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REVIEW

Patient Experiences of the Biopsychosocial Impact of Guillain-Barré Syndrome: A Scoping Review

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Background: Guillain-Barré Syndrome (GBS) is an acute autoimmune disorder of the peripheral nervous system that can lead to muscle weakness, respiratory failure, and long-term disability. While clinical aspects have been widely studied, evidence on the biopsychosocial-spiritual impacts among adults remains limited.

Purpose: This scoping review aimed to map existing evidence on the biological/physical, psychological, social, and spiritual impacts of GBS in adult patients and to identify research gaps.

Methods: The review followed the framework by Arksey and O'Malley (2005) and was reported according to PRISMA-ScR guidelines. Literature searches were conducted in PubMed, Scopus, and EBSCOhost for studies published between January 2015 and January 2025. Using the PCC framework, we included peer-reviewed primary research on adult patients with GBS that examined physical, psychological, social outcomes. Selection is done through title/abstract screening and full-text review. Optional quality appraisal was conducted using the Joanna Briggs Institute (JBI) critical appraisal tools to enhance the rigor of included studies. Data were extracted using a structured form and analyzed thematically.

Results: Of 1,067 identified records, 16 studies across 10 countries were analyzed. Common physical impacts were residual motor weakness, neuropathic pain, sleep disturbances, and persistent fatigue. Psychological impacts included anxiety, depression, and posttraumatic stress, particularly among patients with residual disability or intensive care histories. Social impacts involved barriers to returning to work, stigma, and reduced social participation, with family support acting as a protective factor. Notably, no primary studies addressed the spiritual dimension, highlighting a critical research gap.

Conclusion: Adults with GBS experience multidimensional and interrelated impacts across physical, psychological, and social domains. The absence of evidence on spiritual outcomes underscores the need for future research incorporating biopsychosocial-spiritual assessment to inform holistic, patient-centered care.

Keywords: Guillain-Barré Syndrome, biopsychosocial-spiritual, quality of life, scoping review

Introduction

Guillain-Barré Syndrome (GBS) is an acute autoimmune disorder that attacks the peripheral nervous system, leading to rapidly progressive muscle weakness and, in severe cases, paralysis. The condition frequently occurs following an infection and often requires intensive medical management over a short period of time. Approximately 20–30% of patients with GBS require mechanical ventilation due to respiratory compromise, and most necessitate prolonged hospitalization.[1] Globally, the incidence of GBS is estimated at 1–2 cases per 100,000 population annually. Although modern immunological therapies have significantly improved prognosis, around one-third of patients continue to experience considerable disability within one year after onset.[2]

GBS patients experience various challenges. Physically, patients frequently report persistent symptoms such as limb weakness, neuropathic pain, sensory disturbances, and chronic fatigue, even after hospital discharge.[3] Motor dysfunction and limited mobility often result in a loss of independence in daily activities, significantly reducing quality of life and necessitating long-term physical rehabilitation.[4,5] In addition, psychologically, patients with GBS are at high risk of

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developing mental health problems, including anxiety, depression, feelings of helplessness, and, in some cases, psychotic features such as hallucinations or disorientation, particularly during intensive care treatment.[6] The sudden and life-threatening onset of illness, coupled with loss of bodily control, may trigger significant psychological distress. These manifestations are often underrecognized as part of the disease burden and can further hinder recovery if not addressed through multidisciplinary healthcare approaches.[7]

The social impact of GBS is equally profound. Patients frequently experience social isolation due to physical limitations and loss of functional roles within their families and communities.[3,8] Dependence on others for basic daily activities may lead to feelings of shame, frustration, and additional emotional burden.[3] Furthermore, family members and caregivers often encounter emotional strain and financial hardship throughout the course of care, making social support systems an essential component of recovery.[6] Spirituality also plays a vital role in how patients cope with GBS. Religious beliefs and personal meaning-making often serve as sources of resilience, helping individuals maintain hope, achieve inner peace, and redefine life purpose in the midst of adversity.[3] However, this dimension remains underexplored and is rarely incorporated into routine healthcare approaches.

Although the impact of GBS has been addressed in the literature, most studies have predominantly focused on clinical and neurological aspects.[9–11] This is evident in systematic reviews examining quality of life among GBS patients, where physical dimensions such as motor weakness, fatigue, pain, and mobility limitations were emphasized. At the same time, psychosocial aspects received comparatively less attention.[8] Similar patterns were observed in scoping reviews on the role of physical exercise in rehabilitation, which primarily highlighted motor and functional outcomes without in-depth exploration of psychological or social consequences.[4] In addition, Previous studies examined biopsychosocial indicators but in patients with neurological disorders so they were not specific to GBS.[12] In contrast, systematic reviews and meta-syntheses have noted that patient experiences encompass complex psychosocial challenges, although evidence on these aspects remains limited and rarely integrated with spiritual dimensions.[5]

This situation underscores the need for a systematic mapping of the literature through a scoping review to provide a comprehensive overview of the biopsychosocial-spiritual impact of GBS. Such an approach is essential not only to identify research gaps but also to inform the development of nursing practices and healthcare services that are holistic, multidisciplinary, and patient-centered. Accordingly, the objective of this study is to map existing evidence on the biopsychosocial-spiritual impact of GBS, to describe the scope and characteristics of the available literature, and to highlight underexplored areas that can guide the advancement of more comprehensive interventions and patient care.

Materials and Method

Study Design

This study employed a scoping review design to map the scientific evidence on the biological/physical, psychological, social, and spiritual impacts experienced by patients with Guillain-Barré Syndrome (GBS). The review was conducted using the framework proposed by Arksey and O'Malley (2005),[13] which provides the foundational methodological guidance for scoping reviews. It was reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines.[14] A scoping review approach was selected due to its flexibility in exploring multidimensional topics, as well as its ability to identify knowledge gaps and inform directions for future research.

Eligibility Criteria

The PCC framework (Population, Concept, Context) was applied to formulate the research question as follows:

- Population (P): adult patients (≥18 years) diagnosed with Guillain-Barré Syndrome (GBS).
- Concept (C): biopsychosocial-spiritual impacts, encompassing biological/physical, psychological, social, and spiritual dimensions.
- Context (C): patient experiences during the acute phase, rehabilitation, and long-term stages.

Based on this framework, the research question was defined as: "What are the biological/physical, psychological, social, and spiritual impacts experienced by patients with GBS?"

The inclusion and exclusion criteria were derived from the PCC framework. The study population included adult patients (≥18 years) with GBS. The concept examined focused on the biopsychosocial-spiritual impact, covering biological/physical, psychological, social, or spiritual dimensions, within the context of patient experiences across the acute, rehabilitation, and long-term phases. Eligible articles were peer-reviewed primary studies using quantitative, qualitative, or mixed-methods approaches, published between January 2015 and January 2025, in English or Indonesian, and available in full-text format.

Exclusion criteria included secondary research (systematic reviews, scoping reviews, narrative reviews, editorials, commentaries, or opinion papers), single case reports or small case series with fewer than five participants, studies on pediatric or animal populations, conference abstracts without full text, non–peer-reviewed grey literature, and publications focusing solely on clinical aspects (eg, pathophysiology, diagnosis, or treatment) without addressing biopsychosocial-spiritual impacts.

Data Collection and Search Strategy

The literature search was conducted in three primary databases, including PubMed, Scopus, and EBSCOhost, in August 2025. The search strategy was developed using a combination of keywords and Boolean operators, adapted to the Medical Subject Headings (MeSH) in PubMed and aligned with the search formats in Scopus and EBSCOhost. The main keywords included "Guillain-Barre Syndrome", "quality of life", "psychosocial impact", "spirituality", and "physical impact". The Boolean operator OR was applied to combine synonyms within a single concept, AND was used to link concepts according to the Population, Concept, Context (PCC) framework, and NOT was employed to exclude studies involving children or animals. As an example, the detailed PubMed search strategy is presented in the search strategy Table 1.

Study Selection and Quality Appraisal

The study selection process was documented using the PRISMA Flow Diagram in accordance with the PRISMA-ScR guidelines.[14] All retrieved references were managed using Mendeley (Elsevier) to remove duplicates. The screening process consisted of two stages: (1) title and abstract screening to identify potentially relevant studies, and (2) full-text

Table 1 Search Strategy

Variable	Description	Search Terms	MeSH Terms
Population	Patients with Guillain-Barré Syndrome (adults, ≥18 years)	"Guillain-Barre Syndrome"[MeSH] OR "Guillain-Barre Syndrome"[tiab] OR "GBS"[tiab]	Guillain-Barre Syndrome
Concept	Biopsychosocialspiritual impacts (physical, psychological, social, spiritual)	("physical impact" OR "biological impact" OR "neuropathic pain" OR "fatigue") OR ("psychological impact" OR "anxiety" OR "depression") OR ("psychosocial impact" OR "social participation" OR "stigma") OR ("spirituality" OR "spiritual well-being")	Quality of Life [MeSH]; Anxiety [MeSH]; Depression [MeSH]; Spirituality [MeSH]
Context	Acute, rehabilitation, or long-term phase	"acute phase" OR "rehabilitation" OR "long-term outcome"	Rehabilitation [MeSH]; Follow-Up Studies [MeSH]
Type of study	Original Article	Observational study OR cohort OR cross-sectional OR qualitative OR mixed-methods	–
Language & Period	English or Indonesian, 2015–2025	Limit: 2015/01/01–2025/01/31; English OR Indonesian	–

assessment to determine eligibility based on predefined inclusion and exclusion criteria. Screening was conducted independently by two reviewers (VS and AN), and any disagreements were resolved through discussion with a third reviewer (YT) to reach consensus.

Although critical appraisal is not a mandatory step in scoping reviews, an optional methodological quality assessment was undertaken to provide a descriptive overview of the strength and reliability of the included evidence. The Joanna Briggs Institute (JBI) critical appraisal checklists were employed for this purpose, adapted to the study design of each article (eg, cross-sectional studies, cohort studies, or qualitative research).[15] Each study was appraised independently by two reviewers, with the appraisal focusing on domains such as clarity of research objectives, appropriateness of methodology, adequacy of sample size, validity of measurement tools, and transparency of data reporting. The purpose of this appraisal was not to exclude studies but to contextualize the evidence base and highlight potential methodological limitations. By presenting this information, the review offers readers a clearer understanding of the robustness of the available literature and identifies areas where future research may benefit from stronger methodological rigor.

Data Extraction and Analysis

The data extraction process was carried out systematically using a predesigned extraction form to ensure consistency across studies. Each article that met the inclusion criteria was read in full, and relevant information was recorded, including: author and year of publication, country and study setting, research design and methodology, number and characteristics of participants, the specific impact dimensions examined (biological/physical, psychological, social, or spiritual), and the key findings related to the biopsychosocial-spiritual impacts in adult patients with Guillain-Barré Syndrome (GBS).

Data extraction was performed using a standardized form. VS conducted the initial extraction for all included studies, while AN cross-checked the accuracy of the extracted data. YT served as the final reviewer to ensure consistency across articles and to resolve discrepancies in interpretation when they arose. Extraction was carried out manually with the support of reference management software to facilitate source identification and tracking. To enhance reliability, data extraction was undertaken independently by two reviewers, and any discrepancies were resolved through discussion until consensus was achieved.

All findings were then categorized according to the identified impact dimensions (biological/physical, psychological, social, or spiritual). These categories were developed in line with the conceptual framework established during the formulation of the research question. Data analysis was conducted using a descriptive narrative and thematic approach. Findings from individual studies were mapped to identify patterns, similarities, and differences across the evidence base, as well as to explore interconnections among the various impact dimensions. The results were synthesized into both tabular summaries and comprehensive narrative descriptions, thereby providing an integrated overview of the existing evidence and highlighting gaps in the current research field.

Results

Study Selection

A total of 1,067 records were initially identified through three electronic databases, consisting of PubMed (n = 396), Scopus (n = 364), and EBSCOhost (n = 307). After the removal of 47 duplicate records, 1,020 unique studies remained for screening. Title screening led to the exclusion of 714 articles that were not relevant to the topic, leaving 306 studies for abstract screening. Following this stage, an additional 277 articles were excluded based on abstract content, resulting in 29 full-text articles assessed for eligibility. Of these, 13 studies were excluded for the following reasons: five did not address biopsychosocial-spiritual dimensions, one involved a non-adult population, and seven were not primary research (such as case reports, small case series, reviews, commentaries, or editorials). Ultimately, 16 studies met the inclusion criteria and were analyzed in the final manuscript (see Figure 1).

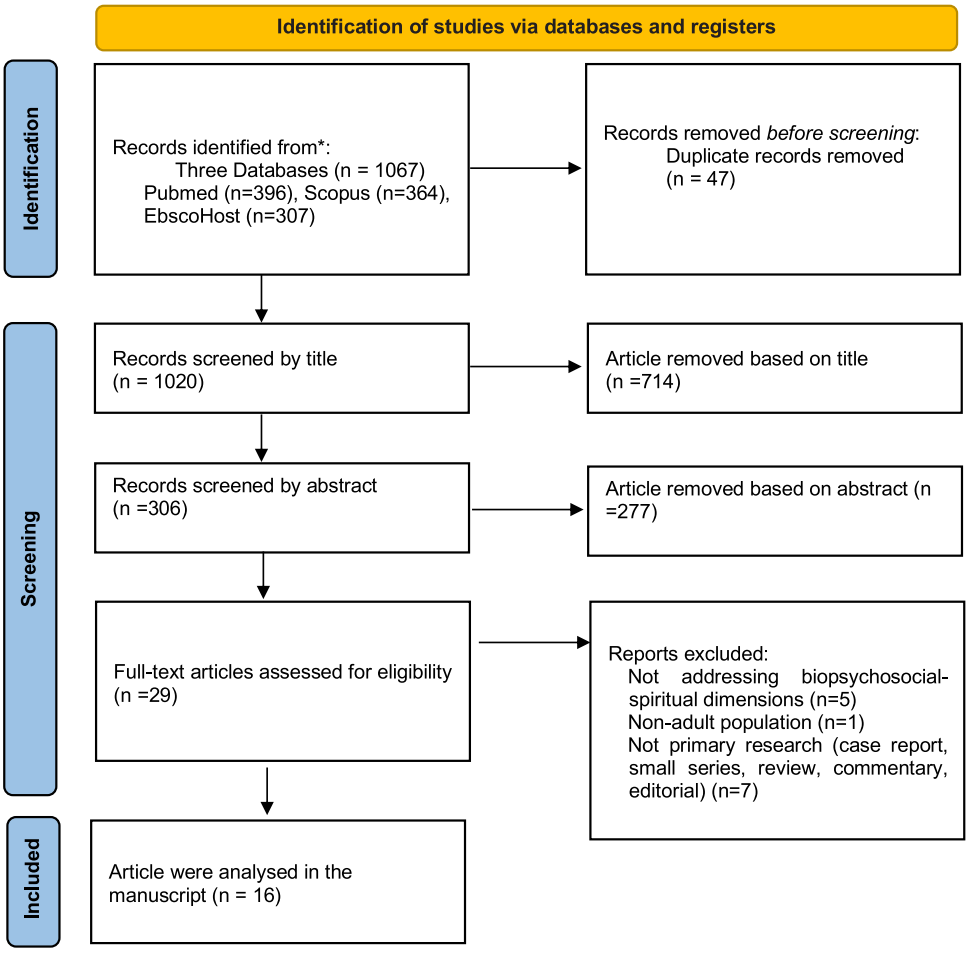

Figure 1 PRISMA Flow Diagram adapted from Page MJ, McKenzie JE, Bossuyt PM et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71. Creative Commons.[16]

Characteristics of Studies

There were 16 studies analyzed from across continents: Asia (China, India, Pakistan, Bangladesh, Turkey, Egypt), Europe (UK, Norway, Denmark, Serbia; some multi-country studies included Bosnia and Montenegro), and Latin America (Colombia). Most studies were conducted in hospital settings (hospital-based), with some being community/home-based or population-based cohorts (see Table 2). The designs used varied, including cross-sectional, prospective/observational cohort, longitudinal, community survey, and population-based cohort, with sample sizes ranging from 17 to 853 participants.

Patient Experiences with Guillain-Barré Syndrome Across Dimensions

The included studies collectively highlight the multifaceted impact of Guillain-Barré Syndrome (GBS) on patients' lives. Beyond its well-documented neurological manifestations, GBS exerts substantial physical, psychological, and social consequences that shape both short- and long-term outcomes. Synthesizing findings across these dimensions provides a more comprehensive understanding of the patient experience and underscores the importance of multidimensional approaches to care and rehabilitation (see Table 2 and Table 3) and Figure 2 which can describe the relationship between the three domains.

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Table 2 Data Extraction

Study	Country and Setting	Design and Sample	Dimension	Key Findings	JBI
Gao et al., 2016[17]	China Hospital-based	Observational Study 49 GBS patients (aged 27–68 years)	Physical, psychological, and social	**Physical** 50% of patients experienced poor sleep quality, primarily due to ventilator use, numbness, severe limb weakness, and higher CSF protein levels, with sleep EEG generally remaining normal. **Psychological** 41.6% of patients had anxiety; 25% had depression; anxiety was significantly associated with sleep disorders. **Social** Hospital environment factors (light, medical device noise, disturbance from other patients) worsened sleep quality.	(4/8)
Millán et al., 2019[18]	Colombia Hospital-based	Cross-sectional study 58 GBS patients (67% male, mean age 49 years)	Physical	**Physical** - Demyelinating AIDP was the most frequent form; several patients required ICU, and some developed dysautonomia. Older age was linked to ventilation need. - Main symptoms: weakness and paresthesia (>50%), 31% had cranial nerve involvement (especially facial palsy), Dyspnea was more frequent in the axonal variant (30% vs 7%, p=0.024)	(6/8)
Chandan et al., 2018[19]	India Hospital-based	Prospective cohort study 40 patients with GBS and 59 stroke patients	Physical, psychological	**Physical** - Around 25% of GBS patients and 10% of stroke patients developed acute RLS, associated with demyelinating GBS and subcortical stroke. - Overall, 22 (52%) patients complained of positive sensory symptoms such as pain, twisting, pricking, burning, or discomfort either alone or in various combinations. **Psychological** Most GBS patients experienced sleep disturbances such as delayed sleep onset and fragmented sleep.	(7/11)
Berisavac et al., 2020[20]	Serbia Hospital-based	Prospective cohort study 74 adult patients with GBS	Physical, psychological	**Physical** Disability improved significantly over 6 months. **Psychological** Mental health and quality of life improved, though more slowly than physical recovery.	(9/11)
Chowdhury et al., 2019[21]	Bangladesh Hospital-based	Cross-sectional Study 38 patients with GBS	Physical, psychological, and social	**Physical** 63% reported residual complaints, mainly gait unsteadiness, pain, paresthesia, and fatigue; 18% had significant disability. **Psychological** 15,7% had moderate-to-severe depression; behavioral problems noted; fatigue remained common. **Social** 36% had home or informal care or adaptations in their house.	(4/8)
Davidson et al., 2022[22]	United Kingdom Community or home-based	Cross-sectional survey 216 adult respondents with a history of GBS	Physical, psychological	**Physical** 52% reported falls in the past year, which were associated with poor mobility, balance problems, body pain, and fatigue. **Psychological** Fallers had higher anxiety and depression scores; fatigue was strongly linked to the risk of falls.	(6/8)
Singh et al., 2020[23]	Pakistan Hospital-based	Cross-sectional study 118 patients with GBS	Physical	**Physical** 41.53% experienced autonomic dysfunction; the most common symptoms were constipation, diarrhea, urinary retention, and fluctuating BP/HR.	(7/8)
Farbu et al., 2016[24]	Norway Hospital-based	Prospective cohort study 17 patients with GBS	Physical, psychological	**Physical** 50% had milder forms of GBS with preserved walking ability and a Hughes score ≤2. **Psychological** On the SF-36 physical (PCS) and mental summary score (MCS), mean PCS increased from 24.1 to 69.0, and mean MCS rose from 47.0 to 78.6 during the first year.	(9/11)

Levison et al., 2023[25]	Denmark Community or home-based	Population-based cohort 853 patients with GBS, 8639 controls;	Psychological	**Psychological** Depression within 2 years was observed in 21.3%.	(9/11)
Walteros et al., 2019[26]	Colombia Community or home-based	Prospective cohort study 34 GBS patients	Physical, psychological	**Physical** 1 year: 73% recovered well, 27% disabled; 53% sensorimotor neuropathy; 21% neuropathic pain; 41% fatigue. **Psychological** Depression is more common in patients with disabilities	(8/11)
Vukojevic et al., 2020[27]	Serbia, Bosnia, Montenegro Hospital-based	Longitudinal study 69 newly diagnosed GBS patients	Physical	**Physical** Pain was reported by 85.5% at day 14; 26.4% had neuropathic pain. At 6 months, 72.5% still had pain, 20% neuropathic. Non-neuropathic pain decreased over time, while neuropathic pain persisted. Neuropathic pain correlated with higher disability scores (rho=0.43, p<0.01)—persistent pain associated with poorer recovery perception.	(9/11)
Modi et al., 2019[28]	India Hospital-based	A prospective observational study was 32 GBS patients	Physical, psychological, and social	**Physical** 56.25% patients had neuropathic pain. **Psychological** The pain group showed a significant association with sensory impairment, CSF protein, and emotional domains of QOL, while no association with disability. **Social** Neuropathic pain is associated with sensory impairment in GBS and markedly affects the quality of life, especially emotional, family, and social activities.	(9/11)
Papri et al., 2024[29]	Bangladesh Hospital-based	Prospective observational cohort studies 470 patients with GBS in FU week 26	Physical, psychological, and social	**Physical** 71% reported pain at enrolment; 38% at week 13; 26% at week 26. Pain associated with disease severity, muscle weakness, axonal GBS, and dysautonomia. **Psychological** Acute pain and chronic pain are associated with anxiety/depression (p=0.048); chronic pain is also associated with depression (p=0.005). **Social** Acute pain was significantly associated with the 'self- care' (p=0.023), 'usual activities' (p=0.049).	(7/8)
Bahnasy et al., 2018[30]	Egypt Hospital-based	Prospective observational cohort studies 20 GBS patients and 10 healthy controls	Physical, psychological	**Physical** The mean sleep latencies of the multiple sleep latency test (MSLT) were significantly shortened. One-night polysomnography (PSG) showed shortening of the total sleep time, sleep efficiency, lowest O2 saturation, and pulse transit time with increased wake after sleep onset, sleep stage transition index, apnea hypopnea index, desaturation index, arousal index, snore index, and periodic limb movement index. **Psychological** An increase in Anxiety in GBS patients, which was positively correlated with the degree of motor disability.	(8/11)
Uz et al. (2023)[31]	Turkey Hospital-based and home-based	Prospective observational cohort studies 24 GBS patients	Physical, psychological, and social	**Physical** The predominant symptoms experienced by these patients were fatigue (100%), neuropathic pain (70.8%), joint pain (54.2%), and autonomic dysfunction (50%). **Psychological** Depression occurred in 25% of patients; fatigue remained in 53% at 3 years. **Social** Social functioning improved with rehab, but residual fatigue limited participation.	(9/11)
Djordjevic et al., 2020[32]	Serbia Hospital-based	Prospective observational cohort studies 74 GBS patients	Physical, psychological	**Physical** Disability as measured by the GDS improved over time (P <0.01). **Psychological** QoL scores also improved over time (p<0.01)	(9/11)

Notes: JBI = *Joanna Briggs Institute* critical appraisal score, which reflects the methodological quality of each included study. A higher JBI score indicates better adherence to methodological standards and lower risk of bias.

Table 3 Summary of Study Findings Based on Dimensions

Dimension	Key Findings	Study
Bio/Physical	• High prevalence of pain, particularly neuropathic, with persistence up to 6 months. • Pain prevalence decreased over time but remained common, associated with severity, weakness, axonal subtype, and dysautonomia. • Fatigue is consistently reported, persisting for years, and is linked to increased fall risk. • Autonomic dysfunction affected 40–50% of patients. • Sleep disturbances included shortened latency, reduced efficiency, and fragmentation, often worsened by hospital factors. • Disability improved gradually within 6–12 months, though residual symptoms were common.	[17,20,22–24,26–32]
Psychological	• Depression is reported in 15–25% of patients, with persistence up to three years. • Anxiety is significantly associated with motor disability and sleep disorders. • Patients with falls exhibited higher anxiety, depression, and fatigue levels. • Moderate-to-severe depression frequently accompanied residual gait problems and fatigue. • Sleep disturbances were common in the acute phase. • Mental health and QoL scores improved over time, though recovery lagged behind physical improvements.	[19,21,22,24–26,30,31]
Social	• A substantial proportion of patients required home care or environmental adaptations. • Neuropathic pain limited social functioning, family roles, and daily activities. • Acute pain significantly affected self-care and usual activities. • Social participation improved with rehabilitation, but residual fatigue continued to restrict involvement.	[21,28,29,31]

Domain I: Physical

Across the included studies, the physical burden of Guillain-Barré Syndrome (GBS) was consistently substantial, with pain, particularly neuropathic pain, emerging as the most persistent symptom. A longitudinal study in Southeast Europe reported that 85.5% of patients experienced pain at day 14, with 20–26% continuing to report neuropathic pain at six months.[27] In India, more than half of patients reported neuropathic pain, which significantly affected emotional domains of quality of life.[28] Similarly, a large Bangladeshi cohort (n = 470) demonstrated a decline in pain prevalence from 71% at admission to 26% at week 26, with pain strongly associated with disease severity, muscle weakness, axonal subtype, and dysautonomia.[29]

Fatigue was also a frequent complaint, identified as a significant risk factor for falls in the United Kingdom,[22] and reported in 100% of patients even three years after onset in Turkey.[31] Autonomic dysfunction was another common manifestation, affecting approximately 40–50% of patients.[22,31] Sleep disturbances, including shortened sleep latency, reduced efficiency, and increased fragmentation, were also documented in China and Egypt, often exacerbated by hospital environmental factors such as noise and light.[17,30] Despite these challenges, several studies documented gradual improvement in disability within the first 6–12 months.[20,24,26,32]

Domain II: Psychological

Psychological impairments were also prominent, most notably anxiety, depression, and disturbances in mental quality of life. A population-based cohort study in Denmark found that 21% of patients developed depression within two years of

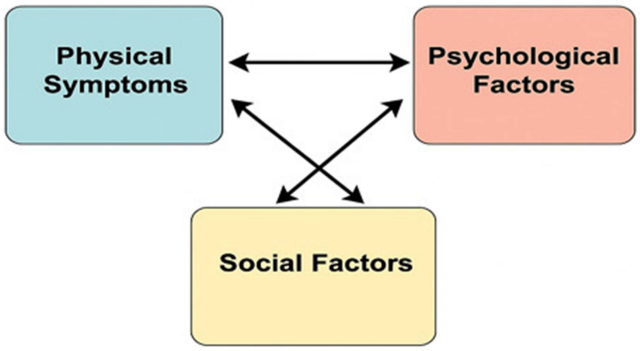

Figure 2 Interconnections among physical, psychological, and social dimensions in Guillain-Barré Syndrome.

GBS onset.[25] Similarly, a community survey in the United Kingdom revealed that patients with a history of falls had significantly higher levels of anxiety and depression, along with greater fatigue.[22] In South Asia, 15.7% of patients in Bangladesh presented with moderate-to-severe depression, frequently accompanied by residual gait instability and persistent fatigue.[21] In Egypt, anxiety levels were positively correlated with the severity of motor disability,[30] while in India, acute-phase patients often reported delayed sleep initiation and fragmented sleep.[21] Improvements in psychological well-being were observed in Norway, where mental health scores increased substantially during the first year.[24] Nevertheless, long-term symptoms remained common, with 25% of Turkish patients experiencing depression three years post-onset,[31] and higher rates of depression were noted among Colombian patients with persistent disability.[26]

Domain III: Social Dimension

The social consequences of GBS were evident, including reduced independence, reliance on informal care, and limited participation in social and family life. In Bangladesh, 36% of patients required home-based support or environmental adaptations following their illness.[21] In India, neuropathic pain was shown to significantly restrict both family roles and social interactions.[28] Similarly, findings from Bangladesh demonstrated that acute pain was significantly associated with impairments in self-care and routine daily activities.[29] Turkish patients showed improvements in social functioning after rehabilitation. However, residual fatigue continued to limit full participation in daily and social activities.[31]

Discussion

This review maps the current evidence regarding the biopsychosociospiritual impact on adult patients with Guillain-Barré Syndrome (GBS). The results show that GBS not only causes acute neurological disorders, but also has complex long-term consequences, encompassing physical, psychological, and social dimensions. In contrast, the spiritual aspect has almost no evidence yet.

The interconnection between the physical, psychological, and social dimensions of GBS can be conceptualized as a dynamic and reciprocal relationship. Physical impairments such as neuropathic pain, fatigue, and motor weakness often act as primary stressors that trigger emotional distress, including anxiety, depression, and reduced self-efficacy. In turn, these psychological disturbances may exacerbate physical symptoms by increasing fatigue perception and reducing adherence to rehabilitation. Similarly, limited mobility and emotional instability can restrict social participation, leading to isolation and diminished social support, which further reinforces psychological burden. This cyclical interaction suggests that effective rehabilitation for GBS survivors requires an integrated biopsychosocial framework that simultaneously addresses physical restoration, emotional well-being, and social reintegration. To visually illustrate this multidimensional interaction, a conceptual model (Figure 2) has been added, summarizing the thematic interconnections across the identified domains.

When compared with other chronic neurological disorders such as multiple sclerosis (MS), or chronic peripheral neuropathies, the biopsychosocial impacts of GBS exhibit both similarities and distinct characteristics. GBS is characterized by an abrupt loss of motor control and acute physical decline, often triggering anxiety, sleep disturbances, and psychiatric symptoms.[30] In contrast, chronic conditions such as MS progress more gradually, allowing patients to adapt psychologically over time and develop sustained coping strategies.[33,34] Moreover, while social burden is prominent in both groups, GBS patients typically face higher dependency in early recovery phases due to sudden paralysis and the need for intensive support, whereas individuals with MS experience long-term challenges in maintaining social and occupational participation. These distinctions highlight that although GBS shares a comparable biopsychosocial pattern with chronic neurological disorders, its acute onset demands earlier and more integrated multidisciplinary rehabilitation and psychosocial interventions to optimize patient outcomes.

Overall, several studies have shown a link between physical, psychological, and social dimensions. Neuropathic pain and chronic fatigue have been reported to contribute to increased symptoms of anxiety and depression, while physical limitations such as falls impact social participation and self-esteem.[23,26,27,31,35] In addition, psychological problems such as depression are also associated with difficulties in social reintegration and returning to work.[21,25,26,35] However, this association has only been reported partially in certain studies, and no research has explicitly assessed the relationship between the four dimensions comprehensively. The lack of evidence on the spiritual dimension further emphasizes the

research gap. It reinforces the urgency of a multidisciplinary care approach that integrates physical, psychological, social, and spiritual aspects in the recovery of GBS patients.

In the physical domain, the most consistently reported physical sequelae were residual motor weakness, neuropathic pain, chronic fatigue, and sleep disturbances. Neuropathic pain persisted in patients up to six months post-onset and was strongly associated with lower quality of life.[27,29] A Previous study reported that pain, though often overlooked, represents a significant burden requiring comprehensive management.[36] In addition, fatigue was another persistent symptom, reported by nearly all patients in some cohorts, even years after neurological recovery.[31] This suggests multifactorial mechanisms, including neuroimmune, autonomic, and psychological contributors.[37] A recent meta-analysis confirmed residual fatigue in more than 50% of GBS survivors.[38] Sleep disturbances, exacerbated by ICU stays and hospital environmental factors, were also common, with disrupted REM sleep linked to poorer long-term outcomes.[17,30,39] These findings underscore the need for rehabilitation approaches that integrate pain management, sleep hygiene, and fatigue interventions alongside motor rehabilitation.

Another impact that is quite widely reported is in the psychological domain. The included studies consistently reported a high prevalence of anxiety and depression among GBS patients, both in the acute and post-acute phases.[28,29] This is reinforced by epidemiological data showing that the risk of post-GBS depression is up to seven times higher than in the general population,[25] as well as qualitative findings highlighting the intense psychosocial burden and the need for a multidisciplinary team approach.[6] A recent qualitative study using grounded theory further added an essential perspective on psychological adaptation after GBS, conceptualized as "Loss, Determination, Adjustment", while emphasizing the significance of support, information, and hope in the coping process.[35] In addition, psychotherapeutic interventions such as Acceptance and Commitment Therapy have recently been shown to be effective in reducing psychological distress and enhancing mental flexibility as well as commitment to rehabilitation.[40] This evidence underscores the importance of early mental health screening and adaptive psychosocial interventions as an integral part of GBS rehabilitation.

Posttraumatic stress symptoms (PTSS) and delirium were also observed among GBS patients with mechanical ventilation or severe paralysis.[30] These findings are consistent with large ICU datasets, where 45–55% of survivors developed psychological disorders such as anxiety, depression, or PTSD within the first year, as reported by Hatch et al (2018).[41] Meta-analyses further indicate that PTSD emerges in approximately 17–34% of ICU patients between 7–12 months post-discharge, and simple interventions such as "ICU diaries" have been shown to mitigate these symptoms.[42] Therefore, systematic psychological screening from the acute phase and the implementation of appropriate psychosocial interventions are crucial for the rehabilitation of GBS patients.

The social impact of GBS was evident across several included studies. Davidson and Parker (2022) identified high rates of falls among post-GBS patients, which restricted mobility, limited social participation, and reduced self-confidence.[22] Barriers to returning to work were also significant, particularly for patients in physically demanding occupations or those lacking workplace flexibility.[31] In addition, stigma and societal misconceptions about the abilities of GBS survivors were highlighted in research from Bangladesh.[21] Although family support played an important role in recovery, it sometimes fostered prolonged dependence.

In a broader context, a recent qualitative meta-synthesis emphasized that many patients undergo significant changes in social roles and personal identity after GBS.[5] Declines in social participation and role limitations often negatively affected their quality of life. These findings are consistent with global evidence showing that the loss of social participation is one of the significant determinants of reduced quality of life in chronic illnesses, further underscoring the urgency of long-term rehabilitation.[43] Therefore, interventions that support social reintegration, such as community-based rehabilitation, vocational counseling, and employment policies that allow workplace adjustments, are essential to help GBS patients regain social and economic functioning.

This review highlights a clear research gap, as the spiritual dimension was absent from primary studies on GBS, with no standardized instruments or qualitative approaches used to assess patients' spiritual well-being. In contrast, evidence from other chronic illnesses, such as cancer and stroke, demonstrates that spirituality plays a vital role in coping, enhancing psychological resilience, and improving quality of life.[44] Similarly, systematic reviews on neuropathies and broader neurological conditions emphasize that spirituality is a key yet often neglected component of subjective well-

being.[45,46] Future research should therefore explicitly incorporate validated instruments, such as the FACIT-Sp or the Spiritual Well-Being Scale, to advance holistic, patient-centered care that integrates biological, psychological, social, and spiritual dimensions in the rehabilitation of GBS survivors.

The findings of this review demonstrate that the experiences of patients with Guillain-Barré Syndrome (GBS) are multidimensional. The most consistent physical impacts include residual motor weakness, neuropathic pain, sleep disturbances, and chronic fatigue, which often persist despite neurological recovery. Psychological impacts involve anxiety, depression, and posttraumatic stress symptoms, particularly among patients with residual disability or a history of intensive care. Social barriers, such as difficulties returning to work, social isolation, and stigma, were also reported, while the spiritual dimension was not explored at all in the primary studies.

Strengths and Limitations

This scoping review systematically mapped the biopsychosocial-spiritual impacts of Guillain-Barré Syndrome (GBS) in adults. Using the Joanna Briggs Institute (JBI) framework and PRISMA-ScR reporting ensured methodological rigor and transparency. Literature searches were conducted in PubMed, Scopus, and EBSCOhost with predefined inclusion and exclusion criteria, allowing only primary studies of adequate quality to be analyzed. The findings provide a comprehensive overview across physical, psychological, social, and spiritual dimensions while identifying key research gaps for future studies.

The JBI critical appraisal revealed that the methodological quality of the included studies ranged from moderate to high (scores 4/8 to 9/11). Most studies demonstrated clear research objectives, appropriate study designs, and valid data collection procedures. However, common limitations included small sample sizes, lack of longitudinal data, and incomplete reporting of participant recruitment and follow-up. These findings support the overall robustness of the evidence while acknowledging methodological weaknesses that should be addressed in future research.

Nevertheless, several limitations should be acknowledged. Only studies published in English and Indonesian were included, raising the possibility of language bias. The search was restricted to three major databases, which may have excluded grey literature. Most included studies were observational with relatively small samples, limiting generalizability. Moreover, no study explicitly addressed the spiritual dimension, restricting analysis of this aspect to highlighting a research gap rather than synthesizing empirical data.

Conclusions

This scoping review demonstrates that Guillain-Barré Syndrome (GBS) has wide-ranging impacts across the biological, psychological, social, and spiritual dimensions of adult patients. The predominant physical consequences include residual motor weakness, neuropathic pain, sleep disturbances, and chronic fatigue. Psychological effects consistently reported were anxiety, depression, and posttraumatic stress symptoms, while social challenges encompassed isolation, stigma, and difficulties returning to work. The spiritual dimension was rarely explored in primary studies, despite evidence from other chronic illnesses suggesting its potential importance in coping and quality of life.

A more comprehensive biopsychosocial-spiritual assessment is expected to inform the development of holistic, patient-centered services and interventions, particularly in rehabilitation and long-term follow-up programs. Integrating psychological and social support within multidisciplinary care pathways may enhance recovery and quality of life for GBS survivors.

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The authors report no conflicts of interest in this work.

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