**Supplementary file 1a**

**Detailed Review Methods**

We conducted a scoping review of the literature based on the updated guidelines recommended by the Joanna Briggs Institute [57]. After identifying the research questions, defining the study aims and methods (including search strategies) *a priori*, we searched databases to find relevant studies. We then identified relevant studies using a screening process (described later), and two independent reviewers selected articles for inclusion, extracted data from the articles, and summarized the results. For the reporting of the review, we followed the recently published extension of PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analysis) guidelines for scoping reviews [105]. This review was not registered in the PROSPERO registry, as at the time of conducting the review, PROSPERO registry did not accept protocols for scoping reviews. Also, we did not assess the methodological quality of the included studies as the aim of a scoping review is not to assess the quality of the published literature, but to learn about the area and its scope [57].

*Study participants and eligibility criteria*

 We included studies that: (1) were conducted in Nepal; (2) included participants who had a diagnosis of a clinical pain condition (e.g., complex regional pain syndrome, headache, chronic pain, musculoskeletal pain, neuropathic pain, post-surgical pain, pediatric pain, cancer pain, etc.) or included pain as the primary outcome (e.g., fracture management); and (3) used either qualitative or quantitative research designs. We did not exclude studies based on language of publication, year of publication, study design, or age of study participants. However, we did exclude studies that: (1) included animals instead of human participants; (2) were editorials or review papers; (3) included participants who did not have a clear pain condition or diagnosis, or had pain as only one symptom of another primary condition being studies (e.g., infectious diseases such as typhoid); or (4) were conducted outside of Nepal.

*Search strategy*

We searched Medline, Embase, Scopus, and Cochrane library from inception to November 2018. Additionally, we searched Google Scholar and Nepal Journals Online (NepJOL, <https://www.nepjol.info/>) to include grey literature and studies from journals not indexed elsewhere. NepJOL is a database of all Nepalese journals which includes many journals published by medical colleges and medical societies that are not indexed in any other international databases. Searching the literature indexed on NepJOL in this review was important to identify the scope of pain research that was conducted locally and published that would otherwise not be retrieved by searching international databases. We also searched the two most commonly used clinical trial registries (WHO trial registry and ClinicalTrials.gov) to locate registered trial protocols. Finally, we searched the reference lists of included studies. We collated articles in the Endnote software, and removed duplicates.

The lead author (SS) developed the search strategy, and amended it after receiving feedback from all authors. We used a combination of terms “pain” or “analgesia” and “Nepal” or their alternative terms to formulate the search strategy. For example, “Nepal” and “pain” were searched as MeSH headings in Medline which were combined using a Boolean operator- “AND”. Limits were used to search articles on “Humans” only. Search strategies were adapted for each database. In order to maximize locally published papers in NepJOL, we used “pain”, “analgesia” or related terms in the title and abstract and avoided the use of “Nepal”. Details of search terms and strategies used are described later.

*Data screening*

A pair of authors (SS, AP, SwS, and MP) independently screened the title and abstract of all the articles. Disagreements about inclusion were resolved through discussions. A third independent reviewer (SS or AP) made a final decision in case consensus could not be reached to solve the disagreement. We then performed the screening of the full text articles that required further reading. Next, we performed data charting (see below).

*Data charting process*

Data charting is the process of data extraction in a scoping review. A data extraction form was created for this purpose by SS on an Excel spreadsheet. The form was pre-tested on 10 studies by five study authors (SS, AP, SwS, MP, MPJ). After agreement from all the authors, the data extraction form was finalized. One of four authors (AP, MP, SS, and SwS) then extracted data from the included studies, and a second author confirmed that the data were extracted correctly. If included studies were of one of the review authors, a review author who is not the author of the study extracted the data. Any discrepancies were discussed with SS who made the final decision.

Based on the results from all the studies included, the lead author (SS) classified the studies into key themes to present the results and organize the discussion. For example, by categorizing studies based on pain conditions being studied versus research design. We did not make attempts to contact the study authors in case of missing information as this was not required to achieve the aims of this review.

*Data items*

We extracted data related to (1) the year of publication, (2) place of data collection/ research, (3) source of publication (local or international journal, PubMed indexed or not indexed journal), (4) study design (qualitative study, clinical trial, study protocol, observational design, case-series or case studies), (5) study setting (clinical, community, mixed), (6) population studied (headache pain, musculoskeletal pain, post-operative pain, low back pain), (7) participant characteristics (age and sex), (8) measures used, (9) treatment delivered, and (10) key findings.

*Synthesis of results*

We computed the frequency for publication types, setting (community or hospital), study design, type of pain condition, age categories, and scope of the study. We then classified the results based on the broader themes of pain research, for example, interventional studies (medical or surgical management and rehabilitation), epidemiological studies, outcome measurement studies, and diagnostic studies.

**Search strategy for Medline**

1 pain.ab,kw,sh,ti. 512451

2 analgesia.ab,kw,sh,ti. 59225

3 nepal.mp. or NEPAL/ 8209

4 nepal.ab,ti. 6516

5 kathmandu.ab,ti. 1130

6 PAIN/ 126582

7 Chronic Pain/ 10725

8 Musculoskeletal Pain/ 2498

9 Osteoarthritis/ 34437

10 Low Back Pain/ 19603

11 Neck Pain/ 6239

12 Shoulder Pain/ 4299

13 neuropathic pain.mp. or Neuralgia/ 20605

14 Reflex Sympathetic Dystrophy/ or Complex Regional Pain Syndromes/ or Temporomandibular Joint Dysfunction Syndrome/ or Causalgia/

Limit: Humans

Total articles: 214

**Search strategy for SCOPUS**

( ( TITLE-ABS-KEY ( nepal  OR  kathmandu ) )  AND  ( TITLE-ABS-KEY ( pain  OR  "Chronic Pain"  OR  "Musculoskeletal Pain"  OR  headache  OR  osteoarthritis  OR  "Low Back Pain"  OR  "Cancer pain"  OR  "Neck Pain"  OR  "Shoulder Pain"  OR  "neuropathic pain"  OR  radiculopathy  OR  sciatica ) ) )  AND NOT  ( TITLE-ABS-KEY ( animal  OR  dog  OR  swine  OR  pig  OR  rat  OR  mice  OR  mouse  OR  rabbit  OR  dengue  OR  tuberculosis  OR  typhoid  OR  hepatitis  OR  encaphalitis  OR  typhus  OR  giardia  OR  diarrhoea  OR  cholera  OR  hernia  OR  "helicobacter pylori"  OR  leishmaniasis  OR  appendicitis  OR  cholelithiasis ) )  AND  ( LIMIT-TO ( EXACTKEYWORD ,  "Human" )  OR  LIMIT-TO ( EXACTKEYWORD ,  "Article" ) )

Total articles: 431

**Search strategy for Embase**

1 pain assessment/ or pain/ or chronic pain/ or musculoskeletal pain/ or myofascial pain/ 426926

2 low back pain/ 53522

3 neck pain/ 20913

4 shoulder pain/ 14677

5 osteoarthritis/ 84835

6 neuropathic pain/ 28725

7 cancer pain/ 19036

8 headache/ 204368

9 nepal.mp. or Nepal/ 11748

10 (Nepal or kathmandu).ab,ti. 10048

11 9 or 10 11919

12 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 762807

13 11 and 12 299

14 limit 13 to human 286

Total articles: 286

**Search strategy for Cochrane**

Title/ Abstract/ Keyword: Nepal OR Kathmandu

AND

MeSH: musculoskeletal pain, osteoarthritis, shoulder pain, neck pain, back pain, cancer pain, neuralgia.

Total articles: 2 articles.

**Search strategy for Google Scholar**

pain[Title/Abstract] AND (Nepal)[Title/Abstract]

<https://scholar.google.co.nz/scholar?hl=en&as_sdt=0%2C5&q=pain%5BTitle%2FAbstract%5D+AND+%28nepal%29%5BTitle%2FAbstract%5D&btnG>=

Total 208 articles (date 2018/12/04)

**Search strategy for NepJOL**

Title: (Pain OR analgesia OR nociception OR osteoarthritis OR headache OR radiculopathy OR sciatica OR neuralgia OR "musculoskeletal disorder\*") NOT India

Total article: 94

Abstract: (Pain OR analgesi\* OR nociception OR osteoarthritis OR headache OR radiculopathy OR sciatica OR neuralgia OR "musculoskeletal disorder\*) NOT India

<https://www.nepjol.info/index.php/index/search/search>

Total articles: 665 (2018.12.04)

Total number of articles screened: 1388.

Total number of articles included: 116

**Supplementary file 1b**

**List of included studies are listed below**

1. Acharya RS, Acharya S, Pradhan A, Oraibi S. Musculoskeletal disorders among dentists in Nepal. Journal of Nepal Dental Association 2010;11(2):107-113.
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**Supplementary File 2.**

## Supplementary Table 1. Evidence on medical management.

| **Author Year**  | **Journal** | **Primary aim of the study**  | **Type of pain condition**  | **Sample size**  | **Population** | **Age Mean (SD) unless specified** | **Women %** | **Study design** | **Intervention** | **Measures used**  | **Key findings related to study question(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aryal 2017 [5]  | Journal of College of Medical Sciences Nepal | Evaluate effects of gabapentin preoperatively and analgesic effects of epidural morphine  | Post-operativepain  | 60 | Adults | Group 1: 42 (7) years; Group 2: 45 (9) years | 100% | Prospective placebo controlled RCT | Group 1: Pre operative oral gabapentin 1 hour before surgery;Group 2: Placebo. | VAS  | Gabapentin increased duration of analgesia, and pain intensity was significantly less in the Gabapentin group.  |
| Basnet 2018 [7] | Nepal Journal of Obstetrics and Gynaecology (NJOG) | Evaluate treatment effects of addition of morphine to hyperbaric bupivacaine. | Post-operative pain following gynaecological surgeries | 100 | Adult |  45 (9) years | 100% | Randomised clinical trial | Group 1: spinal anaesthesia with heavy bupivacaine and morphine pre-operatively; Group 2: spinal anaesthesia with heavy bupivacaine alone pre-operatively. | Not specified  | Mean duration for request of first analgesia post-operatively was significantly less in intervention group (362 minutes) than control group (209 minutes). |
| Bhattarai 2014 [10] | Journal of Society of Anesthesiologists of Nepal | Evaluate analgesic effectiveness and duration of analgesia following combined intraperitoneal instillation and periportal infiltration of bupivacaine  | Post-operativepain  | 90 | Adult | 38 (11) years  | 82% | Prospectiverandomizeddouble blinded study | Group 1: intraperitoneal instillation and periportal infiltration of bupivacaine;Group 2: intraperitoneal instillation of bupivacaine and periportal infiltration of bupivacaine.  | VAS | Combined intraperitoneal instillation and periportal infiltration of bupivacaine reduced postoperative pain after laparoscopic cholecystectomy betterthan intraperitoneal instillation or periportal infiltration of bupivacaine alone. |
| Deo 2016 [15] | Journal of Chitwan Medical College | Compare the efficacy of epidural butorphanol and tramadol for post-operative analgesia in lower limb surgeries. | Pain after lower limb surgeries  | 60 | Adult  | Group 1: 43 (12) years; Group 2: 46 (11) years | Group 1: 60%; Group 2 - 57% | Prospective, randomized, controlled, doubleblind study | Group 1: Bupivacaine + Butorphanol 2 mg; Group 2: Bupivacaine + Tramadol 100 mg | VAS  | The onset of analgesia was faster with butorphanol but the duration of analgesia was longer withtramadol. |
| Faisal 2013 [18] | Nepal Orthopedic Association journal | Compare the efficacy of intra-articular tramadol and morphine | Elective arthroscopicsurgery of the knee | 60 | Adults  | 30 (13) years | 32% | Prospectively randomized double-blind study | Group 1: intra-articular tramadol 50mg;Group 2: morphine 5mg in equivalent volumes. | VAS  | 50 mg IA tramadol provides analgesia equivalent to 5 mg IA morphine. |
| Gami 2014 [19] | Journal of Society of Anesthesiologists of Nepal | Evaluate the efficacy and safety of intrathecal morphine for post caesarean analgesia under spinal anaesthesia. | Pregnant women undergoing caesarean section.  | 300 | Adults | Group 1: 25 (2) years; Group 2: 24 (5) years | 100% | Prospective randomized case-control study | Group 1: Morphine + Bupivacaine;Group 2: Bupivacaine alone | VAS | Postoperative analgesia was significantly greater when morphine was combined with Bupivacaine.  |
| Gertsch 2010 [20] | Wilderness and Environmental Medicine | Compare the effectiveness of ibuprofen and acetazolamide for the prevention of HAH | High-altitude headaches (HAH) in healthy western trekkers | 343 | Adults | 38.3 (12) years | 29% | Trekking route/ Base camp | Mount Everest trail.  | Prospective, double-blind, randomized, placebo-controlled trial | Group 1: Ibuprofen 600 mg; Group 2: Acetazolamide 85 mg, or Group 3: Placebo |
| Ghimire 2015b [21] | Kathmandu University Medical Journal | Compare the feasibility and effectiveness of fascia iliacacompartment block (FICB) and femoral nerve block (FNB) in reducing pain associatedwith positioning  | Patients undergoing proximal femoralfracture fixation procedures | 30 | Adults  | Group 1: 54 (8);Group 2: 55 (22) years | 43% | Randomized controlled trial.  | Group 1: Fascia iliaca block with 30 ml of 1.5% lignocaine with adrenaline; Group 2: Femoral nerve block with 15 ml of 1.5% lignocaine with adrenaline | VAS | Fascia iliaca compartment block provides better analgesia than femoral nerve block in terms of facilitating optimal positioning for subarachnoid block. |
| Ghimire 2015c [22] | Kathmandu University Medical Journal | Assess the effectiveness of a transversus abdominis plane block with bupivacaine for post-operative analgesia | Patients undergoing appendectomy  | 40 | Adults | Group 1: 44 (16) years; Group 2: 44 (16) years | 52% | Double blinded placebo controlled trial  | Group 1: ipsilateral transabdominal plane (TAP) block with 20 ml of 0.5% bupivacaine;Group 2: TAP block with 20 ml of 0.9% isotonic saline | VAS | Pain intensity at 0, 30 min and 24 hours were similar between the two groups. Group A had significantly less pain at 6 hr and 12 hr.  |
| Giri 2015 [24] | Health Renaissance | Determine and compare the efficacy of injection diclofenac and injection tramadol for rapid pain management  | Acute appendicitis | 50 | Adolescent and Adults | 14 to 55 years | 42% | Experimental clinical trial | Group 1: intramuscular injection diclofenac; Group 2: intravenous injectiontramadol. | VAS(0=no pain and 10 = worst pain that can be imagined) | There was rapid and marked decrease of VAS score or pain in tramadol group as compared to diclofenac group. |
| Harris 2003 [26]  | Journal of Emergency Medicine | Compare effectiveness of acetaminophen versus ibuprofen for high altitude headache | High-altitude headaches (HAH) | 74 | Adolescent and Adults | Group 1: 34 years; Group 2: 33 years | Group 1: 59%; Group 2: 60% | Prospective, randomized, double-blind, clinicaltrial | Group 1: 400 mg of ibuprofen (IBU); Group 2: 1000 mg of acetaminophen  | 10-cm VAS. | No differences in mean VAS scores between the two groups were noted at time 0, 30, 60, or 120 mins. |
| Kandel 2016 [31] | Journal of College of Medical Sciences-Nepal | Evaluate the effectiveness of intra-articular lignocaine for reduction of acute anterior shoulder dislocation. |  Acute anterior shoulder dislocation. | 21 | Adults | 45 (20) years | 29% | Case series | Intraarticular lignocaine for pain reduction during manual reduction of acute anterior shoulder dislocation | VAS (0-10) | Manual reduction of anterior shoulder dislocation is a safe and effective but also reduces hospital stay and has negligible adverse effects |
| KC 2014 [36] | Medical Journal of Shree Birendra Hospital (MJSBH) | Evaluate effect of corticosteroid injection for sciatica through caudal route  | Sciatica | 50 | Adults | 37 (9) years | 60% | One arm pre-post design (case-series) | Methyl-prednisolone deposited in epidural space | VAS for pain intensity, slrt  | Most patients had pain relief after 12 weeks with no severe complication. VAS scores changed significantly on 35th day (17.89 + 25.23) than on the day of presentation (70.00 + 16.78). |
| Koirala 2017 [37] | Journal of Society of Anesthesiologists of Nepal | Report a case of an acute discitis | Acute discitis  | 1 | Adult | 22 years | 100% | Case study | Pain medications (tramadol, tizanidine, alprazolam) with antibiotics.  | MRI lumbar spine, ESR Clinical examination | Diagnosis of Acute Infective Discitis made on Day 2 after MRI when pain did not resolve with tramadol, tizanidine and alprazolam. Antibiotics started on Day 3 and patient discharged symptom free on Day 16. |
| Koju 2015 [38] | Nepal Journal of Obstetrics and Gynaecology (NJOG) | Evaluate effectiveness of morphine as post-op analgesia  | Post-operative pain (Gynaecological procedure) | 50 | Adult | 25 years | 100% | Randomized controlled trial | Group 1: morphine plus bupivacaine; Group 2: bupivacaine with normal saline | VAS for maximum pain in the first 24 hours, time for request of additional analgesia | Duration of complete analgesia and the time to request for additional analgesics was longer in test group than in control group.  |
| Lakhey 2010 [39] | Nepal Orthopaedic Association Journal (NOAJ) | Determine the one year clinical outcome of sub-acromialinjections of methylprednisolone and physiotherapy in patients with sub-acromial impingement syndrome | Sub-acromial Pain syndrome | 29 | Adults | 55 (9) years | 48% | One arm pre-post design (case series)  | Each shoulder received xylocaine mixed with 2ml of methyl prednisolone, repeated at 2 to 3 weekly intervals (a max of 3 injections) until pain was 2 or less on the VAS.  | VAS and CMS | Sub-acromial methylprednisolone injections followed by physiotherapy exercises can provide statistically and clinically satisfactory pain relief and improvement of shoulder function at one year follow up in 96.7% patients with sub-acromial impingement syndrome.  |
| Mahara 2004 [41] | Journal of Nepal Medical Association | Study effects of intraarticular morphine in pain relief following arthroscopic knee procedures.  | Patients undergoing arthroscopic procedures of knee | 225 | Adults | 28 years | 31% | Case series (single group prospective study) | Routine intra-articular morphine (2 mg) was used for postoperative (knee arthroscopy) pain relief. | Knee arthroscopy | Meniscal pathology was found in 154 patients, synovial pathology in 14 patients, ACL and PCL insufficiency in 18 patients, chondral lesions in 25 patients, tight lateral structures in 6 patients and loose bodies in 8 patients. |
| Maharjan 2009 [42] | Kathmandu University Medical Journal | Evaluate efficacy of intraperitonial and preiportal injection of bupivacaine after lap cholecystectomy | Post-operative pain (General Surgery) | 40 | Adults | 36 years | 77% | Randomized controlled trial | Group 1: 40 ml intraperitoneal injection of 0.25% bupivacaine and 20 ml of sameconcentration in 4 ports, 5 ml each at the end of surgery; Group 2: no treatment | Vas  | When VAS score was analyzed in the two groups, the study group had less scores compared to control group though it was statistically not significant (p>0.05). The rescue analgesic requirement was significantly less in study group (p<0.00). |
| Maharjan 2012 [43] | Journal of Kathmandu Medical college | Compare efficacy of intraperitoneal bupivacaine vs bupivacaine plus magnesium sulphate for postoperative pain relief after laparoscopic cholecystectomy | Post-operative pain (General Surgery) | 60 | Adults  | Group 1: 40 (13) years; Group 2:  35 (15) years | 92% | Randomized Controlled trial | Group 1: Intraperitoneal instillation of 0.25% bupivacaine plus 50 mg/kg magnesium sulphate to total volume of 30 ml; Group 2: intraperitoneal instillation of 30 ml of 0.25% bupivacaine  | VAS, time of first analgesia demanded was noted  | Mean pain score was significantly less in magnesium sulphate group compared to sole bupivacaine group. The average time interval of first analgesia demand was also longer in magnesium sulphate plus bupivacaine group compared to sole bupivacaine group (5.53±4.33) hours compared to 3.16±1.59 hours respectively)  |
| Mishra 2018 [46] | Journal of Clinical Orthopaedics and Trauma | Investigate and compare decrease in level of pain following treatment with Methylprednisolone injections (DMP) Vs Extra-Corporeal Shock Wave Therapy (ESWT) in plantar fasciitis | Plantar fasciitis | 60 | Adolescent and Adults | 44.18 years (range: 15–65 years) | 73% | Prospective comparative non-randomized study | Group 1: Methylprednisolone injection; Group 2: ESWT | Visual Analogue Pain Scale (VAS) | 87% patients in ESWT group improved at 6 weeks while 53% improved in steroid injection group. At the end of 6 months, 5 patients in DPM Group still had significant pain compared to 2 patients in ESWT group.  |
| Pandey 2017 [50] | Journal of Universal College of Medical Sciences | Compare effectiveness of steroid injection with or without lignocaine in treating frozen shoulder | Frozen shoulder | 100 | Adults | Group 1: 56 (10) years;Group 2: 57 (9) years | 43% | Randomized controlled trial | Group 1: 2 ml (80 mg) of methylprednisolone and 3 ml of 1% Lignocaine;Group 2: 2 ml (80 mg) of methylprednisolone and 3 ml of Distilled water in the affected shoulder. | VAS, Subjective Satisfaction Score Constant Murley Score | Even though steroid and physical exercises play important role in managing frozen shoulder, addition of lignocaine tosteroid injection seems to be helpful. It relieves immediate pain on movement and improves exercise compliance thereby improving early outcomes. Evaluation of long-term benefits of lignocaine injection needs further studies. |
| Pathak 2013 [55] | Health Renaissance  | Evaluate effect of gabapentin premedication on preoperative anxiety and postoperative pain | Post-op pain (elective open cholecystectomy) | 80 | Adults  | Group 1: 41 (12) years;Group 2: 37 (8) years | 86% | Randomized controlled trial | Group 1: Gabapentin (1200mg); Group 2: identical placebo capsules 2 hours prior to surgery | VAS  | 1200 mg gabapentin premedication in open cholecystectomy patients significantly reduced preoperative anxiety, postoperative pain and total pethidine consumption with negligible side effects. |
| Pathak 2015 [54] | Journal of Universal College of Medical Sciences | Evaluate effectiveness of epidural analgesia in major orthopaedic surgeries | Post-op pain (Elective Orthopaedic surgery) | 57 | Adults  | Range 17 to 91 years | 37% | One arm pre-post design (case-series) | Epidural analgesia given according to Departmental protocol | Average time to demand for analgesic, Time till mobilization, hospital stay | Epidural mixture of Bupivacaine-morphine in lower dose and concentration given as an intermittentbolus dosing via lumber epidural catheter is safe and very effective in relieving postoperative pain after major orthopaedic surgeries without any significant complications. |
| Pokharel 2008 [58] | Journal of Nepal Medical Association | Assess the analgesic efficacy and to monitor side-effects of low doses (0.5 mg and 0.75 mg) of epidural butorphanol with bupivacaine compared to bupivacaine alone | Post-operative pain (patients undergoing caesarean section) | 117 | Adults | Group 1: 28 (5) years; Group 2: 26 (4) years; Group 3: 25 (3) | 100% | Randomized controlled trial | Group 1: Epidural 0.125% bupivacaine;Group 2: bupivacaine and 0.5 mg butorphanol; Group 3: bupivacaine and additional 0.75 mg butorphanol  | Onset, duration and quality of analgesia, VAS | Addition of a lower dose of epidural butorphanol with bupivacaine produces a significantly earlier onset, longer duration and better quality of analgesia than bupivacaine alone. |
| Poudel 2017 [59] | Journal of Society of Anesthesiologists of Nepal | Compare efficacy of bupivacaine in opioid consumption and pain relief postoperatively with ilioinguinal and iliohypogastric nerve block in patients undergoing lower segment caesarean section | Post-operative pain following lower segment caesarean section.  | 60 | Adults | Group 1: 25 (4) years; Group 2: 26 (4) years | 100% | Comparative study | Group 1: Bilateral Iliinguinal and Iliohypogastric nerve block with10ml of 0.5% bupivacaine on each side (total 20 ml);Group 2: Bilateral Iliinguinal and Iliohypogastric nerve block with10ml of 0.9% normal saline (total 20ml). | Total opioid consumption; NRS | The total postoperative tramadol consumption in the first 24hr post-operatively was significantly less in the intervention group (125 ± 34.11mg) than comparison group (205 ±37.93mg). |
| Pradhan 2008 [62] | Journal of Institute of Medicine | Describe the outcome of steroid injection for various causes of low back pain in the patients attending a pain management clinic | Low back pain | 97 | Unclear | Not available | Not available | Case series | Epidural steroid injection | VAS  | Among the patients who received epidural steroid, 50 (51%) had significant relief of the symptoms and signs, whereas 18 (19%) patients had moderate relief, 8 (8%) patients had no relief and follow up (FU) was lost in 22 patients (22%) |
| Rai 2013 [63] | Nepal Journal of Obstetrics and Gynaecology (NJOG) | Evaluate the effectiveness of subcutaneous injection of sterile water compared with placebo in reduction of labor pain. | Labour pain | 240 | Adults | Group 1: 24 (4) years; Group 2: 24 (5) years | 100% | Randomised controlled trial | Group 1: Subcutaneous injection of sterile water; Group 2: Subcutaneous injection of normal saline (both in lumbosacral region) | VAS | The low back pain scores were significantly lower among the intervention group compared to the control group at 10, 45, 90 minutes after injection.  |
| Ranjit 2014 [64] | Kathmandu University Medical Journal | Evaluate the efficacy of ultrasound guided transversus abdominis plane (TAP) block for postoperative analgesia. | Post-operativepain following gynaecological surgeries | 45 | Adults | Group 1 42 (11) years;Group 2: 38 (10) years; Group 3: 39 (12) years | 100% | Randomized single blinded prospective study | Group 1: Bilateral transversus abdominis plane (TAP) block with 20 ml of 0.25% bupivacaine; Group 2: Local infiltration of 20 ml of 0.25% bupivacaine; Group 3: No bupivacaine.  | VAS | Bilateral Transversus abdominis plane block was effective in reducing postoperative pain scores for 8 to 12 hours postoperatively. This block was also successful in reducing postoperative opioid requirement |
| Rayamajhi 2015 [65] | Journal of Society of Anesthesiologists of Nepal | Investigate the effect of adding a single shot epidural dexamethasone to bupivacaine on postoperative analgesia and dose of rescue analgesics used | Post-operative pain in lower abdominal surgery | 90 | Adults | Group 1: 39 (11) years;Group 2: 37 (11) years  | 65% | Prospective randomized double blinded study | Group 1: 9ml of 0.5% bupivacaine plain with 1 ml of normal saline; Group 2: received 9ml of 0.5% bupivacaine plain with 1 ml of dexamethasone (4mg). | VAS  | Addition of dexamethasone to bupivacaine for single shot epidural block almost doubled the duration of analgesia. Single shot epidural block using bupivacaine with addition of dexamethasone provides effective post operative analgesia and significantly reduced the postoperative rescue analgesic (tramadol) requirement. |
| Regmi 2014 [66] | Journal of Nepalgunj Medical College | Compare propofol-ketamine combination with propofol-butorphanol combination | Post-operative pain | 60 | Unclear | N/a | N/a | Randomized double blinded study  | Group 1: Propofol- Butorphanol combination; Group 2: Propofol-Ketamine combination | Modified Ramsay sedation score | Propofol-Ketamine combination provided better hemodynamic and respiratory stability than Propofol-Butorpanol combination. Pain during injection of propofol was greater in Propofol-ketamine combination. |
| Regmi 2017 [67] | Journal of Society of Anesthesiologists of Nepal | Explore the duration of analgesia of caudal Bupivacaine in combination with Tramadol. | Post-operativepain  | 60 | Paediatrics | Group 1: 45 (20) months;Group 2: 53 (23) months | 30% | Prospective randomised double-blind comparative study | Group 1: 1 ml/kg of 0.25% bupivacaine; Group 2: 1 ml/kg of 0.25% bupivacaine plus 1mg/kg of tramadol caudally | FLACC scale | Tramadol 1mg/kg as an adjuvant to bupivacaine 0.25% for caudal analgesia in children is effective in increasing the duration of analgesia without an increase of adverse effects |
| Runu 2005 [69] | Kathmandu University Medical Journal | Assess effectiveness of epidural injection on low back pain | Low back pain and sciatica | 52 | Adults | 37.9 yrs (range, 20 - 65 yrs). | 42% | Hospital | Manipal Teaching Hospital | Prospective clinical trial  | Epidural injections: 1 - 3 shots.  |
| Sharma 2013 [73] | Journal of Kathmandu Medical College | Assess the duration of postoperative analgesia and complications in patients receiving different combinations of epidural anaesthesia | Post-operative pain after orthopaedic surgery | 75 | Adults | 50 (39) years | 36% | Prospective study | Group 1: 50 mg epidural pethidine (3 ml) with 13 ml of 0.5% bupivacaine; Group 2: 5 mg (3 ml) epidural morphine with 13 ml of 0.5% bupivacaine; Group 3: received 5 mg (1 ml) epidural morphine with 13 ml of 0.5% bupivacaine and 2 mg (2 ml) epidural midazolam. |  | The use of epidural Morphine and Midazolam in combination with Bupivacaine is the satisfactory method of post operative analgesia. When Midazolam is added, duration of analgesia can be increased with decrease in incidence of nausea, vomiting and pruritus |
| Sharma 2014 [74] | Journal of Chitwan Medical College | Compare the post-operative analgesia requirement and child satisfaction between two groups, general anaesthesia (GA) alone and GA in combination with penile nerve block | Post-operative pain | 50 | Paediatrics | 7 years | 0% | Prospective controlled study | Group 1: General anaesthesia (GA) with a single shot ketamine 2mg/kg iv with midazolam 0.1 mg/kg) and penile nerve block; Group 2: GA (with ketamine 2mg/kg iv plus midazolam 0.1 mg/kg) plus halothane by laryngeal mask. | CHEOPS | Combined penile nerve block in combination with intravenous ketamine plus midazolam is the satisfactory method of post-operative pain management in children undergoing circumcision |
| Sharma 2015a [72] | Journal of Lumbini Medical College | Compare the effect of intraperitoneal hydrocortisone plus bupivacaine with bupivacaine alone on pain relief following laparoscopic cholecystectomy | Post-operative pain after laparoscopic cholecystectomy | 100 | Adults | Group 1: 39 (11) years; Group 2: 42 (12) years | 86% | Randomised study | Group 1: 100 mg hydrocortisone plus 100 mg bupivacaine in 200 ml normal saline; Group 2: 100 mg bupivacaine in 200 ml normal saline into the peritoneum | VAS  | Combination of hydrocortisone plusbupivacaine can relieve pain after laparoscopic cholecystectomy better compared to bupivacaine alone when administered intraperitoneally |
| Shrestha 2005 [84] | Journal of Institute of Medicine | Study practicality of using a drug combination for pain relief in a camp setting (Bupivacaine plus intrathecal morphine versus bupivacaine only) | Post-operative pain (patients undergoing vaginal hysterectomy under spinal anaesthesia) | 89 | Adults | Range from 35yrs to 80yrs | N/A | Randomized controlled trial  | Group 1: bupivacaine and intrathecal morphine (n=61); Group 2: bupivacaine only (n=28). | Post-operative analgesia and side effects like nausea/ vomiting, pruritus and respiratory depression were compared. | Significant pain relief was seen with the added intrathecal morphine but it also caused increased incidence of vomiting. Other serious effects were not seen. Morphine is effective in reducing post-operative pain but an effective antiemetic cover is also required. |
| Shrestha 2014a [85] | Journal of Nepal Medical Association | Compare treatment efficacy of drugs (effects of combination of two drugs versus normal saline on post-operative pain) | Post-op pain following Laparoscopic Cholecystectomy | 120 | Adults  | Group 1: 42 (12) years;Group 2: 45 (15) years | 77% | Randomized clinical trial | Group 1: 8mg/2ml of Dexamethasone + 45.5/2ml Pheniramine hydrogen maleate; Group 2: 5 ml of normal saline 90 minutes before skin incision.  | VAS |  Use of Dexamethasone and Pheniramine hydrogen maleate prior to surgical skin incision helps to reduce both postoperative pain and acute physiological stress. |
| Shrestha 2014b [91] | Journal of Society of Anaesthesiologists | Evaluate treatment efficacy of bolus of magnesium  | Post-op pain (Abdominal surgery) | 60 | Adults | 38 years | Not mentioned | Randomized controlled trial | Group 1: bolus of magnesium 50 mg via epidural before induction of anaesthesia followed by boluses of 10 mg h-1 until end of surgery. Group 2: received epidural saline during all three periods.  | VAS | Patients in the magnesium groups received bolus epidural analgesia with Fentanyl 8mcg, Bupivacaine 0.1%, andMagnesium 8mg in a volume of 8 ml after operation, when patient complained of pain and VAS score was morethan 4. Patients in the control group received epidural analgesia with Fentanyl 8 mcg and Bupivacaine 0.1% in avolume of 8ml.  |
| Shrestha 2016a [90] | Journal of Chitwan Medical College | Evaluate treatment efficacy of tramadol and bupivacaine | Labour pain | 100 | Adults | Range, 20-35 years | 100% | Double blind, open prospective randomized study | Group 1: 10 ml of 0.25% Bupivacaine; Group 2: 10ml of 0.25% Bupivacaine with 1mg/kg body weight of tramadol. | VAS, other vital parameters (Blood Pressure, Heart Rate and Respiratory Rate)  | Epidural anaesthesia with bupivacaine and tramadol provided better pain relief and reduced the total dose of bupivacaine in majority of the patients with no adverse effects on mother and foetus. As tramadol is cheap, safe and effective. |
| Shrestha 2016b [92] | World Journal of Emergency Medicine | Examine the treatment efficacy of intranasal ketamine  | Pain due to acute injury | 34 | Paediatrics and Adults | Median 29 years; Range, 8 - 55 years | 35% | Cross-sectional observational | The initial dose of IN ketamine was 0.7 mg/kg with an additional dose of 0.3 mg/kg if VAS was more than 50 mm after 15 minutes.  | VAS at 0, 15, 30 and 60 minutes; Side-effects, sedation level, patient's satisfaction.  |  The VAS decreased more than 20 mm at 15 minutes in 27 (80%) patients. The relief was not dependent on age, gender, type of injury, and the initial VAS score. |
| Shrestha 2017 [87] | Journal of Kathmandu Medical College | To describe management of pain in a lady with severe pain after below knee amputation | Post-operative (amputation) pain | 1 | Adult | 42 year | 100% | Case study | Ultrasound guided sciatic nerve block | Not specified | Ultrasound can be used successful in adductor canal and sciatic nerve identification, and sciatic nerve block provides prolonged and good analgesia following below knee amputation. |
| Singh 2012 [98]  | Journal of Nepal Paediatric Society | Investigate effectiveness of ketamine or fentanyl in addition to ropivacaine in post-operative pain in children.  | Post-operative pain (Lower abdominal surgery) | 90 | Adults | Group 1: 5 (2) years;Group 2: 5 (1) years;Group 3: 5 (2) years | Not specified | Prospective randomized control trial | Group 1: 0.75 ml/kg of 0.2% Ropivacaine in normal saline; Group 2: 0.75 ml/kg of 0.2% Ropivacaine with Ketamine 0.5 mg/kg; and Group 3: 0.75 ml/kg of 0.2% Ropivacaine with Fentanyl 1 mcg/kg. | FLACC scale | Mean duration of analgesia was significantly longer in Group 2 (621.00 ± 142.73 min) than in Group 3 (507.74 ± 122.12 min) and Group 1 (380.07 ± 141.21 min).  |
| Singh 2013 [100] | Health Renaissance | Compare theefficiency of morphine with that of butorphanol in controlling the postoperative pain relief. | Post-operative pain (after abdominal and vaginal hysterectomy) | 75 | Adults | Group 1: 32 (10) years;Group 2: 34 (11) years;Group 3: 36 (12) years | 100% | Double-blind randomized clinical trial | Group 1: Intrathecal 3ml hyperbaric bupivacaine mixed with morphine (200 microgm-0.25ml); Group 2: Intrathecal 3ml hyperbaric bupivacaine mixed with butorphanol (200 microgm-0.25ml); Group 3: Intrathecal 3ml hyperbaric bupivacaine mixed with normal saline 0.25ml. | VAS (10 cm) | Intrathecal morphine provides prolonged and better analgesic effect after abdominal and vaginal hysterectomy than butorphanol. However, side effects like nausea, vomiting, itching and urinary retention can occur occasionally. |
| Thapa 2013 [102]  | Emergency Medicine Australia | Compare amitriptyline and tizanidine in the management of Episodic Tension Type Headache, hypothesising tizanidine to be as effective as amitriptyline. |  Episodic tension type headache | 60 | Adolescent and Adults | 15-65 years | 88% | Randomized controlled trial  | Group 1: amitriptyline 25 mg; Group 2: tizanidine 2 mg  | Wonca charts; visual body chart, and a pictorial scale (1= no pain and 5= severe pain) | Amitriptyline provided more effective in ETTH management than tizanidine. Social involvement and body pain also showed similar improvement with amitriptyline.  |
| Trikhatri 2018 [106] | Journal of College of Medical Sciences | Evaluate the haemodynamiceffect of intravenous dexmedetomidine and the duration and quality of analgesia in laparoscopic cholecystectomy | Post-operative pain (laparoscopic cholecystectomy) | 84 | Adults | Group 1: 35 (12) years; Group 2: 37 (13) years | 68% | Randomized clinical trial | Group 1: Dexmedetomidine loading dose infusion of 1µg/kg over10 minutes before induction and maintained with 0.4µg/kg/hr till the removal of gall bladder; Group 2: patient received Normal Saline  | Postoperative analgesia requirement and sedation score were assessed | Dexmedetomidine effectively attenuateshaemodynamic stress response during laparoscopic surgery with reduction in postoperative analgesic requirements. |
| Vaidya 2014 [108] | Journal of Advances in Internal Medicine | Study the prevalence and causal relationship of hypovitaminosis D in patients with Chronic Widespread Pain | Chronic widespread pain | 1680 | Unclear | Not provided | 66% | Prospective open-label study |  Patients with low Vitamin-D were given oral Vitamin-D 60,000 IU for 6 months.  | VAS; Vitamin-Dlevels in blood | Hypovitaminosis-D was seen in 1388 (82∙6%), of which 27∙5% had severe deficiency with Vitamin D levels <10ng/ml. Fibromyalgia overlap present in 25∙7%. After 6 months of treatment, no improvement was seen in 196 patients (11∙6%) and all non-responders had fibromyalgia overlap. Vitamin-D level was checked again in non-responders and repeat vitamin-D levels were still low in 10 of them.  |
| Yadav 2013 [110]  | Journal of College of Medical Sciences  |  Compare the efficacy of epidural verses interpleural administrationof bupivacaine (0.5%) with adrenaline for post-operative pain relieve in patients undergoing opencholecystectomy | Post-operative pain (General Surgery) | 40 | Adults | Range 20 - 60 years | N/A | Randomized clinical trial |  Group 1: Thoracic epidural with 0.5%bupivacaine with adrenaline; Group 2: Interpleural instillation of0.5%bupivacaine with adrenaline  | VAS | Both the techniques are equally effective in providing analgesia following cholecystectomy. However, neither technique rendered the patients completely pain free at all times during first 24 hours |

*Abbreviations.* ACL, Anterior Cruciate Ligament; CHEOPS, Children’s Hospital Eastern Ontario Pain Scale; CMS, Constant Murley Score; FLACC, Face Legs Activity Cry Consolability; NRS, Numerical Rating Scale; PCL, Posterior Cruciate Ligament; VAS, Visual Analogue Scale.

## Supplementary table 2. Evidence on surgical management.

| **Author Year**  | **Journal** | **Primary aim of the study**  | **Type of pain condition**  | **Sample size**  | **Population** | **Age Mean (SD) unless specified** | **Women %** | **Study design** | **Intervention (if applicable)** | **Diagnostic tests or measures used**  | **Key findings related to study question(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chapagain 2014 [11] | Journal of Society of Surgeons of Nepal | Summarize disease patternsin patients presenting with scrotal pain | Scrotal pain/urological condition | 83 | Adult  | Not available | Not available | Prospective observational study | Surgery for testicular torsion | Urinalysis, ultrasonography, color doppler | Cause of pain was not known for 47% of the cases. Other common cases were Epididymo-orchitis was found in 19.27% patients, and torsion of testis in 7.2%. |
| Devkota 2009 [16] | Kathmandu University Medical Journal | Ascertain the effectiveness of Minimally Invasive Open Lumbar Discectomy in the treatment of lumbar disc prolapse | Low back pain with disc prolapse | 120 | Adults | Median age 37.14 (range: 16-70 years) | 32% | Hospital | Minimally Invasive Open Lumbar Discectomy  | Prolo Functional and Economic Scale | There were three instances of inadvertent dural tear without fascicle injury, and one instance of residual disc requiring reoperation. At 6 months, 97% had good to excellent (grade 4, or 5) results reaching the premorbid states in the Prolo Functional and Economic Scale. |
| Joshi 2015 [27] | Journal of Kathmandu Medical College | Evaluate whether prophylactic ilioinguinal neurectomy prevents chronic groin pain  | Patients undergoing elective surgery for inguinal repair | 100 | Adults | 49 (15) years | 1% | Interventional study (Randomized controlledtrial) | Group 1: nerve excision (ilioinguinal neurectomy);Group 2: nerve preservation  | NRS, PDI | Excision of the iilioinguinal nerve does not reduce the incidence of chronic groin pain significantly |
| Mishra 2013 [45] | Nepal medical college journal  | Analyse the outcomes regarding pain, hip function, complications in patients treated with hemiarthroplasty | Patients treated with hemiarthroplasty.  | 40 | Adults | 65 years  | 58% | Trial  | Group 1: Hemiarthroplasty using Austin Moore’s; Group 2: Bipolar hemiarthroplasty | Harris Hip Score to assess physical function. | Austin Moore's hemiarthroplasty had better outcome regarding pain and hip function compared with bipolar hemiarthroplasty.  |
| Munakomi 2017 [47] | F1000 Research (not a journal) | Report a rare case of sciatic nerve schwannoma causing sciatica | Sciatica as a result of Schwannoma  | 1 | Adult | 69 years | 100% | A single case study | Surgery for the removal of tumour.  | Physical examination, MRI scan, and histopathological examination.  | MRI indicated presence of tumour alongside sciatic nerve.  |
| Sharma 2016c [70] | Kathmandu university medical journal | Study effects of drain on post-operative pain  | Post-operative pain following laparoscopic cholecystectomy | 60 | Adults | 37 years | Male: female ratio= 1:3.7 | Randomized clinical trial |  Group 1: Drain placed in sub-hepatic space; Group 2: No drain. | 0-10 NRS\* | Postoperative mean pain score was similar at 6 hours after surgery in both groups. Postoperative pain was higher in the drain group by more than two points on the average in VAS at 24 hours and 48 hours. Length of hospital stay was more in the drainage group compared to non-drainage group.  |
| Sharma 2017b [71] | Nepal Journal of Neuroscience | Describe management of trigeminal neuralgia patients who underwent micro vascular decompression (MVD) | Trigeminal neuralgia | 20 | Adults | Range 30-70 years | 55% | Retrospective case-series |  All patients underwent standard unilateral suboccipital retromastoid craniectomy and MVD of trigeminal nerve in park bench position under general anaesthesia.  | All patients were advocated for cranial MRI before surgery.  | MVD for trigeminal nerve in younger patientswho are refractory to medical treatment is one of the best treatment options which is safe and long term pain relief is achieved in majority of cases. One patient came after 3 years of MVD withrecurrence of pain and underwent second decompression surgery. |
| Shrestha 2015 [89] | Kathmandu university medical journal | Evaluate predictors of outcome after surgery (lumbar disc herniation surgery) | Post-operative pain (lumbar disc herniation) | 63 | Adults | 42 (9) years | 32% | Retrospective study | Microdisectomy  | VAS, ODI, Mcnab classification of post-operative outcome, objectiveassessment by health personal  | Being men, non-alcoholic, having low level of education and numbness as a predominant symptom, disc herniation at L4-L5 were significantly associated with better ODI at final follow-up. For ODI score interpretation, gender, smoking habit, presence of leg pain as a predominant symptom were statistically significant factors whereas smoking and drinking habit, level of education, occupation, back pain and numbness as predominant pre-operative symptom, types of disc in MRI were significantly related to Mcnab outcome.  |
| Shrestha 2018 [88] | Journal of Nepal Health research Council | Compare post-operative pain between incision and diathermy | Post-op pain (ENT head and neck surgery) | 61 | Adults  | Group 1: 30 (13) years;Group 2: 32 (13) years | Not available  | Prospective, randomized study | Group 1: Scalpel group;Group 2: Diathermy group | VAS | The early post-operative pain is less in ENT-Head and Neck surgery patients with skin incision by diathermy as compared to the patients with skin incision by scalpel. |

Abbreviations. NRS, Numerical Rating Scale; PDI, Patient Disability Index; ODI, Oswestry Disability Index; VAS, Visual Analogue Scale.

\*Authors used a 0 – 10 NRS but called it a VAS.

## Supplementary table 3. Rehabilitation.

| **Author Year**  | **Journal** | **Primary aim of the study**  | **Type of pain condition**  | **Sample size**  | **Population** | **Age Mean (SD) unless specified** | **Women %** | **Study design** | **Intervention** | **Measures used**  | **Key findings related to study question(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Kayastha 2018 [34] | Medical Journal of Shree Birendra Hospital (MJSBH) | Compare effect of body position on post-spinal anaesthesia headache and urinary retention. | Post-surgical headache (spinal anaesthesia) in orthopaedic surgical cases | 200 | Adults  | Not available | 30% | Randomised clinical trial | Group 1: Early ambulation; Group 2: Post-op bed rest for 24 hours without pillows. | Onset of spinal headache | No significant different in onset of headache in the two groups (17 in experimental group and 20 in control group). Bed rest may not be required to prevent spinal headache.  |
| KC 2017 [35] | Kathmandu University Medical Journal | Study the influence of posture in the incidence of post lumbar puncture headache after spinal anaesthesia | Post lumbar puncture headache | 112 | Adults | 40 (17) years | 40% | Prospective randomized study | Group 1: No restriction to position after surgery; and Group 2: 24 hours bed rest after spinal anaesthesia.  | 0 -10 NRS | Non-significant difference in the incidence of spinal headache between the two groups (22% in group A and 24% in group B).  |
| Sharma 2018d [75] | BMJ Open | Determine feasibility to conduct a full randomised clinical trial evaluating the effectiveness of pain education for individuals with LBP | Low back pain | 40 | Unclear | Not applicable | Not applicable | Protocol of a Feasibility clinical trial | Group 1: Pain education; Group 2: Guideline-based treatment | PROMIS pain intensity, PROMIS pain interference, PROMIS sleep disturbance, PROMIS depression, PCS, CDRISC, 2-item QOL scale, GROC  | Not applicable |

Note: CDRISC, Connor-Davidson Resilience Scale; FABQ, Fear Avoidance Beliefs Questionnaire; GROC = Global Rating of Change; NRS, Numerical Pain Scale; ODI = Oswestry Disability Index; PCS, Pain Catastrophizing Scale; PROMIS, Patient-Reported Outcome Measurement Information System; QOL, Quality of Life; TENS, Transcutaneous Electrical Nerve Stimulation.

## Supplementary table 4. Prevalence and incidence of pain conditions.

| **Author Year**  | **Journal** | **Primary aim of the study**  | **Type of pain condition**  | **Sample size**  | **Population** | **Age Mean (SD) unless specified** | **Women %** | **Study design** | **Diagnostic tests or measures used**  | **Key findings related to study question(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acharya 2010 [1] | Journal of Nepal Dental Association | Estimate the prevalence and distribution of musculoskeletal symptoms among dentist in Nepal | Musculoskeletal pain  | 103 | Adults | 30 (6) years | 55% | Cross-sectional study | Not specified. | Prevalence of MSD during the past 12 months were reported at the neck and lower back (52.4% each), shoulder (49.5%), upper back (41.7%), and wrist/ hand (36.9%). |
| Acharya 2018 [3] | Journal of College of Medical Sciences Nepal | Determine the prevalence of temporomandibular disorders (TMD) | Temporomandibular disorders in dental students | 345 | Adults | 21 (2) years | 61% | Cross-sectional study | Fonseca Anamnestic Questionnaire | The prevalence of TMD was 47.4% with mild and moderate type of TMD. |
| Anderson 1984 [4] | Medical Anthropology | Prevalence of spinal and extremity pain.  | Musculoskeletal pain | 646 | All  | Not specified  | Not specified | Cross-sectional study | - | 18% community adults had back or neck pain, and only 4% had extremity pain.  |
| Bhandari 2015 [8] | Health Renaissance  | Identify common diagnoses and clinical features and demographic profile of chronic headache  | Chronic Headache ( > 3months) | 168 | Adult | 29 (10) years | 79% | Cross-Sectional | NRS  | Chronic headache accounted for 1% of total general outpatient visits. Patients did not fit into any diagnostic criteria in 51% cases. The headache was classified as chronic migraine in 20%, chronic tension type headache in 17% and chronic daily persistent headache in 12%. The mean score for pain (numerical scale) was 7 (SD 2). |
| Bhattarai 2007 [9] | Nepal Medical College Journal | Estimate the prevalence of chronic pain in economically active population and its associated economic loss | Chronic pain | 1730 | Adolescent and Adults | 15 - 64 years | 52% | Cross-sectional study | - | Out of 1730 individuals interviewed, 882 (50%) had pain of which 94% had chronic pain (826 of 1730, which is 48% of total sample). 44% were musculoskeletal pain with Backache (26%), headache (20%) and abdominal pain due to acid peptic disease (12%). About 14% of individuals had severe grade pain. |
| Dhakal 2017 [17] | Journal of university college of medical sciences | Estimate prevalence of occupational overuse syndromes and severity in software professionals.  | Occupational overuse syndrome | 270 | Adults  | 20 - 30 years: 60.7%; 30 - 40 years: 28.1% | 26% | Cross-sectional study design | Structured questionnaire - unclear what questions were used.  | Headache (63%; 12% severe), back pain (63%; 9% severe) and neck pain (57%; 4% severe), Finger pain (40%; 1% severe), Shoulder pain (38%), General body pain (36%).  |
| Gupta 2014 [25] | J Psychiatrists’ Association of Nepal | Study the frequency and pattern of co-morbid psychiatric illnesses amongst patients with chronic migraine headache | Chronic migraine | 48 | Adolescent and Adults | Range: 15 to 55 years | 85% | Descriptive cross-sectional study | HAM-A, HAM-D | Comorbid psychiatric illness was present in 31 (65%) cases among which anxiety was the most common diagnosis (35%) followed by depressive disorders (29%). |
| Joshi 2013b [29] | International Journal of Occupational Safety and Health | Identify work related physical ailments and discomforts dominate brick industries of Nepal. | Work related musculoskeletal disorder | 305 | Paediatrics and adolescents | 1 year to 17 years |  39% and 58% in two sites | cross sectional study | Nordic Ergonomic Questions | 73% of children experienced musculoskeletal pain in Bhaktapur district, and 56% in Sarlahi district. Working children were 8 times more likely to experience musculoskeletal pain compared to non-working children.  |
| Kafle 2017 [30] | J Psychiatrists’ Association of Nepal | Identify the frequency of the diagnosis of primary headache and its association with anxiety and depression | Primary headache | 150 | Adults  | 20-39 years | 79% | Cross- sectional study | - | 69% had migraine headache and 29% had tension-type headache and 2% had cluster headache. Comorbid psychiatric illness was present in 80 (53%) cases among which Anxiety disorder was the most common (31%) followed by depressive disorders (22%). |
| Linde 2017 [40] | European Journal of Neurology | Explore the an association between migraine and chronic exposure to high altitude | High-altitude headaches (HAH) | 2100 | Adults | 36.4 (13) years | 59% | Community, nationwide | HARDSHIP Questionnaire | Age- and gender standardized migraine prevalence increased from 27.9% to 45.5% with altitude between 0 and 2499 m and thereafter decreased to 37.9% at ≥2500 m. The likelihood of having migraine was greater (odds ratio, 1.5–2.2; P ≤ 0.007) at all higher altitudes compared with <500 m. |
| Manandhar 2015 [44] | The Journal of Headache and Pain  | Estimate burden of headache disorders in Nepal from a population-based survey | Headache  | 2100 | Adults | 36.10 (12.60) years | 62% | Cross-sectional survey using structured interview.  | Validated HARDSHIP questionnaire. Pain intensity assessed using 3 point verbal scale - "not bad", "quite bad" and "very bad".  | 85% of total participants reported headache in the last year. Mean headache frequency was 4 (SD 6) days per month. Those with headache had significantly poor quality life compared to those without headache. Total lost productive time due to headache was 7%. |
| Pambos 2012 [49] | Family Practice  | Describe the demographics, diagnoses and treatments offered to people attending threerural health camps in Nepal | All cases presenting in a health camp including abdominal pain and musculoskeletal pain | 1574 Adults; 249 Children | All age groups | 42.8 years (range 1 month to 98 years old) | 69% | Cross-sectional study | Not specified. | For adults, the most frequent complaints were stomach pain 20%, followed by musculoskeletal pain 19%. |
| Pradhan 2003 [61] | Kathmandu University Medical Journal | Describe the prevalence of backache among groups with long and normal working day | Low back pain | 64 | Adults  | Not available | Not available | A cross sectional study | Not specified. | 62% of the participants had back pain. 76% of individuals in long working day category, and 48% in normal working day group experienced back pain. |
| Risal 2016 [68] | The Journal of Headache and Pain | Assess correlates of headache disorders.  | Headache disorders | 2100 | Adults | 36.4 (12.8) years | 59% | National wide cross-sectional survey | HARDSHIP questionnaire to diagnose headache disorders; Nepali version of the HADS to detect anxiety and depression. | HADS-A and neuroticism was associated with any headache. No associations were found between HADS-D and any headache type, or between tension type headache and any psychiatric manifestation. |
| Sharma 2016a [82] | Scandinavian Journal of Pain | Identify factors associated with lost work days in nurses with back pain | Low Back Pain | 111 | Adults | 24.31 (3.7) years | 100% | Cross-sectional study | NPRS (0 -10) | 65% nurses reported LBP. The average number of LWDs was 6.98 (SD = 5.33), and ranged from 0 to 14. Pain intensity was not associated with LWDs. |
| Shrestha 2011 [86] | Health Renaissance | Estimate the prevalence of back pain and to identify predictors of back pain in the community.  | Low Back Pain | 314 | Adults | 40.19 (15.19) years | 48% | Cross-sectional study | - | The overall annual prevalence of LBP was 71%. The annual prevalence of back pain among males was 67.9% and females was 74.3%. The highest prevalence of back pain was found in the age group of 31-40 years. Older Age, marriage and occupation were related significantly to the occurrence of back pain. Farmers and housewives had greater prevalence of low back pain. The number of workdays lost was upto 5 days in 81% of people with back pain. |
| Shrestha 2017b [95] | Medical Journal of Shree Birendra Hospital  | Estimate prevalence of dysmenorrhoea | Gynaecological pain complaints | 427 | Adolescent and Adults | Range (15-49) years | 100% | Cross-sectional study | Semi-structured standardized questionnaire formulated after a pilot study  | The lifetime prevalence of dysmenorrhea was 86.4%, while point prevalence was 75.6%. Among dysmenorrhoeic individuals; 36.9%, 26.8% and 36.3% had mild, moderate, and severe pain respectively. Study showed no significant correlation of dysmenorrhea and its severity with family history, smoking and alcohol use.  |
| Shrestha 2016c [93] | Kathmandu University Medical Journal | Describe causes of neuropathic pain and commonly prescribed drugs in neuropathic pain management and the medication adherence pattern including its associated factors | Neuropathic pain | 84 | Adults | 45.6 (15.6) years | 69% | Cross-sectional study | Not specified. | 54% of patient had low back pain as cause of neuropathic pain, followed by peripheral neuropathy (14%), cervical radiculopathy (11%), and unknown causes (7%). Anticonvulsants were mostly prescribed (75%) followed by non-steroidal anti-inflammatory drugs (52%) and Methyl-cobalamin (48%). 58% (n=49) patients were not adherent to the prescribed medications. |
| Shubham 2014 [96] | Journal of Universal College of Medical Sciences | Estimate the prevalence of low back pain among practicing dentists of Eastern Nepal | Low back pain  | 76 | Unclear | Not specified  | Not specified  | Cross-sectional study | ODI | Prevalence of LBP in practicing dentist was 91% with 50% minimal pain, 37% moderate pain, and 4% severe pain. |
| Silber 2013 [97]  | Neurology | Estimate prospectively the incidence of high-altitude headache (HAH) and to determine its risk factors and characteristics. | High-altitude headaches (HAH) | 60 | Adults | 40.2 (11.8) years | 32% | prospective observational study | Structured questionnaire incorporating IHS and AMS criteria. | 83% reported at least 1 HAH (median 2, range 0 to 10). Those who developed HAH were younger, were women. Persons with headaches in daily life were more likely to report severe headaches. |
| Singh 2010 [99] | Journal of Institute of Medicine | Identifying the incidence and risk of post dural puncture headache in thepatients | Spinal Headache | 12 | Adults | 35.03 (9.66) years | M:F = 1.1:1.0  | Cross-sectional study | Not specified. | The incidence of post-dural puncture headache was 25%. |
| Toh 2018 [104] | PLOS Neglected Tropical Diseases | Investigate Neuropathic Pain prevalence and its impact  | Neuropathic Pain following leprosy | 85 | Adults | 43 (14) years | 46% | Cross-sectional | DN4 questionnaire, BPI, SALSA, and GHQ-12 | 52% complained of pain, 35.3% had NP. Patients with NP suffered significantly higher intensity pain (p = 0.023) and daily life interference (p = 0.003) and were more likely to have moderate to extreme daily activity limitations (p = 0.005). 43% exhibited psychological distress, and medications only reduced moderatedegree (50–60%) of pain. |
| Vaidya 2015 [107] | International Journal of Occupational Safety and Health |  Determine both prevalence of work related musculoskeletal disorders and types of ailments among surgeons | Musculoskeletal disorders | 50 | Adults | Mean 38.9 years; Range 29 - 66 years | 20% | Cross-sectional study | Dutch Musculoskeletal Questionnaire on ergonomic hazards and, Nordic musculoskeletal disordersquestionnaire on pain and discomfort. | Thirty-five respondents (70%) reported having at least one musculoskeletal disorder. Twenty-three (65.7%) surgeons had to miss their job at least once during last 12 month of which nineteen (54.3%) missed them in last 7 days. Thirty-five (70%) surgeons had at least one MSD. Twenty-one (60%) of them complained of pain in lower back, 45% neck pain, and 34% elbow pain and so on.  |
| Walters 2017 [109] | Anaesthesia and Analgesia | Estimate prevalence of chronic pain | Chronic pain | 97 | Adults | Not available | 57% | Cross-sectional study | VGPS, BPI, WHO DAS, PCS, FSQ | Nepalese showed a pain point prevalence of 48%–50%. |

*Abbreviations*. AMS, Acute Mountain Sickness; FSQ, the Fibromyalgia Survey Questionnaire; GHQ-12, General Health Questionnaire-12; Hospital Anxiety and Depression Scale (HADS); HADS-A, HADS for Anxiety; HADS-D, HADS for Depression; HAH, High-Altitude Headache; ODI, HAM-A, Hamilton Rating Scales for Anxiety; HAM-D, Hamilton Rating Scales for Depression; HIS, International Headache Society; MSD, Musculoskeletal Disorders; NRS, Numerical Rating Scale; Oswestry Disability Index; PCS, Pain Catastrophizing Scale; SALSA, Screening of Activity Limitation and Safety Awareness; VGPS, The Vanderbilt Global Pain Survey, WHO DAS, World Health Organization Disability Assessment Scale.

## Supplementary table 5. Studies on outcome measurement.

| **Author Year**  | **Journal** | **Primary aim of the study**  | **Type of pain condition**  | **Sample size**  | **Population** | **Age Mean (SD) unless specified** | **Women %** | **Study design** | **Measures used**  | **Key findings related to study question(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acharya 2014 [2] | Indian Journal of Physiotherapy and Occupational Therapy | Translation of the ODI into Nepali, and assess its psychometric properties. | Low back pain | 101 | Adult | 36. 6 (12.6) years | 45% | Longitudinal study  | ODI | ODI is reliable: Cronbach's alpha = 0.72; test-retest reliability = 0.87 |
| Pathak 2018 [53] | Pain Reports | (1) Identify which of 4 commonly used pain scales is most preferred by Nepalese, (2) compare error rates, (3) determine whether preference and error rates are influenced by age or education level | Musculoskeletal pain  | 202 | Adults  | 54 (19) years | 57% | Cross-sectional study | FPS-R, NRS, VAS, VRS  | FPS-R is the most preferred scale, followed by a VRS. The NRS and VAS were both least preferred and had higher rates of incorrect responses, especially among the older participants. |
| Sharma 2016b [79] | Journal of Pain Research | To evaluate the content validity of questionnaires used to assess pain quality in Nepalese with chronic pain  | Chronic Musculoskeletal Pain | 101 | Adults | 49.04 (14.96) years | 72% | Qualitative study | N/A | Only the original McGill Pain Questionnaire wasfound to have content validity for assessing pain quality in patients from Nepal, although otherexisting pain quality measures could be adapted to be content valid by adding one or two additionaldescriptors, depending on the measure in question. |
| Sharma 2017a [77] | Health and Quality of Life Outcomes | To evaluate the psychometric properties of a measurement scale (NRS and GROC) | Musculoskeletal pain | 104 | Adults | 41.2 (13.5) | 69% | Cross-sectional study | NRS, GROC | Significant cultural adaptations were required to obtain relevant Nepali versions of both the NRS and GROC. The NRS-NP showed excellent test-retest reliability and a MDC of 1.13 points. NRS-NP demonstrated good construct validity and responsiveness. |
| Sharma 2018a [78] | Health and Quality of Life Outcomes | To translate and culturally adapt 10- and 2-item versions of the Connor Davidson Resilience Scale into Nepali and evaluate their psychometric properties | Chronic pain | 405 | Adults  | 46.7 (15.18) years | 70.33 | Longitudinal study  | PCS; CDRISC | The findings support the reliability and validity of the 10-item Nepali version of the CD-RISC, and use of the 2-item version in survey studies in individuals with chronic pain. |
| Sharma 2018b [83] | Journal of Pain Research | To translate and culturally adapt the Pain Catastrophizing Scale into Nepali | Chronic pain | 415 | Adults | 46.68 (15.08) years | 69 | Longitudinal study | PCS, BDI, BAI, NRS.  | PCS-NP was comprehensible and culturally acceptable. The PCS-NP scores evidenced excellent reliability and temporal stability, and demonstrated validity via moderate-to-strong associations with measures of depression, anxiety, and pain intensity. |
| Sharma 2018c [76] | Journal of Orthopaedic and Sports Physical Therapy | To translate and cross-culturally validate the PSFS to Nepali | Musculoskeletal pain | 104 | Adults  | 41.2 (13.5) years | 69 | Longitudinal study | PSFS, ODI, GROC, NRS | The Nepali version of the PSFS showed good reliability. It demonstrated significant correlations with the Nepali versions of the ODI (r = –0.47, P = .001), GROC (r = 0.71, P<.001), and NRS. |
| Sharma 2018f [81] | Journal of Pain (APS Conference) | To assess measurement properties of 5 PROMIS measures to assess  | Chronic pain | 275 | Adults | 46 (16) years | 73 | Longitudinal study | N/A | All measures were reliable (ICC of 0.71 to 0.81). Correlations between the measures ranged from 0.36 to 0.62.  |
| Sharma 2018g [80] | World Pain Conference Abstract  | Evaluate the responsiveness and estimate MIC of the validated Nepali versions of the PCS and the 10-item and 2-item CDRISC | Chronic pain  | 275 | Adults  | 46 (16) years | 73 | Longitudinal study | N/A | The findings support the PCS and CDRISC as being associated but distinct. However, the low AUCs indicate that the Nepali versions of the PCS nor CDRISC are unable to discriminate between the improved and unimproved groups when using a GROC scale as an anchor. |

*Abbreviations*. APS, American Pain Society; AUC, Area Under the Curve; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; CDRISC, Connor-Davidson Resilience Scale; FPS-R, Faces Pain Scale – Revised; GROC, Global Rating of Change; ODI, Oswestry Disability Index; MIC, Minimal Important Change; NRS, Numerical Rating Scale; NRS-NP, Nepali version of NRS; PSFS, Patient-Specific Functional Scale; PCS, Pain Catastrophizing Scale; PROMIS, Patient-Reported Outcome Measurement Information System; VAS, Visual Analogue Scale; VRS, Verbal Rating Scale.

## Supplementary table 6. Studies on diagnosis and imaging.

| **Author Year**  | **Journal** | **Primary aim of the study**  | **Type of pain condition**  | **Sample size**  | **Population** | **Age Mean (SD) unless specified** | **Women %** | **Study design** | **Diagnostic tests used**  | **Key findings related to study question(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bajracharya 2012 [6] | Journal of Kathmandu Medical College | Describe etiology of chronic pelvic pain in consecutive sample.  | Chronic pelvic pain | 48 | Adult |  33 years | 100% | Observational descriptive | Diagnostic laparoscopy | Diagnostic findings were negative in 29% of cases. Simple endometriosis was present in 56% cases, adhesion in 20%, pelvic congestion in 15%, pelvic inflammatory disease in 6%, chronic ectopic diseases in 3% |
| Chapagain 2014 [11] | Journal of Society of Surgeons of Nepal | Summarize disease patterns in patients presenting with scrotal pain | Scrotal pain/urological condition | 83 | Adult  | Not available | Not available | Prospective observational study | Urinalysis, ultrasonography, color doppler | Cause of pain was not known for 47% of the cases. Other common cases were Epididymo-orchitis was found in 19% patients, and torsion of testis in 7%. |
| Chhetri 2009 [13] | Journal of Nepal Health Research Council | Identify causes of chronic pelvic pain | Chronic pelvic pain of at least 6 months of duration | 55 | Adult  | 37 (2) years | 100% | Descriptive study | Ultrasonography and diagnostic Laparoscopy; Self-Reported Questionnaire (SRQ-20)  | 62% had normal ultrasonography findings. 13% of patients had cystic ovaries and 11% had PID. Diagnostic laparoscopy detected abnormalities in 45 (82%) of the patients with chronic pelvic pain. Pelvic adhesion was the most common etiology n=16 (29%), followed by PID (13%), 7% each of Endometriosis, pelvic congestion, and ovarian cysts. |
| Chhetri 2012 [12] | Journal of College of Medical Sciences-Nepal | Evaluate the role of ultrasonography in patients presenting with scrotal pain. | Scrotal pain | 50 | Adult  | 21-30 years: 50%; 31 - 40 years: 40%  | 0 | Descriptive study | Diagnostic ultrasonography of scrotum. | Epididymitis with or without orchitis were seen in 40% patients, followed by cystic lesions of the epididymis (18%). Normal scan was seen in 14%. Malignancy as a cause of scrotal pain was seen in only one patient (2%). |
| Das 2006 [14] | APLAR Journal of Rheumatology | To classify important types of rheumatological disorders in patients presenting at a Rheumatological Department.  | Rheumatological disorders including different musculoskeletal pain | 365 | Adolescents and Adults | 15 - 75 years | Not specified | Cross-sectional | ACR criteria l; all patients underwent radio-imaging and laboratory investigations (general and specific tests for each rheumatological disorder) | Soft tissue rheumatism (40%), inflammatory arthritis (21%) and bone and cartilage diseases (21%), Connective tissue disorders were only 5%, seronegative spondyloarthritis 3%, gout 4%, Rheumatoid arthritis 20%, fibromyalgia 20%. Osteoarthritis of knee, hand and hip were 10%. Lumbago, lumbar spondylolisthesis and spinal canal stenosis together comprised 14% of patients with low back pain. Cervical spondylosis and all types of shoulder joint pain syndromes comprised 6% and 5%, respectively. |
| Ghimire 2015a [23] | Journal of Nepalgunj Medical College | Investigate the implication of a CT scan for headache with non-localizing sign | Headache | 136 | Adults  | Men: 44 years; Women: 42.12 years | 73% | Prospective longitudinal study | CT scan | Positive scan report with significant findings was found only in 4% of cases. 70% cases had no pathology in CT scans, while 29% had positive findings with non-significant findings.  |
| Joshi 2013a [28] | Nepal Paediatric Society Journal | Map the etiology of recurrent abdominal pain in Nepalese children. | Recurrent abdominal pain | 47 | Paediatrics | Range: 4 to 15 years | Not available | Prospective study | Stool examination, Urine culture, Upper Gastrointestinal endoscopy. | Organic causes were found in 41 (87%) children. Giardiasis was found to be thecommonest (46%) organic cause, followed by idiopathic chronic constipation (34%) and urinary tract infection confirmed by urine culture (7%). |
| Karki 2015a [33] | Journal of Nepal Health Research Council | Evaluate the MRI findings of degenerative changes in symptomatic patients. | Chronic low back pain | 2037 | Adolescent and Adults | 44.66 years (range: 11-94 years)  | 45% | Cross-sectional study | MRI | Degenerative changes were present in 94% participants. Disc bulge along with disc desiccation was the most common degenerative findings noted in 82%. Disc herniation was seen in 51%, neural foraminal stenosis in 60%, central spinal canal in 56% and nerve root compression in 32%. |
| Kari 2015b [32] | Journal of Nepal Health Research Council | Evaluate the occurrence of cervical degenerative disc pathologies in symptomatic patient with neck pain and radiculopathy | Chronic Neck pain with/without radiculopathy | 750 | Adolescent and Adults | 45.0 (14) years (range: 11 - 95 years) | 30% | Radiology department | MRI | Degenerative disc disease in the form of disc desiccation, disc bulge, disc herniation was the most common finding in 76% patients. 14% had normal MRI findings. |
| Nepal 2013 [48] | Journal of Chitwan Medical College | Evaluate all the CT scan findings in patients presenting with headache | Headache | 256 | Paediatrics and adults | Mean 35 years; Range 9 - 85 years | Not available | Cross-sectional study | CT scan | Only 10% showed some form of brain parenchymal pathology. Other associated findings were sinusitis in 28 (11%), bone related in 10 (4%), and mastoiditis in 6 (2%) patients.  |
| Pandey 2014 [51] | Health Renaissance  | Identify causes of acute chest pain.  | Chest pain  | 149 | Adults | 61.58 (11.95) years  | 41% | Cross-sectional study | A full clinical history, physical examination and 12 leadelectrocardiograms | The diagnosis of non-ischemic chest pain were made in 30 (20%) and Acute Coronary Syndrome in 119 (80%) patients. |
| Panta 2015 [52] | Journal of Nepal Health Research Council | Compare the morphological MRI findings in young and elderly patients with low back pain and also correlate them with the clinical symptoms | Low back pain | 301 |  | Young adults: 35.57 (8.73) years; Older adults: 66.90 (4.86) years | Young adults: 44%; Older adults: 47% | Radiology department | MRI | One or more disc degeneration changes of the following were present in MRI of all the individuals. Disc desiccation change either focal or at multiple levels were more common in elderly (99%) than in young adults (90%) (p=0.02). Spinal canal stenosis was seen in almost half of patients in both groups. |
| Poudel 2011 [60] | Health Renaissance | To describe the pattern of clinical presentations of abdominal pain in a general clinic | Abdominal pain | 300 | Adolescent and adults | N/a | 59.40% | Cross-sectional study | Stool examination, Urine examination, blood tests, Ultrasonography when indicated | 43% had a gastrointestinal cause, 29% had genitourinary cause, 10% had psychiatric cause. Among gastrointestinal cause, IBS was the commonest gastrointestinal cause of abdominal pain (13%). |
| Paudyal 2016 [56] | Journal of Patan Academy of Health Sciences | To describe the clinical profile and functional outcome of patients with juvenile idiopathic arthritis | Juvenile idiopathic arthritis  | 78 | Paediatrics  | 14.24 years | 47.4% | Cross-sectional study | Serological tests, Rheumatic factor, antinuclear antibody (ANA) and HLA B27. | Polyarticular disease was the most common form of JIA, followed by oligoarticular, enthesitis-related and systemic-onset JIAs. Systemic complications were frequent in polyarticular JIA with fixed flexion deformities of elbows and knees. |
| Shrestha 2004 [94] | Nepal Medical College Journal (Abstract only) | Describe characteristics of patients with mastalgia with treatments provided.  | Mastalgia (breast pain) | 221 | Adult | Not available | 100% | Cross-sectional study | Not available | Overall 37% presented with cyclical mastalgia and 43% with noncyclical mastalgia. Non-hormonal therapy like reassurance, breast support, reduction in dietary fat intake, Vitamin E, Vitamin B6 was preferred for initial therapy of mastalgia. |
| Subedee 2012 [101] | Journal of Nobel Medical College | To find out the proportion of intracranial abnormalities in patients with chronic headache without neurologic abnormality with the use of CT | Chronic Headache ( > 3months) | 56 | Paediatrics and adults | Range 5 to 72 years | 71% | Cross-sectional study | CT Scan | Of the 56 patients, 50 had normal CT (89%), 4 had minor abnormality (7.14%) that did not alter patient management and 2 had significant lesions (3.57%). This further corroborates the evidence that the ability of CT scan in detecting significant intracranial pathology is poor in this group of patients.  |
| Thapa 2015 [103] | Journal of Society of Surgeons of Nepal | To determine the patterns of degenerative disc disease on MRI in patients with low backache. | Low back pain (with symptoms suggestive of lumbar disc disease) | 202 | Adolescent and Adults | 44.26 ±15.61range (13-83)  | 42.6% | Cross-sectional  | MRI | The most common category was disc bulge note in 46.5% of cases. Nerve root compression was observed in 56% cases. |

*Abbreviations*. ACR, American College of Rheumatology; ANA, Anti-Nuclear Antibody; CT, Computed Tomography; IBS, Irritable Bowel Syndrome; MRI, Magnetic Resonance Imaging; PID, Pelvic Inflammatory Disease.

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