Abstract

Physical restraints, (PRs) of older adults were considered a widespread practice in residential care facilities in many countries since 1940. Nurses, being the sole decision makers faced many challenges between protecting the rights of older adults and the application of PRs to control agitation and related falls. For the past two decades, growing concerns have been raised regarding the justification for the high use of PR and its non-beneficence and detrimental effects. Considering the experiences of the individuals directly involved in decision making for PRs may be beneficial in identifying the barriers and enhancing recommended standards related to PRs in residential care settings. The current recommended standard is a commitment to a restraint free environment (RFE) and promotion of person centred care. The aim of this research is to offer an insight into nursing staff’s experiences of the use of PRs of older adults in residential care settings, through systematic review and thematic analysis. The bibliographic databases, in addition to other sources, of CINAHL, PsycInfo, Medline, PubMed, Embase and Google Scholar were searched in December 2014. Studies reporting qualitatively on nursing staff’s experiences of the PR of older adults in residential care settings met the inclusion criteria. Only studies reported in English were included. The included studies were appraised for methodological quality, using the Quality assessment tool developed by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) and used by others (e.g. Brunton et al. 2009). Data extraction was carried out using predesigned data extraction tables and data synthesis using thematic analysis. Four studies were identified and included in the review. Themes that emerged were: types of PRs and nursing staff experiences of its use, positive outcomes of PRs, reasons for PRs, consequences of using PRs, emotions of staff related to PRs and suggestions for PR reduction. The findings emphasised the various types of PRs and their functions as enablers as well as PRs. Some enabling functions of PR devices uplift the wellbeing of older adults, yet the majority of PR use impacts on the older adults’ safety, dignity and invasion of their bodily liberty. Nursing staff’s understanding of the use of PRs and a negative attitude towards PRs are essential in creating RFE. The nurse, resident and organisational reasons leading to PR application should be addressed in a comprehensive manner to facilitate a stress free and relaxing environment to the service users and their families. Nursing staff’s experiences are evident of their influence in facilitating or removing a PR device which are of importance to the care settings. The review recommends promoting restraint free environment from nursing staff’s better understandings of residents’ needs, improved person centred care, holistic assessment, management and documentation and the involvement of the interdisciplinary team, resident and family members. An empowering environment, ethical leadership and better nurse resident interaction are essential for residents to have a stress free life and better acceptance of residential care, which can eliminate the need for PRs.

Key words: Physical restraints, physical immobilisation, nurses, experience, perceptions, qualitative, systematic review, elderly, older adult.
1.0 Background

1.1 Introduction

Physical restraint (PR) of older adults in residential care settings is not supported by legislation or by international research evidence. The Department of Health and Children (DoHC) of Ireland, recommends healthcare providers to maintain the dignity, autonomy, safety, and wellbeing of older adults, as these are their fundamental rights (DoHC, 2011). Any application of PR constitutes a loss of dignity and an invasion of a person’s bodily freedom or liberty. Furthermore, DoHC policy states that there should not be any PR use on older adults in normal circumstances in residential care settings. If an absolute emergency arises, care providers can consider PR for once-off use within the law and best professional practice (DoHC 2011). Despite this policy, nursing staff commonly report PR use in clinical practice (Saarnio & Isola 2010, Dunne et al. 2012). An audit of restraint policy by the Health Service Executive (HSE) and Patient Safety 1st for residential care in five different counties of Ireland, demonstrated that 60 of 98 respondents reported the use of lap belts ‘mostly’ or ‘sometimes’; with regard to bed rails, 83 of the 98 nurses responded that they were ‘mostly’ or ‘sometimes’ used (Dunne et al. 2012). This indicates possible widespread use of PR in current practice. Considering the experiences of nursing personnel who are, in the main, the primary care-staff involved in the application or use of PR may be of benefit in identifying the barriers to and facilitators of recommended standards for practice with respect to PR. Additionally, it may provide a deeper understanding of the views and experiences, from the perspectives of nursing staff, in the application or use of PR of older adults living in residential settings. For this reason, the researcher has undertaken a systematic review and thematic analysis of nurses’ experiences of PR in older adults in residential care settings.
1.1.1 Definition of key terms

To facilitate clarity and understanding and for the purpose of the systematic review, it is important that key terms related to the topic under examination, are explained and demarcated for the reader. These terms are: ‘nursing staff’, ‘residential care setting’ and ‘older adults’. In addition, the term ‘experiences’ for use in the context of this systematic review, will be described. The key term ‘physical restraint’ will be addressed within and as part of the literature review (section 1.2).

The term ‘nurses’ generally refers to Registered Nurses (RNs) with a diploma, associate’s, or bachelor’s degree in nursing who have clinical experience as per state law. In order to practice nursing, state registration is mandatory. In clinical settings, RNs possess the skill to supervise Licensed Practical Nurses (LPNs), orderlies, and nursing assistants. Apart from supervision, RNs directly provide care to sick, injured, and healthy people in various care settings through their assessment and decision-making capabilities (Costa 2014). In this systematic review, a broader view of nurses is taken to include all nursing personnel directly involved in the care of older adults, in residential care settings, irrespective of their grade, age and number of years of experience. The reason for this broader view is that the structure of staffing pattern is different in residential care settings compared to hospital settings, whereby there can be higher numbers of nursing assistants (e.g. trained care assistants, practical nurses, nurses’ aides, etc,) directly involved in the care of older adults, (Mc Cabe et al. 2011, Lopez et al. 2014), and thus directly exposed to the application or use of PR in these settings. To limit the review to a narrow definition of ‘nurses’ would likely limit the in-depth narrative of ‘nurses’ experiences of PR’ and thus limit the overall clinical and practical applicability of the findings that may emerge from the review. For this reason, for purposes of this review, the term ‘nurses’ refers to all nursing care personnel engaged in older adult care provision.

The terms ‘view’ and ‘perception’ are defined as ways of thinking about or interpreting the world; ‘experience’ connotes continuity, as it affects, for better or worse, one’s attitude toward a given phenomenon (Merriam-Webster 2011). Experiences, unlike views or perceptions, may result in a person developing dislikes or inclinations with regard to the phenomena that resulted in the experiences, which in turn may cause a person to act
in a particular way. Therefore, exploring in detail the refined quality of experience can help to understand the way in which the experience formulates an individual’s actions (Dewey 1963). Views, perspectives, perceptions, feelings, and thoughts are all placed under the umbrella term ‘experience’ for the purpose of this review. This umbrella usage of experience may assist the researcher in capturing a more complete understanding of nursing staff’s perspectives of the various aspects of the decision-making process involved in applying PR to older adults, especially when the practice conflicts with recommend practice (Smith et al. 2012).

According to the Nursing and Midwifery Board of Ireland (NMBI), older adults receive care in acute hospitals and public and private long-term care facilities as well as in the community (NMBI 2009). Further to this, rehabilitation, mental health, and disability services may also have older adults in their care. Long-term care facilities refer to nursing homes, extended nursing care, care homes, institutional care, aged care, care of elderly, and residential care settings. Residential care settings and acute settings (hospitals) vary with regard to care provision. Therefore, PR application in these two settings should be treated differently.

The main differences between residential and acute settings are a) nature of illness, b) length of stay, and c) set up. The acute settings deal with emergency medical conditions in a hospital environment for a shorter period of time, whereas in residential facilities, older adults are treated for chronic illness, and the length of stay can be extended into years (Deantonio 2011). Residential care offers a range of services addressing the holistic well-being of older adults who require assistance with activities of daily living (NMBI 2009). These residential care units provide home-like environments, and the service users are referred to as ‘residents’, rather than ‘patients’, as they are in acute care, with no restriction to visiting hours (Deantonio 2011). Consequently, application of PR may be more unacceptable in a home-like residential care environment. In order to appreciate the care setting difference and the PR applications, they must be studied separately.

Finally, according to the World Health Organization (WHO) (2009), ‘older adult’ refers to any person who attains the age of 65 in developed countries. This definition will be applied to the participants in the included studies, in this review.
1.2 Literature review

The older adult population is rising internationally, placing increasing pressure on healthcare services. Statistical information from the Central Statistics Office (CSO) (2012) in Ireland projects an older adult population rise of 22% by 2041. An 11% rise is anticipated in Singapore by 2030 (Mamun and Lim 2005). A major contribution to the older adult population are the ‘baby boomers’ as evidenced by America’s statistical information as reported by Pollard & Scommegna (2014). The report is in agreement of an older adult population rise of 20% by 2029, from 14% in 2012, of which a quarter of its numbers will be from the baby boomer group only (Pollard & Scommegna 2014). Baby boomers’ refer to those babies born after World War II from 1946 to 1964 (18 years), the era with the highest birth rate in the world’s history. The first cohort within this group has exceeded the age of 65 years in 2011 and will continue to contribute to the older adult population until 2029.

The growing elderly population and the advances in healthcare leading to longer life-span has resulted in large numbers of functionally incapable adults in the community (Mamun & Lim 2005). According to Layte et al. (2009), 6% of older adults live in residential care facilities, with many affected by advanced, progressive and life limiting illnesses, for the rest of their lives. This, along with compromised staffing levels, is a potential reason for PR use (Feng et al. 2009, Castle & Anderson 2011). Another possible reason for PR use is the presence of life-limiting and progressive illnesses such as dementia and the associated confusion and wandering tendencies with this condition (Wang & Moyle 2005). Therefore, an awareness of the growing older adult population is important to plan and organise residential care settings’ work management and promotion of a restraint free environment (RFE). Considering the negative impacts of PR on older adults, NMBI (2009) reminds its members to protect the rights of individuals. Nurses caring for older adults are bound by the law to protect patients’ rights and to empower them to make appropriate decisions regarding all aspects of care, including PR (NMBI 2009).
1.2.1 Definition of PR and types

Restraint can be broadly defined as the intentional restriction of a person’s movement or behaviour. The term restraint has different meanings and definition as per purpose. PR refers to “any device applied directly or indirectly to an individual with the aim of achieving immobilization or control” (Molasitosis 1995, p.155). Definitions of PR vary in terms of usage; for example, daily, scientific, and legal definitions are all different (Qureshi 2009). In Ireland, the Health Information and Quality Authority (HIQA) (2009) defines physical restraint as

“Any manual method or physical or mechanical device, material or equipment attached or adjacent to the resident’s body that the individual cannot easily remove that restricts freedom of movement or normal access to one’s body”. (HIQA, 2009, p. 76)

The HSE endorses the above definition and has also referred to the same devices used for PR as “enablers” when intended to use for the purpose of enhancing positioning or resident function at a higher level within the environment, as well as when requested by the resident (HSE 2010). For instance, a bed rail is a form of PR if initiated by the nursing staff, but it is an enabler if a resident requests for erecting the bed rail irrespective of its need and justification. Similarly, when a geriatric chair enhances the body posture and promotes higher physiological functions it acts as an ‘enabler’ rather than a restraint, however, when the geriatric chair is tilted and thus prevents the older person from getting out of it, it is considered a PR. In summary, the intention behind the application determines whether the device acts as a PR or an enabler. In all cases, supporting document should clearly indicate the purpose. The DoHC (2011) has clarified PR definition terms such as ‘easily remove’ and ‘freedom of movement’ from the HIQA definition and also clarified ‘chemical’ and ‘environmental’ restraints which caused uncertainty from the previous policies referring to PR.

‘Easily remove’ refers to those devices under the classification of PR, which can be operated by the staff and the residents for whom they are applied. Freedom of movement means any change in position where an individual can manipulate their body part and are able to control the action (DoHC 2011). For example, a seat belt, act as an enabler, as long as a resident can release its buckle as per his /her wish; any failure to do
so constitutes a PR. A seat belt applied to a resident (other than for transportation purposes) in a wheel chair or a geriatric chair which the resident cannot easily remove is classified as a PR. A PR device which prevents residents from fixing their eye glasses or blowing their nose etc., when residents are capable of doing so, is considered a restriction of freedom of movement and thus constitutes PR.

PR, however, is not the only method that can be used to restrict the freedom of movement of older adults. ‘Chemical restraint’ refers to the purposeful administration of antipsychotic drugs in order to control or modify a resident’s behaviour, who is incapacitated to question the requirement of the same. The same treatment may not have been necessary or the intent of it was to sedate the resident for convenience or for disciplinary purposes. The proper use of drugs to alleviate symptoms such as anxiety, depression, or psychosis as part of the medical condition does not constitute restraint (DoHC 2011). Chemical restraint is always unacceptable.

‘Environmental restraint’ denotes any intentional act preventing a resident access to his or her environment, in terms of mobility, communication, civil and religious liberties (DoHC 2011). Removing mobility aid from a resident to prevent the person from walking or placing a bed table across the chair for those who cannot remove the same in order to prevent mobility constitutes an environmental restraint. The design, layout, equipping, and operations of a nursing home should be developed in a manner that maximises residents’ capacity to exercise personal autonomy and choice (HIQA 2011). In the interest of this review, only PR is described in detail.

Bilateral bed rails, bed chairs, wheelchairs with trays, lap straps, chairs with table, chairs with belts, restraint belts, belts, bed linens, and hand and ankle restraints have been identified as restrictive devices in the context of residential care (Gallinagh et al. 2002, Hamers et al. 2004, Saarnio & Isola 2010). The function of bed rails is supposed to prevent residents from falling out of bed; however, they can act as a restraint by preventing residents from getting out of bed independently (Hughes 2008). Similarly, a chair with belt secures the user while on transport, but can act as a restraint if it cannot be operated by the user. A chair with a table allows the resident to eat independently or to read, but if left in place after it has served its purpose, it effectively constitutes a PR (HSE 2010, The
Alzheimer Society of Ireland 2010). It is obvious that the function of PR has been agreed in various ways, often with a narrow margin between creating wellbeing and causing ill effects.

1.2.2 History of PR and its prevalence

PRs, known as ‘protective devices’, were part of standard care in the 1940s in the United States of America (Martin & Mathisen 2005). From 1960 to 1980, PR devices were marketed as safety devices, in spite of raised concerns regarding their safety provision (Sullivan-Marx 1996). Sullivan-Marx (1996) also acknowledged the resistance to shifting views of PR from “protection” to “restriction of freedom” among American nurses and consumers. Much of the literature on restraints concentrates on law reform and regulating of PRs and chemical restraints specifically in mental health settings.

PR of older adults has been reported as a widespread practice in many countries (Evans & Fitzgerald 2002, Hamers et al. 2004, and Moore & Haralambous 2007). In residential care settings, bilateral bed rails, bed chairs, wheelchairs with trays, lap straps, chairs with table, chairs with belts, restraint belts, belts, bed linens, and hand and ankle restraints have been identified as restrictive devices that are used (Gallinagh et al. 2002, Hamers et al. 2004, Saarnio & Isola 2010). Bed rails were not considered PR until 1992 and currently account for 8-35% of PR in Singapore (Mamun & Lim 2005). Lane and Harrington (2011) reported 12-47% of residents had experienced PR use, in comparison with 7-17% of hospitalised patients, to whom PRs were applied mainly to prevent interference with medical devices. Hamers et al. (2004) reported, chairs with belts being used in 57% of PRs, chairs with tables in 36%, and belts alone in 27%. No data has been identified for these devices as enablers from the literature.

Nursing staff play a major role in making PR decisions regarding older adults (Hantikainen 2001, Saarnio et al. 2009). The reported clinical uses of PR were for purposes such as managing challenging behaviour, prevention of falls, prevention of wandering in confused older adults, and, to a certain extent, for nurses’ own comfort and time management in cases of staff shortages (Ramprogus & Gibson 1991, Hennessey et al. 1997, Karlsson et al. 2000). PRs are capable of restricting the freedom of movement of older adults. The decisions to use PR are often based more on custom than on research, and the use of PR
hinders the autonomy and dignity of the person restrained (Nay & Koch 2006). Nursing
staffs’ knowledge and experiences about the use of PRs are believed to be affecting PR
decisions (Meyer et al. 2009, Goethals et al. 2012). How these factors can influence
nurses’ decisions are still unclear. In this context, the researcher identified the need to
explore the nursing staffs’ experience of PR of older adults in residential care settings.

1.2.3 Legislation as a means to check PR use

Many nations have called for law reforms, which are often lacking in residential care
settings, in relation to serious injuries or deaths arising from PRs. The earliest attempt at
reform was reported in American literature. As explained by Hennessey et al. (1997), the
Omnibus Budget Reconciliation Act of 1987 restricts the use of PR to those prescribed by
physicians. Furthermore, it, requires a check on antipsychotic drugs, as stated by Wener
& Mendelson (2001). In Canada, the Nurses Improving Care of the Hospitalized Elderly
(NICHE) project, a part of the Hartford Foundation, established standards for nurses
assessing and planning care of older adults (Mion & Strumpf 1994).

In Ireland, the Irish Nurses and Midwifery Organization (INMO) identified the need for a
law authorising the use of PR and proposed their own recommendations for restraint
applications (INMO 2003). Law reforms pertaining to the use of PR were introduced in the
Health Act (2007). Intensive law reforms specific to PR use were incorporated into HIQA
(2009) standards. The National Quality Standards for Residential Care Settings for Older
People in Ireland (HIQA standards) set out criteria for countering challenging behaviour
that promotes individuals’ wellbeing with the fewest restrictions possible. The law
further explains that a person’s rights and dignity are affected by each episode of
restraint. Restraint is to be used as a last resort in situations in which there is eminent
danger to self or others, and should be implicated in the least restrictive form for the
shortest possible time period. It should never be used to combat staff shortages or staff
convenience, and this is considered unethical and harmful to residents. The National
Restraint Policy was introduced by the HSE in 2010 in the name of “Policy on the Use of
Physical Restraints in Designated Residential Care Units for Older People” where a clear
definition of restraints and differentiation of enablers was made. The DoHC (2011) put
forward a policy on restraints named “Towards Restraint Free Environment in Nursing
Homes” as a momentous step towards persons as being at the centre of care. A RFE is a combination of a well organised setting and trained staff committed towards implementation of person centred care. In such an environment, there will be a safe, relaxed feeling, confidence and feeling of security, where individuals are valued and there is less chance of challenging behaviours. Spending time with the residents, understanding their attempt to communicate their need, ruling out the underlying cause of behaviour and the help offered in distress can deescalate the stress and thereby avoid unnecessary interventions. Finally, “Guidance for Designated Centres: Restrictive Procedures” by HIQA (2013) is a guidance with explanations and specific examples and models that may assist in understanding the regulations and standards, by clarifying the confusion which arose from the two consecutive year national policies as evident from the summary audit on physical restraints of older people (Dunne et al. 2012).

It is apparent that the use of PRs was considerably reduced following enactment of laws on PR use. For example, in 2009, Feng et al. reported 9% usage, as compared to the 25% to 43% reported by Karlsson et al. in 2000 in America. A study conducted in Finland reported that written policies were lacking with regard to the use of PRs in care of older people; although the study did not report the prevalence of PR, it did state that 88% of nurses reported its use, indicating the importance of written policies relating to protecting the rights of older people (Saarnio et al. 2009).

1.2.4 PR use and decision making process

It is well known that the benefits of caring for older adults without PR, while maintaining safety, can present challenges for health care delivery in residential care settings, with issues such as high risk of falls and related injuries, from agitation, wandering behaviours and gait problems as part of the aging process. Despite the HIQA regulations, PR use was evident in residential care for various reasons and justifications. Decisions by nurses to avoid PR use in older adults are a complex process that requires individualized, comprehensive assessment and creative problem-solving. The policies surrounding the PR application should be clear and supportive of a standard of restraint elimination in favour of older adults’ autonomy and self-determination. It has become clear that the decision to avoid or use PR is influenced by nurses’ attitude or beliefs about the efficacy of
Decision to avoid PR, depends on the information such as the degree of knowledge a nurse possesses and her/his level of autonomy and accountability. Such knowledge will direct nurses as decision makers towards the development of restraint-free care interventions for older adults (Sullivan- Marx 1996).

Findings of a review by Goethal et al. (2012) depicted the decision making process for PR as a complex trail, where decisions involved were of adjusting, lessening, or removing the restraints by the nurses. Moreover, the decisions made by other shift nurses or nurses from other care facilities (acute, psychiatric, rehabilitation and community setting) were carried over without clarity, and these perceptions influenced further decision making. As a result, the duration of PR use of a single resident can be for years; which has not been considered when calculating the prevalence of PR use. Associated memory loss, physical and financial incapacities alter the confidence in individual decision making for older adults. Therefore, it is commonly seen that a resident concedes to medical and nursing teams or own family members to make decisions on their behalf and trust these decisions as being the best decisions for them. In such cases, nurses should possess ethical reasoning and act in a resident’s best interest (Goethals 2012). Nurses did not desire to use PR as a first option, yet felt compelled to use it in the absence of meaningful alternatives and lack of time (Marangos-Frost & Wells 2000, Quinn 1993).

1.2.5 Consequences of the use of PR

PR has been found to cause physical and psychological distress to its users, sometimes with fatal outcomes. Among the physical consequences, most commonly reported, were injuries related to falls (Mahoney 1995, Lee et al. 1999). Accidental strangulation was reported by Dube & Mitchell (1986) as a result of using PR. A similar concern was reported to HIQA inspectors near Naas in Ireland, due to serious injuries from PR (O’Connell 2011). Skin abrasion from entrapment of body parts or from applying pressure against devices from residents’ attempts to release themselves were of high concern (Saarnio & Isola 2010, Molasitosis 1995). Other consequences reported were the sequelae of prolonged immobility such as incontinence, constipation, pressure ulcers and muscle atrophy (Mott et al. 2005, Feng et al. 2009). Mott et al. (2005) also reported on the psychological disturbances associated with PR including loss of self-image,
withdrawal, negative emotions, confusion, fear, resentment, and aggressive and resistive 
behaviours.

On the contrary, restraint removal improved quality of life, more participation in activities 
of daily living, relaxation and more freedom of movement (Mahoney 1995, Capezuti et al. 
1996). Therefore, a restraint free concept can empower the residents and prevent them 
from experiencing negative consequences associated with PR use.

1.2.6 Restraint Free Environment (RFE)

Japan introduced a strategic plan for a RFE in association with their National Council for 
Long term Health care Facilities for Elderly (Akamine 2000). Council members made every 
effort not to restrain residents, restraining materials were removed, beds were changed 
to low mattress beds and medical device needs were revisited and removed where 
possible. The RFE was advertised through media and training for nursing staff to practice 
restraint alternatives was conducted. The National council management communicated 
the same message to other institutions across the nation and attained success in 
achieving restraint free nursing homes even in the absence of legal guidelines (Akamine 
2000). It is acknowledged that every resident has the right to be free from restraint and to 
live their lives like ordinary people irrespective of their ability to make logical decisions 
(DoHC 2011). At the same time RFE is not fully attainable as there could always be a 
situation where a restraint action needs to be planned and employed as a last measure in 
few residents (Hughes 2010). Prevention of falls remains the commonest reason for PR 
application (Gallinagh et al. 2002), which was not supported by research evidence. For 
example, Dunn (2001) conducted a research study, involving 97 residents, where falls 
related injuries post implementation of the Restraint free policy, found no increase in the 
number of falls when not using PRs and also a reduction in the number of injuries and 
impact compared to PR related falls. That PRs can reduce the number of falls is a 
misconception among the nursing staff of all care settings, rather than a proven fact.
1.2.7 Significance of PR in residential care practice.

Residential care has its own culture, in terms of the characteristics of the older adults, staff related factors and context related factors such as involvement of family members. Among those reasons, nurses’ attitude, resident characteristics and the characteristics of the care organisation were noted as influential to PR use (Hamers & Huizing 2005). Nurses’ prevailing concern for resident safety remains at the foremost as a reason for PR (Lee et al. 1999). Safeguarding treatment devices such as nasogastric tube, peg tubes and urinary catheters were a major challenge for nursing staff, especially when residents were confused or were noncompliant. In these situations nurses relied on PRs, even-though the PR was not comforting to residents (Quinn1993, Hamers & Huizing 2005). Nursing staff also believed they could safeguard residents by using PR at times when the workload was heavy. In a way nurses felt relieved from the fear of a resident falling by applying PRs without any plausible benefit to the residents. Older adults with previous history of falls were easily chosen for PRs. Nursing staff labelled confusion, aggression, agitation, wandering, physical violence and threats as difficult, disruptive, asocial, unsuitable and odd behaviours of residents (Lee et al. 1999, Hantikainen 2001). A common factor among these negative labels was identified to develop through communication among staff even prior to initial contact with older adult. The informal hand overs or transfers from acute to residential care settings not only exchanged the resident history but also negative labels such as wandering behaviour, agitation aggression and the need for PRs etc., even before the nurses’ first interaction with those residents. In such cases, assessment for PR only remains as a formality and the decision was influenced by the acquired information not from the actual assessment. Moreover the same behaviour can be perceived as disruptive in contrast with perceived normal behaviour at home (Hantikainen 2001). For example, getting out to the toilet at night time could be a normal pattern at home for a particular resident; however, the, same activity in residential care may require monitoring alarms to prevent anticipated falls or the addition of night sedation to improve sleep may eliminate the requirement of getting out of the bed. Nurses’ experiences of the older adults’ behaviour varied in similar situations (Everitt et al. 2001). Some nurses treated agitation as a behavioural problem, whereas other nurses treated the cause behind the agitation; most commonly dehydration or infections. These experience differences can act as a barrier in making right decisions around PR initiation. Residential settings have
certain staff culture where they tend to consider PRs as ‘protectors’ (Kong & Evans 2012) ‘nice’ and ‘less restrictive’ (Hennessey et al. 1997). Nursing staff believed that PR use provided them comfort and assurance from preventing accidents and the family’s threats for legal pursuit following accidents. The nursing staff expressed that the term ‘protectors’ were used from the staff point of view, not from the resident’s. However, this belief contrasts to the findings from Dunn (2001), where RFE concluded low rate of falls and injuries compared to where PR was used.

Residents’ own characteristics make them vulnerable for PR applications. O’Shea (1999) speculated that one third to half the population in residential care suffered dementia. Wang & Moyle (2005) considered an increased risk for people with dementia to be restrained due to behaviours such as agitation, aggression and unsafe wandering as part of the disease condition. A similar finding was reported by Ben Natan et al. (2010) whereby nursing staff reportedly tend to restrain residents with poor cognition and who bother other residents. In addition to this, the older adult was viewed as having an increased potential for a risk of falls related to poor vision and unsteady gait (Lipsitz et al. 1991). The National Council on Ageing and Older People (2001) estimates that a resident lives in an Irish residential care settings for six or more years or until death. There could be a possibility for longer period of PR applications as the indications are not easily correctable, unlike in the acute setting where the indication for PR application is usually short term (Janelli et al. 1995).

Confused ambulatory residents were subjected more to PR compared to non-confused ambulatory residents (Capezuti et al. 1996). Older adults who required psycho active drugs, who required personal care, bathing assistance and who were incontinent had increased use of PRs (Hamers & Huizing 2005, Heeren et al. 2014). In contrast, residents who require postural support were one group of residents who benefitted from geriatric chairs and lap belts, that enabled them to have higher functions which otherwise could not have been possible. Also some residents who had a fear of rolling out of bed benefitted from erecting bedrails by adding to their safety and wellbeing (Hantikainen & Kappeli 2000).
Care organisation possessed certain characteristics which were more favourable for PR use. Certain care practices, routines and decision making were carried out without individual assessment and requirement. As a result unnecessary PR applications were occurring without actual realisation of staff members. Staff continued with psychotic medications, bed rails and other PRs just because it was practiced in the previous facility or at home prior to admission in residential care settings (Hantikainen & Kappeli 2000, Chuang & Huang 2007). Understaffing and lack of time for care (Hennessey et al. 1997) were reported as reasons for PR. Heeren et al. (2014) examined staffing levels in relation to PR use and found, however, no relationship in terms of the assigned number of staff; rather resident characteristics were the determinants of PR use. An organisation with more experienced nurses (Sullivan –Marx 2001) and more ratio of nurses compared to nurse assistants had fewer episodes of PRs (Castle & Anderson 2011). However, Meyer et al. (2009) could not correlate PR use and institutional characteristics, and concluded that resident characteristics were a more important reason for PR.

Change in the care environment can be supportive and calming to the individuals who are agitated and safe walking can relax them without active supervision. Ward design and diversional activities are found to be effective in diffusing and preventing aggressive behaviours (Lee et al. 2003). The importance of family involvement is an additional characteristic of residential care practice. When an older adult becomes a resident, his or her health needs are affected in such a way that they are usually no longer able to practise previous routines and practices from home such as preparing a meal, bank transactions, shopping, gardening and other hobbies, although the desire to do these may still exist. This situation is quite eminent in residents with varying levels of cognitive impairment. A great amount of family involvement acts as solution to help relax the agitated residents and thus reducing the need of physical or chemical interventions as management (Zadelhoff et al. 2011). Yet, family’s concerns regarding falls prevention and safety of their relative can lead to PR. In such cases family requests for the application of PR for their relatives, without any genuine need and the resident lacks the decision making ability (Hantikainen & Kappeli 2000), can occur.
1.2.8 Rationale for conducting a systematic review

The reduction of PR remains a difficult and challenging task in residential care practice. Haut et al. (2010) assert that exploring the resident characteristics and institutional characteristics could not achieve total restraint reduction. It appears that other factors, such as beliefs and attitude within the care environment, need to be considered as they could present as a powerful barrier to PR reduction. Institutional characteristics needs to be dealt with regionally, in terms of the dependency level of residents, available alternatives to practice RFE, and the nurses’ educational level to adhere and implement RFE (Hamers et al. 2009). Hantikainen (2001) and Saarnio et al. (2009) depicted nursing staff as the major decision makers in PR initiation in residential care setting. This fact is supported by Myers et al. (2009) and Haut et al. (2010) who suggest that the beliefs and attitudes of nursing staff directly affect the PR decision making. Many researchers have conducted studies examining the experiences of nurses of the use of PR in gerontological care using qualitative methods (Quinn 1993, Janelli 1995, Janelli & Kanski 1996, Lee et al. 1999, Chuang & Huang et al. 2007, Lai 2007). Studies, however, were mostly conducted in acute settings, with fewer studies being conducted in residential settings (Hennessey et al. 1997, Karlsson et al. 2000, Hantikainen and Kappeli 2000, Saarnio & Isola 2010). A number of researchers have also measured attitudes of nurses quantitatively using questionnaires in residential care settings (Michello et al. 1993, Karlsson et al. 2001, Hill and Schrim 1996, Werner 2002, Suen 1999, Janelli et al. 1992, Hardin et al. 1994 & Ben Natan et al. 2010).

In order to summarise the findings of studies on the topic of PR, Mohler et al. (2012) conducted an intervention review in order to evaluate the effectiveness of interventions in preventing or reducing restraint use in residential care settings of older adults. These interventions were designed to make changes to the existing nursing practice by focusing on nurses’ attitudes and knowledge, hoping for a subsequent reduction in PR use. Five cluster randomised control studies met the inclusion criteria, where educational approach was examined. Over all methodological quality was low and the results were inconsistent in terms of reduction in the PR use. Some trials showed a reduction in PR use, whereas studies with low risk of bias could not find any difference in PR reduction pre and post intervention. However, the results were lacking a clear description of nurses’ attitudes.
In order to examine attitudes of nurses and their practical link to PR application Mohler & Meyer (2014) conducted a systematic review in geriatric settings. The review methodology was systematic and inclusive of synthesis of qualitative and quantitative studies. All the studies that examined nurses’ attitudes and perceptions met inclusion criteria irrespective of the study design and the settings were not restricted to residential care only. The findings of the review demonstrated differences among the qualitative synthesis and quantitative surveys. Qualitative studies were consistent in generating nurses’ attitudes of the use of PR. Nonetheless the quantitative surveys failed to do so for the reason that their questionnaire was mainly focused on the reasons for PR applications, rather than examining the attitude underpinning the nurses’ decision.

Meta-synthesis identified nurses’ feelings, intended use of PR in clinical practice, moral conflicts arisen from PR situations and their coping strategies. However, the review did not detail the nurses’ experience as per their working environment culture. The review did identify the differences between the care culture and indications of PR in a residential and acute setting. But no separate results were narrated for residential care settings. Therefore, in order to better understand the barriers for PR reduction in a residential care setting, an analysis of studies explicitly reporting on this environment only is required. For this reason, the current systematic review focuses exclusively on residential care settings for older adult care, and PR use. Moreover, in developing and ensuring that evidence based practice occurs the experiences of individuals involved in providing care are necessary to elucidate, with qualitative inquiry studies providing the optimum study design for this purpose.
2.0 Review question

The review (or research) question is often regarded as a neglected aspect of research, even though it carries a lot of weight as it underpins all aspects of the research methodology (Blaikie 2007). A well-focused and answerable question, for a topic of interest, guides the nature and scope of a systematic review, from identifying key words, to developing search strategies, data extraction and in synthesising the results (Bettany-Saltikov 2012). Therefore a review question was chosen that was both of relevance to the work practice and as a topic of interest to the researcher.

The review question underpinning the systematic review is:
“What are the nursing staff’s experiences of the use of PR of older adults in residential care settings?

3.0 Aims and Objectives

3.1 Aim

The aim of the review is to offer insight, understanding and clarity into the experiences of nursing staff of the use of physical restraints of older adults in residential care settings.

3.2 Objectives

The objectives of the review are to collect information on these four key question elements.
1. What are nursing staff’s experiences of PR of older adults in residential care settings?
2. What are nursing staff’s understandings of recommended practice for the use of PR of older adults?
3. How nursing staff’s experiences influence the reasoning for PR use?
4. What contribution a summary of such studies offers to current practice?
4.0 Methods

This review adheres to standard robust systematic review methods. An initial scoping search was undertaken to identify broadly literature of interest and relevance to the topic. This assisted demarcate and refine the review question, assisted clarify the review inclusion and exclusion criteria, and assisted build a comprehensive search strategy using appropriate search terms for identifying studies for including in the review. An explicit review search strategy was adopted for this review with the view of reducing bias as recommended by Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI Centre) (2007).

4.1 Inclusion/Exclusion criteria

Studies were eligible and included in the review only where they reported on:

- Participants: nursing personnel in residential care settings.
- Exposure: PR applied or used on older adults.
- Outcomes: The views, experiences, understandings or perceptions of nursing staff of PR of older adults.
- Study type: qualitative report of experiences or perceptions.

Studies were excluded from the review where they reported on

- Other professionals, nurse administrators, student nurses, family members or patients or residents.
- Studies from mental health, acute hospital settings and hospital wards serving as geriatric and rehabilitation settings.
- Studies where the primary outcomes of experiences was not presented qualitatively.
- Studies that were Randomised Control Trials (RCTs), non-Randomised Control Trials (non RCTs), quantitative designs, non-primary research (e.g. literature reviews, guidelines or reports), and studies not published in English. (See table 1 for details)
<table>
<thead>
<tr>
<th>PEO(S)</th>
<th>Description of PEO(S)</th>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>Nursing staff</td>
<td>Studies involved nursing personnel of all grades, directly involved in health care provision to older adults in residential settings, including registered nurses, nurse managers, nurse supervisors, practical nurses, nurse aids and auxiliary nurses.</td>
<td>Other healthcare professionals, nurse administrators and student nurses were excluded.</td>
</tr>
<tr>
<td><strong>Exposure</strong></td>
<td>Physical restraints of older adult</td>
<td>Experience in caring for older adults of age 65yrs and older, living in a residential care facility or nursing home for older adults for any length of time, where PR was used, irrespective of type or duration of restraint</td>
<td>Studies involving nurses caring for older adults from mental health care facilities, acute hospital settings, home setting and rehabilitation centres were excluded.</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Experiences</td>
<td>The views, experiences, understandings or perceptions of nursing staff of PR of older adults.</td>
<td>Studies of quantitative design and studies that did not report qualitatively on nurses’ experience of PR.</td>
</tr>
<tr>
<td><strong>Study Type</strong></td>
<td>Qualitative design</td>
<td>Primary Studies, using interviews or other methods to narratively collect and report data on nursing staff’s experience of PR of older adults.</td>
<td>All other studies not narratively or qualitatively reporting nurses’ experiences.</td>
</tr>
</tbody>
</table>
4.2 Search and selection strategy

Search processes can be different for different types of reviews and studies; irrespective of this, in all searches, there is a need to keep a ‘search log’ which describes how the search was performed so it can be replicated. This record includes a descriptive log of the how/what journals, websites, databases and search terms, along with search term combinations, were searched (EPPI Centre 2007). As a means of organising the search and selection strategy comprehensively, the search was performed in four phases. These were: i) identification phase, ii) screening phase, iii) eligibility checks and iv) selection of primary studies for quality appraisal. In the identification phase major databases and other sources of information were searched in order to capture all relevant literatures, unpublished studies and conference proceedings. Determining and searching of multiple sources of information is necessary in a systematic review, in order to reduce the risk of bias (EPPI Centre 2007). Citations identified in phase i) were downloaded to Endnote reference manager. As the replication of same studies across various databases were seen, duplicate studies were removed using endnote option ‘find duplicates’. In the screening phase, phase ii) retrieved citations were screened for possible inclusion based on ‘title and abstract’ using the Participants, Exposure, Outcomes, Study Type (PEOS) criteria for guidance. Any papers that did not match the PEOS components, at this point, were discarded. Where there was any doubt as to whether a paper met the inclusion criteria, these were forwarded to the next phase, which was full text review, for eligibility checking. Phase iii) involved a review of the full text of all papers forwarded from phase ii). Those that met the eligibility criteria were forwarded to phase iv) and considered selected for inclusion in the review, subject to the subsequent quality appraisal exercise. (See Figure 1 in the results section 5.1 for details of the search and selection process.

4.2.1 Search method

In order to conduct a valid systematic review, a thorough search to identify published and unpublished relevant literature is essential (Centre for reviews And Dissemination2008). A scoping search was carried out to ensure that no systematic review on the same topic was already published or was in progress (Bettany-Saltikov 2012). Therefore once the scoping search results was satisfactory, the research question was finalised, key words
were identified and appropriate ‘search strings’ were developed under the guidance of the subject librarian. A rapid search was conducted to get a sense as to the number of possible available studies. An advanced search was then essential (Rumsey 2008) to obtain all of the relevant primary studies, which was then performed. Key words such as ‘nurses’, ‘PRs’, ‘experience’, ‘perceptions’, ‘qualitative studies’, and ‘elderly’ were selected to perform the scoping search, which identified studies conducted on PRs from the 1980’s. The studies of PRs and the nursing staff, outside of the mental health field, appeared more prominent from the late 1980’s. Therefore in order to obtain relevant studies of nurses’ experiences on older adult PR use from inception, the years from January 1980 until Dec 2014 in all major databases, were searched.

4.2.2 Free Text Terms for Search strategy

‘Free text terms’ formation is a part of converting the review question into a comprehensive search strategy when used in conjunction with synonyms, key words from similar studies and index terms (Bettany-Saltikov 2012). The Boolean operators such as ‘OR’, ‘AND’ and ‘NOT’ are essential in combining terms (Rumsey 2008) to increase or reduce the number of citations. The free text terms were organised systematically, in the PEOS order. First of all, the key concept was identified from the population as ‘nursing staff’. The free text terms related to the population thus included: Nurse OR nurses OR nursed OR nursing OR “Nursing Personnel” OR “geriatric nurse” OR “geriatric nurses” OR “geriatric nursing”.

The second key concept derived from the PEOs component, exposure, was identified as ‘PR’. The following terms were included in the string for free text term searching:

“Physical Restraints” OR “Physical Restraint” OR “Physical Immobilization” OR “Physically Immobilized” OR “Physically Immobile” OR “bed rail” OR “bed rails” OR “bed chair” OR “bed chairs” OR handcuffs OR handcuff OR fetters OR fetter OR straitjackets OR straitjacket OR strait-jackets OR strait-jacket OR strap OR straps OR “Tying down” OR “physical constraint” OR “physical constraints” OR “Physical utilization”.

The terms: ‘Experience’ OR Experiences OR experienced OR view OR views OR viewpoint OR feel OR feelings OR felt OR perception OR perceive OR perceived OR attitude OR
attitudes OR feelings OR thought OR thoughts OR think OR emotion OR emotions OR belief OR beliefs were based on the third key PEOs concept of outcome.

Finally, the type of studies identified for the review was of qualitative methodology. The free text terms used to search for studies of this type were “qualitative studies”, “Action Research” OR “Ethnographic Research” OR “Ethnological Research” OR “Ethno nursing Research” OR “Ethno-nursing Research” OR “Grounded Theory” OR “Naturalistic Inquiry” OR “Phenomenological Research” OR “Qualitative Study” OR “Qualitative studies” OR “Qualitative research” OR interview OR interviews OR “focus group” OR “focus groups” OR “semi-structured interview” OR “semi-structured interviews” OR “grounded theory practice” OR “narratology” OR “storytelling” OR “action research” OR “Participant Observation” OR “Non-participant Observation” OR “Field Notes” OR “field note” OR “Reflexive Journals” OR “Reflexive Journal” OR “Structured Interview” OR “Structured Interviews” OR “Unstructured Interview” OR “Unstructured Interviews”. Appendix 1 presents the systematic searches applied to the various database with the results of the searches.

No restrictions of country were applied to the search to ensure the strategy was broad enough to retrieve all relevant studies. The searches were, however, restricted to English language publications only due to limited time and limited funding for translation of papers. Limiters applied to increase the specificity of the search were human, peer reviewed and age 65yrs and above.

4.2.3 Electronic databases searching

The comprehensive search commenced using the online databases related to healthcare, nursing and allied health. These were CINAHL (Cumulative Index to Nursing & Allied Health Literature) which has full text for more than 1,300 journals and 4.3 million records with an ease of access and a focus on nursing literatures. Other EBSCOhost databases covering health sciences including PsycInfo, and MEDLINE which were searched and all searched saved. Google Scholar, PUBMED and Embase databases were also searched to retrieve potentially relevant studies. The initial searches were conducted rigorously and the different number of ‘hits’ retrieved each time were noted against the particular
search term combination, so that searches could be rerun if required. The subject librarian was contacted for guidance following the initial search and the search strings were reviewed again. In addition, the researcher attended Endnote training, to become skilled in organising the retrieved references and Scopus search training to become better informed in conducting an effective search.

4.2.4 Grey literature searches

An attempt was made to retrieve unpublished studies from grey literatures using the websites as listed in table 2.

Table 2 Grey literature search websites

<table>
<thead>
<tr>
<th>Date</th>
<th>Digital library</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/12/14</td>
<td><a href="http://www.annualreviews.org/action/doSearch?pageSize=20&amp;AllField=physical+restraints&amp;type=journals">http://www.annualreviews.org/action/doSearch?pageSize=20&amp;AllField=physical+restraints&amp;type=journals</a> (Conference proceedings)</td>
</tr>
</tbody>
</table>

4.2.5 Other databases/searches

Internurse journal available through MAG online library, The Allied and Complementary Medicine Database (AMED) via EBSCO host and British Nursing Index (BNI) were also searched and contributed papers for possible inclusion during phase i) of the search strategy. The Applied Social Sciences Index and Abstracts (ASSIA), Nursing and Allied Health Sciences (NAHS) through ProQuest, Web of science and Scopus were other resourceful sites that were searched for this review. To ensure no previous systematic reviews, answering the same review question to the one posed here, had been reported, The Cochrane Library, CDSR, DARE, Google Scholar and Trip Database were searched.
Hand searching of the references list of the papers selected for full text review, were additionally searched for any potentially eligible papers not already captured by the previously described searches. Finally, Lenus, an HSE health repository, Index to Irish Thesis and Trinity’s Access to Research Archives (TARA) were resources that were also searched. An initial search was carried out in November 2014 and updated in January 2015.

4.3 Outcomes of Interest to review

The outcomes of interest to answering the review question are experience, views, understandings or perceptions of nursing staff of PR of older adults.

4.4 Quality Assessment (QA) of included studies

The term quality assessment is interchangeably used with internal validity of a study, to acknowledge the extent of the absence of bias and especially in a systematic review the methodological quality assess both internal and external validity (Bettany-Saltikov 2012).

In order to appraise the quality of the selected studies a framework developed by The Evidence for Policy and Practice information and Co-ordinating Centre (EPPI-centre) and used by Brunton et al. (2011) was chosen. The reason for choosing this framework was that, it has been used in previous studies and that the framework is validated for review purposes. The quality assessment is based on the ten criteria used by Brunton et al, in their thematic synthesis on “becoming a mother”.

The criteria assessed for quality were related to six main areas which were the aim of the study; sampling; characteristics of the participants; data collection tools / methods; assessing people’s views and relevance to the review question. Each area, or components in each area, is awarded a score between 0 and 1 depending on how well they addressed the quality criterion. In the sampling section, both sampling method and sampling frame were assessed. However, in the ‘characteristics of the participants’ ‘total number of participants’ section was the only question applied to this review. The other assessable characteristics such as ‘age’ and the ‘socio economic statuses of participants’ were marked as not applicable. Data collection tool and method were assessed separately. The
maximum score achievable from the framework tool was 10. A score between 8 and 10 indicated a high quality study; between 5 and 7.5 indicated a medium quality study and scores between from 0 and 4.5 indicated a low quality study. (See Appendix 2 for a sample of the quality assessment tool).

The process for assessing the quality of the included studies, to ensure rigour, was as follows: all studies selected for inclusion were independently assessed, using the EPPI-Centre tool, by the researcher and her academic supervisor. The researcher and her supervisor then met to compare the independent assessments. Any disagreements were fully discussed and a consensus on final awarded scores reached.

4.5 Data extraction

Data extraction refers to the process of pulling out all of the relevant data to answer the review question from the studies included in the review (Aveyard 2010). A data extraction framework not only standardises the process, but also improves the validity of the results (Higgins et al. 2011). Therefore, a data extraction framework was adapted from Bettany-Saltikov (2012). As per Bettany-Saltikov (2012) data extraction refers to going back to the primary study and highlighting relevant information related to the PEOS. The researcher then highlighted the relevant information in the primary study which reported PR use of older adults by nursing staff. Criteria for data extraction were determined using the criteria in Table 5 in the results section and data extraction form (Appendix 3) adapted from (Smith et al. 2012). These tables were helpful in presenting the data in a standard way and allowed comparisons between studies and in summarising study characteristics (Smith et al. 2012). The process of data extraction was time consuming and complex as it involved line by line review, repeated reading and allowing complete absorption in the content and breakdown of each finding, which was performed for each selected study. This data extraction process, however, was necessary to retrieve data relevant in meeting the aim of the review.
4.6 Data Analysis

The review identified thematic analysis for analysing the data generated. Prominent and repeated themes were identified. The thematic headings were formed after combining and synthesising the findings. In order to conduct thematic analysis, steps were taken from Lucas et al. (2007) as follows;

1. Extracted data from each primary study was based on the aim of the review and organised under headings.
2. The emergent themes were isolated from each study’s findings.
3. A list of themes identified by the reviewer was documented in the last column of the data extraction table. In order to clarify the association of themes and the findings relevant sections of the findings were highlighted in bold. Clustering of the themes from each study was then carried out.
4. A synthesis of the findings carried out.

Similar to the quality assessment, in order to reduce bias and to add to the reliability and validity of the data extraction process, the data were initially extracted by the researcher and checked for accuracy by the researcher’s supervisor. Where discrepancies or disagreements occurred, these were discussed and a consensus reached. Finally, a reading and re-reading of the themes in consideration of the original studies’ findings was performed over and over again to enhance accuracy (Smith et al. 2012) before the final synthesis of data was performed.

5.0 Results

5.1 Results of search and selection process

A comprehensive systematic search strategy was applied to the search and selection process. Appendix 5 provides full details of the results of the search strategy for the different terms used, their combinations, and the databases searched. In addition to the search terms developed from the components of the PEOS criteria, the key terms of ‘older adult’ or ‘elderly’ yielded 0 results and therefore, were excluded from the search
string. However, these terms were useful as filtering terms, in reducing numbers, during the screening process. Similarly, the addition of ‘health care settings’ in the search string yielded 0 results and was consequently not included in the search string.

Three hundred and forty five citations were identified through major databases and three hundred and one citations from other identified sources, providing a total of six hundred and forty six citations (Figure 1). All citations were downloaded to the reference manager ‘Endnote’ and duplicates were removed using the option ‘find duplicates’. This was done to remove same publications across the different databases and reduce the unnecessary screening of duplicate papers that were already screened. Following removal of duplicates, 174 unique citations remained. These citations were screened by title and abstract, and a further 158 citations were excluded because they did not meet the review’s inclusion criteria as they did not provide data on nursing staff experience of PR of older adult in a residential care setting. Two unpublished theses were also screened out at this stage due to failure to locate them within a reasonable time frame to facilitate including (Appendix 5.2). For the remaining 14 studies, full texts were retrieved. Applying the residential care setting inclusion criteria to the 14 studies, resulted in the screening out of a further nine studies.

The reasons for excluding these nine studies at full text review stage were: six studies were performed in acute hospital settings and one was performed in a rehabilitation setting (Quinn 1993, Janeli et al. 1995, Janeli & Kansi 1996, Lee et al. 1999, Chuang & Huang 2007, Huang et al. 2005, Lai 2007). For a further one study (Murray & Cott 1998), the researcher was initially unsure regarding the type of study design, however, after obtaining the article through inter-library loans, the study was excluded as it used a different methodology, that is quantitative methodology, to that that was deemed suitable for this review. The final of these nine studies (Moore and Haralambous 2007), was excluded because it included non-nursing staff as participants such as a pharmacist, and other allied professionals, and the data in this study was not presented separately for ‘nursing’ participants. Appendix 5.4 lists these excluded studies with reasons.

The remaining five studies were selected for inclusion in this review. On further examination, it became apparent that one of the studies, Hantikainen (2001), was a separate publication of the original study Hantikainen and Kappeli (2000), study,
however, it reported on different and relevant data to the 2000 study. For this reason this separate publication of this study was included. This resulted in a final number of four studies, reported across five publications, being included in this systematic review. The PRISMA Flow Diagram details the search and selection process.

**Figure: 1 PRISMA Flow Diagram**
5.2 Characteristics of Included Studies

Of the four included studies, one was conducted in America (Hennessey et al. 1997), one in Switzerland (Hantikainen & Kappeli 2000), one in Sweden (Karlsson et al. 2000) and one in Finland (Saarnio & Isola 2010). A total of 83 participants were included in the studies. Similar settings were used across the studies. For example, Hennessy et al. (1997) used one private nursing home and Saarnio & Isola (2010) conducted their study in private nursing homes and a health centre ward. Staff from two nursing homes participated in Karlsson et al. (2000) study and in the study conducted by Hantikainen & Kappeli (2000). The purpose/aim of all of the included studies was to obtain experience of nursing staff of the use of PR of older adults in a residential care setting. In addition to nursing experiences, some studies also explored how these experiences govern decision making on PR use (Hantikainen & Kappeli 2000, Karlsson et al. 2000) and staff experiences’ of barriers to restraint reduction (Hennessey et al. 1997).

All selected studies measured the nursing experience qualitatively, even-though the data collection methods varied. For example, focus group interviews were adapted by Hennessey et al. (1997) and by Saarnio & Isola (2010). Hantikainen (2000), alternatively, used unstructured interviews for collecting data and Karlsson et al. (2000) adopted the use of vignettes. Sampling size varied from 12 to 30 across the included studies. All studies identified the need for including trained and untrained nursing staff along with registered nurses, because of their close involvement in resident care. Karlsson et al. (2000) study was an exception to this where only registered nurses participated.

Key findings across the studies included understandings of the term restraint (Hantikainen & Kappeli 2000, Hennessey et al. 1997), staff and resident related factors leading to initiation of PR (Hennessey et al. 1997, Hantikainen & Kappeli 2000, Saarnio & Isola 2010), staff decision making in favour or against the PR, which was, in the main, reflected on their perception of the situation (Hennessey et al. 1997, Karlsson et al. 2000) and emotions related to PR application (Saarnio & Isola 2010).
Table 4 Summary Characteristics of the studies

<table>
<thead>
<tr>
<th>Study/ Setting</th>
<th>Aims</th>
<th>Sample and sampling strategy</th>
<th>Main result Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hennessey et al. 1997 1 private non-profitable NH , USA</td>
<td>To obtain deeper insight of staff attitude and how the nursing home environment pays a role in PRs application.</td>
<td>Total RN LPN TNA UT</td>
<td>PR definition, Characteristics presented by residents and the contextual factors leading to decision making.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 1 2 6 4</td>
<td>2Focus groups interviews, 1, nursing staff of 9 numbers, 2-nursing administrator (not included)</td>
</tr>
<tr>
<td>Hantikainen Kappeli 2000 Hantikainen 2001 4 LTC units of 2 Nhs, in German speaking area of Switzerland</td>
<td>To gain a deeper understanding of Nursing staff’s perceptions of restraints and how they lead to application of PRs.</td>
<td>20 5 6 5 4</td>
<td>Nursing staff’s perceptions of the term restraint, their justification on its use and the situations where, the staff was unsure of decision making.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purposive Sampling/ Un-structured interviews</td>
<td></td>
</tr>
<tr>
<td>Karlsson et al. 2000 Nhs North Sweden</td>
<td>To enlighten the nurses ‘justification for PR use and how nurses’ attitudes determine the PR decisions.</td>
<td>30 3 0 - -</td>
<td>Themes of Decision making in favor of PR use and against PR use; Circumstances in which nurses would change their primary decision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unclear; use of Vignette Qualitative interviews, and Perception restraint use questionnaire”</td>
<td></td>
</tr>
<tr>
<td>Saarnio &amp; Isola 2010 Private Nhs &amp; Health Centre wards Finland</td>
<td>To refer to the perception of nursing staff on the use of PR in residential care of older adults.</td>
<td>21 6 4</td>
<td>Aspects prominent to PR use; reactions of nursing staff on PR application or removal and their ways of coping.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 5 *</td>
<td>4 Focus groups</td>
</tr>
</tbody>
</table>

RN- Registered nurses; LPN- Licenced Practical nurses; TNA- Trained Nurses Aids; UT- Un Trained staff * Supervisors are nurses in this study
5.3 Quality Assessment (QA)

The five study publications were subjected to a formal assessment of their methodological quality. The review author and her supervisor independently assessed the studies’ quality and met to compare the results. Where differences occurred, these were discussed, the paper was re-reviewed and a consensus was reached (Appendix 6 presents separate copies of the assessment tool, with ratings for each component, for each included study). The assessment was based on the 10 criteria used by Brunton et al. (2011) in their review of ‘becoming mother’. Four of the papers were assessed to be of high quality and one was assessed to be of medium quality (Table 5 provides the results).

One study’s two publications Hantikainen (2001) and Hantikainen & Kappeli (2000) reported on all aspects of QA criteria achieving a high methodological quality study scoring of 9.5. This study lost 0.5 marks because in addition to nurses’ experiences, it also reported on how these experiences govern the decision making on restraint use. Saarnio & Isola (2010) received a score of 9 points addressing all criteria except for the sampling selection criteria. Karlsson et al. (2000) addressed 8 aspects of the quality criteria, also, thus achieving a high quality rating. Henessy et al. (1997) scored the lowest of the included studies, receiving a quality rating of 6.5 of 10 points, indicating the study was of medium methodological quality, overall.
Table 5 Methodological Quality rating of selected studies

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aims</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Sampling frame</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3. Sampling selection</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>4. Sampling number</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5. Age</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6. Socio economic status</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7. Reliability in data collection</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8. Validity of data collection</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9. Use of appropriate methods to express the</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>views of participant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Usefulness of study to answer review</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>question</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6.5</strong></td>
<td><strong>9.5</strong></td>
<td><strong>9.5</strong></td>
<td><strong>8.0</strong></td>
<td><strong>9.0</strong></td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td><strong>Medium</strong></td>
<td><strong>High</strong></td>
<td><strong>High</strong></td>
<td><strong>High</strong></td>
<td><strong>High</strong></td>
</tr>
</tbody>
</table>

High (8-10 points)  Medium (5-7.5 points)  Low (0-4.5 points)
Table 6 Methodological characteristics of selected papers

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sampling method</th>
<th>Data collection</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hantikainen &amp; Kappeli</td>
<td>2000</td>
<td>purposive</td>
<td>Phenomenological approach</td>
<td>Colaizzi’s methods (1978)</td>
</tr>
<tr>
<td>Hantikainen</td>
<td>2001</td>
<td>purposive</td>
<td>Phenomenological approach</td>
<td>Colaizzi’s method (1978)</td>
</tr>
<tr>
<td>Hennessy et al.</td>
<td>1997</td>
<td>Not stated</td>
<td>Focus group interview</td>
<td>Constant comparative (Strauss and Corbin)</td>
</tr>
<tr>
<td>Karlsson et al.</td>
<td>2000</td>
<td>Convenient</td>
<td>Vignette &amp; rating scale</td>
<td>Content analysis (Burnard 1991)</td>
</tr>
<tr>
<td>Saarnio &amp; Isola</td>
<td>2010</td>
<td>Not stated</td>
<td>Focus group interview</td>
<td>Inductive content analysis (Cutcliffe &amp; Mc Kenna 2004)</td>
</tr>
</tbody>
</table>
5.4 Data Extraction (DE)

The steps used to conduct the thematic analysis in the review on PR of older adults and nursing staffs’ with experiences in residential care setting were adopted from Lucas et al. (2007) and involved the following,

1. I extracted the data from the included studies and entered the data into a table for later consideration.
2. When ready to pool the data from the studies in order to ensure rigour in the process, emergent themes were checked for accuracy and relevance by my academic supervisor.
3. A list of themes was produced for each study as in the last column of table. The relevant section of the findings related to the particular identified theme was highlighted in bold to clarify the association between the findings and the list of themes (Table 7).

A grouping of the identified themes was then performed. The data synthesis in the review was iterative and involved going back and forth between original papers and the DE tables, to add to the reliability in recording review outcomes. A shortened summary table (Table 7) illustrates this process. The complete, extensive, DE forms for all of the included studies are presented in Appendix 7.

Table 7 Summary table (shortened for illustrative purposes)

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Key findings reported by authors</th>
<th>Key themes identified by reviewer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hennessey et al. 1997, p. 57.</td>
<td>You have to prevent him or her from falling, whereas you don’t have the time to spend. They [the administration] don’t say much if that person falls, but sometimes at a meeting they say, “People, you can do better than this. You can watch the person a little closer.” “I don’t want them to fall, first of all, because it’s for [their] safety---- you don’t want them to fall on you”.</td>
<td>Lack of time/staff shortage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Safety measure (resident)</td>
</tr>
</tbody>
</table>
The nursing staff had a feeling that restraint was capable of preventing fears of elderly patients of falling, and some of the patients requested them such as bed rails and safety belt themselves to have a feeling of safety. Some of the nurses expressed that their responsibility to maintain safety of the elderly remained the same level even when they have few options.

It was typical for nursing staff to anticipate the consequences of behaviour, just to be on the safe side, explaining that it was impossible for them to predict actual consequences. In case of doubt or anticipated risk nursing staff relied on previous experience with similar presentation:

“You can tell in advance when she’s going to turn aggressive----you must take steps to calm her down before it happens”.

Five nurses used arguments included under this heading. This category contains arguments such as:

“The patient will suffer a great deal from being restrained in a chair and the restraint should be removed because he feels unhappy about it”.

The patient must be allowed to make the decision in this kind of situation and it is
important to have *respect for the patient’s personal integrity*.

| Saarnio & Isola 2010, p. 3202. | “The nursing staff felt that older patient was afraid and felt imprisoned” and that the use of restraint degraded the patient’s human integrity. On the other hand, the nursing staff felt the patient’s sense of safety was improved and had no sufferings from it. The nursing staff felt certain negative emotions, like pity and guilt. They felt the use of restraints to be cruel, bad and uncomfortable. “I mean, it’s such a conflicting feeling, for me at least, I mean that it’s like feeling bad, like I really wish I had a better way of dealing with this but I don’t.” |

| meeting need |

| Lack of dignity(resident) |

| Safety measure(resident) |

| Feeling of guilty/pity (staff) |

| Bad feeling/ conflict (staff) |

### 5.5 Thematic Analysis

Thematic analysis is referred as the way of examining, the codes recognised, to create communicative forms. In order to achieve meaning, one needs to familiarise themselves with data, creating initial codes, looking for themes among codes, reviewing of these themes and group them and finally produce a report (Brown & Clarke 2006). There are various tools to help in summarising, synthesising and presenting the data such as grouping of similar data, making textual descriptions, translation of data by using thematic or content analysis and transforming data to particular groups or section (Bettany- Saltikov 2012). This review adapts transforming data under various sections, gathered from individual codes. When two or more studies among the five papers have
emphasised on the same finding it was taken as a theme for analysis (see Table 8). The themes which appeared only once are ignored for analysis and were alluded to within and as part of the discussion section only.

5.5.1 Theme 1: Types of PRs and nursing staff’s experiences

In this theme nursing staff expressed their experiences of using different types of PRs and their understanding as well as dilemma of considering certain devices as PR. This theme emerged in all four of the included studies (and all in five of the included papers), and includes three sub-themes; a) types of PRs, b) nursing staff’s understanding of PR and c) disagreement of PR function as a restraint

a) Types of PRs

Nursing staff expressed different viewpoints regarding the type of PR and their experience of its use in residential care settings. All five of the included papers mentioned at least one type of PR measure (Hennessey et al. 1997, Hantikainen & Kappeli 2000, Hantikainen 2001, Karlsson et al. 2000 and Saarnio & Isola 2010). The types of PR found in the residential care settings were tilting back of gerichairs, vest restraints, seat belts, magnetic belts, wheelchair with brakes, lap trays and bed rails. Other reported means of PR were wrapping the resident with bed linen in order to stabilise the resident while in bed and tying down or use of physical force to restrict residents’ movements. In addition, keeping the resident in isolation by locking the doors or removing mobility aid preventing residents from them to walking around freely, were also mentioned as forms of PR. Lastly, sedation, verbal violence such as threats, provocation and coercion, aggressive speech or fight to calm aggressive residents were other reported forms of restraint methods in residential care practice.

The types of PR most commonly used in older adult care were gerichair (Hennessey et al. 1997, Saarnio 2010), vest restraints (Hennessey et al. 1997) and different types of belts (Hennessey et al. 1997, Hantikainen & Kappeli 2000, Karlsson et al. 2000 and Saarnio & Isola 2010). Among the various types of belts, staff perceived magnetic belt as a real
restraint (Saarnio & Isola 2010) whereas seat belts were viewed as a safety measure though it restricted resident’s movement also (Hennessey et al. 1997). Karlsson et al. (2000) reported that belts were used especially in circumstances of staff shortages. Similarly, a wheel chair with brakes was viewed by the nursing staff as a safety measure, though it restricted the mobility for those who cannot release the brake (Hennessey et al. 1997).

“I think the seatbelts are, to me, another example of a safety factor as opposed to a restraint. Say, for example, the patient maybe can sit in a wheelchair…….bend over and adjust their sock, or something like that, and just tip over. And so, the seatbelt, I look at it as being more of a safety factor, but you wouldn’t really call that a restraint”. (Hennessey et al. 1997, p. 52).

Tying down was utilised as a restraining method for various reasons. Residents who were resistive of care procedures or who were attempting to exit/escape the care facility were tied down using restrictive sheets, including tying of hands to a bed or wrapping a resident completely in bed linen (Saarnio & Isola 2010). When staff anticipated a resident with potential risk of fall they favoured tying down (Hantikainen & Kappeli 2000). Tying down was opted for those residents whose behaviour was distressful to other residents in the facility or those whom there was a family request for PR (Hantikainen & Kappeli 2000).

“For the simple reason that if they get up they will fall…In these cases I’m all in favour of tying down”. (Hantikainen & Kappeli 2000, p. 1200).

“If he has not tied down he will go to others and shake them….it is not fair on others”…“I don’t want to tie her down but when I think of my responsibility to her relatives”. (Hantikainen & Kappeli 2000, p. 1202).

Certain types of restraints were better accepted than others among the nursing staff, mainly due to perceived positive effects on residents. The gerichair, for example, was considered to provide comfort and postural support to residents when occupied, yet constituted a PR when staff tilted the chair back to prevent older adults from getting out of it. Similarly, elevated bed rails, which were, on occasion, requested by residents, were viewed as offering feelings of comfort and safety for residents who were afraid of rolling
out of bed. These self-requested restrictions were referred to as voluntary restraints or enablers (Saarnio & Isola 2010, Hantikainen & Kappeli 2000), a term, interestingly, also used by the Health Service Executive in Ireland (HSE 2010).

b) Nursing staff’s understanding of PR

Nursing staff’s understanding of the term PR was necessary for them to determine its reduction. Nursing staff saw PR as “anything which restricts the freedom of an individual and his or her self-expression” (Hantikainen & Kappeli 2000, p. 1199) and “anything that restricts or control the movement” and a “degree of control over residents” (Hennessey et al. 1997, p. 52).

“Restraint is interference in people’s freedom, in their right to do the things they want…..if people aren’t allowed to move they will suffer mentally, get depressed”. (Hantikainen and Kappeli 2000, p. 1199).

In other definitions, introduction of the terms ‘voluntary restraints’ and ‘enablers’ were additionally found which might be due to the modification of PR definition for better understanding among nursing staff and the possible RFE propaganda (Saarnio & Isola 2010).

c) Disagreement of PR function as a restraint

Even-though nursing staff possessed good understanding of what constitutes a PR, they were also divided in their opinion with regard to the use of certain PR devices such as belts and gerichairs. While staff argued that they restrict the freedom of movement others were concerned about the safety features these devices were providing to residents (Hennessey et al. 1997, Hantikainen & Kappeli 2000). Staff expressed their opinion that gerichairs were furniture with acceptable safety features and disagreed on them having restraining capabilities. Likewise, use of safety belts was another form of PR which staff disagreed over, whereby, some staff felt that seat belts could not be considered a restraint (Hennessey et al. 1997). A similar viewpoint was expressed by staff about the usefulness of safety belt as a safety feature, with arguments surrounding
benefit outweighing untoward effect as a result of their use and that the situation in which they are used would need to be considered (Hantikainen & Kappeli 2000).

“A chair that holds them well”. (Hennessey et al. 1997, p. 52)

“Just we sit in the car, we put on a seat belt to restrain us from moving forward in case of accident”. (Hennessey et al. 1997, p. 53).

“In one case you may be restricting the freedom of the elderly, in another case a safety belt may be very useful, the only way that the person can sit up in the first place.” (Hantikainen & Kappeli 2000, p. 1199).

5.5.2 Theme 2: Positive outcome or benefits from PR for residents

This theme emerged from the literature as nursing staff expressed views that PR application or removal was found to be beneficial to residents. This theme emerged from all five of the included papers (Hennessey et al. 1997, Hantikainen & Kappeli 2000, Hantikainen 2001, Karlsson et al. 2000, Saarnio & Isola 2010). Three sub-themes describe this main theme as follows: a) meeting needs of residents, b) safety measure to residents and c) respect to residents.

a) Meeting needs of residents

Some residents had a fear of rolling out of bed especially when they were used to using a wider bed at home or when the height of the bed was raised by staff for providing care, which resulted in residents feeling nervous. In such cases or for any unexpressed reason, some residents wanted to feel safe in bed by erecting bed rails and some residents installed belts in their chairs (Hantikainen & Kappeli 2000). These requests may have been in direct contrast to the views of nursing staff who may have perceived these as unnecessary (Saarnio & Isola 2010). In this sense, the nursing staff were facilitating the resident to decide on the use of PR where they were capable of doing so (Karlsson et al. 2000). In all such cases nursing staff believed they were meeting the needs of the residents and the use of PR in these situations was for the resident’s benefit.
b) Safety measure to residents

Through various statements in the included studies, nursing staff justified PR measures as promoting the safety of the residents especially when an accident or fall happened to a resident in the absence of PR and where staff were made to feel at fault for this (Hantikainen & Kappeli 2000). Additionally, when residents exhibited warning behaviours, like aggression, nursing staff opted for PR as a means of ensuring the safety of residents (Hantikainen 2001)

“It is very difficult taking risks when you don’t know how far you can go”. (Hantikainen & Kappeli 2000, p. 1200).

“You can tell in advance when she’s going to turn aggressive….you must take steps to calm her down before it happens”. (Hantikainen 2001, p. 250)

Situations like sitting in wheelchair and using a safety belt for preventing accidental falling if residents decided to fix their sock or bend over to get something were viewed as acceptable as safety measures. Staff viewed safety belt as a reminder for some residents with poor safety awareness to seek help through their own actions or expressions or by shouting to draw staff attention rather than leaving a fall remain unnoticed for a time (Hennessey et al. 1997). PR was also used to maintain the safety of residents with Parkinson’s disease and residual paralysis who were under potential risk of fall due to the impending hazard from an unrestricted environment. Residents with repeated falls were also protected by applying PR to them (Hennessey et al. 1997). However, no evidence emerged from the studies of these views of PR being mutually agreed by the resident and the staff.

“And we have some people here that are falling constantly over and over again, and hitting their heads...these people needs to be restrained... I disagree with the falling period”. (Hennessey et al. 1997, p. 55).

c) Respect to residents

Nurses expressed that residents should be allowed to make decisions about PR because of their respect for resident’s autonomy (Karlsson et al. 2000). Simultaneously, nurses
reported that if any form of PR was causing distress to residents, such as causing them to be unhappy, agitated or aware of being restrained, then these PRs should be removed in order to respect resident’s feelings (Karlsson et al. 2000). Nurses also expressed a willingness to take risks without PRs as they understood that PRs cannot prevent falls always (Karlsson et al. 2000).

“The patient must be allowed to make decisions in this situation... to have respect for the patient’s personal integrity”. (Karlsson et al. 2000, p. 845).

“The patient will suffer a great deal from being restrained in a chair and the restraint should be removed because he feels unhappy about it”. (Karlsson et al. 2000, p 845).

“Sometimes you must take the risk--- it is not possible to prevent everything”. (Karlsson et al. 2000, p. 845).

5.5.3 Theme 3: Reasons for PRs

Reasons for PRs emerged in all four of the included studies (and in all 5 study reports). These reasons emerged in the form of three sub-themes as; a) staff reasons leading to PRs, b) resident characteristics leading to PRs and c) environmental reasons leading to PRs.

Nursing staff reasons for PRs included nursing staff attitudes, nurse as proxy, concept of PR as a safety measure and comfort to staff. PRs were used to follow legal obligations and to avoid potential litigation and peer conflicts. PR was viewed as an easy and convenient option for staff, in cases of staff shortages or when staff were limited in time for care. Certain resident characteristics also contributed in decision making for staff on whether to opt for PR or to refrain from it. Another contributory factor was the residential care culture.

a) Nursing staff’s reasons leading to PRs

Nursing staff’s reasons for PRs were reported in all five studies. Nurses’ attitude was shown as a tendency not to acknowledge older person’s right to choose or decline PRs
Of 30 nurses in one study, four believed that a willingness to take risks only can reduce PRs, indicating that a very small proportion of staff accept willingness for change.

“Sometimes you must take the risk, even-though you know that the patient might fall; it’s not possible to prevent everything”. (Karlsson et al. 2000, p. 845).

Nursing staff had a tendency to concentrate on the consequences of behaviours, mainly deficit oriented, where a resident was highlighted as incapacitated and nursing staff as experts. To be on the safer side and to avoid risks, staff relied on their previous experience of similar behaviours and applied PRs.

“When you are over 80 then it’s natural that you begin to lose power….if they get up and are free to walk around then they may fall and hurt themselves”. (Hantikainen 2001, p. 250).

Paternalistic attitudes were evident as existing among nursing staff when caring for older adults. This attitude resulted in being overprotective to residents by preventing them from any falls’ risks through the use of PRs. Had there been more freedom for residents to mobilise many PRs could have been avoided. Nursing staff felt that, they could convince family members of residents about the need of PRs when family members did not favour the use of PR. This appeared mainly in order to avoid the accountability in case of a fall or injury. (Hantikainen & Kappeli 2000).

“...The relatives say that they’ve had no bed rails at home, but we feel it’s dangerous to leave them without bedrails and then we want them to decide...if something happens it’s not our fault”. (Hantikainen & Kappeli 2000, p. 1202).

Another reason that nursing staff used PR was when PR was viewed as nurse as proxy. For example, certain nursing decisions on PR were taken following the nursing assessment only without having the resident or family consultation at the time of application. It was often found that either the family was informed in advance or after the PR took place, depicting the nurse as proxy.
“...It’s probably tested before the family member is asked for permission...” (Saarnio & Isola 2010, p. 3201).

Another example of nurses as proxy was when nursing staff applied PRs to those residents who resisted the PRs’ application or who lost communication abilities and, where families were neither told about the PRs nor was their consent sought (Saarnio & Isola 2010). Dementia residents were considered vulnerable and frail and nurses felt they should take decisions on their behalf. This was expressed by twelve out of thirty nurses who participated in the Karlsson et al. study (2000).

“The patient is demented and does not understand what is best for him... if belt is removed”. (Karlsson et al. 2000, p. 846).

The nurses felt that decision-making on PR use or non-use varied according to the nurse in-charge rather than by usual/routine practice. Therefore PR use varied widely upon their delegations resulting in inconsistent decisions about PR use. Nurses also undertook PR decisions and applied PR on behalf of other residents in the facility who were disturbed by aggressive or agitated residents. The nurse as proxy found it was only right for those residents to feel secure and not to receive ill behaviour from co-residents.

“If he’s not tied down he’ll always go over to other residents and shake them and I can’t take the responsibility for that, it’s not fair on others”. (Hantikainen & Kappeli 2000, p. 1202).

Some of the PRs were initiated as a comfort measure and to make nursing staff feel safe themselves. Nursing staff believed that better safety was assured when bad behaviours (verbal threats to leave the facility, physical aggression, inappropriate language) were checked by using PRs with cautions (Hennessey et al. 1997). Staff were worried about consequences to themselves in case of accidents and, for one’s own sense of safety, PRs were applied (Hantikainen & Kappeli 2000). Another staff reason to initiate PR was to protect themselves from unnecessary attacks by residents with aggressive behaviours. Some staff, even-though non-supportive of PRs, wanted to portray themselves favourably among colleagues as they were afraid that if some colleagues might take offence if they did not initiate PR (Saarnio & Isola 2010).
“If I remove a patient’s safety belt and if she falls over I can stand behind my decision...what I have done... never know how others will react... I’ve probably done something stupid and I’m accountable”. (Hantikainen & Kappeli 2000, p. 1200).

A final reason that led nursing staff to use PR was their feelings that they had a legal obligation to carry out a prescription for PR and, to avoid troubles even when they might not have agreed with the order to initiate PR (Hennessey et al. 1997). Four of 30 participants in Karlsson et al. (2000) study reported that nurses will initiate PRs if prescribed by a doctor, due to their obligation to follow doctors’ orders. Nurses found themselves vulnerable of potentially facing legal actions in case of a fall of a resident for whom a doctor had initiated a PR (belt) and nurses did not comply with the order. Compliance with doctor’s order comforted nurses from possible legal consequences.

“It’s a nurse’s duty to carry out a physician’s instruction”. (Karlsson et al. 2000, p. 846).

b) Residents’ characteristics leading to PRs

Separate to staff reasons leading to PR, certain resident characteristics’ were identified as reasons also favouring PR applications. The residents who had functional impairments such as dementia, mobility problems and postural difficulties were referred to as being potentially unsafe by nursing staff. However, these conditions themselves did not necessarily constitute using PRs if residents were capable of compensating for their physical restriction (Hennessey et al. 1997). For example, a resident with difficulty in mobilising was able to ring the bell for assistance and a dementia resident who always had worn the shoes prior to getting out of bed posed less or no risk of fall, thus eliminating the need of PR. In contrast, residents with residual paralysis and conditions such as Parkinson’s disease were subjected to PRs due to being considered by nursing staff as having a high risk of injury within an unrestricted environment (Hennessey et al. 1997). Conditions where residents’ loss of judgment and insight, as in dementia, restraint belts were used to prevent falls or hip fracture (Karlsson et al. 2000).
“And all it depends on walking ability, too. Some walk with a lean, almost about to fall, and some walk straight up. They have excellent balance ... they are able to keep their balance”. (Hennessey et al. 1997, p. 53).

“The patient is demented...he can’t realize what consequences it will have for him if the belt is removed”. (Karlsson et al. 2000, p. 846).

c) Environmental reasons leading to PR

Finally, within this theme, the residential care environment was also identified as a reason for contributing to PR applications. The restrictions aroused from the institutional routines of physical care (for example, feeding, bathing, medication administration and toileting) were seen as taking priority over the staff’s time on psychosocial aspects of residents’ care. Moreover the staff to resident ratio, in many instances, was poor. As a result, staff were limited in their ability to monitor resident’s cause of aggression; resulting in PR applications.

“It used to have five residents per staff member, now you have got eight and nine...you don’t have really time... and so limits your ability to keep an eye on them...or... you would like to free them up”. (Hennessey et al. 1997, p. 54).

Another identified environmental factor was the institutional culture itself, where a lack of provisions existed for PR avoidance. Saarnio & Isola (2010), for example, described that the high prevalence of PR resulted from an institutional culture, whereby, in order to prevent fall and hip fractures, the residents were left confined to bed as a substitute for not having proper mobility aids. Care practices, such as non-seeking of residents’ permission to carry out personal care and other care procedures, resulted in increasing resistance and aggressive behaviours which were, in turn, controlled by staff using PRs. A final factor, in this sub-theme, that appeared to contribute to PR applications was involvement of ‘others’, including decisions taken by the care team and family members’ wishes, even if PRs were thought unnecessary by nursing staff (Karlsson et al. 2000).

“I will use the restraint because I assume that it will be in accordance with his relatives’ wishes”. (Karlsson et al. 2000, p. 846).
5.5.4 Theme 4: Consequences of PR use

PRs were identified in the included studies as having positive and negative consequences (Saarnio & Isola 2010). PRs’ negative consequences were reported by four included studies and centred mainly on psychological discomfort (Karlsson et al. 2000, Saarnio & Isola 2010), physical discomfort (Hennessy et al. 1997, Saarnio & Isola 2010) and disrespect to residents (Hantikainen & Kappeli 2000, Saarnio & Isola 2010). Positive consequences were reported in one study only and were therefore not considered as a major finding contributing to this theme (Saarnio & Isola 2010). Five of 30 participants in Karlsson et al. (2000) study argued that the residents will be unhappy and psychologically upset from being conscious of restriction from PRs, and that they should be removed (Karlsson et al. 2000). Saarnio & Isola (2010) described that residents subjected to PR were vulnerable to mental maltreatment, where a resident on PR was kept away from other residents and less attention was paid to their care needs resulting in them feeling unequal and/or disrespected.

“The patient will suffer a great deal from being restrained in a chair and should be removed because he feels unhappy about it”. (Karlsson et al. 2000, p. 845).

Physical consequences were also among the negative consequences of using PR on older adults. Blistered skin, for example, was reported as a consequence of improper use of hand mittens (Hennessy et al. 1997). Certain hazardous situations were from residents trying to get out over the top of bedrails, entrapment of body parts through bedrails and strangulation and choking episodes from restraining belts were also identified as negative consequences of PR use. Skin chaffing and skin breaks were also reported (Saarnio & Isola 2010). In certain cases PRs reduced resident’s mobility in such a manner that the intended need for PR became unnecessary.

“Well the patient’s functional ability does go down, very rapidly in fact, they will be bedridden in two weeks”. (Saarnio & Isola 2010, p. 3203).

Finally, staff’s disrespect to the resident was seen as a cause to initiate PR and as a reason not to discontinue the PR. PR application was undertaken, with no identifiable possible requirement for the PR, just to satisfy the family members’ demands. In these cases, staff
who had the responsibility to protect the autonomy of residents perceived that they
disrespected the residents by applying PR unnecessarily (Hantikainen & Kappeli 2000).
Staff also disrespected residents during care procedures by not fully explaining
procedures and seeking their permission prior to initiating the procedure. This caused
agitation, aggression and care resistance in residents, which ultimately was controlled by
initiating and continuing PR (Saarnio & Isola 2010).

“I don’t want to tie her down but when I think of my responsibility to her relatives”.
(Hantikainen & Kappeli 2000, p. 1202).

5.5.5 Theme 5: Emotions of nursing staff related to PR

Four out of five of the included papers identified various negative emotions in relation to
PR use of older adults, deeming it a prominent theme (Hantikainen & Kappeli 2000,
Hantikainen 2001, Karlsson et al. 2000 and Saarnio & Isola 2010). These negative
emotions experienced by nursing staff are described within two sub-themes as; a)
occurred prior to the initiation of a PR and b) occurred post application of PR. The
emotions prior to PRs were related, in the main, to fear of causing physical harm to staff
from residents (Hantikainen & Kappeli 2000), feelings of anger and frustration and,
feelings of disrespect for nursing staff from residents (Hantikainen 2001). In the
remaining two papers, negative emotions towards PR, were experienced by staff post PR
applications (Saarnio & Isola 2010, Karlsson et al. 2000). Nursing staff described feelings
of guilt and pity for the residents on restraints, and, thinking that residents were afraid
and felt imprisoned when restrained (Saarnio & Isola 2010). Furthermore, nursing staff
also felt that PR degraded the residents’ human integrity and that residents became sad
and unhappy when PR was applied (Saarnio & Isola 2010, Karlsson et al. 2000).

a) Emotions of nursing staff prior to PR application

Nursing staff experienced negative emotions mainly arising from feeling angry due to the
irrational behaviour of residents and, in turn, felt that they had no control over these
situations except to apply PR as a form of sanction.
“She just stands in the toilet and refuses to sit down and urinates on the floor... and laughs and I can’t understand why. At that moment she makes me angry especially the laughing.” (Hantikainen & Kappeli 2001, p. 250)

Many behaviours for example, hitting, abusive language, shouting of residents were perceived by nursing staff as an assault on their self-esteem and professional identity even if they were acting in the best interest of residents. At times these behaviours were perceived by the staff as a deliberate attempt to cause distress to one’s own self and staff decided to stop them by implementing different ways of physical restrictions within their scope of practice.

“The hitting that can’t be right but we are not allowed to hurt their feelings but no one’s interested in how they treat us.” (Hantikainen 2001, p. 250).

Nursing staff described that they were treated dis-respectively, as mere servants to residents, where-by residents called them names or spat at them. Once staff member perceived these behaviours as disrespectful and unfair, and thus, by means of sarcasm and subordination, staff tried to compensate the insults by sanctioning orders of PRs. In certain cases, physical force was applied to residents, in order to calm them down and residents were also isolated against their will (Hantikainen 2001). The fear from these situations made the residents submissive and nursing staff were under the impression that they employed the best way to quieten down these residents.

“A nurse cannot be a normal person just smile and do your job even if they spit on you.” (Hantikainen 2001, p. 250).

“And once I grabbed hold of this lady who always screams. I took her down to the church, in the church she won’t scream. Then I said I will be back in 20 minutes”... (Hantikainen 2001, p. 251).

Some residents’ behaviour caused fear among nursing staff when there was unjust physical or verbal attack against them and they felt that they were under no obligation to accept such behaviour. Staff members restrained such behaviours by threats, issuing orders of PRs or by subordination.
“I will say I am going to call the police. I have said we have two video cameras installed and if he touches me police will come straight away”. (Hantikainen & Kappeli 2000, p. 1200).

b) Emotions of nursing staff post application of PR

Many negative emotions were endured by the nursing staff after PR applications especially when they thought that residents were uncomfortable or unhappy. Nurses felt guilty of their intervention to restrain the resident’s mobility, such as moving the Zimmer frame away from the resident. A similar feeling was expressed by nurses where they decided to remove restraint when they felt residents were struggling to release the PR or were unhappy about it (Karlsson et al. 2000).

“Sometimes you are guilty of things when a patient uses Zimmer frame for walking------ nurse takes the frame and moves it further away”. (Saarnio & Isola 2010, p. 3201).

“The patient will suffer a great deal from being restrained in a chair and the restraint should be removed because he feels unhappy about it“. (Karlsson et al. 2000, p. 845).

Nursing staff also sensed that the older person on PR was afraid and felt imprisoned and that the PR Nursing staff also sensed that the older person on PR was afraid and felt imprisoned and that the PR use was degrading their self-integrity. Staff’s own feeling of the use of PR was cruel, bad and uncomfortable.

“I mean, it’s such a conflicting feeling, for me at least, I mean that it’s like feeling bad, like I really wish I had a better way of dealing with this but I don’t”. (Saarnio & Isola 2010, p. 3202).

5.5.6 Theme 6: Suggestions for improvement of PR reductions

A number of suggestions for reducing PR emerged from four of the included papers. The sub themes include: a) need for team discussion, b) need for of proper assessment and understanding of PRs and c) person centred care (Hantikainen & Kappeli 2000, Hantikainen 2001, Karlsson et al. 2001, and Saarnio & Isola 2010).
a) Need for team discussion

Nursing staff felt that open discussions on the use of PRs were helping to reduce the occurrences of PR use (Saarnio & Isola 2010). The participants included in such discussions were resident, family members, nursing staff and the doctor. Meetings were mostly informal in nature, occurred during lunch and coffee breaks, or in team meetings. Unit managers were mainly responsible for initiating and leading open discussions. However, staff recognized the need for involvement of the multidisciplinary team (Saarnio & Isola 2010, Karlsson et al. 2000). Nursing staff had also noticed inconsistencies with documentations and in care plans pertaining to the use of PRs, making regular assessments difficult. An action plan was also developed to ensure these assessments were more person centred in conjunction with unit managers involvement and an informed decision making taken for PR use. According to Saarnio & Isola (2010) these actions helped to reduce routine use of PRs.

“It’s not possible to have a view on one’s own in this matter and you must have respect for a decision made by team”. (Karlsson et al. 2000, p. 846).

b) Need for better understanding of PR and need of assessment

Understanding of the various types of PR varied between different nursing staff, making judgment and decision-making difficult. Within guidelines, there was room for clarifications due to misinterpretation of PRs. This included the use of words such as ‘real restraint’, ‘routine’ and ‘nice restraint’ which, consequentially, altered the intensity of PR applications through the use of terminology that potentially lessened the meaning and interpretation of PR (Saarnio & Isola 2010). Similar misinterpretation existed in understanding the reasons underlying the behaviours of residents. Staff did not make efforts to understand the behaviours of residents or they ignored them (Hantikainen 2001). Understanding the behaviours can promote restraint free options.

“For the elderly themselves restlessness may mean life, it may mean something happening. If you always say ‘NO’ and slam the door in the face and say ‘No, you have to stay here’, I can understand full well why he gets so aggressive. Instead of saying ‘No’ all the time we should try to think of something else.” (Hantikainen 2001, p. 251).
PRs were also reportedly initiated as a follow on procedure without proper assessment or the need for a revisit (Saarnio & Isola 2010, Karlsson et al. 2000). For example, some of the nursing staff did not know the indication for PRs and chemical restraints in certain residents. They never questioned the need, and they simply practiced the use of PR because PR had been used in a previous facility or home. Lack of assessment was quite prominent in cases of sedatives, a form of chemical restraint, where nursing staff rarely assessed whether dose reduction and discontinuation was possible even though they realised that the drug was not showing a therapeutic effect (Saarnio & Isola 2010).

“...you don’t really know why they’re being given in the first place and how they should help”. (Saarnio & Isola 2010, p. 1201).

In certain instances, PRs were initiated to meet the best interest of others, such as a relative or a colleague, without assessment of the resident for the need for PR. Relatives were requesting the PR measures to console themselves from the fear of possible falls. In such cases, proper fall risk assessment and environmental modifications to prevent falls could have been supportive to the relatives. A multidisciplinary team could have taken a decision as to the need for PR after assessment in such cases (Karlsson et al. 2000).

“I assume that it will be in accordance with his relatives’ wishes”. (Karlsson et al. 2000, p. 846).

c) Person centred care

The provision of person centred care approaches, where resident’s functional abilities are assessed and an informed decision making occurs before deciding on PRs, was a further suggestion for reducing PR use (Saarnio & Isola 2010, Hantikainen 2001). Routine use of PRs were found to be reduced when individual assessments and decision making was implemented (Saarnio & Isola 2010). Some nursing staff perceived agitation and aggression, for example, crying and constantly looking for parents who died long ago or shouting inconsolably to be sent home, were mere expressions of their feelings of insecurity. An empathetic attitude, spending time privately or walking with the resident
can be consoling and help relieve these behaviours as ignoring these can be perilous to the resident (hitting out behaviours leading to PRs) as well as to staff (being hit or verbally abused). A better understanding of the person as an individual (person centred care) can resolve problems with a restraint free solution for the perceived behavioural problems.

“If you always say ‘No’ and slam the door in the face and say ‘No, you stay here’, I can understand full well why he gets so aggressive. Instead of saying ‘No’ all the time we should try to think of something else”. (Hantikainen 2001, p. 251).

Nursing practices, such as gathering antecedents of an agitated behaviour, collecting the history behind an aggressive episode or a casual enquiry like ‘how are you’ or ‘what is the problem’ sound provocative for certain residents as they find it futile because nursing staff generally don’t solve their problem after all of these enquiries even though many are not practically possible for nursing staff (e.g. bring me home, I want to see my mother). In such cases, nursing staff may extensively escalate an agitated or aggressive episode in a resident that may then require PRs or medication to resolve. A person centred approach which caters for better understanding of the person by identifying situations that could aggravate or deescalate a resident’s behaviour is suggested. Furthermore, support from staff and family in such times can assist redirect the agitated person to cope better with the situation, and careful consideration can occur before decision making for PRs takes place (Hantikainen 2001, Saarnio & Isola 2010).

“I can ask them a hundred times during the day ‘What’s the problem?’, and I never find out what’s wrong....and he just gets more and more aggressive, and I can’t blame him because it’s beginning to sound like an interrogation”. (Hantikainen 2001, p. 252).
6.0 Discussion

The purpose of this systematic review and thematic synthesis was to offer an insight, understanding and clarity into nursing staffs’ experience of PRs of older adults in residential care settings. To meet the purpose, the review identified four studies, published across five papers, which met the reviews’ inclusion criteria. All studies explored nursing staffs’ experiences using interview methods other than one study which adopted a clinical vignette to collect data. Two of the studies exclusively reported on nursing staff experiences’ (Karlsson et al. 2000, Saarnio & Isola 2010). The remaining three studies, in addition to exploring experiences also examined barriers, decision making and the behaviours of residents (Hennessey et al. 1997, Hantikainen & Kappeli 2000, Hantikainen 2001). As there were only a small number of studies included in this review, caution is advised when interpreting the synthesised results; however, the reviews’ findings are considerably strengthened by the moderate to high methodological quality of the included studies, which adds weight to the findings of this review. The review is additionally strengthened by adopting a comprehensive search and selection strategy, whereby, the researcher is confident that the review is based on the totality of the current available evidence for answering the review question.

The review findings were able to depict nursing staffs’ experiences of PR use in residential care settings. Six prominent themes (types of PRs and staff experiences of using them, positive outcomes of PRs, reasons for PRs, consequences of using PRs, emotions of staff related to PR use and suggestions for PR reductions), which might be considered significant when attempting to implement evidence based RFE practices in residential care settings, emerged from the data.

The nursing staffs’ experience centred mainly on different types of PRs, their understandings of PR use and ambivalent situations in which PR is used. In this sense, the experience of the participants in the studies identified the various intentions behind the use of PR use that were perceived to be beneficial to residents. Nursing staffs’ experiences were demonstrated as being influential in initiating or removing PR, an aspect that appears to be the central focus of this review and thereby valuable to the recommended practice, that is RFE. Nursing staffs’ opinion also highlighted the ill effects
and various emotions associated with PR use will have the potential to cause nursing staff to rethink their reasoning for PR use. Finally, the review identified findings that will have a contributory effect to achieving RFE in current practice.

The findings of this review identified that some nursing staff favoured PR use as they believed PR is valuable in preventing falls and promoting safety of older adults in residential care; however, PR has also been identified as a form of misuse and as an undignified action rather than its questionable falls prevention aspect (Gallinagh et al. 2002, Hamers & Huizing 2005). Within the context of safety, certain devices have safety or enabling functions for residents such as lap trays, gerichairs, seat belts, bed rails etc., (Molassiotis 1995, Gallinagh et al. 2002, HSE 2010, Saarnio & Isola 2010) yet are also capable of functioning as PRs in certain conditions. Bed rails, although added to the list of PRs in 1992 only, constitutes a PR unless the resident requests the same. Some nurses have the strong viewpoint that PRs are hindrance to residents’ bodily liberty and self-determination and should not be undertaken. This viewpoint is supported by The Alzheimer society of Ireland (2010) and the Department of Health & Children (DoHC) (2011). While the ambivalence of PR as a restraining device or as a safety device was evident in this review, nursing staff equally expressed conflicting opinions of using PRs instead of chemical restraints and vice versa; an issue identified by Healey & Paine (2008) also, especially when a restraining action is deemed necessary to protect a resident or to prevent mishaps during an acute episode of agitation. Whilst PR is currently considered a self-limiting and undignified action, staff tend to nullify the ill-feelings surrounding PR use by considering current PR as less constrictive or a necessary feature facilitating PR use in clinical practice without an actual realization of initiating a PR device. Flicker (1996) highlights the use of indirect forms of restraining whereby environmental restrictions such as removing mobility aid, vision glasses, locking of doors and threatening verbally are recognised as constituting PR; a findings that also emerged from the synthesis of experiences in this review.

Electronic tagging is understood as a form of PR that can infringe on the rights and liberties of residents with dementia who, already, might be downgraded somewhat from society due to old age and mental health problems such as depression or aggressive and excessive psychomotor behaviour (Oosterveld-vlug et al. 2014). From the researcher’s
familiarity and clinical knowledge of older adult care, electronic tagging is known to be widely used in certain residential care practices; interestingly, however, this form of PR did not emerge as a significant type of PR in the systematic review. In contrast to the restriction aspect of PR devices, some residents found PR as comforting whereby PR application added to their sense of security (e.g. fear of rolling out from bed or slipping from wheelchairs) and in promoting a sense of wellbeing in residents without possible consequences when residents can manipulate these devices at their own disposal. Chuang & Huang (2007) describe these enablers as for a user’s ‘own good’. Staff, however, often experience uncertainty surrounding the enabling effect of PR in contrast to the restraining effect of PR. In such cases, policy change along with education and training of staff are required (Mohler & Meyer 2014). However, it should also be recognised that PR, once an enabler, can subsequently become a restraint depending on residents’ health demands (physical/mental) and therefore assessment, continuity and documentation surrounding PR use and rationale for use remains essential in clinical practice.

The findings of this review identified that nursing staff remain influential in deciding on whether to initiate or terminate a PR. This has been identified and supported in quantitative studies on this topic which explored, through survey research, nurses’ attitudes and perceptions of PR (Hamers & Huizing 2005, Mohler & Meyer 2014). Interestingly, nurses’ attitudes and their justifications for PR use have remained relatively unchanged over time from 1996 (Janelli & Kanski 1996) until recently (Mohler & Meyer 2014). Very few staff would consider changing their attitude to reduce PR for the benefit of residents at the expense of taking risks that falls may occur or to enhance the promotion of RFE. Fear experienced by nursing staff in this respect has, however, changed overtime, mainly from not obeying the doctor’s order for PRs to that of relatives’ initiating legal action in the case of a fall in the care facility resulting in nursing staff continuing to initiate PRs (Oduwole 2009). A sense of this perception and fear also emerged strongly in this review whereby participants were fearful of litigation and peer conflicts should injury/falls occur in the absence of PR. Nursing staff in residential care consider residents as incapacitated and themselves as experts often leading to decisions on PR use on behalf of residents; a finding also that emerged in this review.
In cases of behaviours such as agitation, aggression and anxiety of residents, such behaviours tended to be managed symptomatically by either using PR or chemical restraints, without exploring the cause of these behaviours. In older persons, these behaviours can result from many causes, and can often be mere expressions and attempts to communicate basic needs such as hunger, constipation or urinary retention, pain and tiredness (Dewing 2010). In this review, staff failure to explore these behaviours was identified as being associated with under staffing, poor organisational practices (more commitment of time to physical needs and little consideration to psychosocial aspects, lack of provision of mobility aids and suitable chairs), a lack of person centred care and a lack of proper assessment; a finding which is also supported by others (Phelan & McCormack 2013).

PRs has also been viewed as a means of maintaining peace and harmony in care settings by restraining activities of residents who cause potential threats or disturbance to other residents (Oduwole 2009); a finding that also emerged in this review. Residents with previous history of falls, behavioural symptoms such as agitation and anxiety in case of dementia residents, Parkinson’s disease and other motor illnesses are more likely to be restrained. In certain case, staff endorsed the wishes of family members to restrain the residents, resulting from family’s fear of their relatives’ possible falling and sustaining injuries while in residential care.

Residents subjected to PR are likely to suffer from physical as well as psychological consequences, and perhaps even more-so in cases of unnecessary PR applications (family’s request, staff shortage). Physical injuries could potentially result from unnecessary use of PR and inadequate monitoring, whereby residents try to release their restrained body parts or by attempting to escape the restraint, for example, climbing over a bed rail. These are significant considerations and problems surrounding PR use for ensuring safe clinical care and practice. Emotional symptoms such as withdrawal, feeling depressed, sad and unhappy are commonly reported among restrained residents (Molasitosis 1995) and were identified as significant within this review. In addition, the review also unveils the emotions experienced by staff who apply or decide to remove PRs. Nursing staff when witnessed residents’ emotional symptoms on using PRs, felt unhappy and sad, and decided to remove them. On the contrary, certain behaviours of residents
(hitting, calling names, abusive language, spitting, etc.,) disrupted the nursing staff’s self-esteem and PRs were initiated to check these behaviours and also to comfort themselves, a rationale for PR use also identified by Healey & Paine (2008).

The emotional turmoil experienced by the nursing staff as a result of applying PR of older adults influenced not only on their reasoning for PRs, but led also to suggestions to improve care without having interventions like PRs and chemical restraints. In this review, nursing staff present a good understanding of the recommended practice and reported that discussing these behaviours with peers, the medical team and family members gave them more opportunities to know the residents better, to plan care in a less threatening manner and to implement person centred care; a finding that is also supported in the general literature (Chuang & Huang 2005, Zadelhoff 2011). Nurses find varying ways to improve communication among themselves, even in times of staff shortages, and to improve on their assessment and documentation processes in upholding professional standards. Communications mainly concentrated on differentiating PRs from enablers and on improving their understandings of various PRs and their detrimental effects objectively. Improvement in communication and an educational approach involving residents’ families can help residents feel more at ease in their residential care facilities. In other words, nursing staff’s change in perception can lead to a more relaxed atmosphere in residential care settings and will automatically reduce the need for active interventions in cases of behavioural symptoms most common in older adults (e.g. passivity, underlying infections, delirium and as part of disease process of dementia). Every resident feels safe in a non-threatening and friendly home like environment while acknowledging their limitations (Haugan 2014).
7.0 Conclusion

Prevention of falls, related injuries and agitated behaviours were traditionally managed in residential care settings by either physical or chemical restraints; treatments which may have negative consequences. Chemical restraints are always unacceptable. Certain PRs may have some enabling functions for residents; contrastingly, the use of PRs may affect the dignity, safety and wellbeing of residents and may constitute an invasion of their fundamental rights. This systematic review is the first systematic review, that the researcher is aware of, that focuses specifically on synthesising nurses’ experiences of PR in older adults in residential care settings. Nursing staff’s experience and understandings of PR use remains influential in its application or removal. Nursing interventions need to direct a broader person centred approach and care planning for understanding the reason behind agitated behaviours. Nurse-resident interactions should be the focus of future research and education, whereby ensuring a home like atmosphere in terms of the environment and the interpersonal relationships existing therein becomes a priority. Ensuring such an environmental culture will help residents feel safe and nurtured without the need for invasive or undignified interventions, and, may potentially and effectively transform traditional nursing staff attitudes towards PR use in older adults. The findings of this review have a number of implications for both practice and research.

7.1 Implications for practice

As this systematic review focused exclusively on PR use in residential settings, the findings of the review will be of benefit to policy makers in disentangling recommendations for PR use in residential care settings only as opposed to all PR used in various and generalised healthcare settings, The views and experiences of nursing staff are of prime importance when considering the care effectiveness suitable to care settings. Contemporary nursing is challenging and residential care nursing is not any different due to various situations of conflicting values that may arise from the organisational and professional value conflicts. For example, a lack of proper staff numbers, less registered nurses and inappropriate skill mix ratios, agency staff and conflicting opinions among health care providers of PR functions can inflict confusion.
In order to make appropriate decisions on residents’ wellbeing, nurses need a supportive environment and ethical leadership. Ethical leadership requires high aspirations in professional practice, opportunities to anticipate threats to vulnerable residents and to master skills to react suitably (Casterle et al. 2008). As the review has identified, the attitude of nurse manager or leader can play an important role on PR practices and on ways to promote RFE. Nurse Managers can influence the working team under her/him and can assist bridge the gap between organisational and professional values. For this reason, nurse managers should be armed with knowledge and leadership skills (Gallagher & Tschudin 2010) to ensure, as recommended, a RFE.

An empowering environment is required for nurses to feel valued and efficient in rendering person centred care. An ethical leadership and value supported environment must facilitate nurses in discussions about resident wellbeing and progress and nurses’ own concerns about how to practice person centred care in various challenges in daily practice. In a nurturing environment, transformational leadership can promote nursing skills, causing nurses to shoulder more responsibility in care and to improve knowledge while supporting service users and family (Goethals et al. 2012). For this reason, and emerging from the findings of this review, education and training on PR use and leadership in deciphering between the real necessity for PR or RFE is recommended.

Analysing the reasons for PRs, prevention of falls and agitated behaviour management play a critical role. Managing these issues separately through education, team meetings and environmental modifications can assist eliminate unnecessary PRs and chemical restraints from the residential care settings, and are strongly recommended. Furthermore, in an attempt to dispel the myth that PRs will prevent falls ultimately, facilities should be developing their own falls prevention and management policies (Vassallo et al. 2005). Using PRs to control agitated behaviours can have the opposite effect of increasing agitation. In these cases PRs are ineffective and staff in practice need to be empowered and educated in avoiding PR use in these circumstances, rather should be encouraged to determine the source for the agitation. In contrast, for devices described as enablers that might be required by a resident, consideration of these devices in practice must be treated separately. Any resident that might require a device under
this label should be subjected to a one week trial with strict monitoring by two registered nurses followed by multidisciplinary team discussion for approval. These devices should be documented as an enabling device only. Documentation should cover the indication for the enabling device, safety assurance, consent, care plans to include daily application and removal time, regular assessment pattern and evidence of a fresh trial in 6 months or before if any concern demands an earlier review. Maintaining enabler registers in Irish health care facilities should also be considered, in addition to policy reviews. A complete commitment to the philosophy of personalised care with creative leadership and reorganisation of care environment with a shift in care culture (physical, social and environmental), as recommended by Alzheimer’s society of Ireland (2010) is also supported by the findings of this review.

Management of an acute episode of agitation or aggression is a medical issue and must be viewed as one would any other medical or mental health emergency. In normal circumstances, where a resident is carefully monitored and assessed by registered nurses on a daily basis, there are seldom such unanticipated, acute episodes. In cases, however, should such an event occur (new admission or onset of acute infection) seeking help from family and the medical team is essential rather than relying on pre-set orders. Administration of psychotropic drugs used with the intention of settling an agitated resident should follow a detailed description of the episode, evidence of considered/attempted and failed alternative approaches and the effectiveness of the drug administered, followed by a medical team review. This is important in this context for the reason that any reduction in PRs may increase chemical restraining. Education and training of the nursing staff to provide specialised care environment facilities such as music therapy, simulated presence therapy and aroma therapy is recommended. Psychosocial care of residents in routine practice is found to be effective in calming an agitated residents and can be implemented (Dewing 2010).

**7.2 Implications for research**

Nurses needs to inform their interactions and decision making with their clients in order to improve and to ensure that they are adherent to evidence based nursing practice. An escalating number of research studies in the field of nursing (Polit *et al*. 2001) are evident
of a growing evidence base on which to inform nursing practice. Over more than two
decades numerous studies have shed light on the various aspects of PR use.
Recommendations from these studies facilitated control of PRs only temporarily,
although many countries are still in the developing phase of policies and education on PRs
(Wu et al. 2013, Huang et al. 2014). Only four studies that exclusively explored PR from
the perspectives of nursing staff in residential care settings were identified for inclusion in
this review. While these studies provide a sound evidence base, further similar studies,
from other countries internationally, are required to enhance this evidence and to allow
for further contrasts and comparisons to be made.

While the purpose of this review was on nurses’ experiences, although ethically
challenging, a recommendation arising from this review would also suggest the need for
evaluating PR use in residential settings from the perspectives of those subjected to
restraint. This should be considered in future research proposals on the topic of PR.

Where education and training on PR use in residential care settings is implemented, these
programmes should be evaluated through rigorous research of staff experiences of these
programmes and their influences on the care they may provide.

Finally, nurse resident interaction should be developed significantly to move away from
traditional residential care practice that focused on meeting residents’ physical needs.
Nurse-resident interaction and connectivity can provide residents with dementia a
purpose and meaning in life, especially for those residents who have lost their
communication skills completely, who cannot recognise their own family members, who
cannot perform their basic needs, yet have full physical capacity. More research is needed
on how nursing staff can interact effectively with cognitively intact and impaired residents
to ensure, for them, a purpose and meaning to the remaining time they have left in this
world. By facilitating effective nurse-resident interaction, residents can be given a sense
of being worthy, of self-acceptance and of life adjustment rather than experiencing
despair or mourning for home and family members for the remainder of their lives.
Addressing these issues and enhancing nurse-resident interactions can assist largely in
eliminating the need for PRs (Haugan 2014).
7.3 Limitations

Reflecting upon the conduct of this review, and, as with many research studies, certain limitations require acknowledgement.

As non-English publications were excluded from the review, due to time-constraints and an absence of funding for translation, there is a potential for language bias in this review.

This review was conducted as partial fulfilment of a Masters’ degree and was therefore time based and unfunded. Although, I do not view this majorly impacting on or influencing the reviews’ findings, an increased time-frame may have allowed for other activities; for example, contacting authors in the field and allowing time for their responses to identify additional, potentially eligible studies or expanding the review beyond nurses experiences and perhaps including other healthcare professionals as well. As there was only small number of studies included, the results needs to be interpreted with caution. The participants’ (nurses, practical nurses, trained nurse aids and untrained nurse aids) in the included studies were of varying educational qualifications as well as generalised use of nursing staff; this has the potential to impact on the reviews’ findings. While conducting the thematic analysis, few themes presented that had contrasting opinions within them. This led to some challenges in interpreting the themes from the raw data. To overcome this, however, the raw data were read several times going back and forth correcting and re-correcting them until clarity was achieved. This compounded the time taken to achieve this aspect of the review process. Finally, the limited time frame and researcher’s limited experience in doing systematic review may impact, to a certain degree, on the trustworthiness of the reviews’ conduct. To combat these weak points, however, strict adherence to college guidelines was followed and the expertise of my academic supervisor was effectively utilised.

8.0 Dissemination of findings

As evidence based nursing is mandatory in health care, sharing and disseminating research findings is equally mandatory not only to contribute to quality but also to as an
expectation of residents, staff and all users (Bettany-Saltikov 2012). The findings of this review are of contemporaneous relevance in residential care practice where a RFE, as an expected standard, has yet to be achieved.

A full copy of the final corrected thesis will be presented to the Director of Nursing at my place of employment and the findings will be highlighted to circulate among the different units at the local level. I also intend to present the findings to the Irish Gerontological Society.

Lenus Repository is the HSE’s important website providing easy access to employees and students and has a collection of nationally conducted studies available. Therefore, I am intending to submit these research findings to the Lenus repository. I will additionally present the findings of this review to the Alzheimer Society of Ireland as they strive for older adults’ wellbeing. To disseminate the findings on a more international scale, I plan to submit the review for publication in a suitable healthcare journal such as the International Journal of Nursing Studies or an open access journal such as Journal of Geriatrics or Bio Med Central Geriatrics.

Finally, I plan to disseminate the findings of this review at national and international conferences, including the TCD Annual School conference 2016.
REFERENCES


Evidence for Policy and Practice Information and Co-ordinating Center (EPPI) (2007) EPPI centre methods for conducting systematic reviews.


Health Services Executive (2010). Policy on the Use of Physical Restraints in Designated Residential Care Units for Older People. Dublin: Health Services Executive.


Health Information and Quality Authority (2009). National Standards of Residential Care Settings for Older People. Dublin, Health Information and Quality Authority.


