Metaphorical Expressions of Korean Medical Terms: From Non-Medical to Medical Domains

Mi Zhang & Ryang Jin Kim†
Kyung Hee University

ABSTRACT

This study aims to collect and systematically analyze metaphorical phenomena in which Korean medical concepts are expressed in non-medical domains. For example, expressions such as "disease is the shadow of life" evidence the borrowing of diverse non-medical concepts to construct cognitive frameworks. By analyzing such metaphorical expressions, this study identifies the social meanings embedded in medical language. To achieve this, metaphorical usages of medical concepts are collected from news articles and then categorized and examined according to their distinctive features. Unlike previous research that has primarily focused on metaphors such as [war] and [journey], this study discusses medical metaphors related to [transportation], [factory/mechanical], and [crime/disaster] and investigates the mapping structures and characteristics of each type. This categorization demonstrates that medical concepts show evidence of borrowing from various non-medical source domains to convey sociocultural meanings and perform diverse functions such as issuing warnings or emphasizing the severity of problems. The findings highlight the significance of this study by suggesting a point of convergence between metaphor research in Korean linguistics and research on medical communication.

Keywords: medical concepts, metaphorical expression, [transportation] metaphor, [factory/mechanical] metaphor, [crime/disaster] metaphor

1. Introduction

This study aims to systematically analyze metaphorical patterns through which Korean medical concepts are expressed non-medical domains. In doing so, it seeks to reveal how medical language functions not only as a means of transmitting

* This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2019S1A6A3A04058286).
** Through the review process of this paper, we were able to correct various issues thanks to the valuable comments of the three reviewers. We would like to take this opportunity to express our sincere gratitude to the reviewers for their insightful suggestions.
† Corresponding author: kimrj@khu.ac.kr

information but also as a discursive resource that shapes and disseminates social perceptions and attitudes.

Medical discourse deals with themes closely tied to human life, such as illness and treatment, and health and prevention. The language used in this process plays a crucial role beyond conveying information; it constructs and spreads social awareness. Since medical concepts are abstract and highly specialized, they are frequently expressed through metaphors borrowed from familiar non-medical concepts. Such metaphorical expressions not only help the public grasp medical phenomena more intuitively and concretely, but also influence social attitudes and value judgments regarding illness and health. For example, portraying cancer as a "war" or the treatment process as a "journey" frames medical situations as challenges to be overcome or as stepwise processes, thereby eliciting behavioral and emotional responses that extend beyond simple explanation.

Previous studies have primarily focused on "war metaphors" or "journey metaphors" to explore how illness acquires social meanings. These studies are significant in demonstrating how metaphors conceptualize diseases and shape public and patient perceptions. However, they remain limited in scope; they do not sufficiently account for how medical concepts as a whole, including treatment, symptoms, body organs, and prevention, are metaphorized through diverse non-medical domains, nor do they fully reveal the discursive functions of such expressions.

Thus, a broader analysis of diverse metaphor types is essential for clarifying the cognitive frameworks and sociocultural networks of meaning constructed by medical language. This endeavor expands beyond merely describing linguistic phenomena. It concretely demonstrates how medical concepts are socially understood and semantically framed, thereby contributing to the intersection of metaphor studies in Korean linguistics and research on medical communication.

To achieve this, the present study analyzes news articles published in the past five years, focusing on the metaphorical patterns through which Korean medical discourse represents medical concepts by borrowing from non-medical domains. While prior research has been largely confined to [war] and [journey] metaphors, this study highlights how metaphors from everyday domains, specifically [transportation], [factory/mechanical], and [crime/disaster], are employed in medical expressions. By doing so, it examines the direction of metaphorical transfer from "non-medical domains → medical concepts," shedding light on how Korean speakers conceptualize and understand medicine.

2. Theoretical Background and Previous Studies

This chapter first introduces the theoretical background of metaphors and subsequently reviews previous studies to establish the necessity of the present research.

Metaphors are not merely literary devices or rhetorical ornaments; they are understood as fundamental mechanisms shaping human thought and cognition. Lakoff & Johnson's (1980) Conceptual Metaphor Theory (CMT) defines metaphor as "understanding one conceptual domain (the target domain) in terms of another (the source domain)." That is, an abstract target domain is comprehended through a more concrete and tangible source domain. For example, the conceptual metaphor LOVE IS A JOURNEY allows us to understand the abstract concept of love by mapping it into the concrete experience of a journey, thereby establishing systematic correspondences (mappings) between the elements of the two domains (Lakoff & Johnson 1980).

From this perspective, disease functions not only as a medical phenomenon, but also as an important metaphorical resource for explaining social and cultural discourses. Diseases can be examined in two ways depending on their position in the metaphorical structure. First, when a disease occupies the target domain, as in DISEASE IS WAR, the abstract concept of illness is made comprehensible through the familiar notion of war. Second, when disease functions as the source domain, as in "Corruption is the cancer of society", medical concepts are appropriated to describe or criticize political, economic, or social phenomena. In the latter case, abstract social problems are framed in terms of the tangible and experiential aspects of illness, thereby evoking urgency and empathy in the audience.

The present study focuses primarily on the former type of cases where the disease is positioned as the target domain and abstract medical concepts are expressed through more concrete non-medical domains. This focus is particularly suited to analyzing how disease concepts are cognitively structured within social discourse and how medical language extends and conveys meaning metaphorically in everyday contexts.

Research linking metaphor theory to disease can be traced back to Sontag's Illness as Metaphor (1977). Sontag analyzed how specific illnesses, such as tuberculosis, cancer, and AIDS, have been metaphorically associated with notions of romance, fear, and social stigma. She demonstrated that diseases are restructured in terms of concepts such as war and disaster (DISEASE IS WAR/DISASTER), showing that

such metaphors are universally employed across cultures and ideologies. However, her analysis was limited because it focused primarily on literary texts.

Subsequent empirical studies extended this line of research. Gibbs & Franks (2002) analyzed interview data from women with cancer, demonstrating how metaphorical expressions emerged in patients' actual language use. McMullen & Conway (2002) examined psychotherapy transcripts from 21 patients with depression and identified four recurring metaphors: DEPRESSION IS DARKNESS, WEIGHT, CAPTOR, and DESCENT. Wallis & Nerlich (2005) analyzed the news coverage of the 2003 SARS outbreak, showing that British newspapers conceptualized SARS as a killer (SARS IS A KILLER) and represented its impact on people and national economies as the exertion of physical force. Semino et al. (2017) constructed a corpus of approximately 1.5 million words by collecting interviews and online posts from cancer patients, family caregivers, and healthcare professionals, and conducted a systematic analysis of metaphors related to cancer and the end of life in these discourses. Focusing on various conceptual metaphors such as violence metaphors and journey metaphors, they demonstrate that the effects of metaphor are not fixed, but vary according to the discourse context, the speaker group, and individual patterns of use. Spina et al. (2018) conducted an online survey with 168 Latina women to examine how collectivism and familism interact with the use of metaphor in health messages about Pap smear screening, experimentally investigating how risk perception and health behavioral intentions differ depending on whether health information is presented in a metaphorical or a literal (non-metaphorical) form. This suggests that metaphorical health messages aligned with culturally salient values can more effectively promote preventive health behaviors. Navarro i Ferrando (2021) qualitatively compares metaphor use in oncology research articles and press articles on HIV-related lymphoma within the framework of Conceptual Metaphor Theory. The study shows that research articles mainly use image, orientational, and ontological metaphors to categorize phenomena and stabilize specialized terminology, whereas press articles rely on more creative structural metaphors to help lay readers conceptualize disease and treatment and to produce rhetorical, argumentative effects. Thus, highlights how genre shapes both the distribution of metaphor types and their cognitive and communicative roles in medical discourse.

In Korea, studies on disease metaphors have been active since the 2000s. Jeon (2016) classified metaphors of disease in Middle and Modern Korean into seven types: DISEASE IS AN OBJECT, A HUMAN, A DEMON, A WAR, A VESSEL, A PLANT, and A FLUID. However, this study was limited by its reliance on "-병

(disease)" as a keyword, excluding other medical concepts. Jeon & Yu (2016) analyzed news coverage of MERS by KBS and JTBC, demonstrating that metaphors were constructed from domains such as war, waves, humans, living organisms, objects, and fire, and that each broadcaster framed government responsibility differently. Song (2018, 2019) collected discourses on cancer and depression from newspapers, the internet, medical discourse, and books, and classified metaphorical patterns into source domains such as journey, human, liquid-in-a-container, enemy, prison, and natural phenomena. Building on this line of research, Song (2023) analyzed interviews with 18 clinicians to examine how medical professionals use metaphors when explaining diseases to patients, showing that they frequently draw on familiar domains such as machines, tools, and everyday objects (e.g., body-machine, thyroid-stove, kidney-water purifier, blood vessels-pipes, flu vaccine-umbrella) and arguing that such metaphorical explanations are widely used in medical discourse and help patients better understand their bodies and treatment. Lim (2025) analyzed news articles to show how medical vocabulary, such as diagnosis, surgery, wound, immunity, and medicine, are used metaphorically, thereby approaching conceptual metaphors from a different perspective than traditional disease metaphor studies.

Since the COVID-19 outbreak, studies on epidemic metaphors have also flourished. Song (2020) showed that COVID-19 was conceptualized similarly to previous diseases (e.g., WAR and HUMAN), but also gave rise to novel expressions reflecting the particularities of the pandemic and related medical responses. Shon (2020) analyzed news headlines and argued that war metaphors fueled public fear, anxiety, and the spread of stigma and discrimination against specific groups. Kim (2021) examined newspaper editorials from the perspective of conceptual metaphors and framing, and discussed the effects of salience and concealment. Choi (2022) categorized COVID-19 metaphors into domains such as fire, war, burden, journey, natural disaster, prison, and friend and analyzed frequency shifts over time to track public perception. Kwon (2022) and Kim (2022) analyzed how war metaphors surrounding COVID-19 functioned in political discourse and influenced democracy, while Kim (2023) discussed German media's metaphors for COVID-19 in terms of war, fear, causality, and personification.

Overall, Korean studies of disease metaphors have tended to focus on specific illnesses, such as cancer, tuberculosis, SARS, MERS, and COVID-19. Systematic analyses of broader medical concepts, including diagnosis, treatment, prevention, symptoms, health, and comprehensive metaphorical expressions in everyday

language remain relatively limited. The present study seeks to address these gaps by extending the scope of analysis beyond disease metaphors to include medical practices, symptom expressions, and related vocabulary. By doing so, it aims to capture not only how disease concepts are metaphorically expanded and utilized across non-medical domains but also how medical discourse itself employs metaphors to perform diverse functions. This approach is expected to shed light on the wide-ranging symbolic characteristics of language associated with disease.

3. Metaphorical Structures of Medical Concepts

This chapter presents and analyzes the ways in which medical-related vocabulary collected from news articles is metaphorically employed through non-medical source domains categorized by metaphor type.

Data were collected using the detailed news search function of BIG KINDS (https://www.bigkinds.or.kr), which targets reports published from 2020 to 2025. All the major news outlets were included to ensure representativeness. The search category focused on "Society-Medical/Health" within the integrated classification, including reports on accidents and incidents. In discussing metaphor types, this study emphasizes that, in addition to the [war] and [journey] metaphors that have been the main focus of previous research, the metaphors of [transportation], [factory/mechanical], and [crime/disaster] are also closely connected to metaphorical expressions of "disease"[1]. This highlights that in contemporary Korean society, disease is not conceptualized from a single perspective but is shaped in complex ways through multiple metaphorical frameworks. In collecting examples, representative keywords corresponding to the source domains of each category were used to conduct targeted searches. For instance, in the case of [crime metaphors], keywords such as "murder," "assault," "gambling," "fraud," and "theft" were used to extract expressions combining medical-related vocabulary and assess their metaphorical usage.

1) In this study, the three categories of [transportation], [factory/mechanical], and [crime/disaster] were established by grouping together the conceptual frames that appeared with the highest frequency in a preliminary analysis of metaphorical disease expressions recorded in the 『표준국어대사전』 and examples of disease metaphors collected from domestic news corpora.

3.1. Medical-related [transportation] metaphor

Medical concepts are often metaphorically expressed through [transportation]-related notions. Transportation is a familiar domain in daily life, and its various elements can serve as source domains for metaphorical mapping. In this study, transportation-related medical metaphors are divided into two subtypes: signal-and road/driving-related.

(1) Signal-related

a. 그러나 이맘때 **주의해야 할 건강** 적신호가 있다.(However, there are **health warning** red signals to watch for at this time.) <연합뉴스, 2025.9.3.>

b. 무안군, 지역사회 건강조사 결과 **건강신호등** '파란불'(Muan County, community health survey results: "Green light" on **health signal**) <뉴스워커, 2025.03.19.>

c. **건강에 이상**이 생겼기 때문이고 아직 빨간불이 켜질 정도는 아니지만 **건강주의보**인 노란불이 들어왔다는 하나의 신호로 땀이 변화했다는 걸 말해준다.(It is because something has **gone wrong with the body's health,** and although the red light has not yet turned on, the change in sweating indicates a kind of signal that a yellow light — a **health advisory** — has come on.)<베리타스알파, 2025.05.12.>

d. 신체화 증상을 보이는 사람들은 불안·우울의 정서를 지닌 경우가 많지만 이를 억누르고 **신체**라는 경로를 통해 신호를 보내는 것이다.(People exhibiting somatic symptoms often carry anxiety or depression; however, these symptoms are suppressed and expressed via **the body** as a signaling pathway.)<브릿지경제, 2025.9.2.>

(2) Road/Driving-related

a. 막힌 **뇌 회로** 도로에 새 도로 뚫어 약 효과 극대화…(New road opened on blocked **brain circuit** roads to maximize drug effectiveness…)<조선일보, 2025.9.6>

b. 치료제 없던 난치성 '삼중음성유방암' **면역치료의** 길 열리다.(The path to **immunotherapy** has opened for triple-negative breast cancer, an intractable disease that previously had no available treatment.)<경향신문, 2025.9.10>

c. 교통사고 후유증, 한방치료로 **회복의** 길 찾다…(Post-traffic accident sequelae, **recovery** path found through Korean medicine…)<하이닥, 2025.9.4.>

d. 농협이 몰고 온 왕진버스, 어르신 **건강에** '브레이크 없음'…(NH-driven mobile medical bus, "no brakes" for seniors' **health**)<한국면세뉴스, 2025.8.20.>

e. '암투병' 이솔이 "약 먹는 게 일상…**완치의** 길 가는 중"…("Fighting cancer", Lee Sol: "Taking medicine is routine…on the path to **full recovery"**…)<뉴시스, 2025.07.11.>

In (1a-d), signal-related transportation metaphors are used to understand health status or disease through the lens of traffic signal systems. This type of metaphor draws on

familiar traffic signal imagery—green, yellow, and red lights—to represent different states of health. In traffic systems, a red light universally signifies a command to stop, a green light grants permission to proceed, and a yellow light serves as a warning to be cautious or to slow down. When applied to health contexts, these signals metaphorically map onto physical or mental conditions, helping people intuitively understand their bodily states. Expressions such as "health warning red signals," (주의해야 할 건강 적신호)/"gone wrong with the body's health‥red light"(건강 이상 빨간불), "green light on health signal" (건강신호등 파란불) and "a yellow light — a health advisory"(건강주의 노란불) visualize health states in stages (safe/green, caution/yellow, danger/red) based on the prototypical traffic light system. Furthermore, (1d) explains somatic symptoms as the body acting as a signaling pathway for emotions such as anxiety or depression, implying that emotional or health issues are communicated via the body and can be interpreted socially and personally.

Thus, signal-related transportation metaphors provide a powerful way to visualize health conditions and their progression through familiar stages, moving from green for safety to yellow for caution and finally to red for danger. This metaphorical framework not only represents varying degrees of health and risk but also emphasizes the importance of prevention and early warning, encouraging individuals to recognize and respond to potential health problems in a timely manner. Furthermore, it conceptualizes the body as a communication system in which internal physiological signals are interpreted much like external warning lights—intuitive, universally recognizable indicators that help people understand and monitor their health status. Through such imagery, complex medical information becomes more immediate and comprehensible to the general audience, bridging the gap between expert medical knowledge and everyday health awareness.

In (2), road and driving metaphors play an important role in conceptualizing medical processes by turning abstract or invisible phenomena into concrete and familiar experiences. They often simplify complex neurological or physiological mechanisms by mapping them onto everyday notions of movement and direction, as seen in expressions such as "뇌 회로 도로에 새 도로 뚫다" (New road opened on blocked brain circuit roads), "면역치료의 길 열리다"(The path to immunotherapy has opened) or "회복의 길 찾다" (recovery path found) or "완치의 길"(the path to full recovery)[2]. Such metaphors provide a sense of guidance, presenting treatment

2) "Road" is the most central element among transportation-related concepts, as all stages of traffic phenomena—such as the movement of vehicles and pedestrians, the operation of signal systems, and the presence or absence of congestion—presuppose the physical infrastructure of a road. Expressions

or recovery as a clear trajectory rather than an uncertain process. They also convey optimism by emphasizing active intervention and forward motion, thereby offering a sense of hope to patients and readers alike. Moreover, these metaphors enhance visualization by evoking vivid mental images—such as opening blocked pathways—that make otherwise complicated medical ideas more comprehensible. Moreover, transportation metaphors like (2d), the expression ""no brakes" for seniors health" presupposes the brake as a device that brings a vehicle to a halt, and then maps the image of a vehicle running continuously without brakes onto the health management of older adults. In doing so, it highlights that support and care continue without interruption and that medical services are provided without any break. In other words, this metaphor can be interpreted as conceptualizing, via the mediating domain of driving and road traffic, the continuity and smooth delivery of medical care, as well as the rapidity and high accessibility of the services. Overall, transportation metaphors render medical discourse more dynamic, relatable, and accessible to the general public.

In summary, transportation-based medical metaphors have the following characteristics:

1. Health and disease states are reconstructed as staged, visual warning systems.
2. Treatment and recovery processes are understood as continuous, goal-directed paths.
3. Factors such as obstacles, intractable diseases, and medical accessibility are linked to traffic flow for intuitive explanation.

These metaphors visually and experientially restructure medical phenomena and treatments, clearly conveying the processes and risks encountered by patients and healthcare providers.

3.2. [factory/mechanical] metaphor

A "factory" can be defined as a facility equipped to process raw materials into products, including elements such as material input, machinery and equipment,

like "the road opens," "finding a road," and "on the road" visually indicate where the patient is located and how well the future treatment route is secured, thereby restructuring the treatment process not as linear time but as "movement along a path." These uses are rooted in the [LIFE IS A JOURNEY] metaphor, yet can be understood as a specific metaphorical instantiation that highlights medical decision-making and stepwise progression through the concrete image schema of a "path." In this sense, the present study treats "road" not as an abstract image representing life's journey in general, but as a central node that, together with other transportation-related expressions such as traffic lights, lanes, congestion, and vehicles, constitutes a coherent "transportation" semantic field.

workers, energy supply, production processes, and outputs. These elements help to convey abstract or complex medical phenomena or physiological structures more comprehensively. Examples include:

(3) a. 특히 복부 깊숙이 자리한 **내장 지방**은 그 자체가 염증 물질을 뿜어내는 '염증 공장'이며 전신에 악영향을 미친다.(**Visceral fat** deep is an "inflammation factory," emitting inflammatory substances that affect the whole body.)<매일경제, 2025.09.02.>

b. **간**은 해독과 대사, 단백질 합성, 지방 소화까지 맡는 우리 몸의 '종합 화학 공장'이다.(**The liver** is the body's "comprehensive chemical factory," handling detoxification, metabolism, protein synthesis, and fat digestion.)<조선일보, 2025.09.11.>

c. **췌장**은 인슐린을 생산하는 기관으로, 췌장에 종양이 생기면 당뇨병이 갑작스럽게 발생하거나 기존 당뇨병이 악화될 수 있다고 설명했다.(**The pancreas**, as an insulin-producing organ, may trigger sudden diabetes or worsen existing diabetes when tumors develop.)<서울신문, 2025.09.15.>

(4) a. 쉬지 않고 뛰어야 하는 '신체의 엔진'…**심장** 튼튼하게 유지하려면 어떻게?(The "engine of the body" must keep running…how to maintain a strong **heart**?)<코메디닷컴, 2025.09.09.>

b. 자동차 엔진과 트렁크를 동시에 관리해야 하는 것처럼, 우리 몸의 '엔진'인 **근육**과 공간을 차지하고 있는 지방을 어떻게 다루냐에 따라 체력과 폐 기능이 달라질 수 있기 때문이다.(Just as one must manage a car's engine and trunk simultaneously, handling **muscles** (the body's "engine") and fat (space) affects stamina and lung function.)<매일경제, 2025.04.22.>

c. 세 끼를 평소처럼 먹어도 열량 소모 엔진이 원활하게 돌아가면서 섭취-소모 균형이 체지방 감량으로 기울게 된다.(Eating three meals a day keeps the calorie-burning engine running smoothly, shifting the intake -expenditure balance toward fat reduction.)<머니투데이, 2025.05.15. >

d. **심장**이라는 펌프를 활용할 수 없으니 폐혈류가 적고, 폐혈관도 잘 발달하지 못한다.(Without the **heart** pump, pulmonary blood flow is low, and the pulmonary vessels are underdeveloped.)<이데일리, 2025.08.22.>

e. 욕망을 담당하는 **대뇌변연계** 쪽 회로가 복잡게 꼬여 있으면 치료가 쉽지 않다.(**the limbic system** circuits that control desire make treatment difficult.)<매일경제, 2025.08.26.>

f. **뇌**는 인체에서 컴퓨터의 중앙처리장치(CPU)며 거의 모든 생명활동에 간여합니다.(**The brain** is the body's central processing unit (CPU), involved in almost all life activities.)<코메디닷컴, 2024.07.22.>

g. 혈액이 지나는 파이프인 **혈관**, 삶의 질을 위한 규칙적인 점검 필요해 혈액순환은 신체활동의 기본이다.(**Blood vessels**, the pipes through which blood flows, require regular checks; circulation is fundamental to physical activity.)<내일신문, 2011.04.09.>

h. **혈액**은 온돌 시스템의 온수, **혈관**은 배관이다.(**Blood** is like hot water in an ondol system; **blood vessels** are the plumbing.)<중앙일보, 2024.11.04.>

(5) a. **퇴행성 역류**라면 먼저 판막 수리를 시도한다.(For **degenerative regurgitation**, valve repair is attempted first.)<국민일보, 2025.06.03>

b. 심방세동은 심장의 펌프 기능을 떨어뜨려 **심부전**을 유발하거나 악화시키고, 심장질환으로 인한 사망률도 2배 이상 증가시킬 수 있다.(Atrial fibrillation weakens the heart's pump function, leading to **heart failure** or increased mortality.)<대한경제, 2025.09.09>

c. 나영이는 심장 근육에 문제가 생겨 펌프 기능을 잘할 수 없는 **심근병증과 뇌병변, 중증 폐형성증**을 앓고 있다.(Na-young suffers from **cardiomyopathy, brain lesions, and severe pulmonary hypoplasia**, impairing pump function.)<한겨레, 2025.09.02>

d. **심부전**은 심장의 펌프 기능이 점진적으로 약해지는 진행성 질환입니다.(**Heart failure** is a progressive disease characterized by gradually weakening pump function.)<중앙일보 헬스미디어, 2025.07.01.>

e. 이 병원장은 "**당뇨병** 증상으로 체중 감소가 나타나는 것은 우리 몸에서 증가된 혈당이 연료로 사용되지 못하고 소변으로 빠져나가면서 생기는 현상"이라며…(The hospital director explained that weight loss from **diabetes** occurs because elevated blood glucose cannot be used as fuel and is excreted in urine….)<비욘드포스트, 2023.02.27.>

f. 삼, 사십대 분들 중에서도 **치매**가 생긴 것은 아닌가, 하며…컴퓨터 하드디스크가 고장난 것이 아니라, 램의 메모리가 일시적으로 부족해진 것이거든요.(Even among people in their thirties and forties, some may wonder if they are developing **dementia**… but it's not from a broken hard disk but from a temporary RAM shortage.)<정신의학신문, 2018.12.02.>

In (3), all the examples employ the concept of a "factory" to explain medical phenomena, whereas (4) and (5) illustrate metaphors mediated by mechanical components within the factory. In (3a), "내장지방"(visceral fat) in the abdomen is metaphorically described as an "inflammation factory," serving as a continuous source of inflammatory substances. This emphasizes that fat is not merely a storage space but an active agent that generates pathological outputs. In (3b), the "간"(liver) is depicted as a "comprehensive chemical factory," linking its multifunctional physiological roles—detoxification, metabolism, protein synthesis, and fat digestion—to a multi-product, multifunctional production system. Similarly, in (3c), "췌장"(the pancreas), as an insulin-producing organ, corresponds to a factory producing a specific product; tumors or damage can disrupt production or lead to defective outputs.

In this conceptual framework, organs are portrayed as active producers rather than

mere passive storage spaces. This perspective emphasizes the dynamic and continuous processes of production and output that occur within the body, both in states of health and in disease. Viewing organs as factories allows for a more nuanced understanding of the human body's complexity and interdependence. It highlights how each organ contributes to maintaining systemic balance through constant functional activity, and how disruptions in one part of this production system can lead to cascading effects throughout the entire organism. Such a metaphor not only clarifies the physiological interconnections among organs but also provides an accessible way for the general public to conceptualize medical processes and pathologies.

The examples in (4a-i) use "mechanical components" as source domains for metaphors targeting bodily organs. In (4a) and (4d), "심장"(the heart) is metaphorically represented as an "engine" or "pump," highlighting its role as a core driver of life by continuously generating energy or maintaining fluid flow. In (4b), "근육"(muscles) are also described as an "engine" and fat as the "trunk," projecting bodily functions—energy production and storage—onto automotive mechanisms. Although both the heart and muscles are represented as engines, their metaphorical focus differs: muscles emphasize energy conversion and output, whereas the heart emphasizes the sustained provision of vital force. Interestingly, the same organ can be compared to different types of machines depending on the specific function being highlighted. For example, the heart can be conceptualized as an engine, emphasizing its role in generating and supplying energy to the body, or as a pump, underscoring its mechanical function of circulating blood throughout the vascular system. This flexibility in metaphorical mapping demonstrates how mechanical metaphors enable the conceptualization of complex biological processes in more concrete and function-oriented terms.

In (4c), although the target domain is not explicitly mentioned, the context indicates that metabolic processes are conceptualized as a "calorie-burning engine," which helps facilitate an intuitive understanding of energy balance and fat loss. Additionally, the brain is represented as a "central processing unit (CPU)" or "circuit(회로)" (4e, 4f), projecting its complex neural processing and control functions onto mechanical or computational systems. Blood vessels are metaphorically described as "pipes" or "plumbing," and blood is compared to "hot water" (4g, 4h), connecting circulatory flow to the operational logic of mechanical systems.

In (5a-h), disease and symptoms are frequently described using mechanical failure

metaphors. Treatment processes are likened to "수리하다(repairs)" (5a), implying that damaged organs can be restored as one would fix a broken component. Heart failure and cardiomyopathy are described as "pump malfunctions" (5b-d), reducing circulatory dysfunction to mechanical performance decline and linking disease progression to gradual wear and tear. Metabolic disorders are conceptualized as "inefficient fuel use" (5e), portraying conditions like diabetes as failures in energy supply systems. Cognitive impairments are likened to "computer component failures" (5f), connecting dementia and transient memory deficits to errors in electronic storage systems. These metaphors conceptualize illness as a form of breakdown, wear, or defective operation, thereby rendering disease processes more tangible and mechanical. By contrasting normal function with dysfunction, they illuminate how specific bodily systems deteriorate over time and how these failures disrupt the overall balance of the organism. Moreover, such metaphors provide intuitive models for understanding the symptoms, progression, and therapeutic goals associated with disease. Through this framework, medical conditions are presented as technical or operational problems that can be identified, analyzed, and fixed, which helps both medical professionals and the public to grasp complex physiological mechanisms in familiar, practical terms.

Overall, [factory/mechanical] metaphors converge on conceptualizing the human body and disease as industrial and mechanical systems. Factory metaphors frame organs such as the liver, pancreas, and visceral fat as production and processing units and understand physiological functions as the generation and output of products. Mechanical metaphors frame organs and diseases as engines, pumps, circuits, or faulty components, emphasizing the contrast between normal operation and dysfunction. Mechanical metaphors highlight the dichotomy between proper functioning and failure, depicting disease as a form of performance decline, defect, or wear. Thus, factory metaphors stress dynamic production processes, whereas mechanical metaphors emphasize static structures and functional maintenance. Together, these provide complementary and effective conceptual frameworks for visually understanding complex physiological processes.

Furthermore, the [factory/mechanical] metaphor is noteworthy in that it performs complex discursive functions in medical communication beyond serving as a simple figure of speech. First, by conceptualizing organs and bodily functions in terms of factory processes or the operation of mechanical parts, it restructures complex physiological and pathological mechanisms into familiar schemas such as production-circulation-elimination and normal operation-breakdown, thereby fulfilling a

cognitive and educational function that helps patients and laypersons understand disease mechanisms. Second, by mobilizing images of regular inspection and parts replacement, it frames health management as "maintenance for preserving function," and presents treatment and lifestyle modification as management activities required for system upkeep, thus legitimizing and encouraging health-related behaviors. Third, the fact that a malfunctioning machine can be repaired and restored to normal operation through repair and parts replacement allows the body to be imagined as a "repairable system," offering a relatively positive outlook on the possibility of recovery; at the same time, insofar as an irreparable machine becomes an object of disposal or replacement, this metaphor also carries the risk of representing illness as an irreversible breakdown or a "disposable body." In this respect, the [factory/mechanical] metaphor can be regarded as a discursive device that directly shapes how patients' future prospects are configured.

3.3. Medical-related [crime/disaster] metaphor

Unlike the relatively socially positive images associated with [transportation] and [factory] metaphors, [crime and disaster] concepts carry strong negative connotations, reflecting a critical attitude toward diseases. Our investigation found that certain diseases appear particularly frequently among the medical concepts metaphorically expressed through crime and disaster domains; relevant examples are presented in (6) and (7).

(6) a. 김부겸 국무총리는 6일 중앙재난안전대책본부 회의 모두발언에서 "급한 불은 껐지만, **감염 확산**의 불길은 여전하다"(Prime Minister Kim Boo-kyum stated in the plenary session of the Central Disaster and Safety Countermeasures Headquarters on the 6th, "The urgent fire has been put out, but the flames of **infection** continue.") <세계일보, 2021.08.06.>

b. 이재명 경기도지사가 **코로나19 확산**과 관련해 "방파제를 쌓아 파도를 막아왔지만, 방파제로 감당할 수 없는 쓰나미가 몰려올 것으로 예상된다"(Gyeonggi Province Governor Lee Jae-myung, in reference to **the spread of COVID-19**, stated, "We have built breakwaters to block the waves, but a tsunami that a breakwater cannot withstand is expected to come.)<MBC, 2020.04.04.>

c. 이태원 클럽 확진자 100명 넘어 "방심하면 폭발적 **감염**"(As the number of confirmed cases linked to the Itaewon clubs surpassed 100, reports warned that "if we let our guard down, there could be an explosive spread of **infection**.)<KBS, 2020.05.12.>

(7) a. 전문가들은 "**샤가스병**은 미국에서 '잊힌 열대병'이자 '침묵의 살인자'"라며 "CDC와 WHO가 공식적으로 토착 질환으로 인정해야 한다"라고 강조했다.(Experts emphasized, "**Chagas disease** is a 'forgotten tropical disease' and a 'silent killer' in the U.S.," urging the CDC and WHO to officially recognize it as an endemic disease.)<머니투데이,2025.9.8.>

b. **고혈압**은 특별한 증상이 없더라도 심장과 혈관에 큰 부담을 주는 질환으로, 흔히 '조용한 살인자'라고 불린다.(**Hypertension**, even without specific symptoms, imposes a significant burden on the heart and blood vessels and is often called a 'silent killer.')<위키트리, 2025.9.8.>

c. 그래서 **통풍**은 '침묵의 살인자'로 불리기도 한다.(**Gout** is sometimes referred to as a 'silent killer.')<문화일보, 2025.9.10.>

d. '소리 없는 시력 도둑'이라고 불리는 **녹내장**은 황반변성, 당뇨망막병증과 함께 주요 실명원인 중 하나다.(**Glaucoma**, known as a 'soundless thief of vision,' is one of the leading causes of blindness along with macular degeneration and diabetic retinopathy.)<이데일, 2025.08.30.>

e. 더욱이 **골다공증**은 자각 증상 없이 진행되다가 작은 외상에도 쉽게 골절을 일으켜 뒤늦게 발견되는 경우가 많다. 그래서 흔히 '조용한 뼈 도둑'이라 불리기도 한다.(**Osteoporosis** often progresses without noticeable symptoms and can lead to fractures from minor trauma, earning it the nickname 'silent bone thief.')<인천일보, 2025.08.25.>

f. 천안시 서북구 **치매**안심센터는 오는 11일까지 창작 그림책 '할머니 할아버지를 빼앗아간 기억도둑을 잡아라'를 활용한 아동인형극을 선보인다.(Cheonan City Seobuk-gu **Dementia** Safety Center presents a children's puppet show using the creative picture book "Catch the Memory Thief Who Took Grandma and Grandpa" until the 11th.)<쿠키뉴스, 2025.07.07.>

As shown in (6) and (7), crime- and disaster-related metaphors conceptualize diseases and health problems as external threats or criminal acts. Such metaphors are primarily used to emphasize disease risk and potential harm while also highlighting the difficulty of detection.

First, (6) presents disaster-related metaphors in COVID-19 discourse. In (6a), "감염 확산의 불길" the spread of infectious diseases is compared to "flames(불길)" highlighting its similarity to a disaster scenario and visually conveying urgency and danger. In (6b), existing quarantine measures are compared to a "breakwater(방파제)," while the impending spread of infection is described as a "tsunami that a breakwater cannot withstand(방파제로 감당할 수 없는 쓰나미)," thereby representing the spread of infectious disease through the image of a large-scale natural disaster (a tsunami(쓰나미)). This emphasizes that, despite previous quarantine efforts, a

much larger crisis may arrive and reinforces the perception of disease as a destructive risk that exceeds the range of controllability. The expression "폭발적 감염(explosive spread of infection)" in (6c) compares the spread of infection to an explosion, succinctly conveying the potential risk that the current increase in confirmed cases may lead to an exponential surge in the future. By portraying the infectious situation not as a gradual increase but as a crisis phase that may "explode" at any moment, such expressions function as disaster metaphors that warn against complacency and legitimize the need for strong quarantine measures.

Meanwhile, In (7a-f), illustrate examples of crime-related metaphors. Both "killer (살인자)" and "thief(도독)" convey disease risk through analogies with criminal acts, though they differ in emphasis and communicative effect. The "killer" metaphors ("silent killer" and "quiet killer") highlight the covert yet lethal nature of diseases. Typical examples include Chagas disease(샤가스병), hypertension(고혈압), and gout (통풍), where symptoms are difficult to detect, but failure to identify them may cause severe harm or threaten life, emphasizing the potential risks. These metaphors intuitively communicate the swift and decisive threat of the disease and underscore the urgency and need for prevention.

In contrast, "thief" metaphors ("soundless thief of vision(소리 없는 시력 도둑)," "silent bone thief(조용한 뼈 도둑)," and "memory thief(기억도둑)") emphasize the gradual and covert damage caused by disease. In conditions such as glaucoma(녹내장), osteoporosis(골다공증), and dementia(치매), these metaphors highlight the insidious nature of disease progression and reinforce the importance of early detection and prevention. Furthermore, the "memory thief" metaphor in (6g) personifies dementia for a child audience, representing the disease as an antagonistic external force to be overcome, thereby enhancing disease awareness at educational and cognitive levels.

Overall, crime- and disaster-related metaphors reduce diseases to external threats or criminal acts, emphasizing their risk, potential harm, difficulty of recognition, and the necessity of preventive action. These metaphors functionally promote vigilance and awareness when conveying medical information, helping audiences understand diseases not only as physiological phenomena but also as social and psychological risks.

A visual representation of the conceptual mapping between source domains and target domains for medical metaphors discussed so far is presented in Table 1.

Table 1. Mappings of [transportation], [factory/mechanical], and [crime/disaster] metaphors in medical concepts

Metaphor type	Source domain	Target domain
Transportation	Traffic lights: green, yellow, red signaling pathway	Health states/risk levels (safe-caution-danger) health problems
Transportation	Road/path, blocked road (no brakes) driving	Treatment process/recovery path continuity of care
Transportation	Road network, vehicle movement, congestion/free flow	Physiological flows (e.g., neural circuits, blood flow) as blocked or opened
Factory	Factory, production line, output	Organs (e.g., liver, pancreas, visceral fat) as sites of production/secretion
Mechanical	Components engine, pump, circuit, CPU, pipes/plumbing, fuel system	Organs as part of the body's operation, Heart, muscles, brain, blood vessels, blood, metabolism
Mechanical	Breakdown, wear, repair, performance decline	Disease, organ damage, treatment (repair), functional impairment
Disaster	Flames, tsunami, explosion	Spread of infectious disease (e.g., COVID-19), large-scale health crises
Crime	(silent/quiet) killer	Lethal but often hidden diseases (e.g., hypertension, gout, Chagas disease)
Crime	Thief (thief of vision, bone thief, memory thief)	Slowly and covertly damaging diseases (e.g., glaucoma, osteoporosis, dementia)

4. Conclusion

This study analyzed metaphorical expressions of medical concepts in Korean news articles by classifying them into three major types: [transportation], [factory/mechanical], and [crime/disaster] metaphors. Each type reflects a distinct conceptual framework through which health and disease are represented in public discourse. The [transportation] metaphor maps health conditions and medical processes onto traffic systems, presenting risks, prevention, and treatment as dynamic and visually comprehensible pathways. The [factory/mechanical] metaphor conceptualizes the human body as an operational system, emphasizing the contrast between normal function and disease-induced breakdowns. In contrast, the [crime/disaster] metaphor frames disease as an external threat or hidden danger, underscoring its destructive

potential and the need for vigilance.

The analysis reveals that medical metaphors serve as cognitive, social, and communicative tools in representing illness. Cognitively, they simplify complex medical ideas by linking them to familiar experiences—for example, portraying treatment as a journey that guides individuals toward recovery. Socially, they influence public attitudes and behavior by shaping perceptions of health risks and encouraging preventive action; Crime and Disaster metaphors, in particular, evoke a sense of urgency and responsibility. Communicatively, each metaphor type highlights different facets of illness—[transportation] metaphors emphasize process and flow, [factory/mechanical] metaphors stress structure and function, and [crime/disaster] metaphors draw attention to risk and harm—thus reflecting diverse ways in which disease is conceptualized and conveyed.

Overall, these metaphorical frameworks provide a multidimensional understanding of disease, integrating physiological, social, and emotional dimensions. By translating abstract medical concepts into familiar experiential domains, medical metaphors bridge the gap between specialized medical knowledge and everyday understanding, thereby contributing to clearer and more human-centered communication about health and illness.

Thus, metaphorical expressions of medical concepts function not merely as linguistic devices but also as cognitive tools that render complex medical phenomena comprehensible and important mediators in shaping social discourse. By presenting medical phenomena in concrete and intuitive ways, metaphors not only enhance public understanding, but also reflect societal attitudes and emotional responses toward disease and health. Therefore, future research should systematically analyze the metaphorical patterns that emerge in the explanation of medical concepts and comprehensively examine the mapping structures between diverse source and target domains. Furthermore, by incorporating instances in which medical concepts themselves serve as source domains to describe non-medical phenomena, future studies could explore the bidirectional nature of medical metaphors in greater depth.

References

Choi, Y. -J. (2022). How the pain of covid-19 is understood utilizing conceptual metaphors: Comparison of conceptual metaphors observed in newspaper articles at different stages of the Covid-19 pandemic. *English 21, 35*(1), 217-237.

Gibbs, R. W., & Franks, H. (2002). Embodied metaphor in women's narratives about their experiences with cancer. *Health Communication, 14*(2), 139-165.

i Ferrando, I. N. (2021). Metaphorical concepts and their cognitive functions in medical discourse: Research papers vs. press articles. *ESP Today: Journal of English for Specific Purposes at Tertiary Level, 9*(1), 130-151.

Jeon, H. -Y. (2016). Korean people's perspective on diseases: A conceptual metaphor analysis. *The Korean Cultural Studies, 30*(0), 133-161.

Jeon, H. -Y., & Yu, H. -J. (2016). Metaphors for MERS and their ideological meaning: Focusing on the news reports from Korean media KBS and JTBC. *Korean Linguistics, 72*, 199-225.

Kim, C. -K. (2021). A study on the highlighting and hiding caused by metaphorical expressions in newspaper editorials on the COVID19 pandemic. *Journal of Language Sciences, 28*(2), 49-78.

Kim, J. -Y. (2022). War metaphors and COVID-19. *Culture and Convergence, 44*(6), 903-923.

Kim, M. -Y. (2023). Neologismendiskurs und sprachkulturelles Phänomen: Konzeptuelle Metaphern im Zusammenhang mit COVID-19-Neologismen. *Koreanische Zeitschrift Fur Deutschunterricht, 87*(0), 57-78.

Kwon, Y.-Jin. (2022). The conceptualization of Covid-19 metaphor in political discourse. *Korean Journal of English Language and Linguistics, 22*, 871-890.

Lakoff, G. & Johnson, M. (1980). *Metaphors we live by Chicago*. The University of Chicago Press.

Lim, S. -J. (2025). Illness-related lexical items and their metaphors in news articles. *The Journal of Linguistics Science, 113*, 129-148.

McMullen, L. M., & Conway, J. B. (2002). Conventional metaphors for depression. In S. R. Fussell (Ed.), *The verbal communication of emotions: Interdisciplinary perspectives* (pp. 167-181). Mahwah, NJ: Lawrence Erlbaum.

Semino, E., Demjén, Z., Demmen, J., Koller, V., Payne, S., Hardie, A., & Rayson, P. (2017). *Metaphor, cancer and the end of life: A corpus-based study*. Routledge.

Shon, D. -L. (2020). A study on the expressions used in COVID-19 news : Focusing on fear and hate reflected in headlines. *Journal of Ehwa Korean Language and Literature, 51*, 137-166.

Song, H. -J. (2018). Figurative expressions in cancer discourse. *Journal of Korean Culture (JKC), 43*(0), 7-36.

Song, H. -J. (2019). A study of figurative language in medical discourse with a focus on depression metaphors. *Discourse and Cognition, 26*(2), 27-48.

Song, H. -J. (2020). Conceptualizing pandemic diseases: The case of COVID-19. *Journal of East-West Humanities, 14*, 103-129.

Song, H. -J. (2023). Metaphor use in disease discourse: Focus on healthcare professionals. *Eo Mun Lon chong (Korean Language and Literature), 97*(0), 31-62.

Sontag, S. (1977/1989; trans. Lee, J.). *Illness as metaphor*. Ihue, 2002.

Spina, M., Bauman, A., Stramer, R., & Hall, K. D. (2018). Enhancing health message framing with metaphor: An experimental test of metaphorical versus literal messages on health intentions. *Frontiers in Communication, 3*, 58.

Wallis, P., & Nerlich, B. (2005). Disease metaphors in new epidemics: The UK media framing of the 2003 SARS epidemic. *Social Science & Medicine, 60*(11), 2629-2639.

Mi Zhang (First Author)
Ph.D. Canditate
Department of Korean Language and Literature
Kyung Hee University
26, Kyunghee-daero, Dongdaemun-gu, Seoul 02453, Korea
E-mail: zhangmi1218@naver.com

Ryang Jin Kim (Corresponding Author)
Professor, Department of Korean Language and Literature
Research Fellow, The HK+ Institute for Integrated Medical Humanities
Kyung Hee University
26, Kyunghee-daero, Dongdaemun-gu, Seoul 02453, Korea
E-mail: kimrj@khu.ac.kr

Received: October 31, 2025
Revised version received: December 2, 2025
Accepted: December 8, 2025