A systematic review of questionnaires on itch by the Special Interest Group “Questionnaires” of the International Forum for the Study of Itch (IFSI)

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Introduction: Itch can be perceived differently across patients and it can affect daily life in various ways. It is essential to assess those aspects that are relevant for the individual patient’s needs to improve treatment of patients suffering from acute or chronic itch. The International Forum for the Study on Itch (IFSI) Special Interest Group on “Questionnaires” aims to propose tools to assess different dimensions of itch and improve patient care. As a first step, this study aimed at a systematically reviewing existing patients’ self-report questionnaires on itch.

Materials and methods: The databases PubMed, PsycINFO, and CINAHL were systematically searched for any scientific publication describing patients’ self-report questionnaires that assess itch-related information (≥2 items). Information about the publication was extracted by 2 experts as well as which of the 14 predefined dimensions of itch (by the IFSI Special Interest Group) were assessed within the questionnaire, for instance, duration of itch, itch aggravating or relieving factors, and effects on quality of life.

Results: From a total of 5282 records, 58 articles were derived describing 62 questionnaires. Over half of the questionnaires were developed for dermatological conditions, and the vast majority targeted at adults. Most questionnaires address itch-related disability and itch intensity. Affective qualities of itch, coping with itch, response to current itch treatment, and the opinion on the origin of itch are infrequently asked for.

Discussion: The number and content of the items within a dimension vary greatly. Measurement properties of the questionnaires were not systematically addressed, as these were often not reported in the original publication. Future research should focus on selecting adequate and reliable (sub)scales to develop a modular questionnaire system in order to uniformly assess the individual patient’s demands and improve care.

Keywords: Itch, Itch dimensions, Pruritus, Questionnaire, PROM, Itch intensity

Introduction

The Special Interest Group (SIG) on itch questionnaires of the International Forum on the Study of Itch (IFSI) published a consensus paper[1] giving recommendations on what dimensions of itch could be assessed in an itch questionnaire in order to assess itch and, consequently, guide therapy. This is essential because chronic itch (defined by IFSI as lasting at least 6 wk[2]) is a prevalent symptom[3–6] of various conditions, such as dermatoses (eg, atopic dermatitis, psoriasis, chronic urticaria), systemic (eg, liver or renal failure), and neurological diseases (eg, postherpetic neuralgia) or its origin can be multifactorial (for an extensive classification of chronic itch see Ständer et al[2]). Itch can affect patients’ quality of life, which, in turn, can also intensify itch[7,8], making it an interdisciplinary clinical problem and challenge. In order to adequately help each individual patient, it is essential to explore various dimensions of the patient’s itch. The following 14 itch dimensions were put forward by the SIG: localization, frequency, duration, intensity, sensory qualities, scratch responses, opinion on origin, affective qualities, itch aggravating or relieving factors, disability/impairment, response to current and previous itch treatments, coping, cognitions, quality of life[1]. The SIG involved in this subject has the ultimate aim to provide, within an interdisciplinary team, a template for the use of questionnaires for different diagnoses that can be applied in a modular manner. To this end, validated questionnaires are needed.

Various scales, questionnaires, and surveys have been developed to measure itch-related characteristics and itch’ impact on quality of life. Frequently, only one aspect of the itch sensation has been assessed, that is mainly the intensity of itch measured with a Numeric Rating Scale (NRS) or Visual Analogue Scale (VAS)[9–11]. In addition, various questionnaires were developed to primarily...
assess multiple dimensions of itch. Most of these questionnaires were developed for dermatological diseases, for example, the Eppendorf Itch Questionnaire (EIQ)\[^{12}\] and the 5-D-Itch-Scalar\[^{13}\]. Multiple questionnaires within the nondermatological field had a different primary aim, but often also include itch questions. Some questionnaires were designed to measure acute itch (< 6 wk\[^{15}\]), others to assess chronic itch. It has been a challenge to document all itch questionnaires along with their content. Previous reviews focused on patient-reported outcome measures (PROM) especially for their use in clinical trials\[^{14,15}\]. These included not only questionnaires but also monodimensional scales like the NRS\[^{9,16}\]. Ständer et al\[^{15,17}\], provided an overview and additional recommendations for useful PROMs in the treatment of itch. However, to date, an overview of all existing itch questionnaires, while examining their content has not yet been made.

This study aimed at creating a systematic overview of which self-report itch questionnaires (defined by the presence at least 2 items) exist, in any study design or (patient) population, and which itch dimensions these questionnaires address. This overview is the first step to a modular system of itch questionnaires.

### Materials and methods

#### Literature search

A systematic literature search was conducted up to 15 June 2018 (no time limitation for the beginning of the search). To this end, we searched the databases PubMed, PsycINFO, and CINAHL. We also included articles describing questionnaires, which were mentioned by personal communication or found by hand search. References of included articles were screened by 1 expert (F.D.) for eligibility; if questionable a second expert (A.I.M.v.L.) was involved.

The databases were searched for original studies that used itch questionnaires or questionnaires that included multiple questions on itch in (a) population(s) of patients suffering from chronic itch. In the search, itch-related terms were combined with questionnaire-related terms. Medical Subject Headings [MeSH] terms, or equivalent for the respective database were used whenever possible, that is, Pruritus, Surveys and Questionnaires, and Patient Reported Outcome Measures. These MeSH terms were combined with the following terms that were searched for in title or abstract: pruritus* or itch*, questionnaire* or survey* or scale* or patient reported outcome. Detailed search algorithms for the above-mentioned databases are shown in Supplementary Table 1, Supplemental Digital Content 1 (http://links.lww.com/ITX/A2).

#### Eligibility criteria

All titles were screened; abstracts and full texts were also screened when necessary. We included studies if they met the following inclusion criteria:

- the article describes the use of a questionnaire (or equivalent, like a scale or survey) inquiring the patients’ itch characteristics;
- the article describes a questionnaire, not only a single scale (see Reich et al\[^{9,18}\] for reviews on single items assessing itch), that is, it contains at least 2 questions about itch;
- the questionnaire was filled in by the patients and potentially partly by the clinician;
- the article was full text published in a scientific journal (ie, dissertations or conference abstracts were excluded);
- the full text article as well as the questionnaire items could be retrieved; and
- the paper was published in English, German, Japanese, Dutch, or French.

#### Data extraction

A preprinted form was used by one expert (F.D.) to extract the following information about each included questionnaire: Information about the initial publication of the questionnaire (authors, year), the study population(s) along with the sample size and mean age of the sample, and the reported or presumed original language(s) the questionnaire was developed for. In addition, the length of each questionnaire was judged as short (< 25 items), medium (26–50 items) or long (≥ 51 items). Unclarities were resolved by involvement of a second expert (A.I.M.v.L.). Another preprinted form was used to assess which of the 14 dimensions of itch as defined in the IFSI SIG itch questionnaires consensus paper were inquired about in each questionnaire\[^{11}\]. Half of these dimensions can be classified within the category “Characteristics of itch,” that is localization of itch (Where on your body do you feel itch?) and duration of itch—the reference frame of this question can vary between days and years (For how long have you already had the itch or for how long has the itch been present? Both for how long in your life (eg, months or years) and how long it lasts if present (eg, minutes, hours, days) are taken into account); intensity of itch measured by VAS or NRS, or Likert scales (and is your itch getting better/worse is also taken into account here); sensory qualities of itch (Which descriptors are applicable to the itch sensation, eg pure itch, stinging, burning, mixed sensation. What does the itch feel like?); scratch response (What is your behavioral response when you have itch? Eg, scratching, rubbing, squeezing, pinching the skin). The other 7 dimensions can be classified within the category “itch in daily life”: opinion on origin of the itch (What is the patient’s personal view on the origin of itch symptoms?); affective dimensions (Which descriptors are applicable to the itch sensation, eg, whether the itch is bothersome or unbearable); itch aggravating or relieving factors (What makes the itch better or worse, eg hot water, cold weather?); disability/impairment (How does the itch affect the patient’s everyday life physically, including work, social activities, and sleep?); response to current and previous itch treatments (How effective have drugs and other treatments been to reduce itch?); coping with itch (itch specific coping styles, eg looking for distraction by doing something else); itch cognitions (Cognitions about itch, such as catastrophizing (eg, I cannot withstand the itch anymore) and problem focused coping (eg, the itch will only take one minute)) and quality of life (How does the itch affect the patient’s emotional wellbeing). The form assessing the dimensions of itch was filled out by one expert (F.D.) and checked by a second expert (A.I.M.v.L.); discrepancies were solved by discussion.

#### Data synthesis

A synthesis of the extracted data will serve as the overview of the current itch questionnaires. For each questionnaire, we present the study population described in the included paper as well as the mean age of this population. In addition, we report the underlying origin of these itch populations in accordance with the etiological IFSI classification of itch\[^{21}\]. This classification is developed for chronic itch and includes 6 different categories containing dermatological, systemic, neurological, psychosomatic, mixed diseases, and diseases of other undetermined origin.
(IFSI category I–VI); questionnaires that were administered in patient populations not classified according to the clinical classification of itch by IFSI (eg, students or the general population), were classified separately. We also analyzed the reported (or presumed) original language and the length of the questionnaire. We defined one item as one possible answer and assumed therefore 4 groups: very short (2–4 items), short (5–25 items), medium (26–50 item), and long (≥ 51 items).

**Results**

**Study selection**

In total we identified 5754 records in the three databases, after removing duplicates, 5282 records remained (for flow diagram see Fig. 1 and for overview of the included questionnaires see Table 2). Ten additional papers describing questionnaires were found by hand search or by personal communication. Of these 5282 records, 795 abstracts and 251 full texts were screened. In total, we excluded 64 records, because the concerning questionnaire did not assess itch at all (eg, the DLQI[19]) or because the questionnaire did not assess characteristics of itch at all (eg, the patient-relevant benefit in the treatment of pruritus[20]), 119 articles because of various reasons (eg, only a single item on itch was assessed, eg the VAS or NRS[9,11] or the questionnaire was already included). Also, 10 questionnaires could not be included because information relevant for this review was lacking for the respective questionnaire because it could not be derived from the publication and/or the questionnaire itself could not be obtained[21–30]. We identified 58 relevant articles with in total 62 itch questionnaires that fulfilled the inclusion criteria.

**Study characteristics**

In Table 1, an overview of all included studies is provided. Most itch questionnaires (n = 37, 60%) were primarily developed for dermatological diseases (IFSI category I), followed by systemic diseases (IFSI category II) with n = 19 (31%). Only 2 questionnaires each were developed to assess neuropathic itch (IFSI category III) or to assess overlapping/coexisting diseases (IFSI category V Mixed), 2 questionnaires were administered in populations not classified by IFSI, specifically, the general population[86] and students[85] (Fig. 2). Around 81% of the included papers were published in the year 2000 or later. Seventy-one percent of the studies had a sample size over 100 people. The mean age of the individuals included ranged from 8.9 years for a pediatric questionnaire[51] up to 67 years for a wound-itching questionnaire[52]. Two of the 62 questionnaires were especially developed for children[51,81].

The questionnaires were original published in one or more reported (or presumed) languages. Thirty-one questionnaires were published in the English language, followed by 8 questionnaires which were published in the German language. One study was conducted in Nigeria, here no language was reported or could be

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**Figure 1.** Flow diagram of literature search.
Table 1: Overview of studies included that describe itch questionnaires (organized per IFSI etiological classification category in alphabetical order).

| Questionnaire                                                                 | Published By          | Year | Study Population | Sample Size (n) | Mean Age (SD or Range) (y) | Reported (or Presumed) Original Language | Length of Questionnaire |
|--------------------------------------------------------------------------------|-----------------------|------|------------------|----------------|----------------------------|------------------------------------------|------------------------|
| Dermatological diseases (FSI category I)                                        |                       |      |                  |                |                           |                                          |                        |
| 12-Item Pruritus Severity Scale                                                 | Reich et al[31]       | 2017 | Chronic PD       | 148 (67:81)    | 50.0 (15.7)                | Polish                                   | Short                  |
| 4-D score                                                                      | Amtmann et al[32]     | 2017 | BP               | 173 (111:62)   | 34 (17)                    | English                                  | Short                  |
| 5-D-itch-scale                                                                 | Elman et al[13]       | 2010 | Pruritus secondary to: primary DD, BP; HIV; HEP; CKD | 234 (80:154)   | 48 (13.8)                   | English                                  | Short                  |
| Adult Burn Outcome Questionnaire Short Form (by hand searching)                 | Chen et al[33]        | 2018 | BP               | 120 (81:39)    | NR                         | English                                  | Short                  |
| AGP-Questionnaire                                                              | Weisshaar et al[34]   | 2011 | DD               | 100 (44:56)    | 52.3 (13.3)                | German                                   | Long                   |
| American Burn Association Young Adult Burn Outcome Questionnaire                | Ryan et al[35]        | 2013 | BP; non-BP       | Total: 265 (134:131) BP: 153 (112:41); non-BP: 112 (22:90) | Total: NR BP: 24.7 (3.6); non-BP: 25.2 (3.4) | English | Long |
| Atopic dermatitis screening and evaluation questionnaire (ADSEQ)               | Chen et al[36]        | 2016 | AD; DD           | Total = 108 (NR) AD (cases): 27 (NR) DD: not AD (controls): 81 (NR) | NR | English | Medium |
| Characteristics of Itch Questionnaire (adapted to the Eppendorf itch questionnaire) - Short-form Itch Questionnaire | Darsow et al[34]      | 2001 | AD               | 108 (43:65) | 33.4 (11.4) | German | Long |
| Chronic Skin Disease Questionnaire–Marburger Hautfragebogen                   | Stangier et al[42]    | 2003 | AD               | Study 4: 165 (59:106) | 25.2 (7.1) | German | Long |
| Epidermolysis Bullosa and Pruritus Questionnaire                                | Daniil et al[41]      | 2015 | EB               | 146 (73:73)    | 22.3 (6-7)                  | English                                  | Long                   |
| Epipenforr Juckreizfragebogen; Eppendorf pruritus questionnaire; Eppendorf itch questionnaire | Darsow et al[34]      | 1997 | PD               | 30 (NR)        | NR                         | German                                   | Long                   |
| Impact of Chronic Skin Disease on Daily Life (ISDL)                            | Evers et al[32]       | 2007 | PSO; AD          | 301 in total: PSO:173 (89:104); AD: 128 (40:89) | PSO: 47.6 (14.6); AD: 35.0 (15.3) | Dutch | Long |
| Itch Severity Scale (ISS)                                                       | Majerski et al[43]    | 2007 | PSO              | 93 (45:48)     | NR                         | English                                  | Short                  |
| Itching Cognitions Questionnaire (ICQ)                                          | Ehlers et al[44]      | 1993 | AD               | Sample 1: 138 (52:86); sample 2: 60 (24:36) Validation: 89 (55:54); evaluation: 104 (47:57) | Sample 1: 25.2 (6.9); sample 2: 28.3 (9.9) Validation: 58.1 (16.7); evaluation: 55.9 (16.4) | German | Medium |
| ItchyQL                                                                        | Desai et al[37]       | 2008 | PD               | Total: 400 (214:186) | Total: 26.6 (6.8) | Japanese | Very short |
| Kawashima’s pruritus score                                                       | Kawashima et al[40]   | 2003 | AD               | Total: 400 (214:186) | Total: 26.6 (6.8) | Japanese | Very short |
| Leuven Itch Scale                                                               | Haest et al[47]       | 2011 | BP; AD; OJ       | Total: 150: BP: 46 (21:25); AD: 63 (36:27); OJ: 41 (23:12) | BP: 41.0 (16.4); AD: 33.4 (11.8); OJ: 47.4 (13.8) | Dutch | Medium |
| Modified 5-D                                                                    | Vosken et al[46]      | 2017 | HS               | 211 (76:135)   | 38 (29-49)                 | Dutch                                   | Short                  |
| Modified Itch Severity Scale                                                    | Acar et al[44]        | 2010 | Recurrent external auditory canal itching | Total: 40 (43:6) Group 1: 20 (11:18); group 2: 20 (3:17) | 49 (16-93) | Turkish | Short |
| Otolaryngology Questionnaire (school-based asthma and allergy screening questionnaire) | Bruinewoud et al[50] | 2017 | EC               | Field testing: 351 (174:177) | 2057 (NR) | Dutch | Medium |
| Parents Symptom Questionnaire (school-based asthma and allergy screening questionnaire) | Redline et al[57]    | 2003 | Parents to upper and lower elementary school children | Field testing: 351 (174:177) | 2057 (NR) | English | Short |
| Questionnaire                                                   | Published By         | Year | Study Population | Sample Size (n) (M:F) | Mean Age (SD or Range) (y) | Reported (or Presumed) Original Language | Length of Questionnaire |
|---------------------------------------------------------------|----------------------|------|------------------|-----------------------|---------------------------|------------------------------------------|------------------------|
| Paul-Pieper-Itching                                          | Paul[52]             | 2013 | WP               | WP with Itch: 56 (30:26); WP without Itch: 142 (82:60); Germany: 132 (59:73); Uganda: 84 (37:47) | Total: 67 (21–98) | English | Long |
| Pruritus questionnaire                                        | Weisshaar et al[53]  | 2006 | DD               |                       |                           | Germany: 54.5 (14–84) | Uganda: 28 (15–75) 49 (15) | German | Long |
| Pruritus-related Life Quality Index (PLQI) questionnaire      | Erdurk et al[54]     | 2012 | DD               |                       |                           |                           | Turkish | Short |
| Psoriasis Symptom Diary                                       | Lebewohl et al[55]   | 2014 | Pso              | Sample for cognitive interview about the questionnaire: 16 (11.5) | 39 (22–59) | English | Short |
| Questionnaire for Pruritus Assessment                         | Parent-Vachon et al[56] | 2008 | BP               | Step 6: 32 (7:25)      | 43.3 (15.6) | French | Long |
| Questionnaire survey of pruritus and rash                    | Hogan et al[57]      | 1986 | PGEW             | 1954 (1954:0)         | 35.5 (NR) | English | Medium |
| Questionnaire survey of pruritus and rash                    | Hogan et al[58]      | 1986 | PGEW             | 796 (NR)              | 36.3 (NR) | English | Short |
| Rhinitis Symptom Utility Index                                | Rentz et al[59]      | 1998 | RH               | 100 (40:60)           | 36.9 (10.9) | English | Short |
| Shiratori’s pruritus score (by hand searching)                | Shiratori et al[60]  | 1993 | PD               | 124 (79:45)           | NR                       | Japanese | Very short |
| Skindex-61 (by hand searching)                               | Chren et al[61]      | 1996 | DD               | 201 (80:121)          | 51 (17) | English | Long |
| Skindex-29 (by hand searching)                               | Chren et al[62]      | 1997 | DD               | Sample for responsiveness analysis: 508 (NR) | 56 (18) | English | Medium |
| Skindex-16 (by hand searching)                               | Chren et al[63]      | 2001 | DD               | 541 (352:189)         | 58 (18) | English | Short |
| Student Symptom Questionnaire (school-based asthma and allergy screening questionnaire) | Redline et al[64] | 2003 | Upper and lower elementary schools | Validation sample: 107 (50:57) | Validation sample: 8.9 (1.9) | English | Short |
| W-AZS (Wskaznik dla Atopowego Zapalenia Skóry; Index for Atopic Dermatitis) (by hand searching) | Skry et al[65]      | 2005 | AD               | NR                    | NR                       | Polish | Very short |
| Systemic diseases (FSI category II)                           | Noothaiwong et al[66] | 2017 | UP               | UP: ESRD on HD or PD | 168 (100:68) | 60.9 (12.0) | Thai | Short |
| 5-D-itch scale                                                | Elman et al[67]      | 2010 | Pruritus secondary: primary DD, BP; HIV; HBV; CKD | 234 (80:154) | 48 (13.8) | English | Short |
| Brief itching inventory for UP                                | Mathur et al[68]     | 2010 | ESRD on HD       | 103 (53:50)           | 56 (14.2) | English | Short |
| Dialysis itching questionnaire                                | Shirani et al[69]    | 2013 | HD               | 50 (29:21)            | 66.2 (NR) | English | Short |
| Flushing Symptoms questionnaire                                | Naroquie et al[70]   | 2007 | Pts. appropriate for niacin | 175 (108:67) | 48.8 (11.9) | English | Short |
| Itch MDS (of sleep) for UP                                    | Mathur et al[71]     | 2010 | ESRD on HD       | 103 (53:50)           | 56 (14.2) | English | Short |
| Itch questionnaire                                            | Röhe et al[72]       | 2008 | PBC              | Total: 239 (9:231) PBC with itch: 165 (NR) PBC without itch: 74 (NR) HD with itch: 49 (20:29); HD without itch: 21 (9:12) Itch: 50 (13); no itch: 54 (14) | Total: NR (20–71) | English | Short |
| Itching in hemodialysis patients                              | Subach and Marc[73]  | 2002 | HD               |                       |                           | English | Short |
| Liver disease symptom index 2.0 (LSDI-2.0) (by hand searching) | Van der Pas et al[74] | 2004 | CLD              | 1175 (497:678)        | 48 (12) | Dutch | Short |
| MSAS-Memorial Symptom Assessment Scale (by hand searching)    | Porterney et al[75]  | 1994 | BC; CC; DC; PC   | 218 (71:147)          | 55.5 (23-86) | English | Medium |
| Primary biliary cirrhosis-40 (PBC-40) (by hand searching)     | Jacoby et al[76]     | 2005 | PBC              | Validation of the questionnaire: 240 (12:223; 5 NA) Total: 290 (31:259) Italian: 125 (9:116) Japanese: 165 (22:143) | Validation of the questionnaire: 60 (10) Total: 62 (10) Italian: 62 (10) Japanese: 61 (10) | Italian, Japanese | Medium |
| Primary biliary cirrhosis-27 (PBC-27) (by hand searching)     | Montali et al[77]    | 2010 | PBC              |                       |                           | Italian, Japanese | Medium |
assumed because this country has multiple official languages. Seven questionnaires were very short (2–4 items), 29 were short (5–25 items), 14 questionnaires had a medium size (26–50 items) and 12 questionnaires were long (≥ 51 items).

**Results of individual studies and its synthesis**

Table 2 displays the 14 dimensions of itch as defined in the IFSI SIG itch questionnaires. Around 92% of the questionnaires consisted of self-report questions filled out by the patient (and additionally by caregivers in the case of children [Redline, 2003 #5469]). In 8%, a clinician’s judgment was additionally asked for. This concerned questions about the origin of pruritus, skin findings like lesions, previous therapies and investigations as well as secondary diagnoses. Only 4 questionnaires assessed all dimensions within the category characteristics of itch (Table 2 and Fig. 3) and none of the questionnaires assessed all dimensions within the category itch in daily life (Table 2 and Fig. 4).

For the category characteristics of itch, the most frequently measured dimensions were intensity of itch (65%) followed by frequency of itch (53%) and localization of itch (52%). Scratch response and sensory qualities were assessed in only 37% and 26% of the questionnaires, respectively. The dimension of itch within the category itch in daily life that was most frequently assessed, was disability (79%) of the questionnaires, followed by quality of life (56%) and itch aggravating or relieving factors (34%). Of the 49 questionnaires that assessed disability, 74% asked for itch-related disability, whereas 22% assessed disability in relation to the patients’ (skin) condition. Itch cognitions and coping with itch were seldom part of the questionnaires, both in relation to the patients’ (skin) condition. Itch cognitions and coping with itch were seldom part of the questionnaires, both in relation to the patients’ (skin) condition. Itch cognitions and coping with itch were seldom part of the questionnaires, both in relation to the patients’ (skin) condition. Itch cognitions and coping with itch were seldom part of the questionnaires, both in relation to the patients’ (skin) condition.

**Table 1**

| Questionnaire | Published By | Year | Study Population | Sample Size (n) (M:F) | Mean Age (SD or Range) (y) | Reported (or Presumed) Original Language | Length of Questionnaire |
|---------------|-------------|------|------------------|----------------------|---------------------------|------------------------------------------|------------------------|
| Pruritus questionnaire | Gilchrest et al[74] | 1982 | HD | Boston: 130 (66:64) | Boston: 54 (16) | English | Short |
| Pruritus questionnaire | Abila et al[75] | 1980 | HD | 53 (9) | NR | Spanish | Very short |
| Pruritus questionnaire | Balasak et al[76] | 1998 | CAPD: HD | CAPD: 43 (26:17); HD: 54 (29:25); CAPD: 64 (21:83); HD: 61 (24:81) | 66 (59–74) | Greek | Short |
| Pruritus questionnaire | Wittenbrot et al[77] | 2013 | HES-pts. | 190 (105:85) | | Danish | Short |
| Questionnaire Kimme Kimme | Kimme et al[78] | 2001 | HES-pts. | 50 (18:32) | 52 (11) | Swedish | Very short |
| SkinIndex 10 for UP | Mathur et al[79] | 2010 | ESRD on HD | 103 (53:50) | 56 (14.2) | English | Short |
| Survey on uremic pruritus | Wikstrom[80] | 2007 | ESRD on HD | 6137 (NR) | NR | English, French, German, Italian, Japanese, Spanish | Very short |

**Neurological diseases (IFSI category III)**
- Pruritus questionnaire: Gilchrest et al[74]
  - Published By: Gilchrest et al
  - Year: 1982
  - Study Population: HD
  - Sample Size: Boston: 130 (66:64)
  - Mean Age: Boston: 54 (16)
  - Original Language: English
  - Length of Questionnaire: Short

**Type 1 Module**
- Neoplastic diseases
- Pruritus questionnaire: Gilchrest et al[74]
  - Published By: Gilchrest et al
  - Year: 1982
  - Study Population: HD
  - Sample Size: Boston: 130 (66:64)
  - Mean Age: Boston: 54 (16)
  - Original Language: English
  - Length of Questionnaire: Short

**Dermatomyositis questionnaire**
- Pruritus questionnaire: Gilchrest et al[74]
  - Published By: Gilchrest et al
  - Year: 1982
  - Study Population: HD
  - Sample Size: Boston: 130 (66:64)
  - Mean Age: Boston: 54 (16)
  - Original Language: English
  - Length of Questionnaire: Short

**Mixed diseases (IFSI category V)**
- Pruritus questionnaire: Gilchrest et al[74]
  - Published By: Gilchrest et al
  - Year: 1982
  - Study Population: HD
  - Sample Size: Boston: 130 (66:64)
  - Mean Age: Boston: 54 (16)
  - Original Language: English
  - Length of Questionnaire: Short

**Populations not classified according to IFSI’s etiological classification**
- Aquagenic pruritus
  - Pruritus questionnaire: Gilchrest et al[74]
    - Published By: Gilchrest et al
    - Year: 1982
    - Study Population: HD
    - Sample Size: Boston: 130 (66:64)
    - Mean Age: Boston: 54 (16)
    - Original Language: English
    - Length of Questionnaire: Short

**Length of questionnaire:** very short: 2–4 items, short: 5–25 items, medium: 26–50 items, long: ≥ 51 items (1 item is defined as 1 possible answer).

AD indicates atopic dermatitis; BC, breast cancer; BP, burn patients; BPR, back pruritus; CAPD, continuous ambulatory peritoneal dialysis; CC, colon cancer; CLD, chronic liver disease; CQ, chronic urticaria; DD, dermatological diseases; DeMy, dermatomyositis; EB, epidermolysis bullosa; EC, ear complaints; ESRD, end-stage renal disease; HD, hemodialysis; HES, hydroxyethyl starch; HS, hidradenitis suppurativa; IFSI, International Forum for the Study of Itch; NA, not applicable; NR, not reported; NF1, neurofibromatosis 1; OC, ovarian cancer; PBC, primary biliary cirrhosis; PC, prostate cancer; PD, pruritic dermatoses; PGEW, primary grain elevator workers; PSO, psoriasis; Pts., patients; QoL, quality of life; RH, rhinitis; Stud., students; UP, uremic pruritus; WP, wound patients.
that each questionnaire investigated a specific dimension within this category [12,34,39,56]. When assessing how to indicate the location of their itch [47,64,65], or patients had to circle a lot of approaches. Specifically, localization of itch was frequently assessed by displaying drawings of the body on which patients had to indicate the location of their itch [47,64,65], or patients had to circle which of the listed body parts were itchy [13,69]. For specific conditions, it was often inquired whether the itch was localized within the body parts affected by the condition, for example, neurofibromas or rhinitis [58,82]. Frequency of itch was asked for using frames ranging from one day to multiple weeks. Particularly for postburn itch, it is essential to map the frequency of itch per day and week [87], as this seems more sensitive to change than intensity given its episodic nature [88]. Duration of itch was included in less than half of the questionnaires, of which some only refer to perceived itch during the day [43,67]. Whereas the latter information can be relevant for some types of itch, for example, postburn itch occurs most often in the afternoon and evening [83], knowledge on the itch duration over a longer period is useful to determine whether the itch is acute or chronic [52]. For most questionnaires, it was even unclear if the questionnaire was developed for population(s) suffering from acute or chronic itch or both. Besides, different questionnaires follow different definitions of chronic itch, for example, itch present for a minimum of 6 weeks and with episodes occurring (defined by itch present for 5 min several times a day) at least twice a week [43] or present for at least 3 months [54]. Especially for systemic diseases, including liver or kidney disease, for which the comorbidity of chronic itch is lower than in skin conditions such as atopic dermatitis [12,65,83], information about the duration of itch could be beneficial.

Itch intensity was assessed in only 65% of the questionnaires. This is surprising given its high correlation with the patient’s well-being [48,90]. If included, intensity was frequently assessed using a VAS or NRS [34,69], while some questionnaires used Likert scales [37,64]. Despite the major role scratching plays in itch and its chronicification, for example, the itch-scratch cycle [91], scratch responses were assessed in about one third of the questionnaires. Those questions often refer to the effects of scratching, such as inflicted lesions [39,64], associated feelings [39,65,82], its frequency [82], or whether scratching occurs intentionally or automatically [33]. Sensory qualities of itch were assessed extensively in some questionnaires [12,39], whereas other questionnaires only included some sensory (neuropathic-like) descriptors like stabbing or burning [41,43]. Questions on affective qualities of itch, for example, annoying, irritating, unbearable, were almost exclusively found in dermatological questionnaires. Assessing both sensory and affective descriptors may be useful to distinguish different types of itch [92], for example, postburn itch has been characterized by neuropathic descriptors such as stinging, pinching, and burning [93]. Comparable distinctions have been described for pain [94].

The findings for the category itch in daily life (Table 2) show that often the effects of itch on daily life were parallely inquired at a physical (disability) and emotional (QoL) level. The number of items addressing these dimensions varied, however, largely, that is, from 1 item [83], to a unidimensional focus on sleep [65], to a broad focus of itch on physical and emotional aspects [43,65]. Opinion on the origin of itch was predominantly assessed in surveys [45,83,86], for which the underlying cause of itch varies Itch aggravating or relieving factors, whether or not actively pursued by the patient, were primarily assessed in relation to dermatological conditions. Examples of such factors are sleep, rest, stress, heat [82], different seasons [68,74], mixing in company to forget the itch, and applying ointment [39]. Sometimes this was asked in an open question [38]. The dimensions coping with itch, and cognitions about itch were barely included in questionnaires, whilst these are good targets for multidisciplinary interventions [83]. The response to itch treatments has incidentally been included, and, proportionally, mainly in relation to systemic itch diseases [68,69,76,80]. Yet, information about (in)effectiveness of current treatment can be useful to signal if a patient’s treatment regimen should be adjusted.

A strength of this study is that it for the first time systematically searched, in multiple databases, for existing itch questionnaires and that it also provides an overview of which itch dimensions recommended by IFSI [10] are addressed in these questionnaires. At
| Questionnaire Name                                      | References                      | Clinician's Judgment | Characteristics of Itch | Itch in Daily Life | Self-report by Patient | Itch in Daily Life | Sensory Qualities | Scratch Response | Affective Qualities | Disability (Sleep) | Response to Itch Treatment | Coping | Cognitions | QoL |
|--------------------------------------------------------|---------------------------------|---------------------|-------------------------|--------------------|------------------------|---------------------|------------------|------------------|---------------------|---------------------|------------------------|---------|------------|-----|
| Dermatological diseases (IFSI category I)              |                                 |                     |                         |                    |                        |                     |                  |                  |                     |                     |                        |         |            |     |
| 1. 12-Item Pruritus Severity Scale                     | Reich et al[31]                 | No                  | +                       | +                  | +                      | +                   | +                | +                | (+)                 | +                   |                        |         |            |     |
| 2. 4-D score                                           | Antmann et al[42]               | No                  | +                       | +                  |                        |                      |                  |                  |                     | +                   |                        |         |            |     |
| 3. 5-D-Itch-Scale                                      | Elman et al[13]                 | No                  | +                       | +                  |                        |                      |                  |                  | +                   | +                   |                        |         |            |     |
| 4. Adult Burn Outcome Questionnaire Short Form         | Chen et al[33]                  | No                  | +                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 5. AGP-Questionnaire                                   | Weisshaar et al[14]             | No                  | +                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 6. American Burn Association Young Adult Burn Outcome Questionnaire | Ryan et al[35]                  | No                  | +                       | +                  |                        |                      |                  |                  | +                   | +                   |                        |         |            |     |
| 7. Atopic dermatitis screening and evaluation questionnaire | Chen et al[36]                  | No                  | ±                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 8. Brest questionnaire                                 | Brenaut et al[37]               | Yes                 | +                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 9. Burns Itch Questionnaire                            | Van Loey et al[38]              | No                  | +                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 10. Characteristics of Itch Questionnaire (adapted to the Eppendorf Itch questionnaire) -- Shortform Itch Questionnaire | Darsow et al[39]                | Yes                 | +                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 11. Chronic Skin Disease Questionnaire-Marburger Hautfragebogen | Stangier et al[40]             | No                  | +                       | +                  | ±                      | +                   | ±                | ±                | ±                   | ±                   | ±                      | ±       | ±          |     |
| 12. Epidermolysis Bullosa and Pruritus Questionnaire   | Donat et al[41]                 | No                  | +                       | ±                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 13. Eppendorf Itch questionnaire                       | Darsow et al[12]                | Yes                 | +                       | +                  | +                      | +                   | +                | +                | +                   | +                   |                        |         |            |     |
| 14. Impact of Chronic Skin Disease on Daily Life (ISDL)| Evers et al[42]                 | No                  | ±                       | +                  | +                      | +                   | +                | ±                | ±                   | +                   |                        | ±       | ±          |     |
|   | Scale/Questionnaire                                                                 | Authors          | Year | Itch Severity Scale (ISS) | Itching Cognitions Questionnaire (ICQ) | ItchyQoL | Kawashima’s pruritus score | Leuven Itch Scale | Modified 5-D-Itch-Scale | Modified Itch Severity Scale | Parents Symptom Questionnaire (school-based asthma and allergy screening questionnaire) | Paul-Pieper-Itching | Pruritus questionnaire | Pruritus-related Life Quality Index (PLQI) questionnaire | Psoriasis Symptom Diary | Questionnaire for Pruritus Assessment | Questionnaire survey of pruritus and rash 1978/1979 | Questionnaire survey of pruritus and rash 1986 | Rhinitis Symptom Utility Index† | Shiratori’s pruritus score | Skindex-61 | Skindex-29 | Skindex-16 |
|---|-----------------------------------------------------------------------------------|------------------|------|--------------------------|----------------------------------------|----------|---------------------------|-----------------|--------------------------|-----------------------------|----------------------------------------------------------------|-----------------|-----------------------|-------------------------------------------------------|----------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------|-----------------|----------|
| 15| Itch Severity Scale (ISS)                                                         | Majeski et al    | No   | +                        | +                                      | +        | ±                         | ±               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 | 1978/1979                        |                                |                          |                         |                   |
| 16| Itching Cognitions Questionnaire (ICQ)                                             | Ehlers et al     | No   |                          |                                        |          |                           | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 17| ItchyQoL                                                                          | Desai et al      | No   | ±                        | ±                                       | ± (±)    | ±                        | ±               | +                       | ±                           |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 18| Kawashima’s pruritus score                                                         | Kawashima et al  | No   | +                        | +                                       |          |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 19| Leuven Itch Scale                                                                 | Haest et al      | No   | +                        | +                                       | +        |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 20| Modified 5-D-Itch-Scale                                                           | Vossen et al     | No   | +                        | +                                       |          |                          | +               | (±)                      | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 21| Modified Itch Severity Scale                                                      | Acar et al       | No   | +                        | +                                       | +        |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 22| Parents Symptom Questionnaire (school-based asthma and allergy screening questionnaire) | Redline et al    | No   | +                        | + (†)                                   | ± †      | ± †                      | ±               | ±                       | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 23| Paul-Pieper-Itching                                                               | Paul et al       | No   | +                        | +                                       | +        |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 24| Pruritus questionnaire                                                             | Weisshaar et al  | No   | +                        | +                                       | +        |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 25| Pruritus-related Life Quality Index (PLQI) questionnaire                           | Erturk et al     | No   |                          |                                        |          |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 26| Psoriasis Symptom Diary                                                           | Lebwohl et al    | No   | +                        | ±                                       |          |                          | ±               | ±                       | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 27| Questionnaire for Pruritus Assessment                                              | Parent-Vachon et al | No   | +                        | +                                       | +        |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 28| Questionnaire survey of pruritus and rash 1978/1979                               | Hogan et al      | No   | ±                        | +                                       | ±        |                          | ±               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 29| Questionnaire survey of pruritus and rash 1986                                     | Hogan et al      | No   | +                        | +                                       |          |                          | +               | +                       | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 30| Rhinitis Symptom Utility Index†                                                   | Revicki et al    | No   | +                        | +                                       |          |                          | +               | +                       | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 31| Shiratori’s pruritus score                                                         | Shiratori et al  | No   | +                        | +                                       | +        |                          | +               | +                       | + (±)                        |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 32| Skindex-61                                                                        | Chren et al      | No   | +                        |                                         |          |                          | ±               | (±)                     | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 33| Skindex-29                                                                        | Chren et al      | No   | +                        |                                         |          |                          | ±               | (±)                     | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| 34| Skindex-16                                                                        | Chren et al      | No   | +                        |                                         |          |                          | ±               | (±)                     | ±                            |                                                                 |                 |                       |                        |                     |                                 |                                |                         |                          |                         |                   |
| Questionnaire Name | References | Clinician’s Judgment | Localization | Frequency | Duration | Intensity | Sensory Qualities | Scratch Response | Affective Qualities | Opinion on Origin | Aggravating or Relieving Factors | Disability (Sleep) | Response to Itch Treatment | Coping | Cognitions | QoL |
|-------------------|------------|----------------------|--------------|-----------|----------|-----------|------------------|----------------|------------------|----------------|--------------------------|------------------|--------------------------|--------|-----------|-----|
| 36. W-AZS (Wskaźnik dla Atopowego Zapalenia Skóry; Index for Atopic Dermatitis) | Silny et al [63] | No | + | + | + | + | + | + | + | + | + | (+) |
| 37. Student Symptom Questionnaire (school-based asthma and allergy screening questionnaire) | Redline et al [61] | No | + † | + † | | | | | | | | | |
| 38. 14-Uraemic Pruritus in Dialysis Patients scale | Nochaiwong et al [64] | No | + | + | + | + | + | + | + | + | + | |
| 39. Dialysis itching questionnaire | Mathur et al [65] | No | + | + | + | + | + | + | + | + | + | |
| 40. Brief Itching Inventory for UP | Mathur et al [65] | No | + | + | + | + | + | + | + | + | + | |
| 41. Itch MOS (of sleep) for UP | Mathur et al [65] | No | + | + | + | + | + | + | + | + | + | |
| 42. Flushing Symptoms Questionnaire‡ | Norquist et al [67] | No | ± | ± | ± | ± | ± | ± | ± | ± | ± | ± |
| 43. Itching in hemodialysis patients | Subach and Marial [60] | No | + | + | + | + | + | + | + | + | + | |
| 44. Liver disease symptom index 2.0 (LDSI-2.0) | Van der Plas et al [70] | No | + | + | + | + | + | + | + | + | + |
| 45. MSAS-Memorial Symptom Assessment Scale | Portenoy et al [71] | No | + | + | + | + | + | + | + | + | + | |
| 46. Primary biliary cirrhosis-40 (PBC-40) | Jacoby et al [72] | No | + | + | + | + | + | + | + | + | + | |
| 47. Primary biliary cirrhosis-27 (PBC-27) | Montali et al [73] | No | + | + | + | + | + | + | + | + | + | |
| 48. Pruritus questionnaire | Gilchrist et al [74] | No | + | + | + | + | + | + | + | + | + | |
| 49. Pruritus questionnaire | Aubia et al [75] | No | + | + | + | + | + | + | + | + | + | |
| Questionnaire                              | Author(s)                          | Etiology Classification | Validity | Plus | Double Plus | Triple Plus | Quadruple Plus | Plus (+) | Double Plus (+) | Triple Plus (+) | Quadruple Plus (+) | Notes |
|-------------------------------------------|------------------------------------|-------------------------|----------|------|-------------|-------------|----------------|----------|----------------|----------------|-------------------|-------|
| Pruritus questionnaire                     | Balaskas et al                     | No                      | +        | +    | +           | +           | +              | + (+)    |                  |                |                   |       |
| Pruritus questionnaire                     | Wittbrodt et al                    | No                      | +        |      |             |             |                |          |                  |                |                   |       |
| Questionnaire Kimme                       | Kimme et al                        | No                      | +        | +    | +           |             |                | + (+)    |                  |                |                   |       |
| Skindex 10 for UP                          | Mathur et al                       | No                      | +        |      |             |             |                |          |                  |                |                   |       |
| Survey on uremic pruritus                  | Wikstrom                           | No                      | +        |      |             |             |                |          |                  |                |                   |       |
| Questionnaire                             | Kamimura et al                     | No                      | +        |      |             |             |                |          |                  |                |                   |       |
| Neurological diseases (IFSI category III)  |                                    |                         |          |      |             |             |                |          |                  |                |                   |       |
| PedsQL Neurofibromatosis Type 1 Module     | Nutakki et al                      | No                      | ±        |      |             |             |                |          |                  |                |                   |       |
| Questionnaire about pruritus in neurofibromatosis 1§ | Brenaut et al            | No                      | + §      | +    | +           | +           | +              | + (+)    |                  |                |                   |       |
| Mixed diseases (IFSI category V)           |                                    |                         |          |      |             |             |                |          |                  |                |                   |       |
| Dermatomyositis questionnaire              | Shirani et al                      | No                      | +        |      |             |             |                |          |                  |                |                   |       |
| Questionnaire for Notalgia paresthetica    | Pagliarello et al                  | Yes                     | +        |      |             |             |                |          |                  |                |                   |       |
| Populations not classified according to IFSI’s etiological classification |                                    |                         |          |      |             |             |                |          |                  |                |                   |       |
| Aquagenic pruritus questionnaire           | Salani et al                       | No                      | +        |      |             |             |                |          |                  |                |                   |       |
| Prevalence of chronic itch                 | Matterne et al                     | No                      | +        |      |             |             |                |          |                  |                |                   |       |

+ The questionnaire assesses this dimension of itch.
± The questionnaire assesses this dimension, however not in direct relation to itch, but in relation to the patients’ (skin) condition.
*Only in relation to the ear.
† Only in relation to the eyes, nose or throat.
‡ Only in relation to flushing symptoms, that include itch.
§ Only in relation to neurofibromas.
IFSI indicates International Forum for the Study of Itch.
the same time, this outline provides an overview of what is still missing. Such an approach has to our knowledge not yet been taken in previous reviews, in which, for instance, monodimensional scales or clinical assessments and PROMs were reviewed for their use in clinical trials\cite{14,15,17}. Another strong point is that the included questionnaires cover various medical areas, which we systematically organized in accordance with the IFSI-categories classifying the underlying diseases.

Several limitations need to be addressed. At first, we aimed at including papers describing any itch questionnaire for the first time, but often no measures of reliability and/or validity were reported. If we were to provide a full overview of these measures, we should have taken into account all publications of each questionnaire, for example, in different populations or languages. When developing a modular questionnaire system, validated and reliable subscales, derived from studies with low risk of bias should be included to guarantee quality. Second, for the same reasons, the current investigation did not focus on whether the questionnaires were sensitive to change, which is an essential measure when assessing these dimensions of itch over time. Third, this inventory only focused on written self-report measures to assess the different itch dimensions. It is likely that in clinical practice, next to these measures, also other PROMs as described in previous reviews\cite{14,15,17} as well as clinician’s judgments on these dimensions are included. Especially for dermatological diseases, a wide range of clinician’s scores exist that directly or indirectly relate to itch dimensions, like the SCORAD (SCORing Atopic Dermatitis)\cite{96}, EASI (Eczema Area and Severity Index)\cite{97}, and PASI (Psoriasis Area and Severity Index)\cite{98}. Fourth, we used the IFSI-classification for chronic itch, irrespective of whether the questionnaire was developed for acute or chronic itch (if known), as we are not aware of such classification system for acute itch. Fifth, a possible bias in this overview is that we excluded papers based on language restrictions and absence of the full text article and questionnaire.

To conclude, there is a large number of itch questionnaires, each with its own focus. The number and content of the items within a dimension vary greatly and important aspects of itch, like the intensity, or how responsive the itch is to treatment, are, remarkably, often not assessed. Moreover, acute and chronic itch are often not discriminated for in the questionnaires and measurement properties, such as validity, reliability, and capability to detect change over time, were often not reported by the included articles. In view of feasibility, it is unlikely that there will be a questionnaire that includes all itch dimensions and fulfills all needs. This is why the SIG supports the idea of having a modular system with some basic questions complemented by additional modules, for example, for treatment, QoL, etcetera. When developing such modules, the above described variability should have to be overcome. As this variability seems largely independent of the underlying medical conditions, basic (sub)scales could probably be used for each dimension, complemented by condition-specific questions as desired. This way, both general itch-related information and the demands for specific patient populations can be investigated in a standardized and comparable manner. Future research should focus on gaining agreement on how to select the (sub)scales for each dimension, in order to develop modules containing valid and reliable questions that are sensitive to change. At the same time, usefulness and feasibility in all kinds of settings, for example, clinic, research, cultural

![Figure 3](image-url)

**Figure 3.** Number of itch questionnaires including the dimensions within the category “characteristics of itch,” displayed per IFSI etiological classification category. Dermatological diseases according to IFSI category I; systemic diseases according to IFSI category II; neurological diseases according to IFSI category III; mixed according to IFSI category V. IFSI indicates International Forum for the Study of Itch.

![Figure 4](image-url)

**Figure 4.** Number of itch questionnaires including the dimensions within the category “itch in daily life,” displayed per IFSI etiological classification category. Dermatological diseases according to IFSI category I; systemic diseases according to IFSI category II; neurological diseases according to IFSI category III; mixed according to IFSI category V. IFSI indicates International Forum for the Study of Itch.
suitability[99], should be taken into account. This hopefully leads to improved care for patients suffering from itch.

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**Authors’ contribution**

F.D. and A.I.M.v.L. contributed equally.

**Conflicts of interest statement**

The authors declare that they have no financial conflict of interest with regard to the content of this report.

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