What Evidence Informs the Nursing Care of People with Class III Obesity in an Acute Care Setting? A Scoping Review.

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Abstract

Background: Obesity is a complex psycho-social construct which is strongly linked with health and well-being. The health and socioeconomic impacts of obesity on individuals and health care systems can be significant. The nursing care of people with Class III obesity needs careful attention to ensure the provision of appropriate care. This scoping review aims to synthesise available evidence on the nursing care of Class III obese patients in acute care settings.

Methods : A scoping review informed by the Joanna Briggs Institute approach was undertaken. We searched CINAHL Plus, Medline, Scopus, Proquest Central, Web of Science and Embase databases for primary research articles relating to the nursing management of people classified as Class III obese in acute care settings. The methodological quality of all studies that met the inclusion criteria were assessed and data relating to methods and the findings extracted and synthesised into themes.

Results : 3809 records were identified. Thirteen studies met the inclusion criteria and were included in the review. Three themes were generated from the synthesis of the findings: Access, knowledge and training related to equipment; Patient care; and Opportunities to improve care.

Conclusions : The need for proactive planning to improve the nursing care provided to people classified as class III obese and admitted to acute care settings is vital. Access to appropriate equipment to support moving and handling and education on equipment use to prevent injury to both patients and staff is necessary. Education and support to promote engagement with patients, adapt nursing care practices and promote self-care have the potential to improve patient care and patient outcomes.

Introduction

Obesity is a complex psychosocial construct and strongly linked with health and wellbeing. The incidence of obesity is increasing worldwide, with over 650 million adults classified as obese and 1.9 billion as overweight (1). Obesity is not confined to developed countries but is an emerging health concern in many developing countries including Bangladesh (2), India (3) and Saudi Arabia (4). Hospital admissions related to obesity as either a primary or secondary diagnosis are increasing (5). The classification of obesity, however, varies within the literature and is further complicated by the use of the term 'bariatric' (6). Discrepancies in definitions and perceptions of obesity have been noted, particularly in children (1, 7). Body Mass Index (BMI) remains the most frequently used measure of classification. A BMI of >30 kg/m² signifies obesity and the World Health Organization (WHO) (1) have further categorised obesity into three sub classes with Class III (BMI ≥ 40.00kg/m², very severe) categorised as the highest level of obesity.

The health and socioeconomic impacts of obesity on individuals and health care systems can be significant. In young and middle aged adults, obesity is associated with lower educational attainment (8), development of comorbidities (9, 10) and overall reduction in life expectancy (11, 12) Obesity of any classification can increase complexity of care including mobilisation, skin care and perioperative management (13-15) This review will synthesise the evidence on the nursing care of people classified as Class III obese in the acute, non-critical care settings to explore best practice and issues and challenges highlighted in the literature

Review question

What evidence guides the nursing care of people classified as Class III obese in acute care settings?

Review objectives

To synthesise evidence on the nursing care of Class III obese patients in acute care settings.

Methods

Inclusion criteria

This review considered primary research studies published in English, involving participants aged 18 years and over and classified as Class III obese. Studies were included if they reported on the nursing care of people classified as Class III obese within acute care settings, using either qualitative or quantitative methods.

Exclusion criteria

Studies were excluded if they explored the nursing care of Class III obese patients in critical care areas, perioperative care, perinatal care, and in the community. Further exclusions included a focus on patient outcomes without reference to nursing care, and studies reporting prevalence.

Search strategy

A logic grid was constructed to guide the search strategy (See Additional file, Table A) A three-step search strategy was employed commencing with an initial search of Cumulative Index to Nursing and Allied Health Literature Plus with Full Text (CINAHL), Medical Literature Analysis and Retrieval System Online (MEDLINE), Scopus, Proquest Central, Web of Science and Excerpta Medica Database (Embase) to identify key words and index terms, followed by a second search across all databases using the identified terms. Thirdly, the reference lists of all 36 identified reports and articles were searched for additional studies. The timeframe from 1980 to 26/07/2018 was chosen, because of the proliferation of interest and associated publications within the context of patients with obesity during this timeframe.

The search included the following electronic databases:

Cumulative Index to Nursing and Allied Health Literature Plus with Full Text (CINAHL), Medical Literature Analysis and Retrieval System Online (MEDLINE), Scopus, Proquest Central, Excerpta Medica dataBASE (Embase), and Web of Science. The keywords used were: Nursing care, patient care, best practice care, hospital care combined with the terms morbidly obese, and morbid obesity. Boolean exact phrase searching was used in conjunction with mesh terms for obesity, morbid including truncation terms morbid* and obes*, with AND/OR (See Additional file Table A for first search in CINAHL).

Results

Search results

A total of 3809 records were identified (Figure 1), of these, 3773 articles were excluded at title (n = 3627) or abstract (110) level where the paper focused on treatment trials and outcomes regarding medical management, peri-operative care, perinatal care, intensive care or emergency care. Thirty-six full text articles were reviewed, and a further 23 articles excluded (Additional file Table B). Thirteen articles were included in the review. These were four case reports, the remaining primary studies included four retrospective registry records studies, two qualitative studies, one naturalistic observational study, one mixed methods study, and one descriptive survey.

Insert Figure 1 here

Quality appraisal

Two independent reviewers assessed the remaining 13 articles that met the inclusion criteria for methodological validity, using the relevant JBI critical appraisal checklist (See Additional file Table C for Quality appraisal Table and JBI Check lists). All authors contributed to paper assessment and critical appraisal and any disagreements were resolved though group discussion. Seven articles were appraised using the JBI Critical Appraisal Checklist for Descriptive/Case Series studies, four articles using the Checklist for Case Reports, and two articles using the Checklist for Interpretive & Critical Research. Articles were included if they scored Yes to 4 or more questions

Data extraction

A data charting form was developed, and all authors completed data extraction; any disagreement was resolved by discussion to reach consensus. Due to the heterogeneity of the studies, a meta–analysis could not be completed therefore a synthesis was conducted. The extracted data included details about the purpose and setting of the study, the study population and main findings. No missing or unclear information was found (Table 1).

Table 1
Characteristics of studies included in the review.

Author & date	Study Method	Setting	Purpose	Population	Demographics
	Retrospective Registry Records	United Kingdom, Hospital	To ascertain the number of reported patient safety events involving people with obesity	Database search of National Reporting and Learning System	555 records of 'patient safety' incidents involving people living with obesity were identified
Broome et al, 2015	Case study	Hospital, USA	To describe the care of a 'super' bariatric patient	A person with class III obesity	N=1 Gender: M; Age 56 years old; BMI :73
Drake et al, 2005	Qualitative; focus groups, thematic analysis	USA, Hospital	To investigate nurses' perceptions of the challenges they face in caring for patients with morbid obesity	Nurses whose work includes caring for people with morbid obesity	N=17 Gender: M 3, F 14; Mean age 38.32 years old and mean nursing experience 13 years. 5 participants held a baccalaureate degree, 9 held an associate degree, 2 held a diploma of Nursing.
Drake et al, 2008	Descriptive, survey	USA, Hospital	To determine what nurses perceive as challenges in caring for people with morbid obesity	Members of the National Association of Bariatric Nurses	N=109 Gender: M 9 (8.3%), F 100 (91.7%); Mean age 44.6 years (range 24-63); Race: White 93 (85.3%), Black 13 (11.9%), Other 3 (1.8%)
Ecklund & Kurlak, 2004	Case study	USA, Hospital	Use a case report to highlight issues involved in caring for a person who is morbidly obese.	A person with class III obesity	N=1 Gender: M; Age 39 years old; BMI :91
Gardner and Gibbs, 2013	Descriptive, Retrospective; Records	USA, Hospital	To ascertain the number of reported patient safety events involving people with class III obesity	Database search of the Pennsylvania Patient Safety Authority's Patient Safety Reporting System from 2007-2011	Part 1: 1,774 records of 'patient safety' incidents involving people living with Class III obesity of these there were 180 equipment use event reports (10% of total reports) Part 2: State-wide survey administered to all hospitals in Pennsylvania of hospital readiness to accommodate Class III obese patients. Response rate 35.3%; N= 85 of 241.
Gardner and Pagano 2013a	Descriptive, Retrospective; Records	USA, Hospital	To ascertain the reported number of serious skin integrity events involving people with class III obesity	Database search of the Pennsylvania Patient Safety Authority's Patient Safety Reporting System from 2007-2011	Part 1: 1,774 Event reports of people living with Class III obesity, and 33.1% (n=588) were skin integrity reports. Part 2: 2012 Hospital state-wide survey that included questions about class III obese patient skin care protocols (35.3% response rate, n = 59)
Gardner and Pagano, 2013b	Descriptive, Retrospective; Records	USA, Hospital	To ascertain the reported number of falls event reports involving people with class III obesity	Database search of the Pennsylvania Patient Safety Authority's Patient Safety Reporting System from 2007-2011	Part 1: 1,774 event reports involving people living with class III obesity, and 20% of these (357 of 1,774 were falls event reports) Part 2: 2012 Hospital state-wide survey that included questions about hospital preparedness to care for Class III obese patients. Response rate was 35.3% (n= 85 of 241)

Hignett & Griffiths, 2007	Descriptive. Mixed methods (focus groups and questionnaire)	United Kingdom, Special Interest Groups	To identify and explore manual handling risks and process planning pathways for patients with morbid obesity	Members of the National Back Exchange (NBE) Special Interests Group on Bariatrics and The National Ambulance Risk and Safety Forum (NARSF). 25 participants (5 from the Ambulance Service and 20 were from the NBE) attended four focus groups; data from the focus groups was used to develop a questionnaire that was sent to all members of the NBE (n= 1289)	Surveys were sent to members of the NBE (n =1289) and the NARSF (n=71). There were 224 responses from the NBE
Holland et al, 2001	Case study	USA, Hospital	To use a case report to illustrate care and discharge planning for a patient with morbid obesity	A person living with class III obesity	N=1 Gender M; Age 49 BMI 72.6 kg/m^2
Palmer, 2009	Case study	United Kingdom, Hospital	To illustrate that even when specialist equipment is available, it may not be suitable	A person living with class III obesity	N=1Gender F; Age not reported, BMI not reported
Rose et al, 2007	Cross-sectional, naturalistic observation	USA, Hospital	To compare resource requirements in caring for non-obese and morbidly obese patients	Nursing staff observed carrying out identified nursing tasks on obese and non-obese patients	Group 1 : N=30 non-obese patients Group 2 N=30 morbidly obese patients
Rose et al, 2010	Descriptive, Qualitative, semi-structured interview	USA, Professional Association members	To examine nurses' perception of safety concerns when caring for patients with morbid obesity	Nurses who are members of the National Association of Bariatric Nurses (NABN)	N= 23, 4 eliminated because had no contact with patients. Interviewed 19 nurses describing adverse events they had experienced. Events were categorised as Adverse events, Near misses and out-of-control situations

Data synthesis

The findings were narratively synthesized by analyzing the articles, identifying common concepts and themes that were then iteratively grouped firstly into subordinate and finally into four superordinate themes. It was found that there were variations in the definition of Class III obesity across the 13 studies, from no definition at all, definitions based on the Body Mass index (BMI) to whether weight exceeded equipment size (Table 2).

Table 2
Definitions of Class III obesity.

Definition	Author
No definition	Booth et al, 2011 Drake et al, 2005 Drake et al, 2008 Rose et al, 2007
Class III obese patients have a BMI greater than or equal to 40 or 100 pounds more than their ideal body weight	Gardner and Gibbs, 2013 Gardner and Pagano, 2013a, 2013b
Morbid obesity greater than 100 pounds above desirable weight. Severe obesity BMI greater than or equal to 50km/m^2	Ecklund & Kurlak, 2004
Morbid obesity is a body mass index greater than 40 kilograms per square meter	Holland et al, 2001 Palmer, 2004
Morbidly obese (BMI > 40), super obese (BMI > 50) and super, super obese (BMI >60)	Broome et al, 2015
Morbidly obese patient (BMI > 35)	Rose et al, 2010
Some definitions were by pre-determined weight, some by predetermined size, others when weight exceeded predetermined value and/or exceeded equipment size	Hignett et al, 2007

Three major themes emerged from the synthesis (Table 3): these were Access, knowledge and training related to equipment; Patient care; and Opportunities to improve care.

Table 2
Themes generated from the findings.

Themes		Authors								
Superordinate Themes	Subordinate themes	Booth et al, 2011	Broome et al, 2015	Drake et al, 2005	Drake et al, 2008	Ecklund & Kurlak, 2004	Gardner & Gibbs 2013	Gardner & Pagano, 2013a	Gardner & Pagano,2013b	Hignett et al, 2007
Access, knowledge and training related to equipment	Appropriate equipment available		X	X	X	X	X	X	X	X
	Appropriate equipment unavailable	X	X	X	X	X	X		X	X
	Equipment failure/malfunction	X	X				X			X
	Staff knowledge about how to use equipment						X			X
	Weight capacity of equipment identified and known		X				X			X
Patient Care	Circulation issues					X				
	Elimination (and personal hygiene)needs		X	X		X				
	Gait and mobility issues	X	X	X		X			X	X
	Maintaining patient comfort and dignity	X	X			X	X			X
	Maintaining patient safety	X	X	X			X	X	X	X
			X			X				
	Pain and symptom management		X							X
	Patient care plan (daily routine)		X			X		X		X
	Patient education about their own self-care		X			X				
	Patient's psychosocial care and needs		X	X		X				
	Respiration issues		X			X				
	Skin integrity issues identified		X			X			X	
Opportunities to improve care	Communication between staff members		X			X	X			X
	Nurses' concerns/attitudes/safety	X	X	X	X					X
	Patient's acuity and independence levels determined how challenging nursing patients with class III obesity was		X	X						
	Protocols available on the care of people living with class III obesity	X	X	X		X	X	X	X	X
	Hospital policies and procedures for the care of patients with class III obesity either not in place or not followed	X		X			X			X
	Increased resources needed to care for patients with class III obesity	X	X	X	X		X			X
	Infrastructure/facility not retro-fitted or lack of space to accommodate necessary equipment (including lifts, floors and doors)	X	X	X		X	X		X	X
	Multidisciplinary/interdisciplinary approach to the care of patients with class III obesity	X	X			X				

Access, knowledge and training related to equipment

Thirty-four findings from 12 studies contributed to this theme. Equipment was identified as a challenge to providing care for people classified as Class III obese and all findings related to either lack of access to appropriate equipment or knowledge and skills to use equipment appropriately. The specific issues raised were accessing appropriate equipment (16-21); the storage of equipment (17) staff knowledge around how to use equipment (19-21); patient distress and discomfort through the use of incorrect equipment (16, 22-24); putting people at risk of harm through the use of inappropriate equipment (16, 17, 20, 22-24); lack of equipment to measure vital signs (19) and delay in access to rental equipment (17, 19, 20). Other issues identified were equipment failure or malfunction (22, 24) and, the ability of staff to identify the weight capacity of equipment (19, 21). Higher levels of staff satisfaction were reported when adequate equipment was available to safely care for the patient (18)

Patient care

Forty-two findings from 12 studies contributed to the theme on patient care. Fundamental nursing care was described as becoming more challenging due to the patient's body habitus, including changing dressings, checking for bowel sounds and heart sounds (17, 24). Management of respiratory function (including obstructive sleep apnoea, oxygen saturation levels) and skin integrity (local care to wounds, pressure reduction equipment) were also reported (21, 25, 26). Supporting people to mobilise, and maintaining patient safety were the most frequently reported issues (n=10, 77%), it was noted for example that gait instability (27) or a patient overestimating their mobility capacity (16) could pose a threat to patient safety. The need to develop a comprehensive care plan was identified as being vital to assist both staff and patients to anticipate the patient's individual care needs (21) and to build a therapeutic alliance (16, 25). Communication was the second most common concern reported by staff in the review. Effective communication between staff and patients was described as essential in promoting a therapeutic relationship (16, 19), and between staff in order to meet patient care needs (18) and communicate needs at handover (16). The role of nurses in promoting self-care for these patients was also described (16, 25).

Opportunities to improve care

Forty-eight findings from 12 studies contributed to this theme. References were made to specific policies on the care of people classified as Class III obese in most studies. Several issues were identified in relation to the implementation of policies, procedures and protocols across all aspects of care. This finding related to whether there were policies and procedures in place on the one hand, and whether the policies and procedures were followed on the other (20). This included the benefit of specific discharge planning (16, 21) and evacuation planning (19), as well as the capability to weigh and measure patients on admission to hospital so that the appropriate equipment for each patient was both accessible and available (19, 25). Other issues identified included staff training and education (16, 19, 20, 22, 23) skin care protocols (16, 19, 21) and the inconsistency in the use of the term 'bariatric' (17, 20). Not all hospitals had established policies relating to the manual handling of people classified as Class III obese (20). These issues are a concern because Class III obese patients were found to require a greater proportion of staff numbers to care for them, require larger rooms, specialised equipment and other resources in acute care settings compared to other patients (28).

In the four case studies included in this review, it was found that patient comfort, dignity and appropriate care was compromised when appropriate equipment was unavailable. However, issues were resolved when staff collaborated with other disciplines to devise an overhead ceiling lift and obtained appropriate equipment (23), proactive efforts of staff enhanced collaboration with other health care staff (25) and through the development of a daily schedule to establish a patient care routine (16).

Discussion

This scoping review has identified a paucity of evidence to inform the nursing care of people classified as Class III obese in acute care settings. Nurses are caring for patients across the BMI spectrum and the number of people admitted to acute care settings classified as obese is increasing. The availability of guidance to inform and support care will be vital if patient outcomes are to be optimised. The risk of sustaining a musculoskeletal injury for both patients and staff is higher when the patient is classified as class III obese (29). Issues related to timely access of appropriate equipment dominated the findings. Inadequacies in the provision, access and resourcing of specialist equipment to care for patients, as well as time taken to source the equipment has been reported as a significant issue for staff (30). Lack of adequate bariatric equipment accounted for most clinical incidents reported in one study (22). Lack of equipment was also associated with patient harm (19). Whilst there is a perception that patients who are obese have higher care needs (28, 31), perceptions such as these have not been extensively validated. The identification of patients within the National Hospital Morbidity Database and outcomes related to length of stay, morbidity and readmission rates would provide a clearer picture and identify the need for change (32). To ensure clinical staff deliver care based on best available evidence, it is essential to develop and make widely available, policies and procedures that focus on lifting protocols, lift teams, appropriate equipment and algorithms to promote safety and dignity.

This review also found a lack of consistency within the literature relating to terminology and definitions used to define obesity. Inconsistency can lead to confusion, inaccuracy, and a lack of transferability when developing protocols and systems within acute care and pose clinical risk to both patients and staff.

Evidence of organisational-wide innovations in the care of the Class III obese patient was limited. The creation of dedicated manual handling teams lead to a reduction in hospital-acquired pressure ulcers, staff injuries, health care costs and an increase in staff satisfaction (33). Patient and staff satisfaction were increased when a safe patient handling coordinator was appointed to oversee policy and procedures and to provide education for nursing staff (34). The role included the coordination of patient care in the healthcare system, including planning and decision making with key stakeholders in different departments. This review found that nurse-led patient case conferences (21), ongoing moving and handling assessments (23) and streamlined admission processes to anticipate equipment needs (19) were opportunities to improve practice but there is a lack of evidence in the literature that these initiatives have been evaluated or widely implemented.

The concept of weight bias was not a major issue raised in this review but has been acknowledged in the general population, and a range of health care providers (35-37). This may be an area that requires further attention in future research to ensure that care is not compromised. There is limited evidence on

interventions to reduce weight bias (38), but simulated educational techniques have shown promise (39, 40). Inter-professional research into methods to reduce weight bias and incorporating the patient's voice have been called for (38).

One study explored the Class III obese patient experience during an acute care admission (40). The findings reported that even though the admission was an elective (planned) admission, the equipment needed was either not available or appropriate. While the evidence is limited, in the two case studies included in the review, the the findings were similar. More evidence is needed to determine the patient experience across a range of contexts to inform and guide care.

Limitations

The review was limited by the heterogeneity of the available studies, low quality evidence and studies published in the English language. Of the studies in the review less than 50% (6) studies have been published since 2010.

Conclusion

The areas of care reported as the most challenging for nurses included wound management, mobilisation, maintaining dignity, comfort and safety. Specific guidelines that inform these aspects of care will support nurses to deliver optimum care and go some way to de-stigmatising the management of this population within acute care. There was minimal evidence of proactive planning, to the availability of well-educated staff, familiar and confident with the use of suitable equipment to assist with manual handling to prevent injury to both patient, staff, and to maintain patient dignity. What was evident in the literature was the inconsistency with terminology that defines this group of patients. This could lead to inaccurate application of guidelines when caring for this population.

Abbreviations

BMI – Body Mass Index

CINAHL - Cumulative Index to Nursing and Allied Health Literature Plus with Full Text

Class III obesity - BMI≥ 40

Embase - Excerpta Medica Database

JBI – Joanna Briggs Institute

MEDLINE - Medical Literature Analysis and Retrieval System Online

WHO – World Health Organization

Declarations

As this was a Scoping Review of extant literature, ethics approval was unnecessary.

We affirm that all authors have made substantial contributions to this manuscript. The conception and design of the study originally conceptualised by Amanda Towell-Barnard and developed by all other authors. Vivien Kemp conducted the literature search and initially screened all articles. All authors contributed to article appraisal, and the inclusion or exclusion of identified articles. Data extraction, analysis and interpretation was conducted by all authors. Contributions to drafting the article or revising it critically for important intellectual content: Amanda Towell-Barnard wrote the introduction, Vivien Kemp wrote the method and results section, and Beverly Ewens the discussion and conclusion. Lisa Whitehead provided critical revision for important intellectual content at each stage. All authors agreed to final approval of the version.

All data generated or analysed during this study are included in this published article (and its supplementary information files available in Additional Files).

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Figures

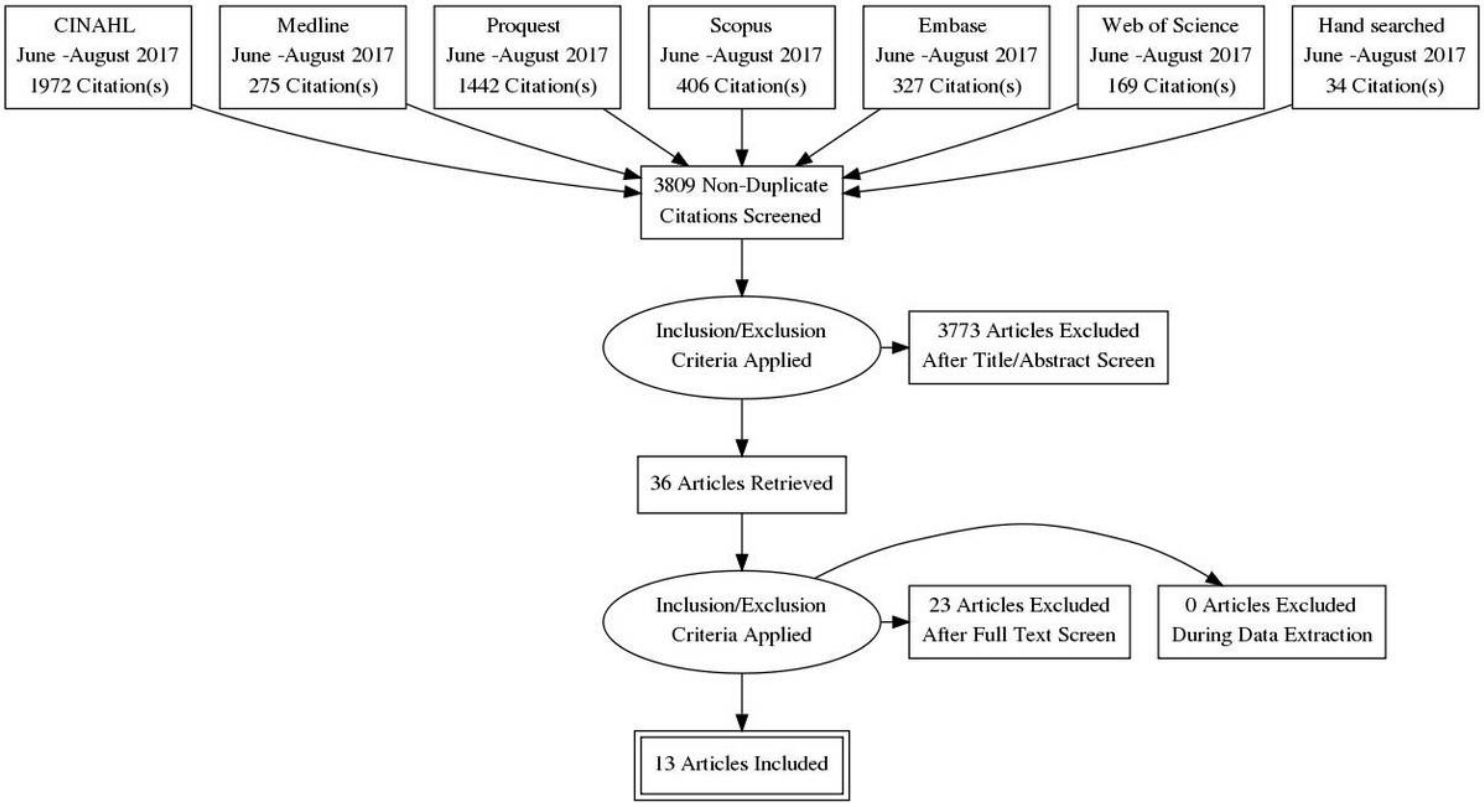

Figure 1

Prisma Flow Diagram (http://prisma.thetacollaborative.ca/)

Supplementary Files

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