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Nursing Process Addressing the Nursing Focus "Hallucination": A Scoping Review

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Abstract

Although hallucinations are prevalent in psychiatric disorders, such as psychosis or dementia, no studies were to be found in literature about the nursing process addressing the focus "Hallucination". This literature review, which is integrated with a scoping study framework, was performed to determine a clinical data model addressing the focus "Hallucination". PRISMA checklist for scoping reviews was followed. From the total of 328 papers found, 32 were selected. The findings of this

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review were summarized according to the nursing process addressing the focus "Hallucination". These findings led to determine a clinical data model addressing the focus "Hallucination", comprising the elements of the nursing process. This clinical data model may contribute toward improving nursing decision-making and nursing care quality in relation to a client suffering from hallucination, as well as contribute toward producing more reliable nursing-sensitive indicators.

Keywords
classification, hallucinations, nursing process, psychiatric nursing, review

Introduction

Hallucination has been defined by the International Council of Nurses (ICN) as an apparent registration of sensory stimuli which is not actually present, classified according to the senses, such as auditory, visual, olfactory, gustatory or tactile hallucination (ICN, 2017). It is classified in the ICN (2017) as a nursing focus and a nursing diagnosis.

Even though this phenomenon is typically associated with schizophrenia and psychosis, a cross-national analysis based on 31261 respondents from 18 countries showed the mean lifetime prevalence of ever having a hallucinatory experience, in healthy individuals, was 5.2% (McGrath et al., 2015). Thus, hallucinations can occur not only in psychiatric disorders, but also in many neurological disorders (e.g., Lewy body disease and Alzheimer's dementia), as well as in patients with eye disease (e.g., Charles Bonnet Syndrome) or even in healthy people (Meppelink, 2015). According to Ballard et al. (2001; Prerost, Sefcik, & Smith, 2014), also patients with delirium have a high incidence of visual hallucinations, over 25%, as well as auditory and tactile false perceptions, over 18% of the time.

People with hallucinations (e.g., auditory hallucinations) require considerable assistance from mental health professionals, such as psychiatric nurses (Petrus, Chun, & Tsun, 2012). However, there have been few practice models to help psychiatric-mental health nurses' practice in identification and care of people experiencing them (Buccheri, Trygstad, Buffum, Birmingham, & Dowling, 2013). Although this phenomenon (hallucinations) is prevalent, mainly in psychiatric settings (for instance, a lifetime prevalence of 80% was found in 750 patients diagnosed with a schizophrenia spectrum disorder for multimodal hallucinations) (Lim et al., 2016), no published studies were found in the literature about the nursing process related to the focus "Hallucination" (ICN code: 10008635). In spite of some

efforts made in that direction (Herdman & Kamitsuru, 2017; ICN, 2017; Johnson et al., 2012), the lack of research in this domain leads to inadequate knowledge about diagnoses, relevant data and diagnostic activities for the identification of those diagnoses, as well as nursing interventions for people with hallucinations.

The nursing process represents the systematic, rigorous and efficient method of organizing thought processes for effective clinical decision-making, focused on problem solving and the provision of individualized nursing care (Ackley & Ladwig, 2014; Silva, 2011). It is divided into five essential steps: (1) data collection (which includes the identification of the relevant data and the diagnostic activities for identifying the nursing diagnosis), (2) diagnosis, (3) planning (selection of nursing interventions), (4) implementation (application of nursing interventions) and (5) final evaluation (Doenges & Moorhouse, 2010).

The data corresponds to elementary units of information regarding people's health, collected by nurses in order to identify real or potential problems and opportunities for client development. The relationship between different sets of data allows its transformation into information (Silva, 2011). This information is translated into a nursing diagnosis, which is defined by the ICN (2016) as a label given by a nurse to the decision about a phenomenon. In a study performed by Gonçalves, Sequeira, and Silva (2018) aiming to analyse the nurses' records in the Portuguese nursing information systems, hallucination has been documented by nurses as a nursing diagnosis. As a nursing focus/diagnosis, there is a nursing process related to it. A nursing intervention is defined as an action taken in response to a nursing diagnosis, in order to achieve a nursing outcome (ICN, 2016).

The development of nursing clinical data models provides evidence-based data elements related to nursing care (Chow et al., 2015) and allows structuring all the information related to a given concept (International Organization for Standardization, 2015). A nursing clinical data model allows the systematization of the connections between the elements of the nursing process—data, diagnoses and interventions—for a given nursing focus. Considering the aforementioned lack of knowledge in the domain of the nursing process related to "Hallucination", the development of a clinical data model comprising its elements, that is, a set of data, diagnoses and interventions addressing "Hallucination", seems relevant. According to some authors (e.g., Sequeira & Sampaio, 2018), that would be an important aid for nurses on the subject of the scientific evidence related to care plans. Furthermore, the existence of clinical data models would help enhance clinical practices, seeing that they could be replicated and eventually improved in other contexts/countries, facilitating the building of consensuses.

Significant of this Research

It seems important to determine a clinical data model comprising the elements of the nursing process centered on the nursing focus "Hallucination", that is, a set of data, diagnoses and interventions addressing "Hallucination". This work would provide a strong foundation for nurses' decision-making in clinical practice and it would certainly improve nursing records related to that focus.

Purpose

The aim of this review was to determine a clinical data model comprising the elements of the nursing process centered on the nursing focus "Hallucination", that is, a set of data, diagnoses and interventions addressing "Hallucination".

This scoping review paper provides a summary, explanation and interpretation of the breadth of the currently available qualitative and quantitative evidence that addresses the review questions.

Method

A scoping study framework uses a systematic approach with five distinct steps as detailed below and does not limit the review to only primary research papers, but allows relevant gray literature to also be considered (Arksey & O'Malley, 2005; Peterson, Pearce, Ferguson, & Langford, 2017). This method enables the review to extract divergent data and develop it in a meaningful, transparent and systematic way (Grant & Booth, 2009). Joanna Briggs guidelines for scoping reviews and PRISMA checklist for scoping reviews were followed (Peters et al., 2015; Tricco et al., 2018)—See Supporting file 1 (PRISMA Checklist). The methodological structure used by Ligita et al. (2018) was adopted. The five essential steps are as follows: (1) identifying the research question(s); (2) identifying the relevant studies; (3) study selection; (4) charting the data; and (5) collecting, summarizing and reporting the data.

The following inclusion criteria were used: peer-reviewed research and non-research papers providing information about nursing diagnoses, relevant data and diagnostic activities for the diagnoses, and interventions addressing the focus "Hallucination"; whether written in English, Spanish or Portuguese. Conversely, the exclusion criterion was: papers reporting children or adolescents with hallucinations.

This literature review concentrated on the nursing focus "Hallucination" regardless of the underlying clinical picture. Any type of disease addressed by the articles was included, as long as hallucination was present.

Step 1: Identifying the Research Questions

By having well-defined research questions, the scope of the studies included will be both practical and effective (Levac et al., 2010). For this review, three research questions were developed: (1) what relevant data and diagnostic activities can lead to nursing diagnoses related to the focus "Hallucination" in adults?; (2) what diagnoses are related to the focus "Hallucination" in adults?; and (3) what nursing interventions can help resolve or diminish the diagnoses related to the focus "Hallucination" in adults?. The option of including only adults in the population was based on the fact that nursing care for children/adolescents with hallucinations can be substantially different to care for adults with this condition.

Step 2: Identifying Relevant Published Papers

Before identifying relevant papers, the authors determined keywords based on the research questions. In this way, electronic databases including MEDLINE, CINAHL (via EBSCOhost) and Web of Science and Scopus were searched using these terms to locate papers that met the inclusion criteria: "hallucination*" AND "nurs*" AND ("diagnos*" OR "intervention*") NOT ("child*" OR "adolescen*").

Considering that the limitation to a 5-year period would greatly condition the results and the absence of a time limitation would lead to identifying such a significant number of articles that would make the analysis unbearable, we decided to limit the period to 10 years (2008-2018).

Step 3: Selecting Relevant Papers

From the search, performed independently by two researchers (PDBG and FMCS), 328 papers were found (all of them written in English). Of this number, 207 papers were duplicates. After removing the duplicates, 121 papers were assessed as meeting the inclusion criteria. These 121 papers were further examined in terms of the inclusion criteria by reading their titles and abstracts. After the full texts were read and assessed against the review questions, 32 papers were considered suitable for inclusion in the final dataset. The selection of relevant papers was based primarily on the research questions, rather than a critical appraisal process. The reviewed research papers' quality is usually not appraised in a scoping review seeing that the review seeks to encompass the range of all available material (Arksey & O'Malley, 2005; Grant & Booth, 2009). Undertaking detailed methodological critiques of the studies may unduly limit the number of selected papers and, therefore,

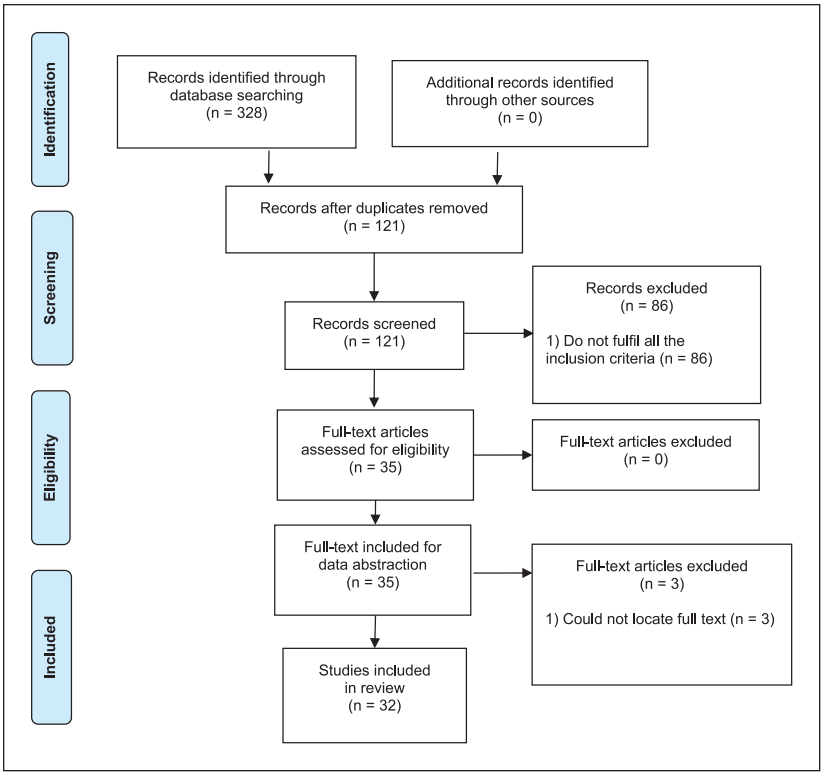

Figure 1. Search strategy recorded in a flow chart, adapted from Moher, Liberati, Tetzlaff, Altman, and PRISMA Group (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and Arksey and O'Malley (2005) scoping study framework stages.

inappropriately exclude papers that would still provide a wealth of information to answer the research questions; in this way, a wide range of methods and study designs should be included in order to provide an appreciation of the scope or extent of literature available on a thinly researched topic (Arksey & O'Malley, 2005). The procedure used to select the included papers is displayed in Figure 1.

Step 4: Data Charting

Each of the included 32 full-text papers was read thoroughly and independently, several times, by two of the researchers (PDBG and FMCS) in order

to obtain all the relevant information. A dataset from the papers was constructed by extracting findings relevant to the questions asked. The dataset was refined regularly by considering whether the extracted data was consistent with the review questions and the study aim. The extracted dataset was categorized using authors, study aims, study design, participants and/or sample, and themes in a practical table (Appendix 1). The design of this dataset was discussed by two of the review authors (PDBG and FMCS) to ensure all relevant information was included.

Quantitative and qualitative data were extracted from papers in the review using another data extraction table, taking into account the review questions, which are in line with the main steps of the nursing process addressing the focus "Hallucination": data collection for the diagnosis identification (relevant data and diagnostic activities), diagnoses and interventions (see Figure 2). In this process, two researchers (PDBG and FMCS), independently of one another, charted the *first five to ten studies using the data-charting form and met to determine whether their approach to data extraction was consistent with the research question and purpose*, as suggested by Levac et al. (2010, p. 6). Any disagreement was resolved through discussion.

Step 5: Collecting, Summarizing and Reporting of Results

The key elements of the review questions formed the theoretical framework for the presentation of summary data. Thematic analysis helped to recognize, analyse and narrate patterns identified in the dataset (Braun & Clarke, 2006). The themes, which correspond to the main steps of the nursing process addressing the focus "Hallucination" (relevant data and diagnostic activities, diagnoses, and nursing interventions addressing the focus "Hallucination"), reflect the key concepts of this review and those that allow the questions posed to be answered.

One researcher (PDBG) assigned each study to the predefined themes. That assignment was validated by a second researcher (FMCS). Discrepancies were discussed and resolved. Where appropriate, studies were assigned to more than one theme.

Results

A total of 32 papers were reviewed. At the level of types of articles identified, the analysis pointed to a combination of literature reviews, quantitative, qualitative and mixed studies, of which literature reviews corresponded to 30% of the total number of articles analyzed. The oldest paper was published in 2008

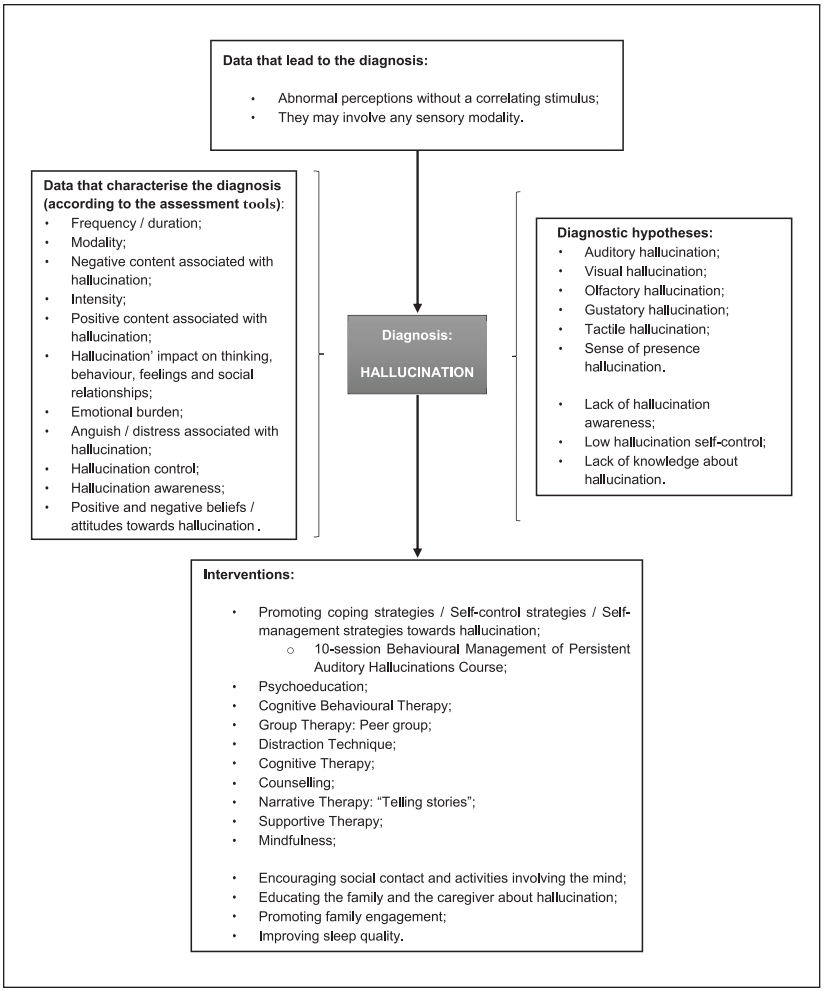

Figure 2. Summary of the results.

and the most recent paper was published in 2018. In terms of participants, most studies focused on patients suffering from psychotic disorders and neurodegenerative disorders. Among the clinical studies, sample sizes varied between 13 and 201 participants. Clinical studies were performed in the following locations: United States of America ($n=4$), United Kingdom ($n=2$), Taiwan ($n=2$), Canada ($n=1$), France ($n=1$), Switzerland ($n=1$), Norway ($n=1$), Spain ($n=1$) and Indonesia ($n=1$). The findings of this review were

summarized according to predefined themes which correspond to the main steps of the nursing process (referred to in introduction section) addressing the focus "Hallucination": data collection for the diagnosis identification (relevant data and diagnostic activities), diagnoses and interventions. The theme most frequently identified in the papers was "Relevant data and diagnostic activities" ($n=31$), followed by "Diagnoses" ($n=28$), followed by "Interventions" ($n=25$).

Data Collection: Relevant Data and Diagnostic Activities

Considering the amount and diversity of obtained data regarding the theme "relevant data and diagnostic activities", this was subdivided into two themes: data that lead to the diagnosis (hallucination) and data that characterize it. While the former was obtained through the analysis of the term "Hallucination", the latter was obtained through item analysis of the hallucination assessment tools.

From the analysis of the term "Hallucination", we extracted the following data that lead to the diagnosis "Hallucination": the existence of abnormal perceptions without a correlating stimulus, which may involve any sensory modality. In relation to the data that characterize the diagnosis "Hallucination", it seems to be particularly relevant to assess the frequency/duration of the hallucination, as well as the negative content associated with hallucination.

The assessment tools whose application was found to be relevant diagnostic activities related to the diagnosis "Hallucination" were the Characteristics of Auditory Hallucinations Questionnaire (CAHQ), the Positive and Negative Syndrome Scale (PANSS), the Unpleasant Voices Scale (UVS/0-10), the Psychotic Symptom Rating Scale (PSYRATS), the Beliefs About Voices Questionnaire (BAVQ), the Auditory Hallucination Assessment Scale (AHAS), the Auditory Hallucinations Interview Guide (AHIG), the North-East Visual Hallucinations Interview (NEVHI), the Brief Psychiatric Rating Scale (BPRS), the University of Miami Parkinson's disease Hallucinations Questionnaire (UM-PDHQ) and the Neuropsychiatric Inventory-Nursing Home Version (NPI-NH).

Of the eight assessment tools identified in the articles for the evaluation of hallucination, four are specifically aimed at evaluating auditory hallucination and one at evaluating visual hallucination. As mentioned before, data that characterize hallucination were obtained through item analysis of the hallucination assessment tools. Frequency/duration and negative content associated with hallucination were the most frequent characteristics identified in the assessment tools, followed by intensity. Positive content associated with hallucination, hallucination's impact on thinking, behavior, feelings and social

relationships, anguish/distress associated with hallucination and hallucination control are also important when characterizing hallucination.

Diagnoses

In as far as concerns the nursing diagnoses related to the focus "Hallucination", results were obtained regarding types of hallucination. At this level, the following types of hallucination were identified: "Auditory hallucination", "Visual hallucination", "Olfactory hallucination", "Gustatory hallucination", "Tactile hallucination", and "Sense of presence hallucination". "Auditory hallucination" and "Visual hallucination" were those more commonly referred to in the literature.

Furthermore, some diagnoses which comprise two nursing focuses were also found, and those also seem to be extremely relevant for the nursing process addressing the focus "Hallucination". In this way, diagnoses such as "Lack of hallucination awareness" (focuses: "Hallucination" and "Awareness"), "Low hallucination self-control" (focuses: "Hallucination" and "Self-control") and "Lack of knowledge about hallucination" (focuses: "Knowledge" and "Hallucination") were also mentioned in the literature and considered in this review.

Interventions

Finally, some nursing interventions that can help resolve or diminish the diagnoses related to the focus "Hallucination" were found. The following set of interventions were identified in this review: "Promoting coping strategies/self-control strategies/self-management strategies toward hallucination"; "Psychoeducation"; "Cognitive Behavioral Therapy"; "Group Therapy: Peer group"; "Distraction Technique"; "Cognitive therapy"; "Counseling"; "Narrative Therapy: Telling stories"; "Supportive Therapy"; and "Mindfulness".

The most commonly interventions referred in the literature were those related to coping strategies/self-control strategies/self-management strategies in relation to hallucination, psychoeducation and cognitive behavioral therapy.

Figure 2 presents a schematic summary of the results.

Discussion

The current scoping review is the first to explore the nursing process addressing the focus "Hallucination", leading to determine a clinical data model related to it. In this way, information about relevant data and diagnostic activities,

diagnoses, and nursing interventions related to the focus "Hallucination" has been described, responding to the review questions.

Data Collection: Relevant Data and Diagnostic Activities

The data that lead to the diagnosis "Hallucination", if analyzed in detail, are the definition of "Hallucination" per se. In fact, they are in line with classic literature too, in which hallucinations are defined as intimate convictions of actually perceiving a sensation for which there is no external object (Waters & Fernyhough, 2017). The data that characterizes the diagnosis, such as frequency/duration and the impact of hallucinations on thinking, behavior, feelings and social relationships, are also in line with the literature. In this way, for instance, a randomized controlled trial carried out by Craig et al. (2018) considered frequency and severity as indicators to evaluate the efficacy of a therapy on hallucinations.

An analysis of the assessment tools used in studies to evaluate hallucination reveals that some of them aimed to evaluate hallucinations only (the CAHQ, the Unpleasant Voices Scale, the BAVQ, the AHAS, the AHIG and the NEVHI), while others sought a more comprehensive symptom evaluation (the PANSS, the Psychotic Symptom Rating Scale, the BPRS, the University of Miami Parkinson's disease Hallucinations Questionnaire and the Neuropsychiatric Inventory-Nursing Home Version).

According to the clinical studies analyzed, some assessment tools were used in specific medical conditions. For example, the Neuropsychiatric Inventory-Nursing Home version (NPI-NH) was used with patients diagnosed with dementia and the University of Miami Parkinson's disease Hallucinations Questionnaire (UM-PDHQ) aimed to evaluate hallucinations specifically in patients with Parkinson's disease. The remaining assessment tools were mostly used with schizophrenia and schizoaffective disorder. No significant differences were found regarding the use of the assessment tools according to professional group or discipline.

Considering the aforementioned information, the findings from this review regarding relevant data and diagnostic activities related to the nursing focus "Hallucination" are supported by other literature.

Diagnoses

At the level of the diagnoses, if we take into account that 60% to 80% of all patients diagnosed with schizophrenia spectrum disorders experience auditory hallucinations (Waters et al., 2014), and a smaller proportion experience visual or other unimodal hallucination (Lim et al., 2016), we can assume the

findings of this review are in line with the literature. However, it is important to underline the absence of terms such as "auditory" or "visual" in the International Classification for Nursing Practice® (ICN, 2017), which makes it impossible for nurses to record these diagnoses so accurately.

In addition to the aforementioned diagnoses, lack of hallucination awareness is another diagnosis frequently related to the nursing focus "Hallucination". Applied to hallucinations, insight (the term usually used in psychopathology) refers to the awareness of the hallucinatory nature of the experience (Fénelon & Hamdani, 2010). In organic disorders, such as Parkinson's disease, patients may maintain insight regarding the hallucinatory experiences (Peyser, Naimark, Zuniga, & Jeste, 1998; Telles-Correia, Moreira, & Gonçalves, 2015). However, in psychiatric conditions, such as psychosis, lack of insight is quite common (Lera et al., 2011). Hence, we can assume the findings of this review are in line with the literature.

Another diagnosis found in the literature is "low hallucination self-control". This seems to be extremely relevant as, although self-care management strategies can decrease or relieve the effects of hallucinations among patients, some of them do not know how to deal with this symptom (Tsai & Chen, 2006).

Considering the aforementioned information, the findings from this review regarding the diagnoses related to the nursing focus "Hallucination" are supported by other literature.

Interventions

Finally, the reviewed literature suggested that promoting effective coping/self-control/self-management strategies toward hallucination is a relevant nursing intervention in this domain. According to Turkington, Lebert, and Spencer (2016), the key problem is that individuals who experience ongoing distress with auditory hallucinations often activate dysfunctional coping strategies as they try to manage these unpleasant experiences. Hence, promoting effective coping/self-control/self-management strategies toward hallucination becomes a key nursing intervention in this domain. Among the intervention "Promoting coping strategies/self-control strategies/self-management strategies in relation to hallucination", emphasis should be put into "10-session behavioural management of persistent auditory hallucinations course", a systematized intervention which is referred to in four papers.

The effects of psychoeducation on hallucinations have also been studied and, in accordance with an exploratory study conducted by Shiraishi et al. (2014), brief psychoeducation for schizophrenia (five sessions during the

course of 4 weeks) showed a statistically significant improvement on beliefs about hallucination in terms of malevolence, omnipotence and resistance.

Some interventions, such as Cognitive Behavioral Therapy or Cognitive Therapy, are psychotherapeutic ones. This can be a problem for nurses because, in some countries, they are not allowed to perform this kind of interventions (Horatio: European Psychiatric Nurses, 2012).

Considering the aforementioned information, the findings from this review regarding the interventions related to the nursing focus "Hallucination" are supported by other literature.

Strengths

A strength of this literature review is that the search included English, Spanish and Portuguese language papers. Moreover, as two researchers (PDBG and FMCS) independently carried out all the steps of the review, some bias was avoided and the reproducibility of the search process was enhanced. The evidence found seems to be transferable to other contexts, considering that studies from different regions worldwide were included in the review.

Limitations

There are certain limitations which are inherent to a scoping review approach: (1) the considerable quantity of data generated and (2) the absence of "synthesis", that is, the relative weight analysis of the evidence found. Furthermore, a systematic evaluation of the quality of the articles included in this review was not carried out. This option was based on the inclusive nature of the review, as we believe that it would be important to provide a wide view about the topic of the study. Finally, the limitation to a period of 10 years constitutes a limitation because it limits the results' comprehensiveness.

Findings of this review clearly reinforce the need to improve the International Classification for Nursing Practice as some of the diagnoses and interventions cannot be recorded by nurses due to the absence of terms in the classification (e.g., Psychoeducation). Regarding nursing interventions which can help resolve or diminish hallucinations, some of them are psychotherapeutic (e.g., Cognitive Behavioral Therapy); however, in some countries, nurses are not allowed to perform them.

Future Works

The findings of this review led to determine a clinical data model for the nursing focus "Hallucination" comprising the elements of the nursing

process, that is, a set of data, diagnoses and interventions addressing it. In future research, it would be relevant to test the efficacy and effectiveness of that clinical data model in clinical practice, that is, to evaluate if the relevant data effectively leads nurses to the correct diagnoses, if the proposed interventions are, indeed, effective in resolving or diminishing the nursing diagnosis, etc. Before that, carrying out a Delphi study would be important in order to validate, with experts, the content validity of the developed clinical data model and, eventually, to make it more comprehensive with the addition of complementary data.

Conclusions

The findings of this review led to determine a clinical data model for the nursing focus "Hallucination" comprising the elements of the nursing process, that is, diagnoses related to the focus "Hallucination", relevant data and diagnostic activities for the identification of those diagnoses as well as nursing interventions which can help resolve or diminish them.

Some assessment tools, such as the CAHQ, the PANSS or the Unpleasant Voices Scale, can be used by nurses to help diagnose a hallucination. However, even in the absence of assessment tools, certain characteristics of the hallucination, such as the frequency/duration and negative content associated with hallucination should be assessed. Some diagnoses related to the type of hallucination may be identified by nurses, such as if it is auditory and/or visual. Moreover, they can also identify diagnoses that combine more than one nursing focus (e.g., lack of hallucination awareness). Finally, some interventions seem to be particularly relevant for patients with hallucinatory activity, such as promoting coping/self-control/self-management strategies toward hallucination.

The clinical data model which was determined by virtue of this review may contribute toward improving nursing decision-making and nursing care quality in relation to a client suffering from hallucination, as well as contribute toward producing more reliable nursing-sensitive indicators.

Implications for Nursing Practice and Nursing Policies

The nursing process is a problem-solving method, allowing nurses to address patient problems in a logical and structured way. Given the scarce formalization of this process in the area of mental health, proven by the inexistence of clinical data models in this field, we believe this is an emerging and challenging area nowadays.

The development of nursing clinical data models provides evidence-based data elements related to nursing care and allows structuring all the information related to a given concept (Chow et al., 2015; International Organization for Standardization, 2015). Clinical data models contribute to information exchange, clinical decision support, quality reporting, research and improvement of nursing care quality (Chow et al., 2015). Besides, they provide nurses the opportunity to systematize their body of knowledge and, subsequently, to record it consistently. The clinical data model which was determined by virtue of this review (comprising the elements of the nursing process) may serve as a guideline for nursing care plans for individuals with hallucination.

Goossen, Goossen-Baremans, and Van der Zel (2010) state that a high level of uniformity is necessary when collecting information in order to enable its later use, in particular regarding the production of health indicators that can reveal the contribution of nursing care toward population health. Thus, the wide application of this clinical data model addressing the nursing focus hallucination will contribute to the production of nursing-sensitive indicators.

Author Contributions

Study design: PGBG, FMCS, CACS, MATCPS
Data collection: PGBG, FMCS
Data analysis: PGBG, FMCS
Study supervision: CACS, MATCPS
Manuscript writing: PGBG, FMCS
Critical revisions for important intellectual content: CACS, MATCPS, PGBG, FMCS

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Supplemental Material

Supplemental material for this article is available online.

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