A Corpus-based Analysis of Covid-19 Vaccine Metaphor in Egyptian Newspapers

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ABSTRACT

This paper aims to investigate how the Covid-19 vaccine is metaphorically represented in English-language Egyptian online newspaper articles. It studies the main metaphors with their entailments, and seeks to uncover the hidden ideologies behind them. A web-derived newspaper corpus of +209000 tokens, collected from articles published between January 2020 and December 2023, has been compiled to provide a comprehensive view of a metaphorical representation of COVID-19 vaccine in Al-Ahram Weekly and Egyptian Gazette newspaper articles. To provide both quantitative and qualitative findings, Charteris-Black's (2004) three-step corpus-based approach of critical metaphor analysis (CMA) has been employed as a framework to identify, interpret, and explain the metaphors in the corpus. The quantitative results show that the race metaphor permeated the analyzed corpus. Qualitative findings suggest that the race metaphor presents the COVID-19 vaccine as a competitive effort, a race against the virus, an unfair playing field, and a symbol of global solidarity and inequality. Moreover, it reflects the high stakes, complex challenges, and competing priorities in vaccine rollout. Research shows that the metaphors of war and journey are also used primarily to persuade people. The war metaphor creates a sense of urgency and places the vaccine at the center of a high-stakes battle. The journey metaphor, in contrast, has a more optimistic and collaborative tone. It acknowledges the task's difficulty but frames it as a united effort with an achievable destination in sight. The widespread use of these persuasive metaphors in the vaccine corpus demonstrates the importance of the vaccine, mobilizes public support, and fosters a sense of hope and resolve in the face of the pandemic.

1. Introduction

The Covid-19 pandemic, an unprecedented event in contemporary history, is having an immeasurable impact on our lives. The pandemic has resulted in social and community uneasiness people strive to remain strong psychologically. Quarantine measures lead to separation from loved ones, helpless feelings, loss of freedom, and insecurity about disease

advancement. The pandemic has also resulted in economic costs that exceeded nine trillion dollars worldwide (Murphy et al., 2021). Therefore, extensive immunization using vaccination was recognized as a global solution to gain herd immunity and prevent and contain transmission of the Coronavirus. Various vaccine candidates were developed, including the Pfizer/BioNtech Comirnaty vaccine, the AstraZeneca/Covishield vaccine, the Janssen/Ad26.COV-2.S vaccine, the US Moderna COVID-19 vaccine, the Sinopharm COVID-19 vaccine, and the Sinovac-CoronaVac, to prepare for the massive vaccination distribution campaigns to rapidly control the virus (Elhadi et al., 2021). Despite the relatively rich provision of vaccine options, low vaccine acceptance rates are reported in Europe, North America, and Africa (Sallam, 2021).

The development and distribution of vaccines have become central to public discourse, with metaphors serving as pervasive and potent linguistic tools in conveying messages, shaping public perceptions, and guiding decision-making processes (Semino, 2021, p. 56). The use of metaphors and, in general, of figurative language is no occasional phenomenon in health crises. According to (Ervas et al., 2016, p. 92), "*Metaphor is indeed a useful device to grasp an unknown (target) concept by using a known (source) concept, thus naming and explaining a phenomenon, i.e, illness, which otherwise would remain unintelligible, obscure*".

During times of disaster and crisis, like the coronavirus pandemic, people often depend on the media to get more information and to assess the risk and protective factors of the situation. The role of the media in framing and directing the public during a critical period is significant. Journalists make use of several linguistic techniques to persuade and convince the audience to believe, trust, or even make the abstract message more easily understood and agreed with. One of these linguistic techniques is the conceptual metaphor. To gain a deeper understanding of the metaphor construction surrounding COVID-19 vaccines, this paper adopts Charteris-Black's (2004) three-step corpus-based critical metaphor analysis (CMA) approach. The (CMA) approach provides a robust and systematic framework for analyzing metaphorical language in a corpus.

Throughout history, metaphors have been commonly used to describe illnesses and diseases; for example, in the 1970s, the United States president, Richard Nixon, announced the statement "war on cancer" (Petsko, 2001). Moreover, Larson et al. (2005) investigated the use of 'militaristic metaphors' in the UK media between 1999 and 2003; in three main areas of science-society discourses, including 'Foot-and-Mouth disease' known as FMD, as well as the 'Severe Acute Respiratory Syndrome' known as SARS. They focused on terms related to the word 'war' such as invade, battle, combat, strategy, attacking, defense, victims, and casualties. While some researchers, such as Charteris-Black (2021, p. 35), argue that WAR metaphors can encourage unity and coordination, others, like Semino (2021), contend that such metaphors may generate counterproductive effects, especially when framing COVID-19 patients as "fighters." Additionally, Benzi and Novarese (2022) express concerns that governments may exploit WAR metaphors to foster obedience and potentially jeopardize democratic principles. Taylor and Kidgell's (2021) work has highlighted the prevalence and implications of metaphorical language in the news media's coverage of COVID-19. However, the metaphorical framing of COVID-19 vaccines and its potential influence on vaccination intentions, as observed by Scherer et al. (2015), remains an area requiring further investigation.

2. Metaphor Theory

Etymologically, the term "metaphor" derives from the Greek "métaphora," where "meta-" signifies "among," "with," "between," or "after," and "-phora" means "to bear" or "to carry," collectively denoting the "carrying over of meaning from one word to another" (Oxford

Dictionary, 2020). Metaphor is thus a figurative use of language based on an implicit notion of resemblance, viewed as a process of mapping one domain of knowledge onto another, with one domain serving as the source and the other as the target. For instance, *John and his wife have called a truce*; the source domain is that of *war*, with its attendant notions of conflict, strategy, and resolution. This source domain is mapped onto the target domain of *a marital dispute*, allowing the complex and abstract concepts of interpersonal conflict and reconciliation to be understood in more concrete, familiar terms derived from the war schema.

Lakoff and Johnson (1980, p. 62) have argued that metaphor is deeply embedded in one's thoughts, actions, and everyday language, constituting the foundation of the conceptual system and influencing communication. Their "Conceptual Metaphor Theory" posits metaphor as a "conceptual or mental" operation reflected in language, enabling speakers to structure and make sense of abstract knowledge and experience in concrete, experiential ways. In the example, *Dr. Jones is a butcher*, the source dimension of a *butcher*; and its associated cruelty are mapped onto the target dimension of *the doctor*, leading to negative attitudes toward the medical profession (Lakoff & Johnson, 1980, p. 54). This conceptual metaphor theory provides a basis for critical metaphor theory, which explores how metaphor can be strategically used to construct particular worldviews, power relations, and ideological representations.

2.1 Critical Metaphor Analysis

Charteris-Black (2004, p. 42) introduced critical metaphor analysis (CMA) as a modification of Lakoff and Johnson's conceptual metaphor theory (CMT). CMA is an analytical approach that combines critical discourse analysis, corpus linguistics, and conceptual semantics to analyze metaphors in context and reveal the hidden intentions of the language used. CMT is a three-step approach to metaphor analysis: metaphor identification, metaphor interpretation, and metaphor interpretation.

In the identification phase, metaphors related to COVID-19 vaccines are systematically presented in the Egyptian newspaper corpus. This process involves searching for linguistic expressions that convey metaphorical understandings of vaccines, such as *vaccine as a race*, *vaccine as a war*, or *vaccine as a journey*.

Then, metaphor interpretation requires creating a connection between the metaphors in the corpus and the factors controlling them (cognitive or pragmatic factors) to describe the social representations they reflect by looking at linguistic evidences in the corpus that aid the general claim of the conceptual metaphor. This interpretation stage helps uncover the underlying conceptual mappings and sheds light on how COVID-19 vaccination is metaphorically presented in Egyptian newspapers.

Finally, the explanation stage focuses on providing insight into the metaphorical function and persuasive impact of the identified metaphors. This stage delves into the reasons for the use of specialized metaphors in discourse. It examines how metaphor is used to convey messages, shape public opinion, and generate opinions about COVID-19 vaccines. For example, the metaphor "vaccine as a shield" is identified in the corpus. The metaphor suggests that vaccines act as a protective barrier against disease. It implies that getting vaccinated provides individuals with a defense mechanism to ward off potential harm from infection. The conceptual mapping beyond this metaphor is that vaccines are associated with protection, such as how the shield provides physical protection. The metaphor emphasizes the preventive nature of vaccines and encourages individuals to get vaccinated by highlighting the safety benefits.

2.2 Corpus Linguistics and Metaphor

Corpus linguistics is defined as an "empirical approach that investigates naturally occurring language, i.e. performance-based data" (Flowerdew, 2012, p. 320). Investigating language through a corpus allows quantitative and qualitative analytical studies to be conducted. In other words, quantitative methods are used to calculate the frequency and how common a word is in the corpus, while qualitative methods are concerned with meanings; qualitative methods are used to state differences between literal and metaphorical meanings of certain words from the context (Charteris-Black, 2004, p. 23). Corpus linguistic studies and their unique software tools were used originally to study lexis and grammar; then the studies grew to explore different linguistic features that can be "systematically analyzed in large quantities of naturally occurring data" such as metaphors (Semino, 2017, p. 463). Moreover, corpus data helps the researchers of the (conceptual metaphor) and rises the number of their studies (McEnery & Hardie, 2011, p. 187); due to the authenticity and the accessibility to a variety of different corpora (Dash & Arulmozi, 2018, p. 2).

There are many corpus tools that can be used to search and analyze metaphors. These tools include the concordance, the collocation, and the clusters tools. According to Semino (2017, p. 465), the concordance tool presents the results of searched words in lines are great tools used by researchers who often look for metaphorical structures by focusing on "the metaphorical construction of a particular topic or experience". The collocation tool lists the collocations of any word in the corpus; then, a researcher can look for metaphorical evidence among the list (Semino, 2017). Lastly, the cluster tool "allows only strings which recur in identical form to be extracted" (Flowerdew, 2012, p. 58).

3. Methodology

The study adopts a quantitative and a qualitative method for displaying the metaphorical representations of COVID-19 vaccine in Egyptian journalism. The used software is the AntConc (version 3.5.8) software due to its convenience. It is used to search the corpora for the chosen lemmas and to show them in a concordance, which is a "list of all the contexts in which a word occurs in a particular text." (Lindquist, 2018, p.5). The corpus was compiled from electronic archives of Al-Ahram Weekly and Egyptian Gazette, selected based on their wide readership and English-language focus, ensuring relevance to COVID-19 vaccine discourse. Articles were chosen if they contained terms like 'vaccine,' 'COVID-19,' or related lemmas identified through pilot readings. All lemmas were searched with a wildcard asterisk at the end. This allowed for different realizations of the lemmas to be found when searching the corpus in AntConc, thus generating a more extensive result. For example, searching for the lemma *fight** will yield search hits such as *fight, fights,* and *fighting.* This enabled more relevant tokens of metaphors to be found. For each search, the occurrences were examined manually to remove those that were not metaphors relating to Covid-19. Metaphors were identified by comparing literal versus figurative uses in context, categorized into 'race,' 'war,' and 'journey' based on conceptual mappings, and analyzed systematically. Charteris-Black's (2004) three-step corpus-based approach of critical metaphor analysis (CMA) has been employed as a framework of analysis to identify (locate metaphorical expressions), interpret(link to cognitive/pragmatic factors), and explain(assess persuasive impact) the metaphor in the corpus under investigation.

4. Data Collection

The data include articles collected from the electronic archives of Al-Ahram Weekly and the Egyptian Gazette. These two Egyptian English-language newspapers have a wide influence

and readership in Egypt. The corpus is limited to the COVID-19 vaccine. It covers articles published from January 2020 to December 2023 and is limited to 209000 tokens. After reading sample texts to identify the potential metaphorical lemmas and forms, which indicate that the metaphors vaccine as a race, vaccine as a war and vaccine as a journey are incorporated within the data. These terms were looked for in the corpus, and if they occurred, they will be examined manually through the concordance tool to determine whether they are used literally or metaphorically. After that, a frequency list of all the lemmas and their occurrences in the corpus was extracted. The next stage is to use the mappings and metaphorical entailments to interpret the metaphor. In other words, to create a set of mappings between the elements of the conceptual domains of the metaphor, the source domain (race, shield, journey) and the target domain (COVID-19 vaccine).

The findings of this study have the potential to inform public health communication strategies, increase media literacy, and contribute to nuanced understandings of the role of metaphors in the public perception and decision-making process regarding the COVID-19 vaccine. By identifying and analyzing the use of metaphorical language in Egyptian newspapers, this study aims to contribute to the growing body of knowledge in metaphorical theory and media discourse analysis.

5.   Results and Discussion

In this section, the results of metaphor usage in the corpus are presented. The analysis focused on three primary metaphorical framings: vaccine is a *race*, Vaccine is a *war*, and vaccine is a *journey*. The researcher quantifies the occurrences of specific linguistic lemmas that instantiate each of these conceptual metaphors, and then provides in-depth discussions of how these metaphors are strategically employed to represent and communicate about vaccines, highlighting the unique perspectives and implications of each metaphorical framing. This multifaceted analysis offers valuable insights into the role of metaphor in shaping the cognitive, linguistic, and sociocultural dimensions of how the vaccine is understood and portrayed in the discourse.

5.1 Vaccine as a Race

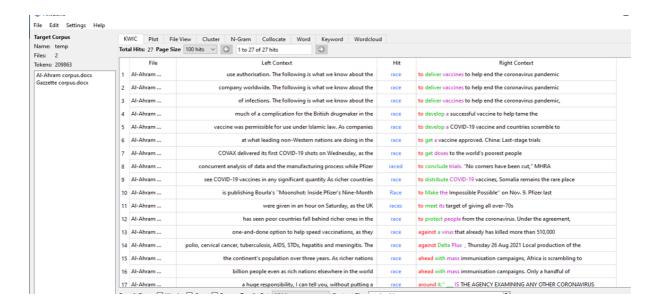The most frequent conceptualization undoubtedly sees the search for a vaccine in terms of race as shown below:

Figure1. Concordance of the Lemma Race in the Corpus

A list of common *race*-related lemmas are identified and their usage are checked (metaphorical or literal). Then, their frequencies are calculated as illustrated below:

Table 1. Race Metaphors Denoting the Covid-19 Vaccine: Their Frequencies and Concordances

Word	Frequency	Word	Frequency	Word	Frequency
Race	28	Front line	4	Track	35
marathon	2	forward	17	lag	15
Competition	8	Back seat	1	quickly	33
Speed	45	Back to square one	2	slowly	4
Challenges	40	queue	8	rapidly	9
victory	3	win	11	fast	27
triumph	3	jump	18	unprecedented	7
milestone	11	leap	1	ongoing	20
pace	19	accelerate	18	urgent	45
Record	47	Ramp up			

As shown above, the lemma *race* appears 27 times**.** Table 1 indicates that race-related lemmas (e.g., 'speed' at 45 occurrences, 'challenges' at 40) outnumber war (e.g., 'fight' at 76) and journey (e.g., 'milestone' at 15) metaphors, suggesting its dominance (see Figure 2 for distribution chart) The notion of a race inherently implies competition among participants. In the case of vaccines, it suggests that various pharmaceutical companies, research institutions, and countries are vying to be the first to discover effective vaccines or to provide a sufficient supply for their populations. There is an implicit sense of urgency and the desire to surpass others in terms of speed and effectiveness. Compared to war metaphors, which emphasize conflict (Semino, 2021), and journey metaphors, which focus on progress (Kövecses, 2010), the race metaphor uniquely highlights competition and inequity, as seen in examples like 'vaccine inequality' [16]. Egyptian media's socio-cultural emphasis on global standing may amplify this framing, unlike Western media's focus on militaristic terms (Larson et al., 2005). Consider the following examples:

[1] Where are we in the COVID-19 **vaccine race**?

[2] Other **frontrunners** in the vaccine race include U.S. biotech firm Moderna, which has said its shot was 94% successful in late-stage clinical trials, and AstraZeneca, which said last month its COVID-19 shot was 70% effective in pivotal trials and could be up to 90% effective....

[3] EU's **marathon** COVID vaccination drive off to uneven start.

[4] After year-long **sprint**, Covid-19 vaccines finally at hand

[5] Here again, AstraZeneca may have an edge on the **competition**.

[6] This week, Britain started deploying the Pfizer-BioNTech vaccine, **jumping ahead** of the rest of the world in the race.

The provided examples highlight the implications of competition and endurance in the context of the vaccine race metaphor. The metaphorical expression *vaccine race* in example [1] implies a competitive environment where multiple entities or countries are striving to develop and distribute vaccines. The question reflects the desire to determine the current progress or position in this competitive race. In example [2], the term *frontrunners* suggests the existence of leading competitors in the vaccine race. It implies that different entities or companies are competing to be at the forefront of vaccine development and distribution (Richards, 2020). Those frontrunners are frequently cited for their developments, breakthroughs, or perceived superiority in terms of efficacy, safety, or manufacturing capacity. The term *marathon* in the context of the EU's COVID vaccination rollout implies that the race to vaccinate the population is a lengthy and difficult procedure that necessitates stamina and endurance. The phrase *uneven start* indicates that progress in the vaccination drive has been inconsistent or variable, reflecting the competitive nature of the race. Framing the vaccine as *a sprint* after *a year-long* effort emphasizes the impressive speed and endurance required to develop the vaccines rapidly, despite the extended duration of the overall process (Pitts, 2020). The fact that the vaccines are *finally at hand* suggests the developers have overcome obstacles and hurdles along the way, just as runners in a race must push through challenges to reach the end. The phrase *edge on the competition* in example [5] indicates that AstraZeneca may have a competitive advantage over other entities involved in the vaccine race. This implies that different competitors are vying for superiority or advantage in terms of vaccine efficacy, distribution, or other factors. The phrase *jumping ahead of the rest of the world in the race* suggests that Britain has made significant progress or achieved a competitive advantage by starting the deployment of the Pfizer-BioNTech vaccine earlier than other countries. It implies a sense of urgency and the desire to be at the forefront or ahead of competitors in the race.

The concept of a race implies a focus **on speed and Efficiency**. It argues that vaccine development, testing, and approval processes should be accelerated. Governments and health groups are racing against the clock to outrun the spread of the COVID-19 virus to slow the virus's spread and mitigate its impact on public health and the economy. Consider the following examples highlighting the implications of achievement, speed, and efficiency in the context as follows:

[7] Prime Minister Boris Johnson hailed the **fantastic achievement** for British science...

[8] Britain's medicines regulator approved the **vaccine in record time**...

[9] Israel is being hailed at home for **breaking the record for the rapid inoculation program**

[10] Health experts are anxiously awaiting a one-and-done option to help speed

vaccinations. Chilean President Sebastian Pinera said the t**riumph" of speedy vaccine development** was offset by political failure" that produced inequitable distribution.

[11] Prime Minister Boris Johnson touted the medicine authority's approval as a global win.

[12] But this **extraordinary achievement** will not mean that a waiting world will be vaccinated right away.

[13] Prime Minister Boris Johnson touted the medicine authority's approval as a global win.

[14] But this extraordinary achievement will not mean that a waiting world will be vaccinated right away.

The description of a vaccine as a *fantastic achievement*, an *extraordinary achievement*, a *global win*, a *triumph,* and a *victory* emphasizes the positive outcomes, notable accomplishments, and the urgency to achieve success in terms of vaccine development, distribution, and administration. The term *extraordinary* highlights the exceptional nature of the accomplishment in vaccine development. However, it also acknowledges that the achievement does not guarantee immediate vaccination for the entire world, indicating the challenges and limitations that exist within the vaccine race. The phrase *global win* emphasizes the significance of regulatory approval as a collective achievement on a global scale. It entails that the vaccine approval process is a success for both the country and the global community, highlighting the competitive aspect of the vaccine race. Words like *victory* and *triumph* are used to highlight the successful development and deployment of vaccinations as an important achievement in the pandemic response. It focuses on the positive outcomes of scientific attempts to overcome the virus's obstacles. The metaphor frequently utilizes verbs like *win, outpace, speed up, ramp up,* and *surpass*, alongside nouns like *competition* and *challenge*. This creates a sense of urgency and rivalry in achieving vaccination goals.

The competitive nature of the vaccine race is also highlighted by phrases like *in record time* and *breaking the record for the rapid inoculation program*, which signify the speed and efficiency with which the vaccine was approved by the medicines regulator (Spinney, 2020). They suggest that the approval process was completed quickly, indicating the urgency to develop and distribute vaccines. The phrase *help speed vaccinations* suggests the importance of efficiency and speed in the vaccination process. The term *one-and-done option* describes a vaccine that only needs to be administered once. This would speed up the immunization procedure and increase efficiency, reflecting the rivalry in the vaccine race. The examples, however, recognize the difficulties and complications involved in ensuring widespread immunization and the necessity of continued efforts to maintain equal distribution. The mention of *political failure* and *inequitable distribution* suggests that the achievement in vaccine development is marred by issues related to equal vaccine distribution. This highlights the challenges and complexities within the vaccine race.

The race metaphor also **suggests an uneven playing field**. In the context of vaccines, it raises concerns about equity and access. It highlights the disparities between countries or regions with greater resources and those with limited access to vaccines, potentially exacerbating existing inequalities in healthcare.

[16] The move comes amid growing criticism of vaccine inequality that has **seen poor countries fall behind richer ones in the race** to protect people from the coronavirus.

[17] It was launched in June 2020 to try to prevent poorer countries being pushed to **the back of the queue for COVID-19 vaccines...**

[18] "The deep inequity that left Africa **at the back of the queue** for vaccines must not be repeated with life-saving treatments."

[19] What is already clear is that Albania, Bosnia, Kosovo, Montenegro, North Macedonia, and Serbia **will lag far behind the EU's 27 nations and Britain in vaccinating their people**.

[20] The U.N. chief also blamed geopolitical divides for hampering a global vaccination plan to fight the COVID-19 pandemic, saying **action ``has taken a back seat to vaccine hoarding and vaccine nationalism**."

Metaphors like *queue, front in line, lag*, and *backseat* draw attention to the disparities in vaccine distribution, where some countries may have privileged access or prioritize certain groups over other. Such words help frame countries as competitors. They often pit "wealthier nations" against "poorer countries" in the "race" for vaccines. The term *vaccine inequality* refers to the gap in vaccination access, which has caused poorer countries to fall behind wealthy ones in terms of population protection. This emphasizes the inequitable distribution of vaccines and implies that the vaccine race has created an unequal playing field. These metaphors highlight the importance of addressing inequities in vaccine access and ensuring equitable distribution practices. Positive adjectives like *swift, rapid,* and *record-breaking* are used to describe countries like Israel and Britain, linking speed in vaccination with success. Severe connotations of *lagging behind* are associated with countries such as Albania and Niger, who are *falling behind* and making *slow progress*, emphasizing the severe repercussions of not competing in the *race*. This means that certain countries are losing out in the vaccine race.

 The race metaphor emphasizes competitiveness**, but it also acknowledges the value of collaboration and cooperation**. Governments, corporations, and scientists frequently collaborate to exchange knowledge, resources, and expertise, thereby accelerating progress. International alliances, such as COVAX, seek to provide fair and equitable access to vaccines worldwide. His collaborative approach acknowledges that addressing a global health crisis necessitates a coordinated effort. Charteris-Black's theory recognizes that metaphors can shape social and interpersonal relationships. In this case, the metaphor acknowledges the importance of collaboration among governments, organizations, and scientists to share knowledge and resources. It underscores the need for collective action to address a global health crisis.

[21] Bringing an end to the COVID-19 pandemic is the most pressing challenge of our time – **and nobody wins the race until everyone wins**.

[22] China will continue to provide anti-epidemic materials according to Myanmar's needs. We shall give a batch of coronavirus for free and will continue discussions on vaccine cooperation," the ministry said in a statement.

[23] The U.N. chief also blamed geopolitical divides for **hampering a global vaccination plan**...

[24] World leaders, aid groups, and global health organizations a**re growing increasingly vocal about the slow pace of global vaccinations**...

The phrase *no one wins the race until everyone wins* emphasizes the importance of collective victory and cooperation in the fight against the virus. Moreover, it emphasizes that defeating the virus requires a concerted effort, with the ultimate goal of ensuring that all vaccines are available and protected. This highlights the need for cooperation and global cooperation in the vaccine race. The description of a program initiated to address the problem of poor countries suggests a way to address potential gaps in vaccination coverage. It indicates efforts to ensure fair access to vaccines and prevent certain countries from being left behind, reflecting the spirit

of cooperation within the vaccine race metaphor. The mention of geopolitical divides hampering a global vaccination plan highlights the negative impact of political divisions on the cooperative efforts to vaccinate populations worldwide. It suggests that cooperation is essential to overcome such divides and effectively implement global vaccination strategies. The fact that world leaders, aid groups, and global health organizations have been *vocal* about the global vaccination decline demonstrates collective concern and calls for greater cooperation. It shows recognition that collaboration is essential to speed up vaccination and achieve broad coverage. Overall, the corpus analysis of this example reveals the implications of collaboration in the metaphor of vaccines. Examples emphasize the importance of collective efforts, global cooperation, and addressing inequalities to ensure equal access to vaccines for all. They emphasize the importance of collaboration, international cooperation and coalitions to effectively combat the epidemic and win the vaccination race.

The race metaphor quickly **conveys a sense of forward movement and the pursuit of a finish line or triumph (**Gaebler & Nussenzweig 2020).Terms like *kick-off, kick-starting*, and *leaping forward,* as in the following examples reinforce the idea of the vaccine rollout as a dynamic, fast-paced endeavor where the pace of progress is of utmost importance.

[25] The EU vaccination drive **kicked off** at the weekend"

[26] We expect that there will be a modest volume of Pfizer through COVAX because of its expense, but it's **kick-starting the process**," said Brennan.

[27] Ahmed Azzab, public health coordinator at the Egyptian Initiative for Personal Rights, believes "Egypt can make a major **leap forward** by utilising the local production of Sinovac and it's the cumulative experience of the health system in vaccination programs"

[28] This week, Britain started deploying the Pfizer-BioNTech vaccine, **jumping ahead** of the rest of the world in the race.

These words convey a sense of urgency, acceleration, and the need to maintain a steady pace to *get ahead* or *jump ahead* of the competition (i.e., the virus). This race-related language suggests a determined, energetic start to the *race*, signaling a strong drive to gain an early advantage and maintain the lead. Moreover, describing the vaccine rollout as a *leap* or a *jump* implies a sense of acceleration, surpassing, and gaining a competitive edge over other countries in the global vaccination effort. It suggests the potential for significant progress and advancement. It implies that by taking proactive measures or implementing innovative approaches, countries can make substantial strides in their vaccination efforts. The *kick-starting* phrase focuses on progress. It suggests a sense of momentum, energy, and the initiation of action. Like other statements, it emphasizes the importance of moving forward with vaccination efforts and suggests a race-like mentality. This metaphor highlights the importance of staying ahead and continuously improving vaccination strategies.

These linguistic choices contribute to the overall metaphorical framing of the vaccine distribution as a race, where the language of progress and advancement is used to convey the urgency, dynamism, and potential for transformative breakthroughs. By employing these evocative words, the examples effectively capture the narrative of the vaccine race, where the successful vaccination of populations is framed as a matter of progress, leaps, and outpacing the competition. This language reinforces the sense of a high-stakes global competition, where the ultimate goal is to be the winner in the race to vaccinate. Countries are seeking higher vaccination coverage and speedier deployment than their rivals. By using these metaphors, the author hopes to make the concept of vaccination more accessible, engaging, and

understandable for readers. They elicit a variety of emotions and create vivid images to portray the urgency, competition, progress, and obstacles connected with the vaccination deployment.

5.2 Vaccine as a War

The basic elements of the source domain WAR, such as the *enemy, battlefield, soldiers, weapons, victory,* and *defeat* are mapped into their corresponding elements of the target domain (COVID-19 vaccine). Some conceptualizations are the pandemic is a war, the virus is an enemy, the vaccine is a weapon or a shield, and the distribution of a vaccine is a battle (Khaliq et al., 2021). Waging a war against diseases (e.g., COVID-19) would arouse individuals' emotions, fear in particular (Flusberg et al., 2018, p. 8). Therefore, using war or militaristic terms to refer to COVID-19 would grasp the Egyptian community's attention and make them feel the seriousness of the situation. Wagener (2019) assumes that schematic awareness of war evokes a wartime spirit, and triggers cultural and emotional resonance among the public, as all people know what war is. The metaphorical use of words like *Covishield, weapon, defense, protection, safeguard*, and *battle* in describing COVID-19 vaccines "allow for glorious activity" (Steuter & Wills,2008, p.11). The coronavirus becomes the invisible enemy, an invading force spreading through populations. Our bodies become the battlefields where the virus and the immune system clash. The shield or the weapon, in this context, transforms from personal protection to a weapon wielded on this battlefield. It strengthens our defenses, like a shield parrying blows from the enemy. Table 2 exhibits the frequency of war metaphor and their concordances.

Table 2. War Metaphors Denoting the Covid-19 Vaccine: Their Frequencies and Concordances

Word	Frequency	Word	Frequency	Word	Frequency
defense	11	defend	13	shield	10
weapon	6	fight	76	protect	230
safeguard	5	Security	3	responsibility	10
cooperation	63	commitment	37	overcome	18
combat	20	immunity	52	battle	20

The metaphorical framing of the COVID-19 vaccine as a "war" or a "battle" against the virus carries several significant conceptual entailments. War metaphors evoke the **idea of a struggle against a formidable adversary**. In the context of vaccines, the adversary or the enemy is the virus itself. This metaphorical framing emphasizes the ongoing battle against the virus and the need for a proactive approach to combat it. Consider the following examples:

[29] **There seems to be a battle for imposing will and flexing political muscle** in these hard times when nations should be cooperating to the fullest extent possible in maintaining a balanced flow of vaccines to all countries needing them, especially countries hard hit by the virus.

[30] But current President Evariste Ndayishimiye last year described the virus as Burundi's "**worst enemy.**"

[31]`Whether it is for regional peace and stability or the virus that is a common human **adversary**, we will continue to uphold common ideas and work together,' Tsai wrote in Chinese.

[32]South Africa - the worst-hit country on the continent in terms of reported coronavirus infections and deaths - **has struggled to kick start a mass vaccination program**.

[33]"This is a critical step forward in strengthening sustainable access **to a vaccine in the fight against this tragic, worldwide pandemic**," said Biovac chief executive officer

Morena Makhoana.

As shown above, describing the virus as the worst enemy personifies the virus as a deadly, dangerous, and ruthless adversary that is actively seeking to "kill" or "eliminate" human populations. This frames the pandemic as a high-stakes, life-or-death struggle where the stakes are the survival of individuals and communities. Vaccines as weapons play a key role in this war. It emphasizes the urgency, resilience, and concerted efforts needed to beat the epidemic (Gibbs, 2008). The words struggle and adversary refer to problems, hardships, and the need to overcome significant challenges and obstacles. The metaphor of war also refers to a collective effort against a virus. Vaccine distribution is not an easy or simple process but requires effort, determination, and mobilization of resources to achieve success. As in war, language can be used to promote an "us versus them" mentality, calling on the masses to "join the fight" and support vaccination efforts as a patriotic duty. This mobilizes resources, encourages adherence to public health policies, and provides an understanding of shared sacrifice and determination in the face of a common "enemy."

Metaphors such as weapons and protection position vaccines as powerful tools for protecting individuals and communities. This highlights the idea that vaccination is necessary to bolster immunity to the virus and reduce its impact. It also reflects a sense of power, suggesting that individuals have the means to protect themselves through vaccination. Consider the following examples.

[34] Modi's government signed purchase pacts on Monday with vaccine maker Serum Institute of India (SII), based in the western city of Pune, for its **Covishield shot**, more than a week after approving the vaccine developed by Britain's AstraZeneca and Oxford University

[35] "Given the current dire state of affairs, the only light at the end of the tunnel has been the news of vaccines that can **shield people from the onslaught of the virus**."

[36]``Vaccines are one of **our greatest weapons** against the virus," acting FDA Commissioner Janet Woodcock said.

[37] Britain became the first country to authorize AstraZeneca's inexpensive, easy-to-handle COVID-19 vaccine Wednesday, **gaining another weapon against the virus**.

[38] "Vaccines are Africa's `**best defense**' against severe illness, death and overwhelmed health systems, Matshidiso Moeti, the WHO Africa director said."

[39] "It's the **protection of vaccines** that will ultimately allow us to reclaim our lives and get the economy moving again."

[40] But a vaccine focused directly on the Omicron variant would also **guard against** breakthrough infections of a strain that has proven highly contagious, but has also resulted in many mild or asymptomatic cases."

[41] "Pfizer and BioNTech last month said a two-dose regimen of the vaccine was 95% **effective in preventing illness** from COVID-19.

The term *Covishield* combines the prefix *Covi-*derived from COVID-19, and the suffix *-shield* associated with protection. This combination of defense-related terms describes the protective effect of vaccines. That means that the fight against viruses is like war, and vaccination is an important defensive weapon in that fight. The shield metaphor is often used to build trust in vaccines and encourage people to accept vaccines. It emphasizes that vaccines are a reliable and effective means of protection. Vaccination is portrayed as a means of erecting a

metaphorical "wall" that can shield entire communities, regions, or even nations from the spread of the virus. In addition, the metaphor implies that a full vaccine is needed to reclaim lives, resume daily activities, and revive the economy. Describing vaccines as the *greatest weapons* entails that they are powerful tools used in the war against the virus. It suggests that the vaccine is a key weapon in this war, to be strategically wielded against the viral foe. The use of the word *against* evokes a hostility to weapons, which corresponds to a warlike nature. This metaphor emphasizes the idea that vaccines are a proactive approach to confronting and conquering the virus's threat. The metaphorical use of *defense* and *protection* emphasizes the importance of vaccines in keeping individuals and societies safe from the virus. It means that vaccines serve as a defensive measure, avoiding or reducing the severity of illness and serving as a protective barrier against the virus.

Another entailment can be drawn by **recalling the element of the set of mapping (soldiers) and (healthcare workers)**. In the literal sense of war, soldiers or warriors who protect their countries are considered heroes. Correspondingly, and due to the nature of the enemy (i.e. COVID-19), which is a rapidly spreading virus that causes health issues, the healthcare workers (i.e. doctors and nurses) are seen as heroes in this pandemic; as they are in face-to-face engagement with the virus. The word *frontline* is found in the corpus 16 times, and in all the occurrences, they were connected to healthcare workers; as the form is collocated with workers and doctors. War metaphors provide healthcare workers with the strength to cope with this situation" (Bhaumik et al., 2020); thus, calling healthcare workers soldiers or warriors on the frontline by authorities and the public would encourage them to be courageous and work even harder to be adapted to the current and urgent situation. War metaphors highlight the sacrifices, risks, and heroic efforts of healthcare workers in combating the virus and caring for the sick, casting them as the "defenders" of public health. This metaphor allows Egyptian government agencies and even individuals to show gratitude and appreciate the sacrifices made by the healthcare workers of putting their lives at risk by facing the virus and infected patients.

> [42] "PNG needs a fighting chance to beat this, and frontline doctors and nurses could be the difference between keeping this under control or utter catastrophe

Since every member of society must work together to combat the pandemic, **mobilization and cooperation** are also implied by the war metaphors. The metaphorical language around vaccinations suggests the significance of readiness and proactive actions to effectively fight the virus, just as governments mobilize their resources and get ready for war (Seixas, 2020, p. 4). The forms (*cooperation, commitment, determination, responsibility, overcome, defeat*) are found in the corpus. They highlight the importance of a unified, collaborative approach to ensure equitable and efficient vaccine rollout. Words like *commitment* and *determination*, convey the idea that overcoming logistical, political, and social challenges in vaccine distribution is crucial to quell the pandemic. Because the fight against COVID-19 is high-stakes, the term *responsibility* emphasizes the idea that all parties participating in the vaccination distribution must be held accountable for their decisions and actions.

> [43] Egypt has signed **a cooperation protocol** with GAVI Alliance to ensure its share of any vaccine manufactured to counter the coronavirus, he added.

> [44] My appeal to member states is: if we are doing our part to mobilize these vaccines, you do your part and use the vaccines," John Nkengasong, director of the Africa Centres for Disease Control and Prevention (Africa CDC), told a news conference.

> [45] This June, we must build on the momentum from this summit to secure COVAX the doses and funds needed to **overcome its immediate supply gap** and continue to build a sustainable pipeline into the future,"

The war metaphors also carry **the notion of victory and triumph** over the adversary. It "enticingly promises a clear narrative of aggressors and victims [and] winners and losers" (Steuter and Wills, 2008, p.10). By portraying vaccinations as weapons and the virus as the adversary, the assumption is that widespread immunization will result in a decisive triumph over the pandemic. The same metaphor, however, implies that if individuals are hesitant to be vaccinated, the war may be lost. This metaphorical framing instills hope and optimism, emphasizing that vaccines are the key to ultimately overcoming the challenges posed by the virus.

[46]"The vaccine story is a good news story. It is the **victory** of human endeavor, potentially, over a microbial **adversary**," he said.

[47] The approval of a jab for use almost exactly a year since the novel coronavirus emerged in Wuhan, China, is a **triumph for science**, Pfizer boss Albert Bourla and his German biotechnology partner BioNTech.

[48]Health experts and world leaders have repeatedly warned that even if rich nations immunize all their people, **the pandemic will not be defeated if the virus is allowed to spread in countries starved of vaccine**.

The widespread use of war metaphors to describe COVID-19 vaccinations indicates the severity of the pandemic and the urgency of the response. This metaphorical framework highlights the high stakes involved and the need for societal mobilization and sacrifice to protect public health. It casts the virus as an invading force to be defeated through a coordinated, military-style response It also suggests that vaccines are a necessary tool of defense. Victory is important because failure would be catastrophic. Moreover, it supports healthcare workers, alleviates their pain, and gives them the honor of being *heroes* who serve the country. The "war" metaphor frames the vaccine as a weapon against a deadly enemy - the COVID-19 virus.

5.3 Vaccine as a Journey

A frequent conceptual mapping in media narration in this field is describing the vaccine development process as a "journey" or "quest". The journey metaphor is used to conceptualize the vaccine development and distribution process as a progressive, step-by-step process with a clear destination (i.e., the successful development and widespread deployment of the vaccine). (Kövecses, 2010). Below is the table of the frequency of journey metaphor and its concordances:

Table 3. Journey Metaphors Denoting the Covid-19 Vaccine: Their Frequencies and Concordances

Word	Frequency	Word	Frequency
roadmap	2	path	2
route	3	milestone	15
hurdles	2	obstacles	2
tunnel	3	Light at the end of the tunnel	2
Ray of hope	2	road	2

The metaphor of describing the COVID-19 vaccine as a journey or travel experience can be a creative and engaging way to convey the process and impact of vaccination. Consider the following examples:

[50]The world's big powers have been racing for a vaccine for months to begin **the long road to recovery**

[51]The WHO said it would work with the six countries chosen to develop a training and support **roadmap** so they can start producing vaccines as soon as possible. Training will

begin in March.

[52] Drs. Sahin and Tureci will explain the 30 years of scientific research that laid the foundations for the first Covid-19 vaccine, at a time when public confidence in its safety and efficacy is crucial to offering humanity **a route out of this pandemic**

[53] Beyond Britain, there are hopes the AstraZeneca shot, which Pollard has called a "vaccine for the world," will offer **a path out of the pandemic**

[54] 'Today, **Canada reached a critical milestone** in its fight against Covid-19 with the authorization of the first Covid-19 vaccine,' Health Canada said in a statement

[55] **"No corners have been cut,"** MHRA chief June Raine said in a televised briefing from Downing Street, adding that the first data on the vaccine had been received in June and undergone a rigorous analysis to international standards. "Safety is our watchword."

[56] With contagion still rising in many European countries and vaccination campaigns **hitting hurdles**, some governments have shown increasing irritation with the pharmaceuticals group

[57]Supplies are tight... they continue to be," Zahawi told BBC TV. "Any new manufacturing process is going to have challenges, it's **lumpy and bumpy, (**then) it gets better, it stabilises and improves going forward

[58] Taiwan is facing unique challenges in combating the virus, `` he said. ``While we are doing our best to import vaccines, **we must overcome obstacles** to ensure that these life-saving medicine are delivered free from troubles of Beijing."

[59] That said, the WHO chief, added, **"The light at the end of this long, dark tunnel is growing brighter."**

[60] Prime Minister Boris Johnson touted the medicine authority's approval as **a global win and a ray of hope amid the gloom of the novel coronavirus** which has killed nearly 1.5 million people globally, hammered the world economy and upended normal life.

The metaphorical language of the *roadmap, path, route, milestones, hurdles, obstacles, lumpy & bumpy* suggests that the vaccine journey is long and arduous. Just as a journey can have many twists and turns, ups and downs, the path to defeating the pandemic is filled with challenges, uneven terrain, and unexpected difficulties that must be navigated carefully. However, these can be navigated and overcome through scientific research, government policies, and international cooperation. The references to *light at the end of the tunnel* and a *ray of hope* convey a sense of optimism, progress, and the possibility of a return to normalcy, despite the "gloom" and difficulties of the pandemic. The *tunnel* represents the challenging and uncertain times of the pandemic. It signifies the difficulties and hardships that individuals and communities have faced. The journey metaphor is used to make the complex and technical process of vaccine development and distribution more accessible and relatable to the public as illustrated below:

The destination represents the desired outcome or goal, which is achieving protection against COVID-19. It is the point at which individuals can feel safer and more secure in their health. The destination signifies the end of the journey and the realization of the benefits of vaccination. The itinerary represents the step-by-step process of vaccination. Getting vaccinated involves taking steps, such as scheduling appointments, receiving doses, and following guidelines. Each step, from receiving the shot to developing antibodies, is like a leg of the journey. Some routes might be faster (single-dose vaccines), while others involve multiple stops (booster shots). The vaccination process might have side effects, which can be

seen as bumps along the road. Additionally, new variants emerging are akin to unexpected detours or changes in the travel landscape.

In this metaphor, **the mode of transportation is similar to the technique of vaccine administration**. For example, vaccination may be referred to as a "shot in the arm" or a "jab," meaning that it is a quick and efficient mode of transportation to the intended destination of protection. The preparations for receiving the vaccine are similar to those done before embarking on a journey. These preparations may include acquiring required papers, determining eligibility, and being informed of any potential side effects or precautions. This metaphorical comparison emphasizes the significance of being tuned and prepared to get the vaccination.

The metaphorical **travel companions represent healthcare professionals** who guide individuals through the vaccination process. They give information, answer inquiries, and administer vaccinations. This metaphor underlines the importance of healthcare professionals as reliable guides and partners on the path to immunization.

Memories and souvenirs are also related to travel as a metaphor. The metaphor of travel can extend to the idea of souvenirs and memories. In the context of vaccination, these can represent the vaccine record or certificate, which serves as a tangible reminder of the journey and achievement. This metaphorical aspect adds a sense of accomplishment and serves as a memento of protection against the virus.

Overall, the metaphor of the journey is a persuasive way to communicate about the COVID-19 vaccine because it promotes community involvement, reflects progressive thinking, and frames the vaccine project as a collaborative project is (El-Kanash & Hamdan, 2023). The metaphor focuses on basic cognitive processes and narratives of exploration, determination, and overcoming challenges, which can resonate with people's lived experiences and make them aware of the pandemic situation (Pedrini, 2021).

6. Conclusion

The present study provides a critical explanation of the metaphorical representation of the COVID-19 vaccine in the discourse of English language Egyptian online newspaper articles. Employing a corpus-based approach to Charteris-Black's (2004) critical metaphor analysis (CMA), the research investigates the primary metaphors used to conceptualize the vaccine, their entailments, and the underlying ideologies they convey. The study is based on a web-derived corpus of over 209,000 tokens, comprising articles from the Al-Ahram Weekly and Egyptian Gazette newspapers.

Quantitative findings suggest that the dominant metaphor used to conceptualize the COVID-19 vaccine is that of a race or a competition. Qualitative research finds the potential metaphorical entailments and seeks to uncover the ideological motives of incorporating the metaphor vaccine as a race in the corpus as follows:

1. Vaccination is portrayed as a competitive endeavor; a "prize" awarded to a winner of a high-stakes race or competition. There is competition among different pharmaceutical companies, research groups, and countries, all competing to be the first to develop and distribute effective vaccines

2. This metaphorical framework suggests that vaccine rollout is a time-consuming endeavor, with the goal of vaccinating the global population before the virus can continue to spread unchecked.

3. Embedded in the race metaphor is the notion of an uneven playing field. This metaphorical framework underlies all vaccine inequity issues, as the corpus shows that not all countries have equal use of resources and infrastructure necessary to participate in the competition on a level playing field.

4. Paradoxically, the metaphor of race contains a reference to global solidarity and solidarity, as the corpus suggests that the vaccine "race" is one that requires a concerted effort by the international community to prevent epidemics.

5. Finally, the race metaphor emphasizes the extremely risky nature of vaccine use, whereas corpus frames the successful development and delivery of the vaccine as critical to "victory." in the battle against COVID-19. This metaphorical mapping evokes a sense of urgency and importance, casting vaccines as indispensable tools in the fight against the epidemic.

Overall, the dominance of race metaphors in the discourse of the COVID-19 vaccine reflects complex, multifaceted, and often conflicting approaches to vaccine development as represented in the Egyptian online articles. This metaphorical structure highlights the need for critical engagement with the underlying assumptions and ideologies embedded within such discursive constructions.

In addition, the study shows how other evocative metaphors, such as war and journey, are used to increase emphasis on the importance of vaccines, mobilize public support, and offer hope and solutions to contain the crisis. The prevalence of metaphorical structures implies a concerted effort to shape public perceptions, feelings, and actions in relation to the COVID-19 vaccination campaign.

The research findings highlight the important role of metaphorical representation in understanding COVID-19 discourse. The study highlights the underlying concepts and assumptions embedded in these metaphorical concepts, which may have important implications for vaccine acceptance, equity, and the overall pandemic response. In order to affirm the results conferred in this paper, we suggest that more analysis and additional consideration of various corpora are recommended and required.

In conclusion, this study contributes to the growing literature on the discussion process of the COVID-19 pandemic and highlights the importance of critically examining the rhetorical process of vaccination. The findings provide valuable insights for policymakers, health communicators, and researchers seeking to examine complex social and cultural dynamics. Future research should explore metaphor use in Arabic-language Egyptian media and other cultural contexts. Limitations include the corpus's restriction to English-language sources and lack of reader response data. Practically, these findings suggest health campaigns should balance urgency (war/race) with optimism (journey) to boost vaccine uptake.

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