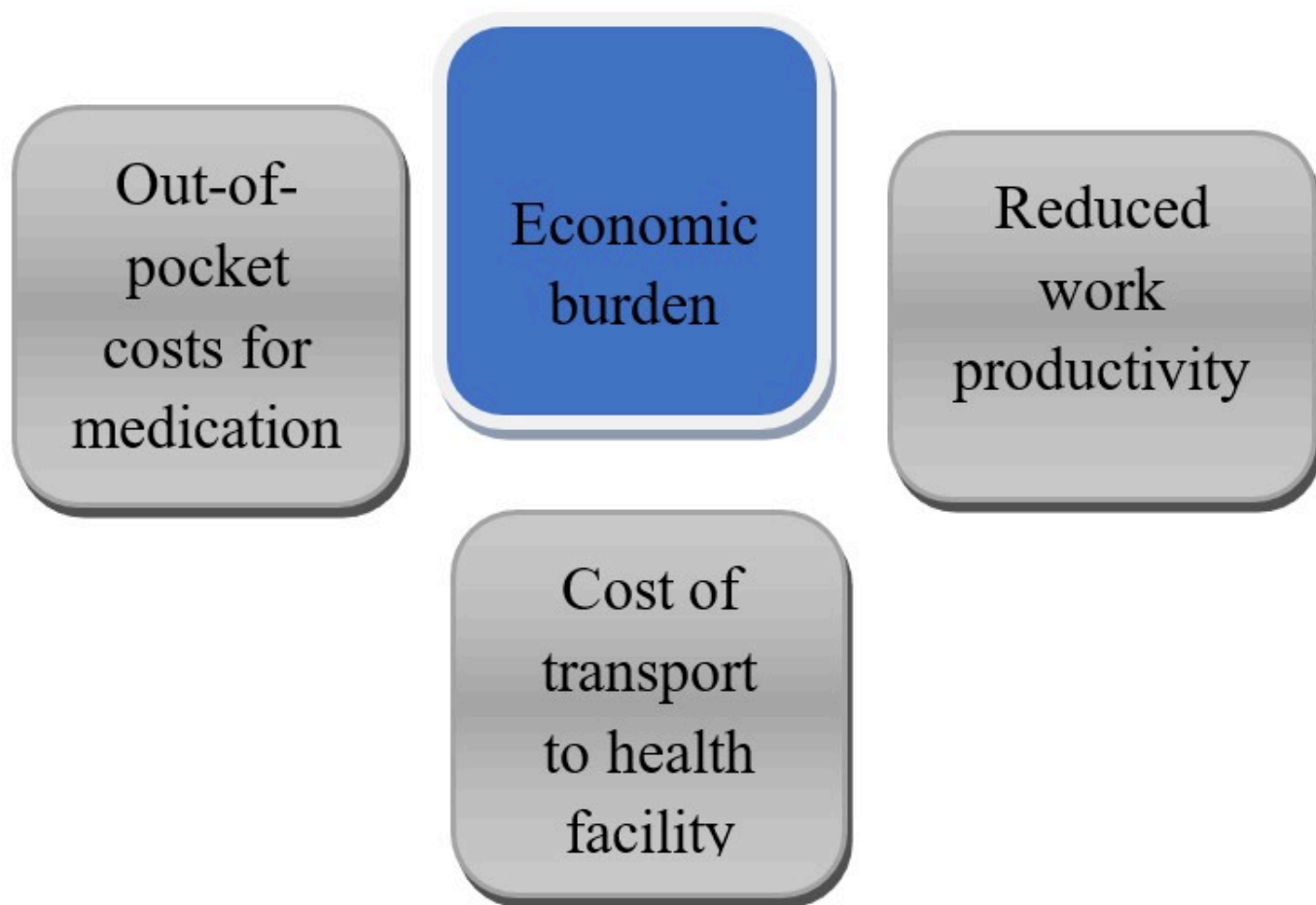


Figure 3

Economic burden associated with managing both conditions

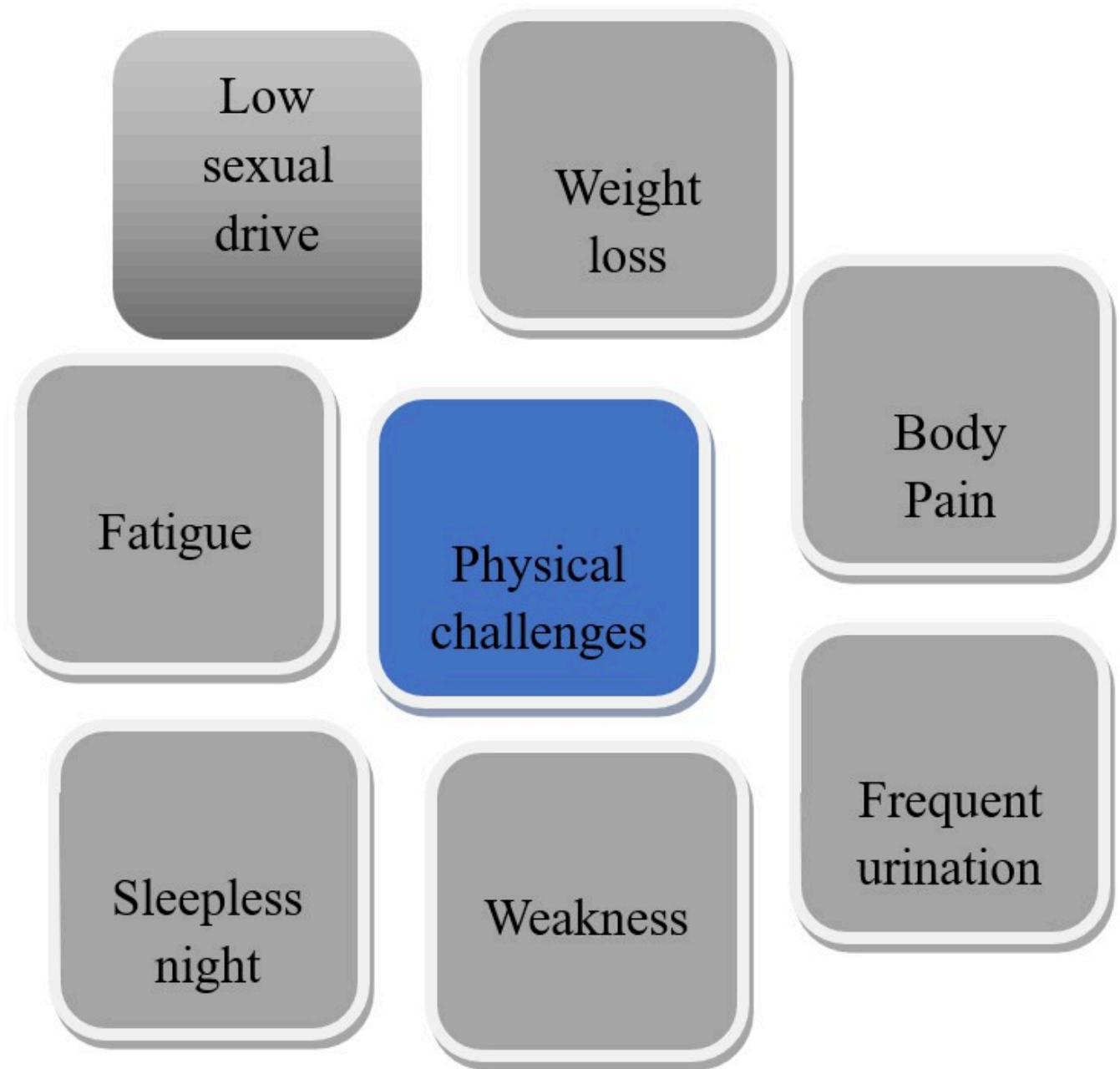


Figure 4

Physical challenges associated with managing both conditions