

Impact on Quality of Life in Incarcerated Individuals: A Theoretical Reflection from the Cognitive Perspective of COVID-19

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Abstract: - The bibliographic review addresses studies conducted concerning incarcerated individuals and how their cognitive conditions have been affected by factors influencing their quality of life. The experience they underwent with regard to COVID-19 is particularly significant. While the pandemic affected individuals in normal living conditions, its impact on incarcerated individuals was even more pronounced, given the suboptimal psychological, mental, emotional, legal, and physiological conditions within the Colombian prison system.

Key-Words: - Pandemic, Prison, Mental Impact, Emotions, Legal Systems, quality of life

Received: May 14, 2022. Revised: July 21, 2023. Accepted: August 16, 2023. Published: September 20, 2023.

1 Introduction

Currently, the panorama brought about by COVID-19 has reflected a discouraging progression marked by alarming and radical measures, [1], accompanied by governmental decisions that prevented more disastrous consequences in populations where, nonetheless, the virus saw exponential growth, [2]. Moreover, there exists scientific evidence of the issues that have unfolded since the virus's arrival, including evidence of its effects on various human systems, leading to diverse emotional reactions, [3], [4].

Thus, the world cannot remain indifferent to how incarcerated individuals have been affected on psychological, mental, emotional, legal, and physiological levels. Considering that the COVID-19 pandemic intensified the manifestation of symptoms related to isolation, environmental and social factors for incarcerated individuals, as greater restrictions and limitations on social interactions were imposed as preventive measures to curb contagion, [5].

Mitigating and reducing the risk of COVID-19 transmission within prison environments poses a significant challenge for public health, [6]. Indeed, detainees face a higher susceptibility to infection, transmission, and fatal consequences related to COVID-19 due to factors such as dormitory and cell crowding, congested circulation conditions within

correctional facilities, and the high prevalence of chronic diseases. Furthermore, characteristics of infection and the massive spread of this infectious disease were observed within the incarcerated population, [7], amplified by the flow of contamination resulting from overcrowding, vulnerability under insufficient surveillance and sanitary control, or precarious and unsanitary conditions, [8].

Furthermore, the World Health Organization, [9], outlines several factors that render incarcerated individuals vulnerable in terms of mental health impact: overcrowding, social isolation, lack of privacy, and absence of meaningful activities. It is established that the onset of the pandemic caused by the SARS-CoV-2 virus in penitentiary institutions resulted in diminished cognitive potential and greater behavioral implications, [5], [10].

From this point onward, the foundational propositions of humanistic approaches by Abraham Maslow and those aligned with the tenets of Max-Neef emphasize that humans possess fundamental needs that must be fulfilled, not only from a hierarchical perspective, but also from the viewpoint of being, having, doing, and being present, [11], [12].

Undoubtedly, preexisting challenges were exacerbated by the issues caused by the COVID-19 pandemic, given the high levels of overcrowding in Colombian prisons and deficiencies in health and

sanitation systems, [13]. It was reasonable to assume that the introduction of the virus would significantly intensify the crisis within the penitentiary sphere, [14]. However, while overcrowding heightens the chances of COVID-19 contraction among incarcerated individuals (IIs), it is not the sole risk factor associated with detention facilities, [15].

While it is true that overpopulation situations in Latin America have particularly severe impacts on the occurrence and spread of coronavirus infections within penitentiary institutions, [16], the inherent infrastructure and health conditions present in detention facilities globally also hinder the implementation of actions aimed at preventing disease expansion, [17]. For this reason, penitentiary and correctional establishments internationally have assumed a pivotal role in efforts to control pandemic spread, [18], as they inevitably exhibit three conditions highly conducive to contagion: enclosed environments, overcrowding, and limited ventilation, [15].

Understanding the incarcerated population's vulnerability to potential virus effects necessitates contributing to the understanding of human behaviors within prison communities, deeply rooted and influenced by global circumstances. In this case, these behaviors are particularly relevant in response to the virus's consequences and the establishment of coping strategies aimed at mitigating adverse effects on the well-being and health of individuals at higher risk due to the potential for rapid spread, confined spaces, and overcrowding, [19], [20], [21], [22]. In this regard, the IACHR has highlighted that overcrowding emerges as a primary challenge concerning deprivation of liberty in the Americas. Moreover, it underscores that this leads to various severe risks to the life and personal well-being of those detained. In conclusion, the Commission has directed its focus toward the notable consequences that overcrowding has on the health of those in detention, especially during the evolution of the COVID-19 pandemic, [23].

The psychosocial perspective based within the penitentiary context revisits the term "privatization," according to authors, [24], [25], as the transition and changes evident in physical and mental health, validating cognitive, emotional, sexual factors, and adaptive reaction within the context of freedom deprivation. In accordance with the presented definition, a close relationship is identified with the diverse psychosocial effects developed within this research population.

When a person is compelled to confront and adapt to their incarcerated status, a reference point is

established that entails alterations in physical, psychological, and social aspects. Throughout this process, physical separation from support networks is experienced, along with radical transformations in social, familial, and work dynamics, resulting in a significant impact on the individual's life, [26]. Additionally, imprisonment escalates tension levels, brings about emotional problems, reduces family income, and inflicts detrimental consequences on children, [27].

The described exploration of the interplay between social circumstances and the cognitive domains of incarcerated individuals can lead to a legitimate and preventive interpretation from psychology, enabling a rational distinction between stressors and their resultant factors, [28], [29].

In accordance with the aforementioned, the objective of this article is founded upon establishing a contemporary theoretical and conceptual foundation concerning the cognitive effects of SARS-CoV-2 (COVID-19) on the incarcerated population. Through a bibliometric review methodology derived from the PRISMA guidelines, an examination of the relationship between the influence of cognitive impairments associated with SARS-CoV-2 (COVID-19) on the conditions and ways of life of incarcerated individuals is conducted, aimed at enhancing the quality of life and mental health. This delineation involves a review of articles available in the Spanish language relating to the quality of life among incarcerated individuals and the adverse cognitive effects of COVID-19.

For information retrieval, keywords pertaining to the pertinent variables within the study were identified and subsequently validated through verification against the UNESCO Thesaurus. Drawing from these, searches were conducted across diverse databases including Scielo, PubMed, Dialnet, university repositories, Scopus, and others. The search was structured using the Boolean formula pandemic AND prison, pandemic AND mental effect, prison AND mental effect, prison AND quality of life, prison AND legal systems. Initially, prison AND quality of life, 160 articles were identified; however, guided by inclusion and exclusion criteria such as the publication years between 2018 and 2022, relevance to the studied variables, and a global origin with a preference for national contributions, a final selection of 40 articles was made.

In conclusion, notwithstanding the prominent emphasis on the cataclysmic effects of the global pandemic, not solely confined to the incarcerated population, within this demographic, the

psychological ramifications were more profound than mere contagion, but intricately linked to the adaptation to incarceration, [28], [29], [30].

2 Problem Statement

Considering the typical structure of a bibliographic review methodology, it is understood as a scientific and academic product that synthesizes, analyzes, argues, discusses, and compiles information in general terms about a given topic. Within this method of academic literature, it enables the incorporation of thematic and critical exercises on the studied phenomenon as a complement and theoretical-conceptual support for the discussion, [31].

Thus, it is important to recognize the distinction between the two purposes that a compilation of scientific information serves, primarily in terms of academia and research, as pertains to the phenomenon addressed in this writing, touching on related elements concerning the trajectory and progression of the SARS-CoV-2 virus globally. In addition to these premises, the concept of the state of the art is linked, understood as the most recent advances in science and research itself. This is in relation to the set of academically relevant experimental procedures, seeking the correlation of variables related to the topic under consideration, a thesis reflected within the framework of this article,

especially concerning aspects of cognitive nature, mental health stability, quality of life, and incarcerated individuals, [32].

This review was developed by means of a systematic scheme using the existing literature from various information sources, including university repositories (*Universidad del Quindío, Universidad Pontificia Javeriana, PUCESA, Universidad del Valle, Universidad Distrital, UNAL, UNSA, UTA, UNAC, UPF*) and other databases such as *PubMed, Scielo, Scopus, Coursehero, ScienceDirect, UNODC, and Lancet* (Table 1). A base terminology was employed, along with the combination of different keywords, such as COVID-19, “*Personas Privadas de la Libertad*” (incarcerated individuals), “*Calidad de Vida*” (quality of life), “*Efecto cognitivo*” (cognitive effects), “*Problemática Social*” (social issues), and “*Contexto jurídico*” (legal context). Additionally, the Google Scholar platform was used as a secondary source of information, always respecting the criteria and terminologies adopted for this literature review. Chronologically, the search task began in early April 2022 and ended in the first days of August 2022. This date is consistent with the start of knowledge construction, which began with approximately 160 information sources as a significant part of the literary analysis, and in accordance with the research selection criteria (Figure 1).

Table 1. Consulted sources

Database	Quantity	%
University repositories	20	39,21%
Dialnet	11	21,56%
PubMed	4	15,68%
SciELO	3	5,88%
Organizations and United Nations Offices (UN - WHO - UNODC)	3	5,88%
Internet Archive Scholar	2	3,92%
ScienceDirect	1	1,96%
Lancet	1	1,96%
Scopus	1	1,96%
Coursehero	1	1,96%
Academia.edu	1	1,96%
Medigraphic	1	1,96%
Infomed- Rev Panorama	1	1,96%
<i>Authors' own elaboration</i>	Total	51

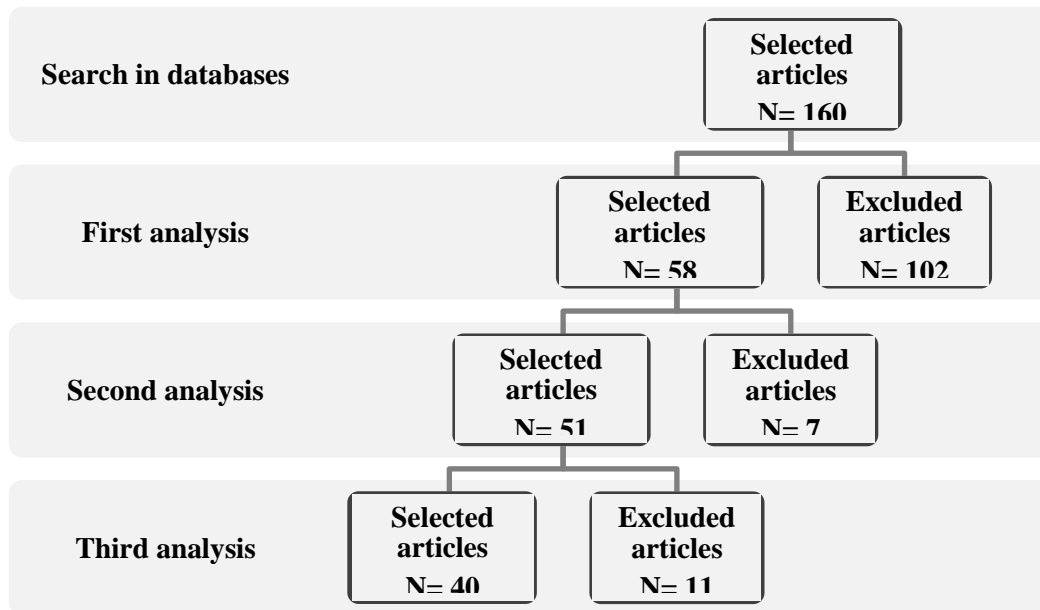


Fig. 1: Flowchart of search, selection, and exclusion of articles.
 Source: Authors' own elaboration

Particularly, within this article, the search included documents such as literature reviews, scientific articles with qualitative and quantitative designs, products from foreign and local university repositories, experimental research, reports, professional thesis papers, books, and information or communication databases. The search and selection of documentary sources were independently carried out by the group of researchers, with the data extraction from each article being grouped according to the determined results, thus being consistent with what was established in the problem statement.

Meanwhile, the selection criteria considered are based on a document review approach on studies determining cognitive aspects in relation to prison stay during the confinement period by COVID-19. These studies are constituted according to qualitative, quantitative, or mixed methodologies and from cross-sectional or longitudinal designs.

On the other hand, according to what is stated in Figure 1, in the first phase of this review, around 160 bibliographic resources were found, considering

filters of information such as Spanish and English languages, complete texts or important fragments, and primary or secondary research. The exclusion of documents was carried out based on topics different from the described variables, thus the consolidation of the database comprised 58 articles, 7 of which were refined in a second phase due to their theoretical contents, leaving a total of 51 that include concrete results of research and other academic reflections that met the aforementioned requirements (Figure 1). Lastly, with the intention of taking the most up-to-date data, the third information filter was reduced to the reference sections of the last 5 years of academic evolution (Table 2).

However, this review, according to the territorial classification of bibliographic references, extends across the continents of Asia and Europe, reaching Central America and Latin America, all the while supporting the considerations of international and/or global entities such as the World Health Organization, the Pan American Health Organization, among others (Table 3).

Table 2. The final result of 40 selected articles according to the year of publication.

Year	Quantity	%
2018	2	5%
2019	6	15%
2020	16	40%
2021	12	30%
2022	4	10,00%
Total	40	

Authors' own elaboration.

That stated, this review, according to the territorial classification of the bibliographic references, extends across the continents of Asia and Europe, reaching Central America and Latin America, all while supporting the considerations of international and/or global entities such as the World Health Organization, the Pan American Health Organization, among others (Table 3).

With clear purposes and guidelines for the review, an information classification scheme was developed according to the selected topics and sources consulted from the methodological approach of this article, with emphasis on

Incarcerated Individuals and, in descending frequency order: COVID-19 as a global health emergency, followed by cognitive implications, quality of life and mental health, then the importance of the emotional aspect of human beings, and lastly, the legal and constitutional approach to human rights (Table 4 Appendix and Table 5).

Table 3. Selected articles according to the country of publication

Country	Quantity	%
Colombia	13	32,50%
Spain	9	22,50%
Ecuador	5	12,50%
Peru	3	7,50%
Iran	1	2,50%
Cuba	2	5,00%
China	2	5,00%
Japan	1	2,50%
England	1	2,50%
Pakistan	1	2,50%
Chile	1	2,50%
Mexico	1	2,50%
Total	40	

Source. Authors' own elaboration.

Table 5. Frequency of Variables in the reviewed articles

Variable	Quantity	%
Quality of Life (QoL)	6	15%
Cognition (CG)	7	18%
Emotionality (E)	5	13%
Mental Health (MH)	6	15%
Covid-19 (C19)	25	63%
Incarcerated Individuals (II)	28	70%
Human Rights (HR)	1	3%

Total number of articles = 40

Authors' own elaboration

3 Problem-solving

3.1 Epidemiological Chronology

Diseases that have disrupted human life at various points in history have paved an endless societal trajectory, considering all those viruses and/or related elements that, at some juncture, caused distress and mortality. Therefore, the central focus of the arguments in this section will be anchored in diseases such as the Black Death, [33], the H1N1 flu, [34], (influenza / H1N1), [35], and the recent and catastrophic global pandemic of COVID-19.

With this historical backdrop in mind, the Black Death, which emerged around 1348, wrought a profound impact on the European population and its environs. The most effective transmission routes were established through commercial channels between Europe and Asia. However, historical records also demonstrate that the impact of this disease extended beyond exposure and contagion. The high mortality rates were exacerbated by the vulnerability of the population, given the economic and agricultural crises of the era. These crises ushered in an extended period of famine, [33].

This virus, according to its pathological classification, was mainly transmitted by animals and produced by the *Yersinia Pestis* bacterium, which usually settled on fleas in animals, and it was through the coexistence with humans that contagion became possible. Given the ease of contagion, this endemic disease became one of the most devastating phenomena known in history, with outbreaks occurring every few years for two centuries. The deadliest outbreak was in 1347, followed by 1362 and 1364 in Europe, and later years in the Mediterranean. All these appearances of the black plague became less deadly and violent over time until they eventually “disappeared”, [33].

Centuries later (20th century), harmful viruses for human life emerged, such as variations of the influenza or H1N1 flu (H1N1), a family of orthomyxoviruses (RNA viruses grouped into five subtypes), including influenza types A, B, C, [34], and two other genera, namely Isavirus and Thogotovirus, [35], all of these viruses consolidated around 1918 as another great pandemic in human history, permeated by the climate of World War I and renamed at the time as Spanish flu or influenza, mainly because Spain was the country with the first outbreak of press coverage on the high mortality rates of the disease itself. Subsequently, there were outbreaks of this virus in 1957, known that year as the Asian flu (N2N2), and in 1968 as the Hong Kong flu (H3N2), [36], [37]. Both cases left mortality

estimates reaching 4 million and 1.5 million, respectively, even though the origins of these mentioned variations of this virus are not entirely clear, [38].

Now, this virus has had other outbreaks, such as the case of 2009, where contagion of this A (H1N1) flu was evident; however, its incidence was not recognized as a significant public health risk because, despite the mild and moderate symptoms, the recovery process was increasingly quick and favorable. Even in prisons where there were cases, treatment was reduced to attention within the penitentiary establishments due to the good receptivity of individuals to treatment, [39].

Subsequently, it is worth mentioning COVID-19, a phenomenon classified as the disease caused by coronavirus 2 or SARS-CoV-2, of which little was known about its implications until the outbreak in Wuhan, China at the end of 2019. It became a global health emergency given its spread and contagion throughout the world. This virus, like the previous ones mentioned, has caused high levels of death, changes to human life, and a direct impact on the overall quality of life, [1]. The brief transmission process of the disease led the WHO to declare it an international public health emergency, taking into account the virus's impact on less developed countries in terms of healthcare infrastructure. As of April 10, 2020, approximately 182 positive cases of COVID-19 had been reported, along with 1,563,857 confirmed cases and 95,044 fatalities, resulting in a fatality rate of 6.08%, [9].

3.2 Quality of Life as a Concept

According to the World Health Organization (WHO), quality of life is understood as an individual's perception of their existence, based on the correlation between expectations, norms, concerns, and objectives that cover the global population, while also integrating their psychological state, autonomy in the formation of interpersonal relationships, and physical health, [40]. However, Liebling and Arnold's postulates, [41], emphasize two aspects of this theme: the material conditions that encompass the physical structure of correctional facilities, and the morality and ethics within these institutions, constituted by considerations such as dignity, respect, and humanity. All the above suggests, in one way or another, that pre-existing interpersonal relationships within these spaces are one of the elements that protect and establish the quality of life of incarcerated individuals (II).

Furthermore, the individual performance of these people becomes one of the causes of the

treatment within the correctional facilities, given that in many cases it becomes dehumanizing during the process of fulfilling judicial sentences, [42], due to the subjective and objective material conditions that seek to shape such sociability, [43], linking to the positive evaluations that are made, considering that within these spaces they are perceived as moral collectivities despite the evident power imbalance, [42].

3.3 Globality of Quality of Life in Prisons

Starting from the recognition that Colombia is structurally recognized as a Social Rule of Law State, [44], safeguards must be prioritized to protect the healthy exercise of fundamental rights based on respect and dignity that, from the correctional facilities, are oriented toward the rehabilitation and resocialization processes of incarcerated individuals (hereinafter II), [45].

However, the increase in the prison population intensifies overcrowding, especially when sharp and pronounced increases in population occur within short periods of time. While not all countries experiencing population growth have prison overcrowding, Colombia ranks 46th out of 204 countries examined in this regard. Additionally, it holds the fifth position among South American countries with the highest levels of prison overcrowding (Table 6).

Within this entire spectrum, emphasis is placed on the treatment within these penitentiary establishments, which, according to some authors like, [46], should be carried out in accordance with the principles of respect and human dignity. However, given the living conditions and minimal sanitary guarantees, the process of rehabilitation is not something that is clearly perceived within these establishments in the country.

This is also due to certain attitudes projected by custodial agents within the prison centers of the National Penitentiary and Prison Institute (*INPEC*, for its acronym in Spanish), which is why the figures presented take on an alarming character for society, as the conditions within the prisons do not fall outside of dehumanization; a number of incidents involve the state as a responsible entity for the exercise and fulfillment of human rights for all types of populations, [47].

Authors such as, [3], addressed and described the no satisfaction of such fundamental needs as a result of the complexity and variability of lifestyles, as well as the human being as a whole; understanding the achievement of quality of life as the set of elements affecting the satisfaction of basic needs, which allow for the maintenance of

physical and mental health, and which are somewhat influenced by the social environment and the individual perception of II, [48].

Now, in directing this academic narrative on scientific and investigative evidence, Rodríguez, [28], states the quality of life in prison is a multivariate concept in which it is relevant to mention the time within the center and the regulation of the space that is evidenced within it; although social relationships formed there also come into play, comprising a more incident sphere that can be consolidated as a risk or protective factor depending on the type of interpersonal bond, [49].

The above can be understood as a directly proportional correlation in the quality of life of inmates, as they feel affectively accepted, they strengthen their empathy; however, when they are in a precarious environment, conflict and violence increase; In relation to this, a study in which the Measuring the Quality of Prison Life (MQPL) survey by, [41], was used to mainly look for the perception of quality of life within prisons, found that cordiality and coexistence within penitentiary centers were noted as regular, this due to shortcomings in the implementation of policies of humane treatment, which influence in one way or another in psychosocial areas of II and in criminal behavior, [29].

Table 6. Intramural Population by Region

Location	Population	Capacity	Overcrowding
CENTRAL	35,673	30,767	15,90%
OCCIDENT			
E	18,887	15,301	23,40%
NORTE	9,466	7,391	28,10%
ORIENTE	9,723	7,88	23,40%
NORESTE	11,976	8,196	46,10%
VIEJO			
CALDAS	11,576	11,148	3,80%

*Source: Adapted from Statistical Tables - INPEC (2020)

3.4 Forms of life in Colombian prisons

In this context, if the narrative of this review focuses on the ways of life of II, particularly in the Colombian context, with a special interest in the mental health of these subjects, it is necessary to take into account some research studies that mention how the experiences and the permanence in the prisons of Colombia managed by the National Penitentiary and Prison Institute (*INPEC*, for its acronym in Spanish) have implications for

personal achievement for this population, involving here autonomy, self-esteem, self-control, and other elements that have this same prefix and mainly involve intrapersonal aspects. This has been demonstrated by studies that show that life inside penitentiary and prison centers wears down and impoverishes these individuals psychologically, leading to alarming mental health conditions, [5], [10], [50].

These facts highlight the importance of identifying the current state of mental health care in Colombian prisons, in order to initiate solutions aimed at creating environments conducive to social health, which could be used to diagnose and predict conditions and symptoms that could impede the correct execution of such transformation plans, [5], [10].

On the other hand, [24], conducted a study that aimed to analyze sociability among a group of incarcerated women, which resulted in low scores precisely in the indicators that generate interpersonal skills. This finding is of relevance to the quality of life of II, as understanding the human being as a rational being who faces constant processes of decision-making and interaction, they struggle between good and evil. This is approached in the article from the perspectives of morality and social ethics, leaning towards legal actions that justify the deprivation of liberty in each individual case, [51].

Up to this point, it has been described how the satisfaction of needs, as proposed by Maslow, is limited in Colombian prison facilities, considering three premises: the physical structure and/or distribution of space in the penitentiary centers, the dehumanizing and humiliating treatment that is evidenced in prisons, and the conflicts that limit interaction and decrease social contact among II.

From another point of view, the fact that human beings are born in a condition of absolute freedom is important to consider, specifically speaking about the Colombian state according to articles 20 and 28 of the current Political Constitution, [44], [52], a person is born free in terms of thought, opinion, feeling, person, and family; that freedom ends when social responsibility is violated and a written order from a competent judicial authority is issued.

Therefore, it is necessary for the State's resources to be allocated to improve the conditions in the penitentiary centers, as this is a forgotten part of the population that not only receives punishment for their sentence but also inhumane and degrading treatment from the State, [6], [15], [53].

In contrast, the study conducted by, [54], arrived at a somewhat controversial conclusion. They found that both incarcerated and non-incarcerated men demonstrate resilience and happiness. This conclusion is substantiated by the fact that individuals possess personal capacities and abilities (independence, decisiveness, invincibility, empowerment, self-confidence, and ingenuity), as well as other responses to adversity (adaptability, equilibrium, perseverance, and flexibility).

3.5 Covid-19 as a Threat to II and Human Societies in General

Now, when focusing this review on one of the most impactful health problems in global societies, the Sars-CoV-2 virus emerges as a pandemic that represents effects from macro-systems to micro-systems, taking into account, along with the previous thesis, the work of Urie Bronfenbrenner, [3], including social and economic, as well as labor, educational, and family fields, taking as a preventive measure the manifestation of various behaviors, feelings, and emotions, along with fear of illness and death, helplessness, loneliness, sadness, hopelessness, worry, guilt, and others, [4]. In this context, the variable of family in the context of incarceration and the establishment of social support networks as a means of promoting mental health within the prison setting is highlighted. This is particularly pertinent when considering the related consequences of the Covid-19 pandemic. Thus, the results obtained by, [55], stand out, revealing that the majority of incarcerated individuals did not maintain any form of romantic relationship or stable partnership (62.1%). It is understood that such interpersonal connections facilitate the cultivation of positive attitudes and reeducation.

Prison, as an environment, not only subjects these individuals to family separation but also to social detachment, both in a drastic manner. This complex scenario further complicates the process of adaptation and may potentially hinder coping mechanisms on behavioral, emotional, and cognitive levels, [28], [49].

During the evolution of the social crisis caused by Covid-19, the risk to the quality of life and both the physical and mental health of II did not go unnoticed, as the high levels of vulnerability of these individuals caused Covid-19 to be expected to have the worst possible impact on them, [22], this was not only due to deficiencies in health care and confined spaces within prisons, [20], but also due to the rapid spread of the virus as an infectious

disease, which became critical in the second half of March 2020, [19], [21].

All of this highlighted a latent need within these centers regarding the reinforcement of their healthcare teams and preventive measures in emergency situations, ultimately safeguarding security and health within these establishments, [21], [56]. Similarly, the report disseminated by the United Nations details how the pandemic in the year 2021 disproportionately affected prison systems and the global incarcerated population, which surpasses eleven million individuals. According to estimates, more than 527,000 inmates contracted the virus in 122 countries, resulting in the deaths of over 3,800 individuals across 47 of those countries, [21].

The conditions within Colombian prisons do not meet the necessary requirements to uphold

health and dignity during a public health emergency. There is a significant risk of contagion within prisons due to confinement, lack of ventilation, privacy, and overcrowding, [6], [15], [53]. These conditions were present prior to the arrival of COVID-19, but their risk level increased with its emergence, leading to not only evident physical consequences and an elevated danger of chronic diseases but also mental health aspects concerning adaptation, [5], [10], [57].

At the national level, 136 deaths related to COVID-19 were recorded in penitentiary centers between April and October of the year 2020. More than half of these deaths occurred in individuals over 60 years of age, with 94.9% being male and 5.1% female population (Table 7), [30].

Table 7. Epidemiological situation of COVID-19 by age and sex as of October 31, 2020

Characteristic	Females	Males	Total	% of age group
Tests applied RT-PCR				
Total tests	3 542	38 846	42 388	100
< 3 years	2	17	19	0
18-26 years	884	8 100	8 984	21,2
27-59 years	2 447	27 390	29 837	70,4
> 60 years	209	3 339	3 548	8,4
Confirmed cases				
Total cases	1 703	15 101	16 804	100
< 3 years	2	11	13	0,1
18-26 years	431	3 040	3 471	20,7
27-59 years	1 201	10 513	11 714	69,7
> 60 years	69	1 537	1 606	9,6
ICU hospitalization				
Total deaths	3	77	80	100
18-26 years	0	1	1	1,2
27-59 years	3	29	32	40
> 60 years	0	47	47	58,8
Mortality				
Total deaths	7	129	136	100
18-26 years	0	1	1	0,7
27-59 years	4	45	49	36
> 60 years	3	83	86	63,3

**Source: Adapted from Piñeros-Báez, V. H. (2021)*

Such circumstances hold relevance on a global scale since, despite the social disparities among nations, the pandemic's effects have similarly and exponentially strained demands on public healthcare systems, resulting in new points of social instability due to resource shortages and insufficient guarantees for various segments of the population, [58].

In light of the aforementioned, the statement made by the Commissioner for Human Rights of the Council of Europe on April 6, 2020, is highlighted, which states that individuals within prisons are part of vulnerable populations in the face of contagion, according to the high-risk environment to which they are subjected, [8].

The way of managing such a crisis within the penitentiary institutions of Colombia has become a great social challenge, since the protection of fundamental rights and moral and physical integrity demand effective and proactive actions from the country's penitentiary administrations, thus promoting mental health and quality of life, [59], although, given the uncertainty stemming from the health emergency, it was taken into account that, not having the possibility to adequately respond to the situation, processes of release or conditional liberty had to be adopted only if staying in these establishments posed significant risks to the life and dignity of these individuals, to the extent possible, [8].

Within the prisons of the Basque Country, La Rioja, and Madrid, the first actions that were taken to prevent the effects of the virus in prisons were to reduce contact with family and visitors, with the only exception being through telephone communication with them. However, this attempt to mitigate contagion within prisons reached the point of excluding support staff in these centers, which could trigger the emergence of risk factors and the limitation of material and human resources of primary need in prisons, [49].

From another perspective, the literature shows that one of the main guarantees during the COVID-19 pandemic was the advancement of processes and/or phases of progressive vaccination. However, considering the incarcerated population, if these measures to control COVID-19 contagion had been promptly provided to these individuals, the probability of containment against the spread of the virus within prisons would have been low, [60].

According to the European Committee for the Prevention of Torture (CPT) in its Declaration of Principles on the Treatment of II during COVID-19, any restrictive measure allied to prisons should be proportional to the inherent necessity, respectful

of human dignity, and time-limited. Regarding visits, the WHO anticipated this issue in its Provisional Guidance on Preparedness, Prevention, and Control of COVID-19 in Prisons, but this directly impacted the increase in anxiety that the separation of these individuals from the outside world may have caused, [8].

3.6 Nervous System (NS) and Cognition in the Context of Covid-19

There is great relevance in cognitive responses within this discussion, as well as the impact of these on mental health, also linking individuals' executive functions (EF), demonstrating an alteration or change in these depending on the type of conditions in which the subject operates. Saiz, [10], argues that to achieve effective cognition that safeguards stability in mental health, the brain must be exercised, thereby ensuring that daily tasks and those involving complex functioning are carried out fully.

However, this author also mentions that factors such as sleep, and mood state also have a determining influence on cognitive well-being. Therefore, it can be concluded that stimulation of physical and mental activity improves performance in attention, memory, thinking, executive function, and reaction speed, and likewise promotes healthy cognitive aging, [5].

On the other hand, in situating this literary discussion on the participation of the nervous system (NS) and its multiple neurological manifestations given the spread of the Sars-CoV-2 virus, the information that can be gathered is limited, supported by the fact that less than a quarter of patients with positive diagnoses of Covid-19 presented evidence of neural or nervous system involvement. However, other authors have stated that a subject with pre-existing cerebrovascular pathologies may encode a higher risk factor and negative prognosis against the contagion of this virus, [61], [62].

The main manifestations that underlie the central nervous system (CNS) due to the presence of SARS-CoV-2 are encephalopathies, headaches, cerebrovascular accidents, myelitis, and dyskinesias. These effects in relation to COVID-19 patients were not uniformly described in different studies, however, among all, neuralgia, anosmia, dysgeusia, Guillain-Barré Syndrome (GBS), and a variety of implications on the musculoskeletal system can be highlighted, [63].

Focusing the discussion on the neurological field, particularly regarding the repercussions stemming from Covid-19, it could be mentioned

that, [64], observed that few patients presented with cerebrovascular difficulties and seizures, unfortunately resulting in the absence of specialized sampling and recording, as these could have been crucial procedures in the neurological invasion brought about by Covid-19, while also enabling the identification of causal factors in the presence of respiratory failure upon SARS-CoV-2 infection in some patients but not others, [64].

Within the statistics of recovery and survival of people who suffered from COVID-19, [65], understanding the non-specific cortical and subcortical injuries or alterations presented by these individuals, [66], along with other discoveries that have been reported to date, considering executive functions, [67], allows for the identification of two particular aspects. Firstly, the absence of a clear neuropsychological functioning pattern in relation to COVID-19, and secondly, the fact that the global population faced an alarming condition with a direct impact on mental health, involving psychologists, neuropsychologists, and other behavioral professionals in this scenario.

For this reason, the pandemic and its effects are not limited to executive involvement, but initially permeate phylogenetic, ontogenetic, and epigenetic correlates, with the latter two encompassing all aspects related to individuals' personality and their development in processes of socialization, desocialization, and resocialization. The third is a key stance defended by penitentiary and prison centers, which has been emphasized within this document, [68].

Globally, in neuroscientific research, varying sensitivity in detecting cognitive impairment was observed during applications in screening tests, [61], as an example, how the Mini-Mental State Examination (MMSE) was shown to be less sensitive than MoCA in detecting cognitive impairment at the moderate level within each sample.

This phenomenon is evidenced primarily through comparative research conducted among focus groups consisting of asymptomatic individuals and control groups, where significant differences were not as pronounced when using the Montreal Cognitive Assessment (MOCA). However, contrasting results emerged during the administration of specific subtests of this assessment, where levels of cognitive deterioration were indeed detected. This led the authors to conclude that individuals might have been experiencing difficulties not adequately addressed by standardized tests, [68].

On the other hand, another issue found in different studies that associate COVID-19 with cognitive functioning is linguistic, specifically emphasizing language fluency as an executive function. This also includes naming difficulties, anomia, aphasia, and problems with written language, finding that difficulties with attention and concentration were mostly related to cognition and memory, [68]. In summary, the most severe implications during the pandemic were underlined as affecting executive functioning and verbal learning, according to some authors, [69].

3.7 Cognitive Deterioration as a Result of a Sentence

When discussing the cognitive functioning of incarcerated individuals in penitentiary and correctional institutions, it is necessary to start by examining the process of entering these establishments because of being convicted for committing a criminal act. This event can lead to a decline in certain cognitive functions as a result of confinement and the challenge of adapting to a new, unfamiliar situation. This process of adaptability can compromise the cognitive abilities and skills of individuals, due to dissatisfaction with physiological and social needs, which can result in memory failure, attention loss, temporal-spatial disorientation, withdrawal, and alterations in eating and sleeping patterns, [5], [28], [70].

Depending on the way in which individuals adjust to their new living conditions and the degree of plasticity in the brain, which seeks to maintain stability in the face of new circumstances and environments. These issues are even more prevalent in incarcerated individuals who are elderly, as this stage of the life cycle also involves a need for reflection on their quality of life, [13], which is inextricably linked to recognition and self-realization needs that are inhibited within the prison system, as previously mentioned in this text. Accordingly, it becomes relevant to consider the challenges faced by individuals with dementia or moderate cognitive impairment within prisons given the situation of confinement and incarceration, which led to modifications in established routines and a reduction in sociability and access to support networks. Meanwhile, engaging in stimulating, enjoyable activities and physical exercise was limited and even abolished within these establishments, directly impacting the health status of individuals. Confusion, disorientation, the emergence of mental and behavioral disorders, and neuropsychiatric symptoms such as delusions, agitation, and

hallucinations were constant and emerging effects of all these changes within prisons, [71], presenting a much more consistent and riskier incidence during the COVID-19 pandemic.

4 Limitations

The proposed methodology in this document presents several limitations that pertain to constraints or weaknesses encountered during the information search, review, and processing. Common limitations include source availability, as not all instances of online publication encompassing the foundational terminology adhere to scientific criteria or meet minimal requirements for academic consideration. This affects the integrity and comprehensiveness of the review, consequently impacting the quality of the drawn conclusions.

Furthermore, language plays a significant role during the bibliographic review process. Restricting the review to a single language can lead to the loss or omission of pertinent information. Similarly, biases present in publications, stemming from various factors such as scientific validation, instrument endorsement, publication dates, source quality, keyword scope, researcher personal biases during selection, and data reliability aspects, constitute variables that influence the development and accomplishment of the scope and objectives of this bibliographic review.

5 Discussion and Conclusion

The Covid-19 pandemic as a global health emergency, undoubtedly brought about alterations in various spheres of life for the global population, and in terms of the focus of this writing, imminent repercussions for the quality of life and mental health. However, when emphasizing the living conditions of II within penitentiary and prison establishments, this context generates uncertainty from an academic standpoint, as factors within prisons that affect the lives of these individuals overlap with affective, perceptual, cognitive, emotional, behavioral, and social imbalances, mainly due to constant situations of tension. It is agreed that II are prone to developing symptomatology related to mental disorders such as stress, anxiety, and depression, as well as other affective implications such as low levels of self-esteem, interaction, and adaptation, among others. Some of these ideas are similar to those expressed by Andrea Catalina Lobo, a legal psychologist,

lawyer, and professor at the *Pontificia Universidad Javeriana* for the *PESQUISA* journal of the same institution.

Particularly, by focusing attention on emotional aspects as determining elements of the human being, it can be said that under "normal" conditions within prisons, there is a prevalence of II with symptoms of anxiety and depression, as, [72], demonstrates in a study where a sample of incarcerated women was analyzed, it was determined that more than half of them ingested oral medication to inhibit the aforementioned symptoms, along with other similar psychological disorders, which, according to this research, arise from the condition of isolation due to the state of imprisonment or deprivation of liberty.

In this regard, incarcerated individuals (II) in Colombia develop adaptation and survival strategies during their stay in a correctional facility that involves denial, inhibition, and suppression of those emotions that, according to Daniel Goleman's classification of primary emotions, [73], they are part of primary emotions since they are controlled by the brain in one way or another and can generate survival responses in hostile environments, [14]. Initially, these behaviors may be considered maladaptive due to the harsh context of a correctional institution, yet they are a product of the brain's restructuring proposed by Damasio through exposure to new stimuli and experiences, [74]. Descriptive research findings demonstrate that these behavioral reactions may represent low levels of quality of life within prisons, proposing that coping responses oriented toward cognitive areas reflect better quality of life, with logical analysis standing out as the process that enables mental preparation for stressors and their consequential factors, [75].

As a complement to the previous arguments, the position of, [76], stands out, who points out that the longer the time in a situation of deprivation of liberty, the higher the levels of emotional symptoms may be, with the most common ones being stress, anxiety, and depression. On the other hand, according to, [77], 1 in 25 incarcerated individuals suffered some kind of emotional disturbance in the last year, in this case taking into account common factors such as pathologies such as adaptive disorder, bipolar affective disorder, panic, and generalized anxiety. [50], establish fear as the main emotion of uncertainty towards the future, which appears when thinking about re-entry into correctional facilities, feeling of not being heard, and social isolation, problems that arise in prison include defending oneself from others and

the inability to live freely and autonomously. Moreover, certain nosological possibilities such as depression are mentioned as a clear product of the aforementioned aspects, repercussions of these problems are greater as age advances and sensory and cognitive-affective deficiencies become more evident, [78],

When discussing the “COVID-19” pandemic, various authors and health entities defend the idea that overcrowding is the main factor associated with the high degree of transmission of contagious diseases within Colombian prisons, [62]. In these contexts, it is natural that the immediate reactions include fear of the unknown, of not having the minimum and necessary healthy conditions to face the situation, and of not understanding why, in critical and risky moments, contact with loved ones is either impossible or reduced, while at the same time, emotional and material security guarantees are not provided, [79]. Amidst the fear and uncertainty brought about by the COVID-19 pandemic in conditions of confinement, the neglect of unsanitary living conditions that these individuals endured also comes to light. Coupled with the absence of a minimal support network for these individuals, this only contributes to the violation of constitutional rights and the deterioration of the physical and mental health and quality of life of those II, [79].

Based on the aforementioned fact, it could be argued that such living conditions support the emergence of symptomatology related to depression, as well as an increasing trend or worsening of this mental disorder if there is no adequate professional follow-up, [80] or at least a minimal mental health service that safeguards it among II, as well as their overall quality of life in different areas of development, [5].

All these emotional and cognitive effects cannot be viewed as a separate element from what has been discussed throughout the article regarding the COVID-19 pandemic. This situation led to the emergence of new health issues related not only to physical health, but also to self-esteem, stress, anxiety, depression, fear, and distress, as well as cognitive factors such as memory problems, attention, and abstraction. Both scenarios are associated with neurobiological and psychosocial correlates, and they exponentially configure behavioral responses to new adaptation scenarios in which there is a radical decrease in external communication with support networks. Social isolation or preventive confinement became the means by which people deprived of liberty saw their mental health deteriorate during COVID-19,

even when pre-existing difficulties regarding their living conditions within prisons were already present, [56].

All of this makes evident the gaps in the functioning of these establishments in terms of resocialization processes, due to adverse situations such as the precariousness in which these spaces are found, the lack of conditions for educational spaces, overcrowding that can generate difficulties in terms of cleanliness, climate, lack of possibilities for medical assistance, which are understood as key characteristics that hinder the purpose of resocialization, [62]. From this point on, prevention exercises on violence, abuse, and harassment and promotion of human rights, mental health, and quality of life within prison environments are required, essential aspects for a dignified life and integral health according to what is established in the Colombian political constitution in sections of fundamental rights, applying such conceptualizations to a type of governmentally forgotten population such as the (II) within the Colombian territory.

In conclusion, the undertaken review of literature encompassed an exhaustive exploration of various authors' works, amalgamating a compendium of research materials germane to the subject matter. This assemblage of scholarly resources delved into explicating the studied phenomenon while furnishing historical antecedents pertaining to the emotional, cognitive, and physical ramifications consequent to the management of pandemic events, [81]. This approach engendered the cultivation of a more comprehensive apprehension of the milieu, multifarious perspectives, and preexisting theoretical constructs germane to the pivotal subject of this bibliographical review.

This analysis contributes to the understanding that while the COVID-19 pandemic has produced critical effects worldwide, the mental effects and quality of life problems were already present among the incarcerated population regardless of the virus's arrival, attributed to changes in lifestyle and the dissatisfaction with needs associated with a prison sentence, [28], [29].

The mental effects on incarcerated individuals, specifically in the Colombian context, stem from extreme situations due to the conditions in which the majority of this population finds itself, with a current overcrowding rate of 24.95%, [82].

In conclusion, this current study, through a systematic review, provides a diagnosis of knowledge gaps in the area, emphasizing that it's a correlational case linking a psychometric

perspective, a medical diagnosis, and a situation of deprivation of liberty. This study clarifies the scarcity of significant literature in Spanish language databases, underscoring the importance of researching in this area and within the context of Latin America, which possesses socio-cultural characteristics distinct from countries with more available documentation.

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Appendix

Table 4. Variables found according to the literary interests of the articles

Nº	Year	Country	Author(s)	Target population	QoL	CG	E	MH	C19	II	HR
1	2020	Pakistan	Ahmad I. & Rathore FA.	General					x		
2	2020	Peru	Alzamora de los Godos L.	General			x		x		
3	2019	Colombia	Arias, G. E.	Prisons						x	
4	2020	Iran	Asadi-Pooya AA & Simani L.	General					x		
5	2021	Colombia	Báez, V. H. P.	Prisons					x	x	
6	2018	Colombia	Bautista Parra Y. et al.	Prisons			x				x
7	2021	Colombia	Bergonzoli G., & Duque F.	General					x		
8	2021	Colombia	Bonilla, M. I. et.al	Prisons	x	x					x
9	2021	Colombia	Bravo, O.A.	Prisons				x			x
10	2021	Spain	Ramírez, F. B. et.al	General			x	x	x		
11	2020	England	Callaway E. & Cyranoski D.	General					x		
12	2019	Colombia	Forero Mesa D.	Prisons							x
13	2021	Peru	Gaciot Delgado, M.G.A.	Prisons					x		x
14	2022	Spain	García Guerrero J. & Vera Remartínez E.	Prisons					x		x
15	2022	Cuba	García, L. C. et.al	Prisons							x
16	2020	Colombia	Iturralde, M. et.al	Prisons					x		x
17	2020	Ecuador	Lalama Aguirre J., & Vinicio Castro A.	Prisons					x		x
18	2020	Colombia	Londoño V., & Rodríguez J.	Prisons	x						x
19	2020	Colombia	López Cantero, E. J.	General			x	x	x		
20	2021	Colombia	López Corredor, M. F.	Prisons				x			x
21	2021	Cuba	Lorigados Pedre L., & Pavón Fuentes N.	General		x			x		
22	2020	China	Lu R. et.al	General					x		
23	2021	Chile	Manríquez López L., et al.	General		x			x		
24	2020	China	Mao L. et.al	General		x			x		
25	2021	Spain	Marco, A. et.al	Prisons					x		x
26	2021	Japan	Meissner P.	Prisons					x		x
27	2018	Spain	Menés, J. R. et.al	Prisons	x						x
28	2020	Spain	Monsalve, M.H.	Prisons			x		x		x
29	2022	Colombia	Montaño Rozo M. X. & Martínez Durán N.	Prisons					x		x
30	2019	Mexico	Reyes, J. A. G.	Prisons						x	x
31	2020	Ecuador	Rodas Castillo, M.	Prisons		x	x				x
32	2019	Spain	Rodríguez, M.	Prisons							x
33	2019	Colombia	Ruiz D. et.al	Prisons	x						x
34	2020	Ecuador	Shugulí Zambrano, C. N. et.al	Prisons	x	x					x
35	2019	Ecuador	Taipe Culqui M. A.	Prisons	x						x

36	2020	Spain	Tapia Antolín, V.	Prisons					x	x	
37	2022	Ecuador	Valle Vega E. D.	Prisons					x	x	
38	2020	Spain	Ventosa P.	Prisons					x	x	
39	2020	Spain	Yagüe, C.	Prisons					x	x	
40	2021	Peru	Yañez Escalante, T. M., & Tupa Belizario, R. S.	General				x	x	x	
Total					6	7	5	6	25	28	1

Authors' own elaboration

* *Quality of Life (QoL), Cognition (CG), Emotionality (E), Mental Health (MH), Covid-19 (C19), Incarcerated Individuals (II), and Human Rights (HR)*

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

- Ana María Lozano Hurtado contributed to the study design, organization, data analysis, writing and revision of the manuscript.
- Cristian David Gaviria Giraldo, Isabela Gutierrez Rivera contributed in the organization of the database and statistical analysis.
- Valeria Cárdenas Parra, Cristian David Gaviria Giraldo, contributed in the writing of manuscript sessions.
- Gustavo Adolfo Gutiérrez Puerta contributed in writing manuscript sessions.

The authors contributed equally in the search of the articles to be analyzed, revision of this article, from the style to the deepening of the content.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

The article was financed by the higher education institution Unidad Central del Valle del Cauca, by means of an internal call of the project called “Neuropsychological characteristics in inmates of the Penitentiary and Prison Institute of the Municipality of Tuluá with SARS-Cov-2; and their relationship with the months of evolution” with number PI-1300-50.2-2021-18

Conflict of Interest

The authors have no conflict of interest to declare.

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