

# Development of Nurses' Asthma Management Practice Check-List: Non- Participant Observation Check-List

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**Abstract:** Nurses' asthma management practice check-list is a tool developed to ensure nurses' render evidence based- asthma care to patients living with asthma hence close asthma management gap among nurses. It was developed to meet the objective of a study titled nurse led educational program on knowledge and practice of asthma management practice. Multi-step Iterative process research design using modified Delphi technique was utilized in this study. Purposeful homogeneous sampling technique was used to select panel for the development of the check-list. Three Medical Surgical Nurse specialists' lecturers who are highly skilled in managing asthma patient having managed asthma in clinical settings for years were selected as panel. The first step was systematic review of nurses' knowledge and asthma management practice to what will be the content/domains of the check-list. Identified domain and content were review by medical surgical nurse experts who were check-list panel members. The development of nurses' asthma management practice check-list was carried out in 5 steps. Step 1, the researcher developed the initial draft of the check list which comprised section A – F with two weighting scale yes or no. Step 2, had 4 rounds of panel meetings. Step 3: Check-list was subjected to pilot study. Step 4: The panel members reviewed the post pilot check-list and no further changes were made as the panel agreed with the final version of the check-list. Step 5: Check-list was subjected to reliability test using Cronbach's alpha coefficient same yielded .89. The final version of the check list was developed. **Objectives:** the general objective of this study is to develop asthma management practice check-list which will close asthma management gap among nurses.

**Keywords:** Nurses, check-list, asthma, management, practice.

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## Research Paper

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## INTRODUCTION

Uncontrolled asthma and ineffective management remain a public health challenge in all nations of the world especially in the developing countries. Asthma is generally under-diagnosed and under- treated and this has resulted in significant burden of disease, as nurses and other healthcare practitioners continues to manage asthma poorly despite implementation of adopted asthma guidelines by various institutions. Since asthma is heterogeneous in nature, its management is also complex and requires a lot of multi-dimensional approach to ensure effective management. There is need for nurses to use evidence-based check-list to guide and evaluate their asthma management practice as nurses are important partners in the provision of quality healthcare to persons living with asthma worldwide.

The goal of asthma therapy is to maintain good symptom control, normal activity levels, and reduced

exacerbation risk resulting in preventable emergency visits or hospitalizations (Hall *et al.*, 2017). Nurses' asthma management practices are in two folds, pharmacological and non-pharmacological methods. Although pharmacological treatment is the mainstay of asthma management, non-pharmacological interventions such as asthma education on self -care management, nurse patient partnership, asthma action plan and use of asthma control compliments pharmacological management of asthma. Morris (2022), expressed that pharmacology management include the use of control agents such as inhaled corticosteroids, long-acting bronchodilators (beta-agonists and anticholinergics), theophylline, leukotriene modifiers, and more recent strategies of add on therapies such as monoclonal antibodies called biologics such as omalizumab (anti-immunoglobulin-E) or anti-interleukin (IL), IL-5 and IL-4/IL13 etc. Non-pharmacological asthma management compliments asthma pharmacological management, and it requires technical steps, when omitted will lead to poor

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asthma management outcome. Though there are array of methods of managing asthma by nurses in different quarters, the guideline for asthma management remains same. Implementation of a formalized process reduces errors caused by lack of information and inconsistent procedures (Schuers *et al.*, 2019).

There is a growing concern among nurses on steps to follow to ensure appropriate management of asthma patients. Literature appears to be in broad agreement regarding difficulties nurses encounter in management of asthma due to lack of simplified generalized tool that is evidenced based for asthma management. Multiple reports have demonstrated check-lists to be helpful for improving patient outcome in the management of other diseases. Check-lists can be valuable to patient outcome and cost savings within an acute care hospital setting. Check-lists which is a mnemonic device that gathers lists of what is needed to complete a particular duty or procedure remains a vital tool in comprehensive asthma management. It is imperative that evidence- based check list will serve as a pointer that ensures patient receives adequate nursing care.

Along with improving patient safety, check-lists creates a greater sense of confidence that the process is completed accurately and thoroughly (Reese, 2017). Shimazaki *et al.*, (2021) stated that check-lists include "factors, properties, aspects, components, criteria, tasks or dimensions that must be carried in a task to fulfil objectives of such task. Therefore, it allows stakeholders to comprehend the process of the evaluation; it also helps the person carrying out such task to keep track of all the essential point of practice in conducting or carrying out specific task or duty. The use of evidence-based check list has shown to ensure patients receive evidence-based and safe care (American College of Obstetricians and Gynecologists, September 24, 2019). According to the World Health Organization, it is inevitable to have human error due to complexity of modern medicine.

However, it is believed that resultant harm to patients is preventable. Utilizing check-lists can allow function of complex pathways of care to continue by encouraging a "pause" before proceeding to next steps in patient care (WHO, 2020). Asthma management check-list is a guide to identifying nursing practice areas in nursing asthma management that will enhance management outcome.

## METHODOLOGY

### Design

Multi-step Iterative process design using modified Delphi technique was utilized in this study. Purposeful homogeneous sampling was used to select panel for the development of the check-list and purposive sampling technique used to select the participants for the implementation of checklist in the clinical area. The researcher selected three Medical Surgical Nursing lecturers in Nigerian University who are skilled in managing asthma patient having worked in clinical setting for years. They were met one on one basis, purpose of the study explained and the need for development of this check-list explained in detail.

### Steps in Developing Nurses' Asthma Management Practice Observational Check-List (Non- Participant Observation Check-List)

**Step 1:** The researcher and panel members carried out systematic review of evidence-based asthma management practice, developed the initial draft of the check list which comprised section A – F with two weighting scale yes or no.

**Section A:** inhaler techniques with eight items

**Section B:** Nebulizing techniques with 16 items

**Section C:** Asthma education on self- care management with 15 items

**Section D:** initiating nurse patient relationship, no items

**Section E:** giving patient a copy of action plan, no items

**Section F:** give patient a copy of asthma control test form, no items

Section A: inhaler technique	Yes	No
Shake the inhaler		
Instruct patient to lift the chin slightly		
Instruct patient to breath out slowly and fully		
Place inhaler mouthpiece in the mouth and seal the lips around the mouthpiece		
Puff the inhaler		
Instruct the patient to hold the breath and then breath out		
Wait 30-60 minute before the next puff		
Patient to rinse the mouth with water		
Section B: Nebulizing technique		
Ensure there is current depending on the type of nebulizer		
Ensure nebulizing breathing mask is properly clean		
Wash hands with soap and water and dry completely		
Attach appropriate facemask to the nebulizer		

Put prescribed medication in nebulizer cup diluting with appropriate amount of solution		
Let patient sit in upright position		
Check the pulse rate and respiration rate		
Power on the nebulizer		
Place the breathing mask over the patient's mouth and nose and fasten at back of the head or ear depending on the type of nose mask		
Instruct patient to inhale spray from the nebulizer		
Appropriate time to be on nebulizer 10-15minutes		
Reassure the patient and put off nebulizer		
Remove breathing mask		
Unplug power current.		
Put patient in comfortable position		
Clean, dry and store breathing mask in appropriate place.		
<b>Section C:</b> asthma Education on self- management		
1.Gain consent		
2.Assess patients' literacy level		
3.Communicate effectively		
Educate patient on:		
4.Understanding what asthma is		
5.Causes of asthma		
6. Asthma symptom recognition		
7.Asthma symptom control		
8.Trigger control		
9. Improving communication with the nurse		
10.Making changes in lifestyle to avoid triggers		
11. Positioning during sleep to avoid nocturnal asthma		
12. Avoidance of trigger		
13. Asthma medication/ medication adherence		
14. On how to use the nebulizer		
15 On how to use the inhaler		
<b>Section D:</b> initiate nurse-patient/ family partnership		
<b>Section E:</b> give patient a copy of asthma action plan		
<b>Section F:</b> give patient a copy of asthma control test form		

**Step 2:** Step 2 of check-list development was in 4 rounds of meetings

**Round 1:** The draft hard copy was given to the three panel members for review. Panel met in a physical conference meeting and reviewed the check-list, suggested the removal of section E and F, to itemize them as item 16 and 17 of section C. The researcher integrated panel's suggestions and redistributed the check-list for next round of suggestions.

**Round 2:** The panel meet again and decided that step in personalized action plan be itemized (section D), same carried out with six items added to the section.

**Round 3:** In another round of panel's meeting, the panel consensually agreed that Yes and No will not yield desired result, it was agreed by the panel that the weighting of 0= not done, 1= partially done and 2= done correctly and complete will be best for objective evaluation of asthma management practices, same was carried out.

**Round 4:** The panels met, no further corrections or suggestions were made. This step was completed as

consensus was reached after panel members observed that all suggested and correction were made.

**Step 3:** Check-list was subjected to pilot study; this was done to observe if there are items difficult to score or needs more clarification and to determine if the tool assesses what it is meant to assess. A pilot testing was conducted on five nurses who met selection criteria to evaluate and test the clarity, applicability, relevance and feasibility of the tools. Other goals of the pilot test were to identify difficulties in administering the tools and to estimate the time needed to complete the tools.

**Step 4:** The panel members reviewed the post pilot check-list and no further changes were made as the panel agreed with the final version of the check-list.

**Step 5:** Check-list sent for reliability test using Cronbach's alpha coefficient same yielded .89.

#### Modified Delphi Review Rounds

The panel members were three Medical Surgical nurse lecturers with many years of Medical Surgical nursing clinical/teaching experience.

**Round 1:** The panel agreed that section E and F be removed and added to section C to form item 16 and 17.

**Round 2:** Panel agreed that steps in actualizing section D of the check-list should be itemized. Same was carried out.

**Round 3:** The panel unanimously agreed with the itemized points in round two and further decided that the item weighting of yes and no will not allow proper data collection that will answer research questions. Hence the

panel agreed that the rating should be thus: 0 = not done, 1- partially or incomplete done, 2= done correctly or complete. Same corrected by the researcher.

**Round 4:** panel accepted the checklist as no further correction or suggestions were made.

## RESULT

### Final Version of the Checklist

#### Check List Title: Nurses' Asthma Management Practice Checklist

Section A: Inhaler technique	Not done	Partially done or incomplete	Done correctly or complete
1. Shake the inhaler			
2. Instruct patient to lift the chin slightly			
3. Instruct patient to breath out slowly and fully			
4. Put inhaler mouthpiece in the mouth and seal the lips around the the inhaler			
5. Instruct the patient to hold the breath and then breath out			
6. Wait 30-60 minute before the next puff			
7. Instruct patient to rinse the mouth with water			
<b>Section B: Nebulizing technique</b>			
1.Ensure there is current depending on the type of nebulizer			
2.Ensure nebulizing breathing mask is properly clean			
3.Wash hands with soap and water and dry completely			
4. Attach appropriate facemask to the nebulizer			
5. Put prescribed medication in nebulizer cup diluting with appropriate amount of solution			
6.Let patient sit in upright position			
7.Check the pulse rate and respiration rate			
8.Power on the nebulizer			
9.Place the breathing mask over the patient's mouth and nose and fasten at back of the head or ear depending on the type of nose mask			
10.Instruct patient to inhale spray from the nebulizer			
11.Appropriate time to be on nebulizer 10-15minutes			
12.Reassure the patient and put off nebulizer			
13.Remove breathing mask			
14.Unplug power current.			
15.Put patient in comfortable position			
16.Clean, dry and store breathing mask in appropriate place.			
<b>Section C: asthma Education on self- management</b>			
1.Gain consent			
2.Assess patients' literacy level			
3.Communicate effectively			
<b>Educate patient on:</b>			
4.Understanding what asthma is			
5.Causes of asthma			
6. Asthma symptom recognition			
7.Asthma symptom control			
8.Trigger control			
9. Improving communication with the nurse			
10.Making changes in lifestyle to avoid triggers			
11. Positioning during sleep to avoid nocturnal asthma			
12. Avoidance of trigger			

13. Asthma medication/ medication adherence			
14. how to use the nebulizer			
15. how to use the inhaler			
16. Educate patient on personalized action plan using a copy of action plan			
17. Educate patient on asthma control test using asthma control test form			
<b>Section D: Initiate nurse-patient/ family partnership</b>			
1. Define nurse-patient/family partnership			
2. Discussion with the patient on the need for the partnership			
3. Assess patient's communication needs/ level of literacy			
4. Set meeting goals			
5. Meeting with patients and significant others			
6. Scheduling date/time for asthma education/ therapy techniques for patient and significant others			

## DISCUSSION

In this study, the researcher developed a checklist to guide asthma management practice among nurses. The check-list was developed by the researcher and three Medical Surgical nurse experts through systematic rigorous stages. The first step was systematic review of nurses' asthma knowledge and asthma management practice to what formed the content/domains of the check-list. Identified domain and content were review by panel members. This check-list was subjected to pilot study to ensure it contains all it is required to contain and also reliability test. The final version of the checklist was developed.

## CONCLUSION

The review of relevant literature to identify existing asthma management checklist provided the guideline for the development of the checklist. The use of modified-Delphi technique produced a series of checklist items that represented relevant content for essential practices in nurses' asthma management practice, and were deemed clear, concise, and instructive statements for use by asthma nurses. Transparent reporting of both methods and results allow for study replication and further testing for the purposes of determining reliability and clinical utility.

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