



# Deep gluteal syndrome is defined as a non-discogenic sciatic nerve disorder with entrapment in the deep gluteal space: a systematic review

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## Abstract

**Purpose** Clinicians are not confident in diagnosing deep gluteal syndrome (DGS) because of the ambiguity of the DGS disease definition and DGS diagnostic pathway. The purpose of this systematic review was to identify the DGS disease definition, and also to define a general DGS diagnostic pathway.

**Methods** A systematic search was performed using four electronic databases: PubMed, MEDLINE, EMBASE, and Google Scholar. In eligibility criteria, studies in which cases were explicitly diagnosed with DGS were included, whereas review articles and commentary papers were excluded. Data are presented descriptively.

**Results** The initial literature search yielded 359 articles, of which 14 studies met the eligibility criteria, pooling 853 patients with clinically diagnosed with DGS. In this review, it was discovered that the DGS disease definition was composed of three parts: (1) non-discogenic, (2) sciatic nerve disorder, and (3) nerve entrapment in the deep gluteal space. In the diagnosis of DGS, we found five diagnostic procedures: (1) history taking, (2) physical examination, (3) imaging tests, (4) response-to-injection, and (5) nerve-specific tests (electromyography). History taking (e.g. posterior hip pain, radicular pain, and difficulty sitting for 30 min), physical examination (e.g. tenderness in deep gluteal space, pertinent positive results with seated piriformis test, and positive Pace sign), and imaging tests (e.g. pelvic radiographs, spine and pelvic magnetic resonance imaging (MRI)) were generally performed in cases clinically diagnosed with DGS.

**Conclusion** Existing literature suggests the DGS disease definition as being a non-discogenic sciatic nerve disorder with entrapment in the deep gluteal space. Also, the general diagnostic pathway for DGS was composed of history taking (posterior hip pain, radicular pain, and difficulty sitting for 30 min), physical examination (tenderness in deep gluteal space, positive seated piriformis test, and positive Pace sign), and imaging tests (pelvic radiographs, pelvic MRI, and spine MRI). This review helps clinicians diagnose DGS with more confidence.

**Level of evidence** IV.

**Keywords** Hip · Deep gluteal syndrome · Disease definition · Diagnostic pathway · Systematic review

## Abbreviations

DGS Deep gluteal syndrome

MINORS The methodological index for non-randomized studies

MRI Magnetic resonance imaging

PRISMA The preferred reporting items for systematic reviews and meta-analyses

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SI Sacroiliac  
95% CI 95% confidence interval

## Introduction

Buttock pain and posterior hip pain are very common symptoms caused by a variety of disorders [8]. The entrapment of the sciatic nerve in posterior hip area potentially causes buttock and posterior hip pain. Conventionally, the term “piriformis syndrome” has been used to cover entrapment of the sciatic nerve by the piriformis muscle [5]. However, accumulating evidence shows that various disorders cause entrapment of the sciatic nerve in addition to piriformis muscle, such as the obturator internus muscle, levator ani muscle, gemelli muscle, and coccygeus muscle [6, 19]. Therefore, the more comprehensive term, “deep gluteal syndrome” has been adopted. It has been almost 2 decades since McCrory et al. first used the term “deep gluteal syndrome”, expressing a pathophysiological understanding of chronic hip, groin, and buttock pain [18].

However, clinicians are not confident in diagnosing deep gluteal syndrome (DGS). The problem arises from the ambiguity of the DGS disease definition, deep gluteal space definition, and DGS diagnostic pathway. The purpose of this systematic review was to identify the DGS disease definition and deep gluteal space definition. Also, it was aimed at proposing a general DGS diagnostic pathway in reference to the included studies in this review.

## Materials and methods

### Eligibility criteria

Studies in which cases were diagnosed with DGS were included in this review. When the diagnostic pathway was not explicitly shown, the studies were excluded. Also, review articles and commentary papers were excluded.

### Literature search

A comprehensive literature search was conducted using four electronic databases: MEDLINE (1946 to June 20th, 2019), EMBASE (1974 to June 20th, 2019), PubMed (1999 to June 20th, 2019), and Google Scholar (1999 to June 20th, 2019). We chose the key search term “deep gluteal syndrome”.

A 3-step screening process (title screening, abstract screening, and full-text screening) was adopted to select eligible articles. After duplicate articles were removed, two reviewers (\*\*KK AND \*\*AS) independently performed title and abstract screenings. If either of the reviewers included an article during title or abstract screening, it was moved

to the next stage for screening. During full-text screening, discrepancies were resolved through discussion and consensus with the senior authors (\*\*SU AND \*\*OA). We did not register the protocol for this systematic review.

### Data collection and analysis

All relevant data were collected in duplicate (\*\*KK, \*\*AD), including demographics of studies (authors’ name, country, publication year, patients number, the percentage of female in the study cohort, age), DGS disease definition, deep gluteal space definition, and DGS diagnostic pathway. When age was not expressed with mean, but expressed with median, minimum–maximum range, or interquartile range, we estimated the mean in reference to Wan et al. (2014) in order to output the pooled mean age [34]. The extracted data in DGS disease definition, deep gluteal space definition, and DGS diagnostic pathway were qualitatively synthesized.

### Assessment of risk of bias

The methodological index for non-randomized studies (MINORS) appraisal tool was used to assess the quality of the included studies [28]. A score of 0, 1, or 2 was given for each of the eight items on the MINORS checklist with a maximum score of 16 for non-comparative studies. The MINORS were independently scored in duplicate by two reviewers (\*\*KK, \*\*CA). Methodological quality was categorized a priori as follows: a score of 0–8 was considered as poor quality, 9–12 was considered as fair quality and 13–16 was considered as excellent quality, for non-comparative studies in the MINORS.

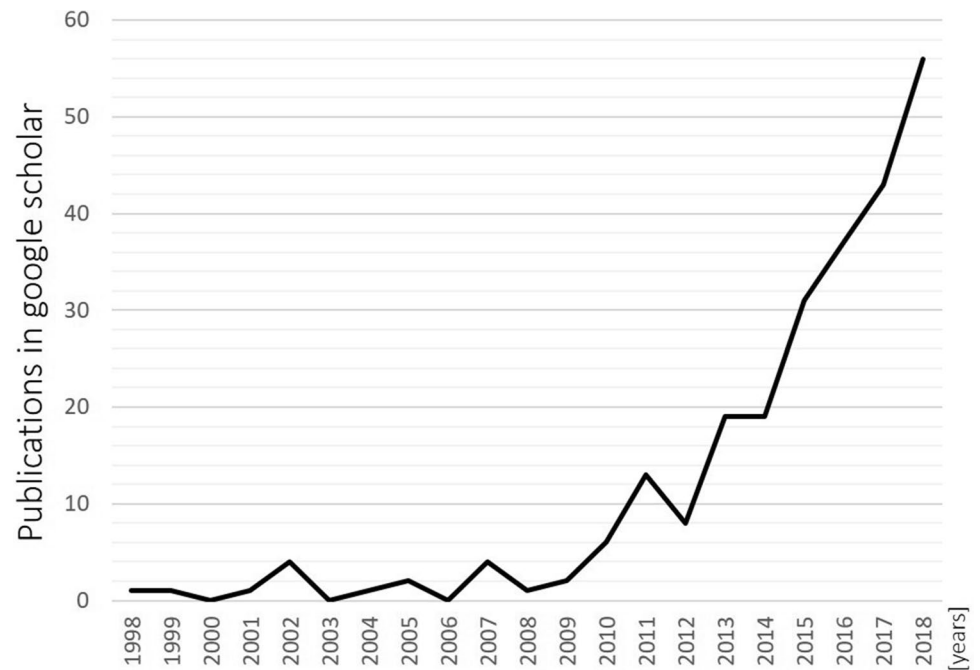
## Results

### Study identification and characteristics

The frequency of use of the term “deep gluteal syndrome” has recently increased in medical literature. In Google Scholar, more than 280 articles included the term “deep gluteal syndrome” and especially more than half of papers have been published in the last 5 years, as shown in Fig. 1.

The initial literature search yielded 359 articles, of which 14 studies (e.g. 11 full papers and 3 conference proceedings) met the eligibility criteria pooling 853 patients clearly diagnosed with DGS [2, 3, 7, 9, 10, 12, 16, 22–24, 26, 27, 29, 33]. In the pooled population, the mean age was 48.1 years (range 5–80 years) and 57.6% of the patients were female, as shown in Table 1. The results of the screening process are described in the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram (Fig. 2) [20]. In most of the studies with the pooled

**Fig. 1** The number of publications mentioning DGS in Google Scholar. More than 280 articles included the term “deep gluteal syndrome” and more than half of the articles have been published in the last 5 years



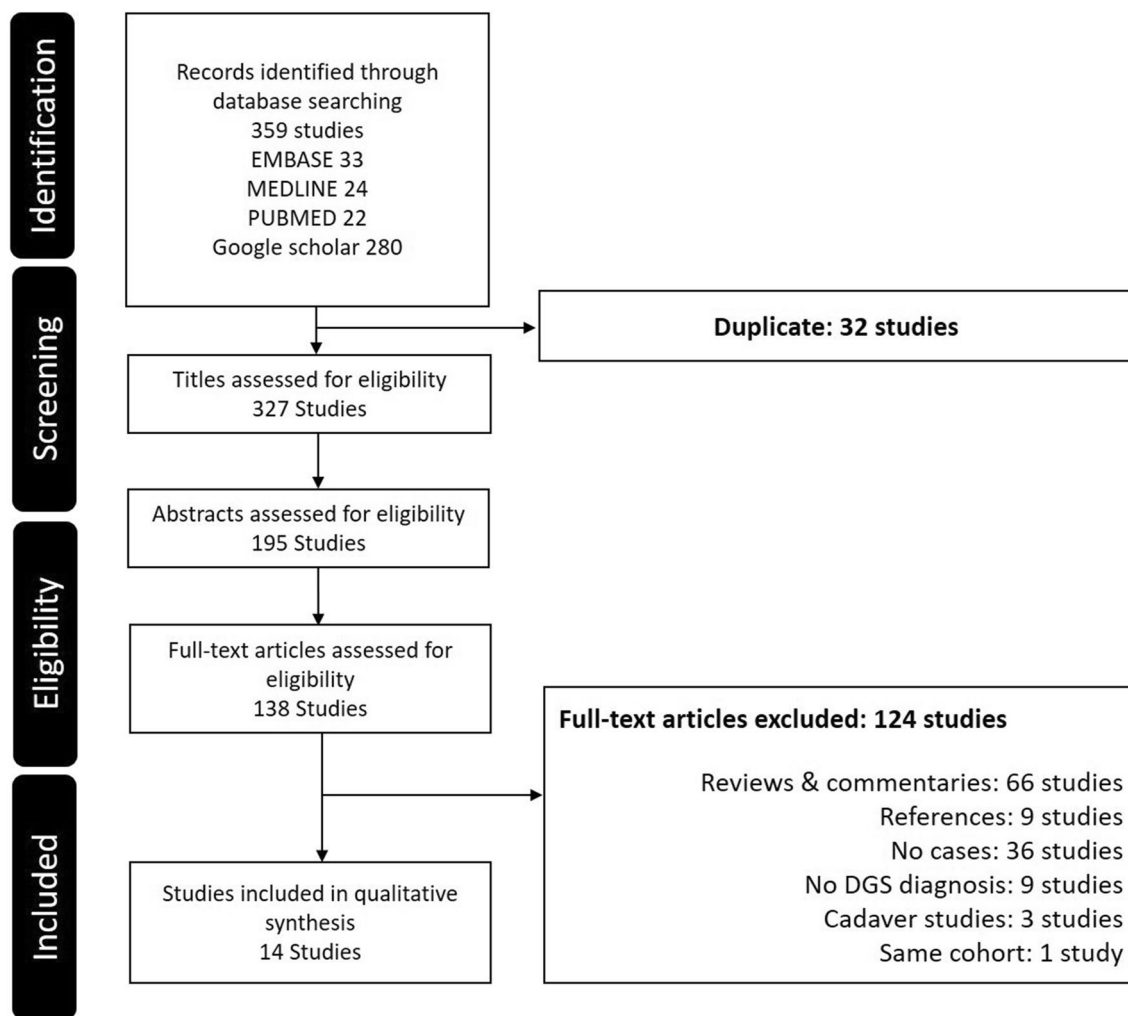
**Table 1** Demographics of the included studies

Authors	Year	Country	Patient number	% Female	Age	DGS disease definition	Deep gluteal space definition	MINORS
Martin et al. [16]	2011	USA	35	80	47	It has been suggested that the term “deep gluteal syndrome” (DGS) be used because entrapment of the sciatic nerve may occur from any of the gluteal region anatomy or the non-discogenic sciatica	S	12
Nordfors et al. [22]	2013	Denmark	187	50	NS	The syndrome is defined as tenderness and abnormal pain sensitivity in the parasacrocygeal area	NS	10
Rosales et al. [26]	2015	Chile	49	43	40.4	Deep gluteal syndrome is a term used to describe the symptoms and signs caused by entrapment of the sciatic nerve in the gluteal region	S	12
Park et al. [24]	2016	South Korea	60	45	48.6	Deep gluteal syndrome (DGS) involves pain in the buttock caused from entrapment of the sciatic nerve in deep gluteal space	S	12
Schröder et al. [27]	2016	USA	6	100	40.8	DGS is a condition involved with musculoskeletal, psychological and social factors	NS	12
Auilera-Bohorquez et al. [2]	2018	Colombia	41	88	48.4	Deep gluteal syndrome (DGS) is characterized by compression, at extra-pelvic level, of the sciatic nerve (SN) within any structure of the deep gluteal space (DGS)	S	11

**Table 1** (continued)

Authors	Year	Country	Patient number	% Female	Age	DGS disease definition	Deep gluteal space definition	MINORS
Barbero et al. [3]	2018	Spain	45	100	NS	the set of symptoms and signs caused by compression of non-discogenic sciatic nerve origin in the anatomical region of sub-gluteal space. This term defines the sciatic nerve compression in the anatomical region of space gluteus not discogenic causing those originating this region	NS	8
Fernández-Jara et al. [7]	2018	Spain	49	69	44.2	NS	NS	8
Ham et al. [10]	2018	South Korea	24	54	47.1	Deep gluteal syndrome (DGS) is an underdiagnosed condition characterized by pain and/or dysesthesias in the buttock area, hip or posterior thigh and/or radicular pain due to a non-spinal sciatic nerve entrapment in the sub-gluteal space	S	12
Leal et al. [12]	2018	Portugal	23	70	41.2	Deep gluteal syndrome (DGS) is an entity characterized by pain or paresthesia on the buttock, hip or posterior thigh caused by a non-discogenic, extra-pelvic compression of the sciatic nerve	NS	9
Stajic et al. [29]	2018	Serbia	143	60	NS	NS	NS	11
Vassalou et al. [33]	2018	Greece	116	43	53.8	Piriformis muscle syndrome (PMs) represents a subtype of deep gluteal syndrome (DGS) referring to neuropathy resulting from compression of the sciatic nerve (SN) in the greater sciatic foramen, which is the medial margin of the upper sub-gluteal space, by disorders related to the piriformis muscle (PM)	NS	12
Girolami et al. [9]	2019	Italy	1	0	62	NS	S	9
Park et al. [23]	2019	South Korea	74	47	49.7	Deep gluteal syndrome (DGS) describes the presence of chronic pain in the buttock due to non-discogenic and extra-pelvic entrapment of the sciatic nerve	S	12

USA The United States of America, DGS deep gluteal syndrome, S shown, NS not shown



**Fig. 2** PRISMA flowchart. The initial literature search yielded 359 articles using four electronic databases: MEDLINE, EMBASE, PubMed, and Google Scholar. After a 3-step screening process, 14 studies met the eligibility criteria pooling 853 patients clearly diagnosed with DGS

### Risk of bias in included studies

The consensus mean MINORS score of the included studies was  $10.7 \pm 1.5$ , indicating fair methodological quality. Seven studies satisfied the domain of inclusion of consecutive patients, having potentially low risk of selection bias, however, there were no studies in which data were prospectively collected. The MINORS scores in the included studies are shown in Appendix Table 3.

### Definition of DGS disease and deep gluteal space

In the included studies, 11 studies explicitly described the DGS disease definition [2, 3, 10, 12, 16, 22–24, 26, 27, 33]. The most prominent DGS disease definition was signs and symptoms caused by non-discogenic entrapment of

sciatic nerve in deep gluteal space. The DGS disease definition comprised three characteristics: (1) non-discogenic, (2) sciatic nerve pain, and (3) entrapment in deep gluteal space. Seven studies described deep gluteal space [2, 9, 10, 16, 23, 24, 26], as shown in Appendix Table 4. The most recognizable definition of deep gluteal space is as follows:

Anterior border: posterior acetabular column  
Posterior border: gluteus maximus muscle  
Medial border: sacrotuberous ligament  
Lateral border: gluteal tuberosity  
Superior border: sciatic notch  
Inferior border: Ischial tuberosity

The definition of the deep gluteal space is illustrated in more detail in Fig. 3.

**Table 2** DGS diagnostic pathways in the included studies

Article type	Ref. [2]	Ref. [3]	Ref. [7]	Ref. [9]	Ref. [10]	Ref. [12]	Ref. [16]	Ref. [22]	Ref. [23]	Ref. [24]	Ref. [26]	Ref. [27]	Ref. [29]	Ref. [33]
	full	conf	conf	full	full	conf	full	full	full	full	full	full	full	full
<i>HPI</i>														
Posterior hip pain	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Radicular pain	1			1	1		1	1	1	1	1			1
Paresthesia				1	1	1	1	1	1	1	1			1
Worsen while sitting for 30 min	1		1	1	1	1	1	1	1	1	1			1
Walking pain				1	1		1	1	1	1				
Muscle weakness								1						
Night pain				1	1		1	1						
<i>Physical exam</i>														
Tenderness in gluteal space	1			1	1		1	1	1	1	1			1
FADIR test <sup>a</sup>	1			1	1		1	1	1	1	1			1
Seated piriformis test	1			1	1		1	1	1	1	1			1
Pace sign <sup>b</sup>	1			1	1		1	1	1	1	1			1
Lasègue's test				1	1		1	1	1	1	1			1
SI joint-specific						1		1	1	1				
<i>Imaging</i>														
Spine Xp				1							1			
Spine MRI	1	1	1	1	1	1	1	1	1	1	1			1
Spine CT														1
Pelvic Xp	1						1	1	1	1				
Pelvic MRI	1			1	1		1	1	1	1	1			1
Pelvic MRA				1	1		1	1	1	1				
Pelvic CT				1	1		1	1	1	1				1
ARFI elastography														1
<i>Nerve</i>														
Electromyography				1	1		1	1	1	1				1
Nerve conducting velocity								1						
Response-to-injection														
Injection in deep gluteal space				1	1	1	1	1	1	1	1			1
Root block														1

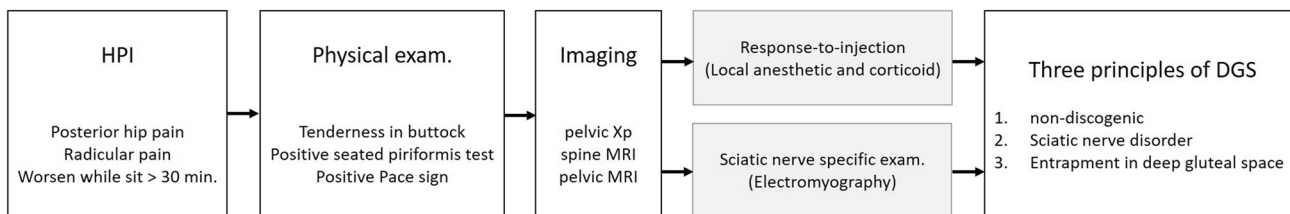
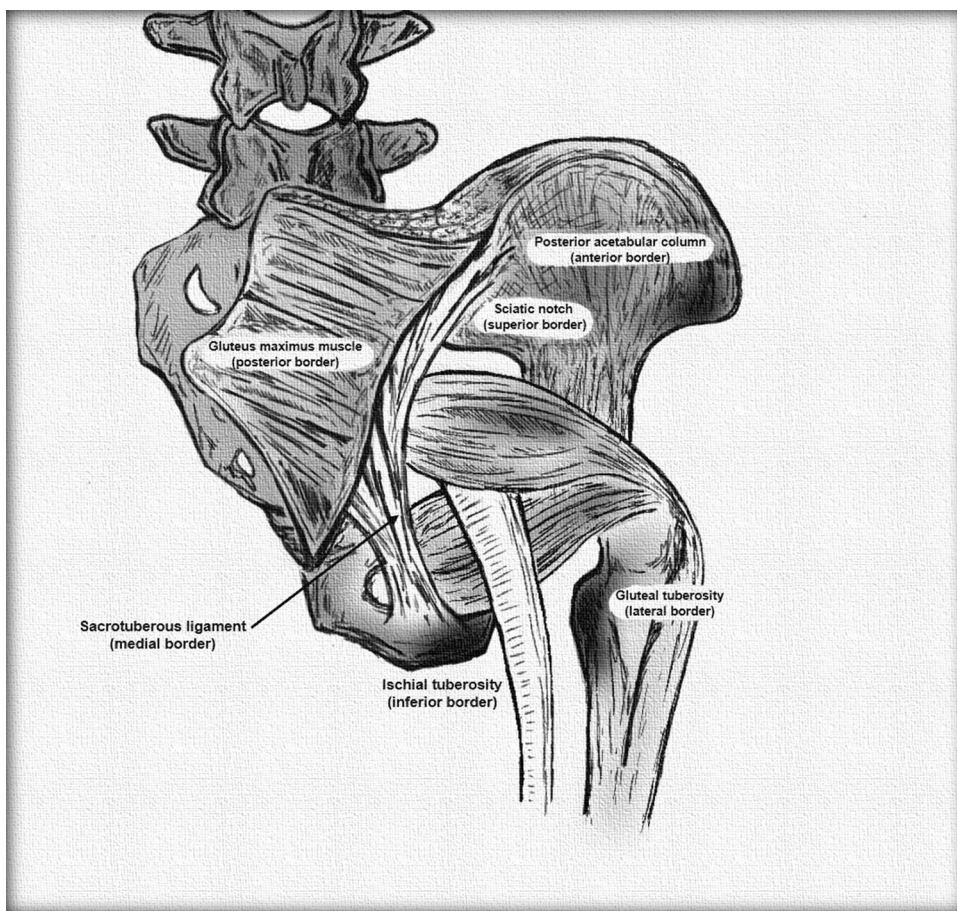
full full-paper, conf conference proceeding, HPI history of present illness, FADIR flexion-adduction-internal rotation, SI sacroiliac, Xp X-ray photograph, MRI magnetic resonance imaging, CT computed tomography, ARFI Acoustic Radiation Force Impulse, OBGYN obstetrics and gynaecology

<sup>a</sup>FADIR test (flexion-adduction-internal rotation of the hip) was positive when buttock pain aggravated [10]. When posterior hip pain was worsened by passive flexion of the hip, it was also categorized as FADIR test positive [9]

<sup>b</sup>Pace sign (pain and weakness with resisted abduction and external rotation of the hip) includes posterior hip pain aggravation when active Piriformis test [2, 27, 33] and active extension of the hip against resistance [9]



**Fig. 3** Deep gluteal space definition. The most accepted definition of deep gluteal space in the included studies is as follows: anterior border (posterior acetabular column), posterior border (gluteus maximus muscle), medial border (sacrospinous ligament), lateral border (gluteal tuberosity), superior border (sciatic notch), inferior border (ischial tuberosity)



**Fig. 4** DGS diagnostic pathway. The most prominent DGS disease definition was non-discogenic entrapment of sciatic nerve in deep gluteal space. To confidently diagnose DGS, history taking, physical

examination, imaging tests, response-to-injection, and nerve-specific tests were conducted

**DGS diagnostic pathway**

In the included studies, the DGS diagnosis was performed in reference to diagnostic procedures categorized into five domains: (1) history taking, (2) physical examination, (3) imaging tests, (4) response-to-injection, and (5) nerve-specific tests, as seen in Table 2. In most of the studies with the pooled 544 patients, history taking, physical examination, and imaging tests were all performed. Response-to-injection was also performed in eight studies with the pooled 470

patients. Nerve-specific tests were also performed in five studies with the pooled 336 patients.

In history taking, posterior hip pain, radicular pain, and worsening when sitting for more than 20–30 min were the most common symptoms in patients clinically diagnosed with DGS. In physical examination, tenderness in deep gluteal space, pertinent positive results with seated piriformis test (recreated posterior hip pain at the level of the piriformis or external rotators when examiners extend the knee and passively move the flexed hip into adduction with internal

rotation in seated position) [33], and positive Pace sign (re-created posterior hip pain with active or resisted abduction and external rotation of the hip) [33] were predominantly seen. In qualitative synthesis, active piriformis test and active extension of the hip against resistance were counted as the Pace sign. In imaging tests, pelvic radiographs, and pelvic magnetic resonance imaging (MRI) were commonly used to find abnormalities in deep gluteal space (e.g. sciatic nerve entrapment in piriformis muscle or obturator internus muscle in deep gluteal space). Spinal MRI was also performed to rule out discogenic sciatic nerve entrapment. In response-to-injection, five studies with the pooled 218 patients used ultrasound-guided injection. Several medications were used in injection and the most common medications were local anaesthetic (e.g. mepivacaine and lidocaine) combined with corticosteroids (e.g. methylprednisolone). A general diagnostic pathway for DGS is demonstrated in Fig. 4.

## Discussion

The most important finding of the present study was identification of the DGS disease definition, and also a clear definition of deep gluteal space. It was discovered that the DGS disease is defined by three characteristics: (1) non-discogenic, (2) sciatic nerve disorder, and (3) nerve entrapment in the deep gluteal space. In the diagnosis of DGS, we found five diagnostic procedures: (1) history taking, (2) physical examination, (3) imaging tests, (4) response-to-injection, and (5) nerve-specific tests. History taking, physical examination, and imaging tests were generally performed in cases clinically diagnosed with DGS, followed by response-to-injection and nerve-specific tests.

Previously, Kay et al. (2017) undertook a systematic review of the causes of DGS [11]. In this review, the most common cause of DGS was iatrogenic (from a previous intervention such as injection or debris from wear of arthroplasty prostheses) (30%) followed by piriformis syndrome (entrapment of the sciatic nerve by the piriformis muscle) (26%), and trauma (15%). Also, ischial tunnel syndrome is a non-discogenic sciatic nerve entrapment in the ischial tunnel (between ischial tuberosity and lesser trochanter) among the deep gluteal space, and it would be potentially categorized into DGS [17].

The term, “deep gluteal syndrome”, in itself, potentially covers cases with posterior hip pain in the deep gluteal space caused by anything outside of sciatic nerve entrapment, such as bursitis in the deep gluteal space, proximal hamstring tendinopathy, and piriformis muscle pyomyositis [13, 30]. Also, posterior femoral cutaneous nerve entrapment, inferior gluteal nerve entrapment, and superior gluteal nerve entrapment may be broadly categorized into DGS if these

nerves are compressed in the deep gluteal space [21, 31, 32]. In searching the literature, we could not find any DGS cases outside of sciatic nerve entrapment. However, a future framework is required regarding whether DGS is specific to sciatic nerve entrapment or includes other pathological conditions.

A clear disease definition is essential in the provision of best clinical practice. DGS is currently clinically diagnosed based on the judgement of comprehensive information. However, many clinicians do not have confidence about the diagnosis and a clear definition of the DGS is needed. Here, definition of the DGS disease and the deep gluteal space was explicitly described. The most noticeable strength in this review lies in the identification of a potential DGS diagnostic pathway. A general diagnostic pathway for DGS in clinical practice was introduced in this review. The diagnostic pathway seems to comprehensively cover the three characteristics of the DGS disease definition. For instance, history taking and physical examination capture the signs/symptoms of sciatic nerve disorder. Martin et al. examined diagnostic test accuracy of seated piriformis test and Pace sign for cases with sciatic nerve entrapment in the gluteal region. It showed high accuracy of these tests with sensitivity 0.52 (95% confidence interval (95%CI 0.33–0.71) using seated piriformis test and 0.78 (95%CI 0.58–0.90) using Pace sign, and specificity 0.90 (95%CI 0.60–0.98) and 0.80 (95%CI 0.49–0.94), respectively [14]. Physical examination and pelvic radiographs comprehensively examine the possibility of the osseous biomechanical influences and spinal MRI excludes discogenic disorders [15]. Pelvic MRI confirms the presence of nerve entrapment in the deep gluteal space and excludes possibility of intra-pelvic entrapment. Among patients with posterior hip pain, lumbar spine or sacroiliac (SI) joint disorder should be ruled out [8] and, therefore, physical examinations and imaging tests specific to the lumbar spine and SI joint should be considered in the DGS diagnostic pathway. Also, consultations with experts such as neurologists and gynaecologists can aid in differential diagnoses.

This review has several limitations. First, this review has risks of publication bias, since cases clearly diagnosed with DGS were published and listed in medical literature search engines, whereas underdiagnosed cases are probably less likely published in the medical literature. Publication bias may potentially oversimplify the DGS disease definition and the diagnostic pathway, since only typical cases are included aside from underdiagnosed cases [1]. To minimize risks of publication bias, we did a comprehensive search using Google Scholar. In our search, 280 articles were available in Google Scholar, in contrast only 22 articles were screened in PubMed. A second limitation is that the diagnostic pathway is not validated. Each diagnostic procedure



should be assessed to confirm whether it accurately reflects three components of the DGS disease definition to satisfy content validity [4]. In future research directions, the conceptualization of a clear DGS disease definition is needed in the consideration of other pathophysiologies such as non-sciatic nerve entrapment in the deep gluteal space. An expert panels meeting may be necessary to clarify DGS diagnostic criteria using a Delphi consensus method [25].

The clinical relevance of this review is that it aids clinicians in the diagnosis of DGS with more confidence. Also, clarification of the DGS disease definition and the general diagnostic pathway guides future establishment of a clear diagnostic criteria.

### Conclusion

The DGS disease definition was identified as being a non-discogenic sciatic nerve disorder with entrapment in the deep gluteal space. Also, we proposed the general diagnostic pathway for DGS using history taking (posterior hip pain, radicular pain, and difficulty sitting for more than 30 min), physical examination (tenderness in deep gluteal space, pertinent positive results with seated piriformis test, and positive Pace sign), and imaging tests (pelvic radiographs, pelvic MRI, and spine MRI).

**Author contributions** KK, SU, and OA conceptualized the work and formatted the research question. KK and AS performed searching. KK and CA assessed the quality of the included studies. KK, NS and AD performed data acquisition and statistical analysis. SU, HM, and OA interpreted the data and commented on the data. KK wrote the manuscript. OA supervised the study and edited the manuscript.

**Funding** No financial support for this review.

### Compliance with ethical standards

**Conflict of interest** We disclosed conflict of interest in the ICMJE file.

**Ethical approval** This is a systematic review, and therefore, IRB approval is not required.

**Informed consent** This is a systematic review, and therefore, informed consent is not required.

### Appendix

See Tables 3 and 4.

**Table 3** MINORS scores of the included studies

	Ref. [2]	Ref. [3]	Ref. [7]	Ref. [9]	Ref. [10]	Ref. [12]	Ref. [16]	Ref. [22]	Ref. [23]	Ref. [24]	Ref. [26]	Ref. [27]	Ref. [29]	Ref. [33]
A clearly stated aim	2	0	2	1	2	1	2	2	2	2	2	2	2	2
Inclusion of consecutive patients	1	0	0	0	2	0	2	0	2	2	2	2	1	2
Prospective collection of data	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Endpoints appropriate to the aim of the study	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Unbiased assessment of the study endpoint	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Follow-up period appropriate to the aim of the study	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Loss to follow-up less than 5%	2	2	0	2	2	2	2	2	2	2	2	2	2	2
Prospective calculation of the study	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	11	8	8	9	12	9	12	10	12	12	12	12	11	12

**Table 4** Deep gluteal space definition in the included studies

Authors	Year	Deep gluteal space definition
Martin et al. [16]	2011	Between the ischial tuberosity and the greater trochanter lying close to the posterior capsule of the hip joint. The sciatic nerve innervates the hamstring group of muscles. Proximal to the piriformis are the superior gluteal and inferior gluteal nerves. Distal to the piriformis are the nerve to the quadratus femoris/gemellus inferior and the nerve to the obturator internus/gemellus superior
Nordfors et al. [22]	2013	NS
Rosales et al. [26]	2015	Anatomically, the sciatic nerve is located in the deep gluteal region covered by the gluteus maximus. It leaves the pelvic region through the greater sciatic foramen below the piriformis muscle and descends between the ischial tuberosity and greater trochanter while maintaining its relationship with the posterior portion of the hip joint capsule
Park et al. [24]	2016	The boundaries of deep gluteal space are femoral neck anteriorly, gluteus maximus posteriorly, linea aspera of proximal femur laterally, sacrotuberous ligament medially, inferior margin of the sciatic notch superiorly and hamstring muscle inferiorly
Schröder et al. [27]	2016	NS
Auilera-Bohorquez et al. [2]	2018	The DGS is defined in front by the femoral neck, from behind by the posterior edge of the gluteus muscles, on the side by the rough line of the femur and medially by the sacrotuberous ligament and the falciform fascia
Barbero et al. [3]	2018	NS
Fernández-Jara et al. [7]	2018	NS
Ham et al. [10]	2018	Deep gluteal space boundaries are: 1) anteriorly, femoral neck, 2) posteriorly, the gluteus maximus, 3) laterally, linea aspera of proximal femur, 4) medially, sacrotuberous ligament, 5) superiorly, inferior margin of the sciatic notch, and 6) inferiorly, hamstring muscle. Any structure in the gluteal space (e.g. piriformis muscle, fibrous bands, gluteal muscles, hamstring muscles, gemelli–obturator internus complexes, vascular bands) can induce sciatic nerve entrapment
Leal et al. [12]	2018	NS
Stajic et al. [29]	2018	NS
Vassalou et al. [33]	2018	NS
Girolami et al. [9]	2019	“Deep gluteal space”, an anatomical space marked by the gluteus maximus muscle (posteriorly), posterior acetabular column, hip joint capsule and proximal femur (anteriorly), lateral lip of linea aspera and greater tuberosity (laterally), sacrotuberous ligament and falciformis fascia (medially), inferior margin of the sciatic notch (superiorly), proximal origin of the hamstrings and ischial tuberosity (inferiorly)
Park et al. [23]	2019	Within the deep gluteal space include the piriformis tendon, fibrovascular bird’s nest, gluteal muscles or tendons, hamstring proximal insertion, the gemelli–obturator internus (triceps coxae) muscle, vascular abnormalities, and space occupying tumours

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