1. **Research Instruments**

Research doesn’t use any instruments. The research use many articles from various databases as material of this study.

1. **Data Sets**

Data collection is two researchers performed an inital literature screen independently. Articles that not relevant to this study, a judgement made based on their titles were identifed and excluded. Researchers read full text of each articles into account selection criteria. Articles did not meet the search eligbility criteria were excluded. Articles that meet the inclusion criteria reviewed to see the quality of the research articles. Articles should be related to research about fulfillment of safety and comfort needs in urinary catheter patients.

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1. **Figures and Tables**

Articles were excluded by title (1.965)

1. Not related to nursing
2. Not match with topic (safety and comfort needs in urinary catheter patients)

Articles identified through the search (n=2.207)

1. PubMed : 1061
2. Wiley Online Library: 293
3. SAGE journals:673

Identification

1. Duplicate data
2. Journals cannot be accessed in full text, only abstract
3. abstract does not match (n=37)

Articles are valued by abstract (n=62)

Screening

Articles selected by inclusion criteria (n=25)

Eligbility

Exluded by full text (n=11)

The literature which we used for literature review (n=14)

Include

Figure 1. Article Search Process.

**Table 1. Data Analysis Matrix for Articles Used in Literature Review.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Autors | Country | Types of Catheter | Design | Sample | Result |
| Darbyshire et al (2016) | United Kingdom | Urinary catheter (general) | Survey research | 50 patients from 17 different ward | Patients feel leaking (32%), embarrassement (24%), inconvenience (26%), , pain (26%), blocking (24%), 8% finding their catheters restrictive. 14% felt have coped without catheter.  |
| Hu et al (2019) | Taiwan | Urinary catheter (general) | Survey research or study investigated | 321 patients | Compared with male patients, females reported greater convenience and comfort use urinary catheter.  |
| Laan et al (2019) | Netherlands | Urinary catheter (general) | RICAT-study | 49 patients had urinary catheter | Symptoms from insertion, patients reported no symptom (75%), pain (14,6%), restriction in daily activities (31,3%). Statements from urinary patients feel satisfied (63,8%), no symptom (50%), rather have no urinary catheter (65,2%). It’s no difference in outcomes of statements and symptoms between age and gender.  |
| Trautner et al (2019) | United States | Indwelling urinary catheter | Descriptive analysis (part of prospective observational study) | 2.819 enrolled to study. But 2.276 patients with indweling urinary catheter. | Positive comments by patients with catheter, patient can sleep at night and sit was a relief to have the catheter. More than 80% negative comments about urinary catheter (pain, irritation, discomfort, interference with activities of daily living) because many patients mentioned the trouble were made by health care provider when insertion and removal.  |
| Chapple et al (2015) | United Kingdom | Long term catheter | Narrative interviews followed by thematic analysis | 36 long term catheter users (men and women) in England, Wales, or Scotland | Some respondents felt that suprapubic catheter would be more hygienic, comfortable and better for sexual than urethral catheter. It can cause all sorts problem because you get pressure sores where catheter is pressing.  |
| Cobussen-Boekhorst et al (2016) | Netherlands | Indwelling catheter | Qualitative multicentre | 124 inclusion criteria patients of a quantitative study with variety diagnoses. | Patients relief their complaints. They need more rest, pain has disappeared and they needed less incontinence material. Before catheterization, almost all male patients thought that it would be painful. But it less painful as expected.  |
| Fowler et al (2014) | United Kingdom | Indwelling catheter | Qualitative research  | 27 community indwelling long term catheter. 14 females (4 urethral, 10 suprapubic) and 13 males (6 urethral, 7 suprapubic). | Respondents linked indwelling catheter to physical discomfort. Women particularly found the urethral catheter uncomfortable beacuse they felt they sat on it for much of the day. This was cited as one of the reasons to change suprapubic catheter. Participants also reported pain when the catheter blocked.  |
| Logan (2015) | United Kingdom | Intermitten catheter | Survey research | 99 male  | When removing the urinary catheter, 93% patients no pain. 82% found catheterization with hydrosil gripper more comfortable. when removing the catheter ,93% experience no pain. After catheterization, 86% rarely experienced discomfort. |
| Logan (2017) | United Kingdom | Intermitten catheter | Survey research | 49 participants were recruited. 9 were not new to ISC. | Almost all women using hydrosil go to do procedure of catheter because it’s easy and comfortable procedure. 81% participants did not feel pain when inserting catheter, describe comfortable (59%) and discomfort (27%). 70% participants were no discomfort after catheter removed. Comparing the result , overall female patients less comfortable than men when insertion and removal of catheter.  |
| Safdar et al (2016) | United States | Indwelling catheter | Qualitative study | 20 patients with indwelling urinary catheter (9 men, 11 women) | 6 out of the 20 (30%) patients reported they aware indwelling urinary catheter increased the risk of infection. 10 out of the 20 (50%) patients reported uncomfortable or painful. 5 out of the 20 (25%) reported feeling sense limitation in mobility. 9 out of the 20 (45%) patients reported indwelling urinary catheter to be convenient because they did not have to ge up and go to bathroom. |
| (Goldstine et al., 2019) | 5 country (United Kingdom, United States, Germany, France, Netherlands) | Intermitten catheter | Qualitative study | 25 adult patient, ≥18 years old | Patients have experienced infections when this catheter is inserted, such as fever, pain, fatigue, spasms in the leg area so they have to go back and forth to the hospital. Patients say catheters are very helpful to them and more practical.Initially, some patients said they were afraid the first time they would undergo the catheterization process. The catheter insertion process scared her because there were several catheter products that were stiff so that when the catheter was inserted it caused blood to flow in the urethra. With a community, patients feel more open, share information with each other so that patients can share knowledge as long as they do the catheterization themselves and how the catheter is processed. Patients can travel to places they want to go |
| (Atakro et al., 2017) | Ghana | Indwelling catheter | Qualitative  | 19 patients (men) were interviewed | All patients said their level of activity was disturbed. The patient said it was uncomfortable and painful with this catheter inserted.The patient says that his sexual life is limited. The patient also tries to hide the catheter.With the catheter in place, patients reduce their social activities for fear of creating odors that can cause embarrassment. In the work environment patients say the catheter has a negative effect for them.Many patients experience economic hardship due to the insertion of this catheter so they have to depend on their family and partner. So that patients feel that this catater makes the role of patients seeking money obstructed. Even though the patient is elderly, the patient says that he wants to work. |
| Park et al (2017) | Korea (Seoul) | Intermitten catheter | Survey research  | 45 pediatric patients who underwent CIC for neurogenic bladder. | Result that patients in all group, gave higher scores in favor of SUC (ease of use, convenience, discreetness, symptomatic benefit), even though they may or may not significant.  |
| Kandadai et al (2016) | United States | Foley catheter and Valve catheter | RCT | 49 subjects. 24 use foley catheter and 25 valve catheter. | Catheter with valve (VC) and foley catheter (FC) users report that it has similar catheter related pain. Feeling of frustation and limited social activities have significant results. |