

Multidimensional vulnerabilities and health inequities among migrants in Tunisia: a qualitative study

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Abstract

Background

Migrant vulnerability is increasingly recognised as a multidimensional and dynamic condition shaped by interacting structural, social, and individual determinants. However, evidence remains largely derived from high-income countries, limiting understanding of how vulnerabilities manifest in resource-constrained transit settings. As both a transit and destination country, Tunisia provides a unique middle-income context to examine how structural barriers intersect with health equity. This study explored how multidimensional vulnerabilities are produced and experienced among migrants in Tunisia and how they influence healthcare utilisation.

Methods

This qualitative secondary analysis was conducted using data collected between May and December 2023 across four Tunisian cities (Tunis, Sousse, Sfax, and Medenine). Using purposive sampling, 163 participants were recruited, comprising migrants and refugees ($n = 87$), migrant community leaders ($n = 33$), and non-governmental organisation (NGO) staff ($n = 43$). Data were collected through 33 semi-structured interviews and 16 focus group discussions conducted in participants' preferred languages (French, Arabic, and English), with recruitment continuing until thematic saturation was achieved. Thematic analysis followed a hybrid inductive-deductive approach informed by the International Organization for Migration's Determinants of Migrant Vulnerability (DoMV) framework.

Results

Vulnerability emerged as a dynamic and cumulative process driven by interacting structural, socioeconomic, and social determinants. Irregular legal status functioned as a key upstream determinant, restricting access to employment, social protection, and healthcare. Economic precarity, housing instability, family obligations, racial discrimination, gendered power asymmetries, and language barriers contributed to unmet health needs and eroded trust in public services. Participants reported a dual burden of infectious and chronic conditions alongside substantial unmet mental health needs. NGO staff corroborated these findings, highlighting systemic failures including administrative exclusion, lack of interpreter services, and the absence of culturally competent care. These intersecting vulnerabilities prompted coping strategies, including self-medication, informal support networks, and delayed healthcare utilization, which paradoxically exacerbated health risks and reinforced structural inequities.

Conclusions

Healthcare inequities among migrants in Tunisia are driven less by individual behaviours than by structurally embedded forms of legal and socioeconomic exclusion. Addressing upstream legal, administrative, and financial barriers is essential to promote equitable access to healthcare.

1. Introduction

International migration has intensified over the past decades, driven by armed conflict, economic inequalities, political instability, and environmental pressures[1, 2]. While migration can represent a strategy for protection and socioeconomic mobility, it often occurs in contexts of structural inequality that expose migrants to cumulative and intersecting risks across different stages of the migration process[3, 4]. Beyond health, these risks encompass economic precarity, legal insecurity, social marginalisation, housing instability, and restricted access to essential services. Collectively, these conditions place migrants in situations of heightened precariousness, making their vulnerability a central concern in global health and migration research[5, 6].

Current evidence increasingly recognizes vulnerability as a dynamic and context-dependent condition arising from the interaction between individual characteristics and broader social, institutional, and political environments[6, 7]. Legal insecurity, exclusion from labour markets and social protection systems, discrimination, and disrupted social networks can collectively constrain migrants' ability to access services, maintain well-being, and achieve social integration [3, 6, 8]. Consequently, vulnerability is increasingly understood not as an inherent characteristic of migrants, but as the cumulative result of interconnected social and structural inequalities.

Despite growing scholarly interest, most studies on migrant vulnerability have been conducted in high-income settings, particularly in Europe and North America[9, 10]. Comparatively little is known about how vulnerabilities are experienced and reproduced in low- and middle-income countries (LMICs), where migration pressures often coexist with limited institutional capacities and weaker social protection systems[11–13]. This knowledge gap is especially important for transit and destination countries in the Global South, where migrants frequently navigate multiple vulnerabilities while relying on limited formal support mechanisms[13].

Tunisia offers a prominent illustration of this gap. Situated at the crossroads of sub-Saharan Africa, North Africa, and Europe, it has increasingly become both a transit and destination country within evolving regional migration flows[14, 15]. In 2024, nearly over 63,200 migrants lived in Tunisia, over 73% of whom were sub-Saharan Africans[16]. As a middle-income country occupying an intermediary position between high-income destination countries and humanitarian contexts, Tunisia offers a valuable opportunity to broaden current understandings of migrant vulnerability and inform comparative research[17]. However, existing research on migration in this country has predominantly focused on healthcare access and specific health outcomes, often without considering the wider socioeconomic and institutional environments shaping migrants' lives[18, 19]. Consequently, empirical evidence regarding how vulnerability is produced and experienced in this context remains limited.

Addressing this gap requires moving beyond single-factor explanations and adopting a multidimensional perspective that considers how legal status, socioeconomic conditions, living arrangements, institutional responses, and individual resources interact to shape migrants' experiences. Therefore, this study aims to examine the multidimensional vulnerabilities affecting migrants in relation to health and healthcare in Tunisia. By applying the International Organization for Migration's Determinants of Migrant Vulnerability framework, this study contributes to a better understanding of vulnerability in underrepresented LMIC contexts and provides evidence to support more equitable and rights-based approaches to migration governance.

2. Methods

2.1. Study design and setting

This study constitutes a distinct, theory-driven secondary analysis of a comprehensive qualitative dataset collected between May and December 2023 in four urban settings selected for their high concentration of migrants (Tunis, Medenine, Sousse, and Sfax)[20,21]. The overall study design, including sampling strategy, participant recruitment procedures, data collection methods, reflexive considerations, and ethical safeguards, has been described in detail elsewhere[22,23]. The present analysis expands the analytical framework beyond health issues to explore the multidimensional and structural factors contributing to migrant vulnerability in Tunisia.

While our foundational study[22] has mapped healthcare access using the Levesque framework[24], this risks treating systemic exclusions as isolated operational failures within healthcare delivery. To move beyond symptom-level explanations, this secondary analysis repurposes the dataset through the International Organization for Migration's (IOM) Determinants of Migrant Vulnerability (DoMV) framework[25] to explore how legal, economic, and institutional regimes actively manufacture vulnerability. Consequently, this paper does not merely replicate healthcare utilization findings; rather, it theorizes the broader structural architecture that sustains health inequities within a middle-income transit setting, offering a novel conceptual entry point for equity-driven migration governance.

2.2. Sampling strategy and recruitment process

A purposive sampling strategy was used to recruit participants with diverse migration experiences and roles. Sampling continued until thematic saturation was reached, defined as the point at which no substantially new themes emerged across participant groups.

With support from Médecins du Monde (MdM), Three participant categories were recruited: migrants, community leaders, and non-government organization (NGO) staff. To account for gendered power structures, focus groups were organized separately for male and female participants.

2.3. Eligibility Criteria

Participants were adults (≥ 18 years) fluent in French, Arabic, or English. Migrants included all non-Tunisian individuals residing in Tunisia, regardless of migration motive. Migrant community leaders (MCLs) and NGO staff with sustained engagement with migrant communities were included to provide complementary community and institutional perspectives.

2.4. Data collection

Data were collected through semi-structured interviews and focus group discussions (FGDs). Interviews and FGDs lasted between 45 and 90 minutes and were conducted by trained qualitative researchers with experience in migration and public health research. Interviews were conducted in neutral, safe environments to ensure participant confidentiality and mitigate power imbalances. The interview guide was developed for the parent study[22] and is provided as Supplementary File 1.

All sessions were audio-recorded with consent, transcribed verbatim, and, where necessary, translated into English. To ensure accuracy, translations were reviewed by bilingual researchers familiar with the study context, with attention to preserving culturally specific expressions and idioms.

2.5. Data analysis

Thematic analysis was performed using NVivo (v.14)[26], following a hybrid inductive-deductive thematic approach[27,28]. A priori codes derived from the IOM DoMV conceptual model[25] structured the initial coding framework, while allowing for the emergence of new themes from the data. The four analytical levels of the DoMV framework; individual, household/family, community, and structural, served as organising categories, within which inductive sub-themes were identified.

To ensure trustworthiness, two independent researchers (TM and AO) coded the transcripts, resolving any discrepancies through a consensus process involving a third researcher (SE). An audit trail of coding decisions was maintained. To preserve contextual meaning, the transcripts were analysed in their original language and then translated into English for synthesis and reporting.

2.6. Reflexivity

The research team comprised clinicians and public health researchers from Tunisia, Morocco, and Europe, with varying degrees of familiarity with the study context and migrant communities. Differences in cultural background, institutional affiliation, and social position were considered throughout the research process, particularly given the vulnerability of many participants and the potential power imbalances inherent in researcher-participant interactions. Reflexive discussions were conducted regularly to examine how researchers' assumptions and positionalities could influence data collection and interpretation.

Collaboration with Médecins du Monde facilitated trust-building and helped alleviate participants' concerns regarding confidentiality and legal status. Throughout the study, particular attention was paid to maintaining a non-judgmental approach and to framing vulnerability as a product of social and institutional conditions rather than as an inherent characteristic of migrants.

2.7. Ethics statement

Ethical approval was obtained from the University of Sousse (CEFMS 157/2023) and the University of Barcelona (HCB/2022/0655). This research was conducted in accordance with the ethical principles of the World Medical Association Declaration of Helsinki (Fortaleza, Brazil, 2013) and the International Ethical Guidelines for Biomedical Research Involving Human Subjects (WHO). The participants were informed of the study's objectives and procedures, and written consent was obtained on the basis of voluntariness and the right to withdraw. Sessions were conducted in private spaces to ensure confidentiality. No personal information was recorded, and quotes were anonymized.

3. Results

3.1. Sociodemographic profile of the participants

The study included a total of 163 participants recruited across four study sites through 33 individual interviews and 16 focus group discussions[22]. Participants comprised three categories: migrants and refugees (n=120, including 87 individual migrants and 33 MCLs drawn from this cohort), and NGO staff (n=43).

The migrant sample (n=87) consisted of individuals with a mean age of 30.6 years (Standard Deviation (SD): 8) and a female-to-male ratio of 2:1. The sample was predominantly composed of Cameroonian (29.2%) and Ivorian (27.5%) nationals, reflecting the major migration corridors in the country. Overall, 45.8% (n=55) had completed secondary education and 40.8% (n=49) had attained technical or university-level training. Irregular legal status, defined as lacking a valid residence permit or having overstayed a visa, was reported by 60% (n=72). The mean stay in Tunisia was 2.8 years (SD 3). Within migrant cohort, 33 individuals was MCLs. These leaders were slightly older on average (35.2 years; SD: 8), predominantly male (n=28), and highly educated (n=31), though nearly half (n=14) reported a lack of stable employment at the time of data collection (table 1).

To provide a systemic perspective, 43 NGO staff members were also engaged (mean age: 36.3 years; SD: 10.9). This group was primarily male (61%) and largely affiliated with national organizations (65.1%), with a mean professional tenure of five years (SD: 4.5).

3.2. Thematic analysis results

The qualitative analysis identified multiple and intersecting dimensions of vulnerability among migrants in Tunisia. Using the IOM vulnerability framework as an analytical lens, findings were organized across four interrelated levels: (1) individual factors, (2) household and family factors, (3) community and social factors, and (4) structural and systemic factors. Vulnerability emerged as cumulative and dynamic, shaped by the interaction between health needs, socioeconomic precarity, racial discrimination, gender inequalities, and legal insecurity (figure 1).

3.2.1. Individual-Level Vulnerabilities

Migration status itself constitutes a structural source of vulnerability, as the migratory trajectory exposes individuals to a progressive accumulation of compounding health risks. At the individual level, vulnerability reflects the interplay of pre-existing biological characteristics, prior health status, histories of adversity, and constrained access to personal resources. These intrinsic factors are further compounded by the physical and psychological consequences of the journey itself, including violence, detention, and severe deprivation in transit, as well as previous experiences with under-resourced health systems that durably influence health beliefs, trust, and care-seeking behaviour.

This layered accumulation of physical and mental health burdens produces complex, overlapping clinical presentations rarely captured by conventional health assessments. The diagnostic complexity arising from polymorbidity and the co-occurrence of physical and psychiatric disorders requires an integrated, trajectory-sensitive approach to care. Without this, fragmented clinical management risks further deepening the vulnerabilities that migration itself has engendered.

"We went through very difficult periods of life during which we accumulated many health conditions...you do not understand what is wrong". (Male, leader-TI07)

Gender emerged as a central determinants of individual vulnerability. Women of reproductive age were particularly exposed to health-related risks. Participants described discontinuities in access to timely and adequate reproductive healthcare, including antenatal care and safe delivery services. Narratives also reflected gendered vulnerability shaped by the intersection of biological susceptibility and social precarity. These constraints restricted women's ability to seek timely care, particularly in situations of pregnancy or reproductive health needs. Unwanted pregnancies were reported in contexts marked by instability, economic dependency, or limited autonomy in healthcare decision-making and control over reproductive choices. These dynamics underscore how reproductive vulnerability is embedded within broader power asymmetries, particularly in a LMIC such as Tunisia, where universal health coverage entitlements do not extend to non-nationals. One migrant reported on behalf of a female community member:

"She went to the hospital, she was ignored and stayed outside. She delivered outside" (Male, Migrant-TF04)

Age operated as a key modifier across multiple vulnerability dimensions, with children identified as particularly susceptible due to pronounced gaps in maternal and child vaccination coverage as well as neonatal care, underscoring deficiencies in preventive and early-life health services.

Physical health conditions can substantially intensify individual vulnerability. Migrants often present with a distinctive disease profile shaped by their country of origin and the conditions they encounter during their journey. A critical challenge is the limited familiarity of Tunisian healthcare providers with this epidemiological profile. Their unfamiliarity with diseases such as malaria, which are rarely encountered in the local population, increases the risk of misdiagnosis and diagnostic delays.

"The doctors here do not know our diseases. They give us paracetamol for everything. In my country, they would have tested my blood first." (female, migrant-TF12)

In addition, the structural realities of migration, particularly high mobility, further increase health risks. Migrants living with chronic diseases are especially vulnerable, as they often experience difficulties in maintaining continuity of care and ensuring regular access to long-term treatment and follow-up.

Mental and emotional well-being was identified as a crucial yet consistently overlooked dimension of individual vulnerability. Psychological distress was frequently associated with uncertainty, social exclusion, economic hardship, and precarious living conditions. Emotional burden appeared to influence care-seeking behaviours, treatment adherence, and coping strategies. Importantly, mental health was rarely acknowledged within formal healthcare interactions, reinforcing a sense of invisibility within the system.

"We even lost someone in Tunis who died as a result of severe depression, as she felt neglected and abandoned." (Male, leader-TI14)

Confronted with cumulative individual vulnerabilities, migrants in Tunisia developed adaptive strategies primarily oriented toward immediate symptom management. Reliance on pharmacies, traditional remedies, and informal community financing mechanisms emerged as the predominant response. These responses were deeply shaped by prior experiences of exclusion, institutional mistrust, and financial constraints. While offering short-term relief, these strategies frequently result in delayed diagnoses, untreated conditions, and reproductive health complications.

"Initially, migrants may experience warning signs, but these are often neglected due to financial constraints. As conditions worsen, many eventually require hospitalization, and in some cases, delayed care leads to preventable deaths" (Female, Migrant-TF03).

3.2.2. Household and Family-Level Vulnerabilities

Economic precarity substantially increased health vulnerability. Unemployment, informal employment and low wages limited migrants' ability to afford transport, consultations and medication. This financial insecurity was closely linked to housing instability, which further worsened health outcomes. Many migrants reported living in overcrowded or unsanitary conditions, and some were homeless.

"You will find young people here who will tell you they sleep in the street and they walk and eat every day... they are not even covered" (Male, Leader-TI07)

Family responsibilities further intensified these challenges. Migrants supporting children, either in Tunisia or in their countries of origin, faced competing priorities between remittances and healthcare expenditures. For pregnant women and mothers, the absence of extended family support systems increased dependency and psychosocial stress. This vulnerability is particularly acute among single mothers, whose caregiving responsibilities were not shared with partners or relatives. Many reported social isolation, stigma, and limited access to formal childcare, which constrained their ability to seek employment or attend health services. In addition, they face extreme domestic insecurity, elevated reproductive risks (e.g. unmanaged postpartum complications) and a heightened risk of economic exploitation or gender-based violence.

"You have to pay for rent, you need also to eat and have a place to sleep... It's really complicated." (female, migrant- TF04)

To cope with this resource scarcity, migrants adopted survival-oriented strategies, including income diversification through informal employment, collective budgeting, and prioritization of remittances. They described constant trade-offs between meeting basic survival needs and healthcare, resulting in a self-reinforcing cycle of economic precarity and deteriorating health.

3.2.3. Community and social Vulnerabilities

At the community level, social exclusion and limited integration into host communities further amplified migrants' vulnerability. Participants often described discriminatory practices in healthcare settings, public spaces, and employment contexts. These practices were frequently racialised, with sub-Saharan African migrants reporting being subjected to differential treatment explicitly linked to skin colour and national origin. As one participant stated:

"We are stigmatised in this country even by citizens... We were always placed second in line" (male, migrant-TF01).

NGO staff corroborated and expanded upon these accounts, describing how racial discrimination operates as a structural barrier that extends beyond individual encounters to shape institutional practices:

"When a sub-Saharan migrant arrives at a public health facility, the first question is often about their papers, not their symptoms. The reception itself becomes a barrier. Some staff members are welcoming, but others clearly show that these patients are not a priority." (female, NGO-TF08).

Furthermore, pervasive physical and psychological insecurity remains a critical concern, compounded by structural linguistic barriers. Although some migrants spoke French, predominant lack of Arabic proficiency impeded communication, service access, and social integration into the host community, thereby reinforcing isolation. The absence of professional interpreter services in public health facilities was identified by both migrants and NGO staff as a critical gap:

"Without someone to translate, the consultation is meaningless. The doctor writes a prescription, the patient doesn't understand the dosage." (male, NGO-TF15)

In response, migrants often adopted community-based resilience strategies, such as living in closed communities, to pool resources and provide mutual support. However, these practices inadvertently promoted isolation and reinforced a lack of integration into Tunisian society. They also facilitated the circulation of misinformation about local services and contexts, perpetuating vulnerability cycles.

3.2.4. Structural and Systemic vulnerabilities

Legal status and documentation emerged as central structural drivers of vulnerability. Irregular migration status was closely associated with fear of arrest, restricted mobility, and avoidance of public institutions, including healthcare facilities. The absence of valid residency permits or identity documents often constituted a major, and at times absolute, barrier to accessing public health services.

"You will have no support or any form of help if you don't have a passport or documents." (male migrant-TF14)

Even when services are theoretically free of charge, access remained constrained by administrative complexity and unclear procedures. Participants and NGOs reported that bureaucratic requirements, coupled with inconsistent implementation, frequently delayed or prevented effective use of services.

"Each hospital applies the rules differently. In one, they accept a UNHCR card; in another, they refuse it. There is no national directive, so it depends on the goodwill of the person at the desk." (male, NGO-TF22)

This was particularly evident in national health programs, where eligibility criteria and documentation requirements limited access. As a result, even when care is formally available, migrants often face difficulties in obtaining timely and continuous care, especially for chronic conditions.

NGO staff described functioning as a de facto parallel health system for migrants, providing services that the public sector fails to deliver. However, they also highlighted the unsustainability and limitations of this model:

"We fill the gaps, but we cannot replace a health system. Our funding is project-based..., and when a project ends, the patients are left with nothing." (female, NGO-TF31)

Taken together, these findings suggest that migrant vulnerability in Tunisia is not simply the aggregation of individual risks, but rather a structural condition that is reproduced at multiple, mutually reinforcing levels. Legal exclusion amplifies economic marginalisation, restricting access to the essential services that could mitigate health deterioration. Racial discrimination and language barriers further reduce institutional trust, while informal coping mechanisms, although adaptive, ultimately speed up the progression of preventable conditions.

4. Discussion

The present study advances the understanding of the complex nature of migrant vulnerability in Tunisia by applying the IOM DoMV framework within an intersectional analytical lens. Our findings suggest that vulnerability is not an individual attribute but rather a structurally produced condition shaped by intersecting legal, economic, racial, and gendered constraints, with irregular status acting as a key upstream determinant. Legal insecurity restricts access to formal employment and social protection, leading to economic hardship, housing instability, and food insecurity, which in turn limit healthcare utilisation and contribute to delayed diagnoses and the progression of otherwise manageable conditions.

4.1. Vulnerability as a Cumulative and Systemic Process

These findings align with and extend existing literature illustrating how structural vulnerability compounds biological vulnerability, particularly in contexts where universal health coverage does not extend to non-nationals[20, 29]. By contrast, many high income countries (HICs) guarantee emergency care for migrants regardless of legal status, even though there are still persistent administrative barriers[30, 31]. Our data extend these findings by documenting how the absence of a clear legal framework in Tunisia creates a system marked by uncertainty and discretionary practices. This results in fragmented and unpredictable access to care.

Financial constraints emerged as a key mediator that further reinforces health inequities, as migrants remain outside national social protection systems while facing high out-of-pocket costs relative to their unstable incomes. These findings reinforce global evidence suggesting that economic marginalisation is a pervasive determinant of migrants' health access to care[3, 32, 33]. While economic barriers in HICs are often linked to insurance eligibility and residency requirement [33–35], in LMICs settings, high out-of-pocket costs and unclear entitlement rules directly limit migrants' access to primary and preventive services[19, 36, 37].

In Tunisia, migrants face multiple and intersecting burdens shaped by the cumulative interaction of legal exclusion from the national social security system, economic precarity linked to a high cost of living relative to informal wages, and social marginalisation, including experiences of discrimination that undermine trust in public services. These dimensions operate simultaneously and reinforce one another, resulting in compounded vulnerabilities and unmet health needs over time. Overall, these findings support evidence that migrant vulnerability should not be conceptualised as a healthcare-specific burden, but rather as a structurally embedded condition in which health outcomes are the downstream consequence of multiple, interacting social determinants, leading to significant health risks[10, 38, 39].

4.2. Health Systems Misalignment with Migrant Needs

Our findings underscore a critical mismatch between migrants' health needs and the capacity of the Tunisian health system to respond effectively. Migrants present with a complex and overlapping burden of disease, including communicable diseases, non-communicable conditions, and pronounced psychological distress. These coexisting conditions remain inadequately addressed within healthcare system largely structured around standardized, population-based

approaches that fail to account for migration-specific risk profiles[22, 40]. This misalignment manifests through limited provider familiarity with certain infectious diseases, fragmented management of chronic conditions, and the systematic neglect of mental health needs.

This observation supports the argument advanced by Wickramage et al. (2018)[34] that health systems in transit countries often lack migrant-sensitive epidemiological surveillance, resulting in misdiagnosis and delays in appropriate treatment. Moreover, in contrast to the “healthy migrant effect” commonly described in HICs[4, 10], migrants in Tunisia appear to experience accumulated morbidity linked to their migratory trajectories.

Mental health, in particular, was identified as a central yet largely neglected dimension of vulnerability. Psychological distress was deeply intertwined with legal insecurity, economic hardship, and social exclusion in Tunisia, reflecting a convergence of pre-migration, transit, and post-migration stressors[6, 41]. In HICs, the literature often highlights post-migration stressors such as discrimination and insecure employment as key contributors to poor mental health[34, 42]. However, studies from LMICs highlight broader challenges posed by inadequate social protection systems and mental health services under-resourced and insufficiently integrated into primary care[41]. Our findings suggest that Tunisia, as a middle-income transit and destination country, exhibits characteristics of both contexts: structural fragility intersects with limited targeted support for migrants, amplifying psychological strain.

4.3. Intersectionality: Gender, Race, Legal Status, and Household Responsibilities as Interlocking Axes of Exclusion

A central contribution of this study is the demonstration of how gender, racial identity, and legal status operate not as independent risk factors, but as interlocking axes of structural exclusion that produce differentiated health vulnerabilities. These findings resonate with intersectional frameworks in health equity research[43, 44], which argue that systems of oppression interact to produce unique configurations of disadvantage that cannot be understood by examining single categories in isolation. In our study, Sub-Saharan African migrants, particularly those in irregular situations, occupied the most precarious position. Crucially, These intersecting systems of exclusion have a disproportionate impact on migrant women, particularly with regard to sexual and reproductive health (SRH). Women face increased risks due to the intersection of biological vulnerability, economic dependence, racial marginalisation and restricted autonomy. This convergence restricts access to antenatal care, contraception, and safe delivery services, exposing them to preventable complications and reinforcing long-term health inequalities[38, 39, 45]. The accounts of women who delivered outside health facilities, of single mothers unable to access childcare, and of women experiencing gender-based violence without institutional recourse vividly illustrate how gender inequality is amplified by racial and legal precarity. Evidence from systematic reviews corroborates that lack of information, economic constraints, and language difficulties severely hinder women migrants' access to maternity care, yielding negative outcomes[45, 46].

At the household level, these vulnerabilities are further shaped by transnational and familial obligations, which are themselves deeply gendered. Financial responsibilities, including remittances and caregiving roles, create competing priorities between immediate survival and health-seeking [22, 38]. For single mothers, whose caregiving responsibilities are rarely shared with partners or relatives, this results in extreme domestic insecurity, social isolation, and a heightened risk of economic exploitation. These trade-offs illustrate that vulnerability extends beyond the individual body and is embedded within broader social and economic structures.

These intersectional disparities are particularly concerning as they continue to persist despite the formal availability of primary healthcare services in Tunisia. This underscores a critical paradox: legal or nominal entitlement does not necessarily translate into effective access when intersecting barriers of gender, race, and class are at play[19]. Addressing these inequities therefore requires moving beyond universalist health policies to adopt targeted, intersectional approaches that dismantle the specific structural and institutional barriers faced by the most marginalised groups.

4.4. Adaptive Strategies and Their Paradoxical Effects

In response to systemic exclusion, migrants often develop adaptive strategies, including self-medication, reliance on informal networks, and community-based solidarity mechanisms. Our observations are consistent with existing scoping evidence on health-seeking behaviours among undocumented migrants, which indicates that this population frequently bypasses formal healthcare systems and instead resorts to informal care or self-treatment when faced with administrative, financial, and discriminatory barriers [47, 48]. Although these strategies may provide short-term relief, they remain limited in scope and effectiveness. Moreover, they tend to delay engagement with formal healthcare services, which can lead to the progression of disease and poorer health outcomes over time, particularly in the case of severe or chronic conditions[48–50].

Without targeted intervention, such trajectories may ultimately increase long-term costs for the Tunisian health system through the treatment of advanced-stage conditions that could have been prevented. These findings suggest that coping strategies constitute adaptive responses to structural exclusion rather than expressions of individual preference. Although These strategies may temporarily compensate for limited access to services, they ultimately contribute to cumulative disadvantage by postponing diagnosis and treatment, worsening health outcomes, and reinforcing existing inequities. This illustrates how vulnerabilities become self-reinforcing over time.

4.5. Implications for Tunisia as a distinct migration context

The findings position Tunisia as a distinct migration context that combines characteristics of high-income destination countries and low-income humanitarian settings. Unlike many European countries, Tunisia lacks institutionalised mechanisms to ensure healthcare access regardless of legal status, but it does not operate within a fully humanitarian framework either. Instead, migrants navigate a hybrid system characterised by administrative ambiguity, fragmented responses, and substantial reliance on NGOs to fill service gaps. This intermediary position generates forms of vulnerability that are insufficiently captured by frameworks largely derived from either European or emergency contexts, underscoring the need for more context-sensitive approaches to migrant health equity.

From a public health perspective, these findings call for targeted and feasible interventions to promote equitable access to healthcare. Key priorities include standardising national entitlement procedures to reduce administrative arbitrariness; deploying trained intercultural health mediators from migrant communities within primary care; integrating mental health support through task-shifting approaches; implementing gender-responsive programmes, including mobile clinics and safe spaces tailored for migrant women; and strengthening health information systems with disaggregated data to drive evidence-based planning.

5. Limitations

Although our study provides in-depth, context-specific insights that contribute to the limited evidence base on migrant vulnerability in Tunisia and comparable middle-income settings, it has limitations. First, the sample may be biased towards migrants who are already in contact with community leaders or NGOs, potentially excluding the most marginalized individuals. Second, the cross-sectional nature of the data captures vulnerabilities at a specific point in time, whereas migrant vulnerability is fluid and changes with policy shifts. Finally, as a secondary analysis, this study relied on data originally collected for broader objectives. Although the richness of the dataset enabled in-depth exploration of vulnerability dimensions, some aspects of structural vulnerability may not have been explored exhaustively because the original interview guides were not specifically designed for this purpose.

Future research should prioritise longitudinal designs to track health outcomes over time, participatory approaches that centre migrant voices in research design, and policy evaluation studies to assess the impact of interventions on migrant access to care.

6. Conclusion

This study demonstrates that migrant vulnerability in Tunisia is produced through interacting forms of legal exclusion, socioeconomic precarity, and social marginalisation that generate cumulative disadvantages over time. Rather than being driven primarily by individual behaviours, healthcare inequities arise from structurally embedded barriers that shape health-seeking trajectories and access to care. Tunisia's hybrid position as a middle-income transit and destination country highlights the need for context-sensitive approaches to migrant health that extend beyond models developed in high-income or humanitarian settings. Addressing upstream legal, administrative, and financial barriers is essential to promote more equitable access to healthcare in Tunisia and similar settings.

Abbreviations

DoMV
Determinants of Migrant Vulnerability
FGD
Focus Group Discussion
GBV
Gender-Based Violence
HIC
High-Income Country
IOM
International Organization for Migration
LMIC
Low-and Middle-Income Country
MCL
Migrant Community Leader
MdM
Médecins du Monde
NGO
Non-Governmental Organisation
SD
Standard Deviation
SRH
Sexual and Reproductive Health
UNHCR
United Nations High Commissioner for Refugees

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the University of Sousse (CEFMS 157/2023) and the University of Barcelona (HCB/2022/0655). The participants were informed of the study's objectives and procedures, and written consent was obtained on the basis of voluntariness and the right to withdraw. Sessions were conducted in private spaces to ensure confidentiality. No personal information was recorded, and quotes were anonymized.

Consent for publication

Not applicable.

Availability of data and materials

The data from this study will not be shared due to the sensitive nature of the topics discussed and the risk of re-identification despite anonymisation.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

All authors contributed to the study's conceptualization, methodology, and validation. Data curation and investigation were performed by TM and AO. Formal analysis was conducted by TM, AO, and SE. Software development was carried out by TM. Project administration was managed by AK, MD, WM, AM, and AR. Supervision and visualization were overseen by DZ, AR, and SE. TM wrote the original draft of the manuscript. TM, DZ, AR, and SE critically reviewed and edited the manuscript. All authors have read and approved the final version of the manuscript.

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References

1. Requena-Méndez A, Wickramage K, Ito C, Assarag B, Hilali M, Deal A. Understanding health inequities-MENA Ana Requena. *Travel Med Infect Dis.* 2021;42. <https://doi.org/10.1016/J.TMAID.2021.102094>.
2. Schwerdtle P, Bowen K, McMichael C. The health impacts of climate-related migration. *BMC Med.* 2017. <https://doi.org/10.1186/s12916-017-0981-7>. 16.
3. Lebano A, Hamed S, Bradby H, Gil-Salmerón A, Durá-Ferrandis E, Garcés-Ferrer J, et al. Migrants' and refugees' health status and healthcare in Europe: A scoping literature review. *BMC Public Health.* 2020;20. <https://doi.org/10.1186/s12889-020-08749-8>.
4. Castañeda H, Holmes SM, Madrigal DS, Young MEDT, Beyeler N, Quesada J. Immigration as a social determinant of health. *Annu Rev Public Health.* 2015;36:375–92. <https://doi.org/10.1146/annurev-publhealth-032013-182419>.
5. Marchetti F, Preziosi J, Zambri F, Tambascia G, Di Nolfi A, Scardetta P, et al. Health needs and perception of health care quality among Asylum Seekers and Refugees in an Italian local health authority: A qualitative study. *Front Public Health.* 2023;11. <https://doi.org/10.3389/fpubh.2023.1125125>.
6. Ben Farhat J, Blanchet K, Juul Bjertrup P, Veizis A, Perrin C, Coulborn RM et al. Syrian refugees in Greece: Experience with violence, mental health status, and access to information during the journey and while in Greece. *BMC Med* 2018;16. <https://doi.org/10.1186/s12916-018-1028-4>
7. Davies A, Basten A, Frattini C, Migration. A social determinant of the health of Migrants. Geneva, Switzerland: International Organization for Migration. *Eurohealth.* 2009;16(1), 10–12.
8. Rousseau C, Frounfelker RL. Mental health needs and services for migrants: An overview for primary care providers. *J Travel Med.* 2019;26. <https://doi.org/10.1093/jtm/tay150>.
9. Quesada J, Hart LK, Bourgois P. Structural vulnerability and health: Latino migrant laborers in the United States. *Med Anthropology: Cross Cult Stud Health Illn.* 2011;30:339–62. <https://doi.org/10.1080/01459740.2011.576725>.

10. Carruth L, Martinez C, Smith L, Donato K, Piñones-Rivera C, Quesada J. Structural vulnerability: Migration and health in social context. *BMJ Glob Health* 2021;6. <https://doi.org/10.1136/bmjgh-2021-005109>
11. Chang CD. Social Determinants of Health and Health Disparities Among Immigrants and their Children. *Curr Probl Pediatr Adolesc Health Care*. 2019;49:23–30. <https://doi.org/10.1016/j.cppeds.2018.11.009>.
12. Pfarrwaller E, Suris JC. Determinants of health in recently arrived young migrants and refugees: a review of the literature. *IJPH*. 2012;9(3). <https://doi.org/10.2427/7529>.
13. Mutombo N, Mberu B, Beguy D, Muindi K, Mutua M, Faye CM et al. Health Vulnerabilities among Migrant/Mobile Populations in Urban Settings of East and Southern Africa: A Regional Synthesis of Evidence from Literature. 2016;30(3):3047–3029. <https://doi.org/10.11564/30-3-920>
14. Boubakri H, Mazzella S. La Tunisie entre transit et immigration: politiques migratoires et conditions d'accueil des migrants africains à Tunis. *Autrepart*. 2005;36(4):149–65. <https://doi.org/10.3917/autr.036.0149>.
15. Boubakri H. Migration et asile en Tunisie depuis 2011: vers de nouvelles figures migratoires ? *Rev Eur Migr Int*. 2016;31:17–39. <https://doi.org/10.4000/remi.7371>.
16. United Nations, United Nations Department of Economic and Social Affairs, Population Division. International Migrant Stock 2024: Key facts and figures. 2024. Available from: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesa_pd_2025_intlmigstock_2024_key_facts_and_figures_ad_unedited.pdf
17. CREAT4MED, Stiftung B et al. Council of Europe, Statista, JICA, Universities UK International al. ifa ECP Monitor Country Report. Ifa ECP Monitor Country Report. 2022. Available from: https://opus.bsz-bw.de/ifa/frontdoor/deliver/index/docId/152/file/ifa_ECP_Monitor_Tunisia_Report.pdf
18. Jaaouene M, Azouz A, Noomen N, Faizy K. Barriers and Perceptions: Health and Socioeconomic Challenges Faced by Sub-Saharan African women refugees and asylum seekers in Tunisia. *ResearchGate*. 2023. <https://doi.org/10.13140/RG.2.2.28711.11681>
19. Ouahchi A, Maatoug T, Seedat F, Deal A, Mansour W, Khelifi A, et al. Structural vulnerability and maternal health: Qualitative insights into the three delays faced by undocumented migrant women in Tunisia. *SSM-Qualitative Res Health*. 2026;9:100748. <https://doi.org/10.1016/j.ssmqr.2026.100748>.
20. Khenissi Mohamed Malek. Réalités et besoins des personnes migrantes et réfugiées dans le gouvernorat de Médenine depuis septembre 2018. *ReliefWeb*. 2019. Available from: <https://reliefweb.int/report/tunisia/tunisie-r-alit-s-et-besoins-des-personnes-migrantes-et-r-fugi-es-dans-le-gouvernorat>
21. Réseau académique sur la migration en Afrique du Nord. Politiques et Pratiques d'une Bonne Gouvernance Migratoire Fondées sur les Preuves en Afrique du Nord. 2021. Available from: [file:///C:/Users/User/Downloads/8_Regional_Study_Labour_migr_Algerie_Maroc_Tunisie_French\(2\).pdf](file:///C:/Users/User/Downloads/8_Regional_Study_Labour_migr_Algerie_Maroc_Tunisie_French(2).pdf)
22. Maatoug T, Ouahchi A, Seedat F, Deal A, Khelifi A, Douagi M, et al. Healthcare access among sub-Saharan migrants and refugees in Tunisia: an interpretative qualitative study. *BMC Med*. 2025;23:547. <https://doi.org/10.1186/s12916-025-04383-6>.
23. Evangelidou S, Seedat F, Deal A, Ouahchi A, Maatoug T, Elafef E, et al. Migrant Health Country Profile tool (MHCP-t) for transforming health data collection and surveillance in the Middle East and North African (MENA) region: tool development protocol with embedded process evaluation. *BMJ Open*. 2025;15. <https://doi.org/10.1136/bmjopen-2024-085455>.
24. Levesque JF, Harris MF, Russell G. Patient-centred access to health care: Conceptualising access at the interface of health systems and populations. *Int J Equity Health*. 2013;12. <https://doi.org/10.1186/1475-9276-12-18>.
25. IOM. The determinants of migrant vulnerability. Available from: https://www.iom.int/sites/g/files/tmzbd1486/files/our_work/DMM/MPA/1-part1-the-domv.pdf
26. NVivo. – Lumivero. Available from: <https://lumivero.com/product/nvivo/>
27. Boyatzis R. Transforming Qualitative Information: Thematic Analysis and Code Development. Sage; 1998.
28. Crabtree BF, Miller WL. Doing qualitative research. 2nd ed. Thousand Oaks, Calif: Sage; 1999.
29. Dias S, Fronteira I, Gama A, Gróz AP, Mardin D, Simões J, et al. Health Policies, Patterns and Barriers to Migrants' Access to Primary Health Care. *SpringerBriefs in Public Health*. Springer International Publishing; 2018. pp. 99–109. https://doi.org/10.1007/978-3-319-73630-3_9.
30. Carballo M, Divino JJ, Zeric D. Migration and health in the European union. *Trop Med Int Health*. 1998;3:936–44. <https://doi.org/10.1046/j.1365-3156.1998.00337.x>.
31. Winters M, Rechel B, De Jong L, Pavlova M. A systematic review on the use of healthcare services by undocumented migrants in Europe. *BMC Health Serv Res* 2018;18. <https://doi.org/10.1186/s12913-018-2838-y>
32. Akalu TY, Clements ACA, Wolde HF, Alene KA. Economic burden of multidrug-resistant tuberculosis on patients and households: a global systematic review and meta-analysis. *Sci Rep* 2023;13. <https://doi.org/10.1038/s41598-023-47094-9>
33. Jahn R, Perplies C, Rast E, Biddle L, Gold AW, Bozorgmehr K. Health system resilience in the context of forced migration: a qualitative framework analysis of Germany's crisis responses in 2015 and 2020. *Soc Sci Med*. 2025;381:118174. <https://doi.org/10.1016/j.socscimed.2025.118174>.
34. Wickramage K, Vearey J, Zwi AB, Robinson C, Knipper M. Migration and health: A global public health research priority. *BMC Public Health*. 2018;18. <https://doi.org/10.1186/s12889-018-5932-5>.
35. ThB:COOPtoFGHT. The fight against trafficking in human beings into the EU: Promoting legal cooperation and victims' protection. 2006. Available from: https://www.transcrime.it/wp-content/uploads/2016/01/THB_CoopToFight.pdf
36. De Siqueira Filha NT, Li J, Phillips-Howard PA, Quayyum Z, Kibuchi E, Mithu MIH, et al. The economics of healthcare access: a scoping review on the economic impact of healthcare access for vulnerable urban populations in low- and middle-income countries. *Int J Equity Health*. 2022;21. <https://doi.org/10.1186/s12939-022-01804-3>.

37. Gostin LO, Monahan JT, Kaldor J, DeBartolo M, Friedman EA, Gottschalk K, et al. The legal determinants of health: harnessing the power of law for global health and sustainable development. *Lancet*. 2019;393:1857–910. [https://doi.org/10.1016/S0140-6736\(19\)30233-8](https://doi.org/10.1016/S0140-6736(19)30233-8).
38. Sawadogo PM, Sia D, Onadja Y, Beogo I, Sangli G, Sawadogo N, et al. Barriers and facilitators of access to sexual and reproductive health services among migrant, internally displaced, asylum seeking and refugee women: A scoping review. *PLoS ONE*. 2023;18. <https://doi.org/10.1371/journal.pone.0291486>.
39. Bouaddi O, Zbiri S, Belrhiti Z. Interventions to improve migrants' access to sexual and reproductive health services: A scoping review. *BMJ Glob Health* 2023;8. <https://doi.org/10.1136/bmjgh-2023-011981>
40. Ismaïl S, Zaouali N. Health and health insurance in Tunisia: the challenges of the 2004 reform. *Eastern Mediterranean Health Journal*, vol. 28, World Health Organization; 2022, pp. 444–53. <https://doi.org/10.26719/emhj.22.040>
41. Jannesari S, Lotito C, Turrini G, Oram S, Barbui C. How does context influence the delivery of mental health interventions for asylum seekers and refugees in low- and middle-income countries? A qualitative systematic review. *Int J Ment Health Syst*. 2021;15. <https://doi.org/10.1186/s13033-021-00501-y>.
42. Li SSY, Liddell BJ, Nickerson A. The Relationship Between Post-Migration Stress and Psychological Disorders in Refugees and Asylum Seekers. *Curr Psychiatry Rep* 2016;18. <https://doi.org/10.1007/s11920-016-0723-0>
43. Kimberle Crenshaw. Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color on JSTOR. *Stanf Law Rev*. 1991;43:1241–99. <https://doi.org/https://doi.org/10.2307/1229039>.
44. Hankivsky O. Race and Gender: Intersectionality Theory. *The Wiley Blackwell Encyclopedia of Health, Illness, Behavior, and Society*. 2025. <https://doi.org/10.1002/9781118410868.wbehibs573.pub2>
45. Gagnon AJ, Merry L, Robinson C. A Systematic Review of Refugee Women's Reproductive Health. *Refuge*. 2002;21(1). <https://doi.org/10.25071/1920-7336.21279>.
46. Thomson G, Nowland R. A rapid evidence review of postnatal listening services for women following a traumatic or negative childbirth experience. *Midwifery* 2024;139. <https://doi.org/10.1016/j.midw.2024.104185>
47. Martínez Alguacil H, Gómez i Prat J, Pérez-Muto V, Tejada Panduro G, Ouaraab Essadek H, Garcia Circuns A, et al. Community-based strategies for tuberculosis control in migrant communities: how to integrate determinants of vulnerability into decision-making. *BMC Public Health*. 2025;25. <https://doi.org/10.1186/s12889-025-24237-3>.
48. Riza E, Kalkman S, Coritsidis A, Koubardas S, Vassiliu S, Lazarou D, et al. Community-based healthcare for migrants and refugees: A scoping literature review of best practices. *Healthc (Switzerland)*. 2020;8. <https://doi.org/10.3390/healthcare8020115>.
49. Ahmed MW, Sakib QN, Hasan MZ, Mehdi GG, Khan AM, Islam J. Implementation challenges for achieving universal health coverage through social health protection scheme: what can we learn from Bangladesh? *Int J Qual Stud Health Well-Being*. 2026;21. <https://doi.org/10.1080/17482631.2026.2623094>.
50. Abihiro GA, Mbera GB, De Allegri M. Gaps in universal health coverage in Malawi: A qualitative study in rural communities. *BMC Health Serv Res*. 2014;14. <https://doi.org/10.1186/1472-6963-14-234>.

Tables

Table 1
Sociodemographic characteristics of participants (N = 163)

Characteristic	n (%)
Migrants (n = 87)	
Gender	
Female	44 (40.9)
Male	43 (59.2)
Age group	
18–29	56 (64.4)
30–39	24 (27.6)
≥ 40	7 (8.0)
Region of origin	
West Africa	43 (94.4)
Central Africa	36 (41.4)
Middle East/North Africa	8 (9.2)
Educational level	
No education / Primary education	14 (16.1)
Secondary education	41 (47.1)
High education ¹	32 (36.8)
Occupational status	
Stable employment	9 (10.3)
Student	16 (18.4)
No employment	62 (71.3)
Migration status	
Refugee / Asylum seeker	8 (9.2)
Regular migrants ²	21 (24.1)
Irregular migrants ³	58 (66.7)
Migrant Community leader (n = 33)	
Gender	
Female	5 (15.2)
Male	28 (84.8)
Age group	
18–29	8 (24.2)
30–39	15 (45.5)
≥ 40	10 (30.3)
Region of origin	
West Africa	16 (48.5)
Central Africa	16 (48.5)
Middle East/North Africa	1 (3.0)
Educational level	
No education / Primary education	3 (9.1)
Secondary education	13 (39.4)
¹ : technical schools or university-level education, ² : Migrants with residence or work permit, ³ : Migrants with no residency permits or overstayed their visas	

Characteristic	n (%)
High education ¹	17 (51.5)
Occupational status	
Stable employment	12 (36.4)
Student	9 (27.3)
No employment	12 (36.4)
Migration status	
Refugee / Asylum seeker	3 (9.1)
Regular migrant status ²	16 (48.5)
Irregular migrant status ³	14 (42.4)
NGO staff (n = 43)	
Gender	
Female	15 (34.9)
Male	28 (65.1)
Age group	
18–29	14 (32.5)
30–39	18 (41.9)
≥ 40	11 (25.6)
Nationality	
Tunisian	36 (83.7)
Non-Tunisian	7 (16.3)
Educational level	
No education / Primary education / secondary education	3 (7.0)
High education ¹	38 (93.0)
Responsibility in the NGO	
Administrative agent	23 (53.5)
Field agent	20 (46.5)
¹ : technical schools or university-level education, ² : Migrants with residence or work permit, ³ : Migrants with no residency permits or overstayed their visas	

Figures

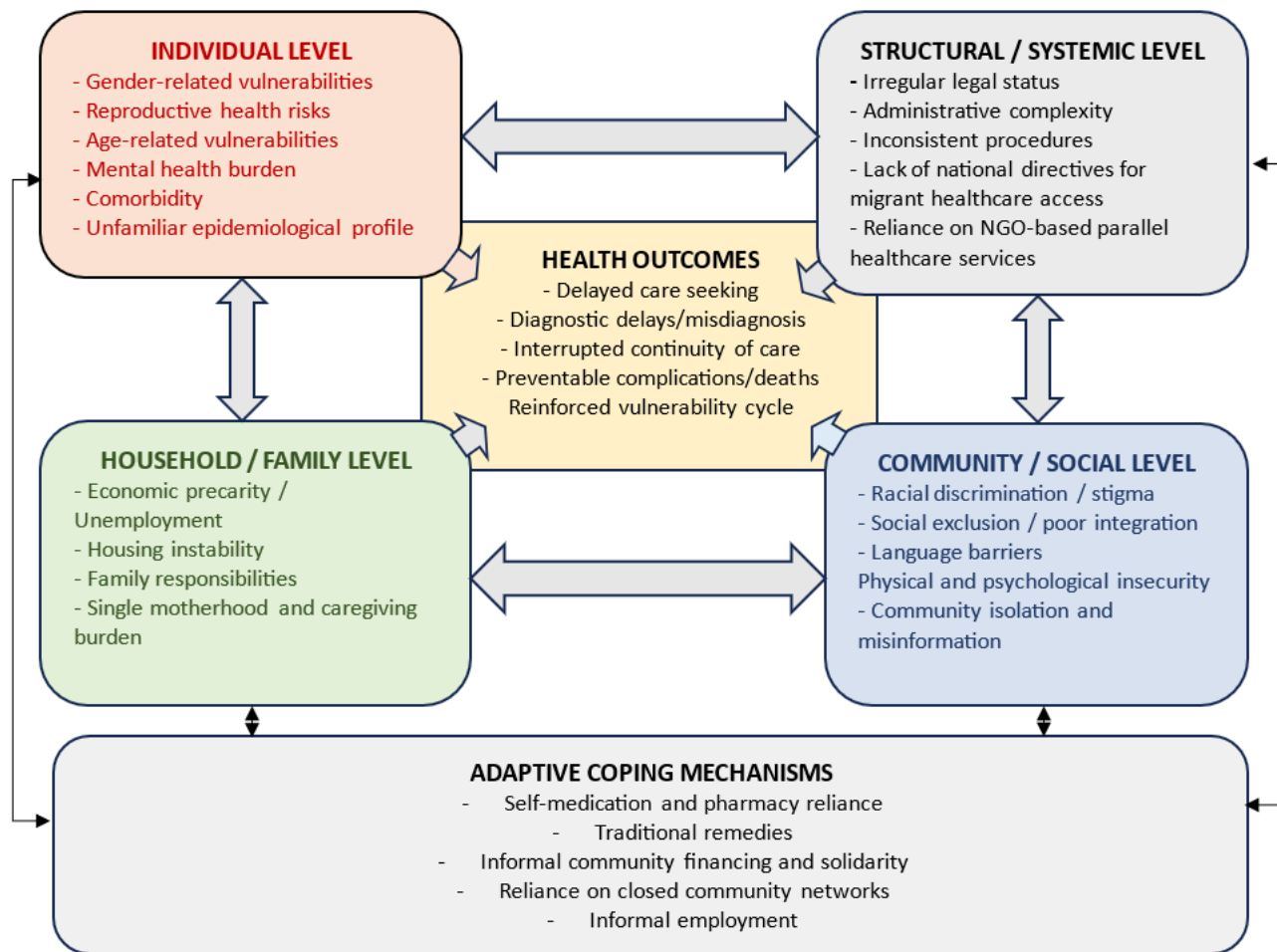


Figure 1

Adapted Determinants of Migrant Vulnerability (DoMV) Framework for Migrants' Health Vulnerability in Tunisia.

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