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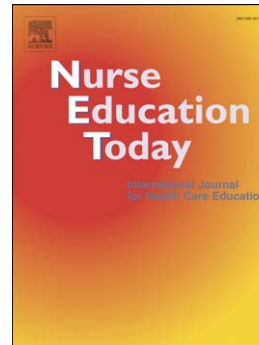
The evaluation of undergraduate nurses' attitudes, perspectives and perceptions toward older people

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**THE EVALUATION OF UNDERGRADUATE NURSES' ATTITUDES, PERSPECTIVES AND PERCEPTIONS  
TOWARD OLDER PEOPLE**

Running title: Undergraduate nurse attitudes toward older people

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**ABSTRACT**

*Objectives:* This literature review was undertaken to evaluate undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people. The objectives were to (1) identify if undergraduate nurses hold positive or negative attitudes and perspectives toward older people and perceptions of working with older people, and (2) determine if positive attitudes, perspectives and perceptions can be established, maintained and improved with curriculum activities.

*Design:* Literature review

*Data Sources:* For the period 2008–2013, the literature search included an electronic database search (Medline, CINAHL, Healthsource/Academic Edition, PsycINFO and PubMed) and a hand search of reference lists of the papers included.

*Results and Conclusions:* The analysis of 32 studies revealed that undergraduate nurses' attitudes, perspectives and perceptions are positive and it is recommended this be the starting point for the development of curriculum activities and future research to maintain and improve this result. Finally, the limitations of recent studies are identified and a research agenda for future studies proposed.

**KEY WORDS**

nursing education, nursing student attitudes, nursing student preference, older adults, gerontological nursing, aged care, baccalaureate nursing programs, ageism

## INTRODUCTION

Nurses are key health professionals involved in the frontline care of older people. This fundamental role has even more significance as the crisis of the global ageing population looms. The World Health Organization (2012) predicted that the proportion of people aged over 60 years will increase from 11% to 22% between 2000 and 2050. Aligned with this increase in the ageing population will be a greater demand for nursing care (Plonczynski et al., 2007). The reasons for this are older adults have more hospitalisation days (Gilje et al., 2007) and use the largest portion of health services (Institute of Medicine, 2008).

Undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people is of international interest to the nursing profession, governments and service providers due to the shortage of qualified nurses (Auerbach et al., 2013) and an even greater shortage of nurses interested in gerontology as a specialty (Neville et al., 2014). Additionally, one's attitude, perspective or perception can impact on the quality of care (Flood and Clark, 2009). Negativity can reduce an older person's sense of wellbeing and recovery whereas positivity has the likelihood of ensuring better health outcomes (Levy et al., 1999).

Attitudes, perspectives and perceptions have been a topic of interest for many years with studies coming from across the world (King et al., 2013). For the purpose of this review the key terms are defined as: attitude - a settled opinion or way of thinking; behaviour reflecting this; perspective - a mental view of the relative importance of things; and, perception - an interpretation or impression based on one's understanding of something (The Oxford Dictionary, 1999).

The aim of this paper was to evaluate the attitudes and perspectives of undergraduate nurses toward older people and perceptions of working with older people by synthesizing findings from recently published individual papers. Two research questions were addressed: (1) What type of attitudes and perspectives do undergraduate nurses hold toward older people and what are their perceptions of working with older people? (2) Is it possible for positive attitudes, perspectives and perceptions to be established, maintained and improved with curriculum activities? Each of these questions will be answered before proposing a research agenda for future studies to advance the identified issues.

### **METHODS**

The search strategy involved peer-reviewed, English language, research studies (2008–2013). Databases included Medline, CINAHL, Healthsource/Academic Edition, PsycINFO and PubMed. The search syntax and limiters were (aged care OR nursing homes OR care homes OR elderly) AND (undergraduate nurse OR nursing student) AND (attitudes OR perspectives OR perceptions OR views OR thoughts OR values). Yielded and reviewed papers are detailed in Table 1. Both authors were involved in the literature search, study selection and data extraction. Inclusion criteria were both qualitative and quantitative studies. The authors conducted a hand search of the reference lists of the 39 retrieved papers to determine if there were other relevant papers that fitted the inclusion criteria. Five studies were extracted using the reference list hand search with two found suitable as outlined in Table 1. Studies were excluded if they focused on perceptions or attitudes toward a career in gerontology. Overall, we discuss 32 studies.

INSERT TABLE ONE ABOUT HERE.

## **RESULTS**

There have been two recent reviews in this area but one (Koh, 2012) lacked conceptual clarity by mixing the terms of attitudes, perspectives and perceptions, and the other (Liu et al., 2013) being a systematic review, excluded qualitative studies. However, in consideration of the scope, strengths and limitations of Koh (2012) and Liu et al. (2013), we determined that at least a five year review period would be appropriate to inform our questions. In reviewing this literature, we encountered a number of problems. The first was there was often no definition of the concepts of attitude, perspective and perception and these were interchanged throughout individual papers. The second issue was the intertwining examination of attitudes, perspectives and perceptions of nursing the older person in both the general and specialist gerontological fields. Lastly, with the reporting of attitudes, perspectives and perceptions there was a mix of studies which included an intervention, for example, a curriculum activity, and its effects and other studies that did not. Therefore, as can be seen in Table 2, we have refined this area of interest by categorising our results as Part A) Research that tested the impact of curriculum activity on attitudes, perspectives and perceptions, Part B (i) Research that studied attitudes, Part B (ii) Research that studied perspectives and, Part B (iii) Research that studied perceptions. Also included in Table 2 are methodological details and findings to aid in an overall critique of the studies. Nine instruments were used to measure the attitudes, perspectives and perceptions of undergraduate nurses. Kogans' Attitudes Toward Old People scale (Kogan, 1961) in its' pure, translated or revised form was the most popular choice. Table 3 outlines the psychometric properties of the different instruments used by the authors of the studies reviewed in this paper.

INSERT TABLES TWO and THREE ABOUT HERE.

## **DISCUSSION**

In relation to the first research question, it can be seen from Table 2 that in the majority of studies reported, undergraduate nurses hold positive attitudes and perspectives toward older people and perceptions of working with older people. One exception was Bernardini Zambrini et al. (2008) who found nursing students held the least positive attitudes in a group of health science students. This study used the Aging Semantic Differential (Rosencranz and McNevin, 1969) and considered scores lower than 4 as indicating positive attitudes. Nursing scored an average of 4.31 for all the Aging Semantic Differential variables and it was suggested that societal and personal influences and the lack of exposure to older people could be the reasons for this finding. Another exception was Xiao et al. (2013) which had mixed results where Australian students demonstrated a significantly higher level of prejudice and separation compared with Chinese students. Interestingly, Australian students had significantly higher levels of appreciation and agreement with the statement 'Elderly people live mostly independently' than did the Chinese students. Xiao et al. (2013) postulated that this may have been a reflection of the different cultural backgrounds. Placing these two studies aside, overall it is a pleasing outcome given the common notion that undergraduate nurses may have a negative attitudes, perspectives or perceptions (Liu et al., 2013). What this means is the starting point has been established for ongoing work to maintain and improve these positive attitudes and perspectives toward older people and perceptions of working with older people.

Findings from the studies listed in Table 2 will be discussed further to answer the second research question - is it possible for positive attitudes, perspectives and perceptions to be



established, maintained and improved with curriculum activities? In order to simplify this complex topic for knowledge translation applicability, the discussion will focus on the factors of personal experiences, gender, age, culture, gerontological nursing theory and clinical placements. Evidence-based curriculum activities from Part A of Table 2 have been matched to these factors to assist in the establishment, maintenance and improvement of positive attitudes, perspectives and perceptions.

Personal experiences with older people whether it is within families, communities or in the workplace can be linked to either positive or negative attitudes, perspectives and perceptions toward older people. For Celik et al (2010), a lack of understanding about the ageing process and poor experiences with ageing family members had a negative influence. This was attributed to witnessing the decline of older people living in the home and the burden of family caregivers. Whereas, Rejeh et al. (2011) determined a history of caring within the family had a positive influence. Evers et al. (2011) found positive experiences with older people in the students' personal lives where they saw older people as 'normal' and felt they should receive equal treatment was contrasted with feeling sorry for older people in the clinical environment and frustrating to work with. Quite a few researchers found that work experience with the older person seemed to be a positive influence (Chen and Walsh, 2009; Evers et al., 2011; Goncalves et al., 2011; Henderson et al., 2008; Holroyd et al., 2009; Runkawatt et al., 2013; Swanlund and Kujath, 2012; Xiao et al., 2013). Personal and work experiences may be improved by targeting educational activities where positive socialisation experiences with older people occur. Walsh et al. (2008) and Chen and Walsh (2009) successfully used an art activity delivered as a creative-bonding intervention and a friendly visit where students were encouraged to use better interpersonal communication skills and memorabilia to enhance their interactions with older people thereby producing a positive impact on attitudes.

Gender and age were also identified as influencing factors. Overall, males were less positive than females (Bernardini Zambrini et al., 2008; Pan et al., 2009; Usta et al. 2012). A reason offered by the researchers was culturally based, where men are not expected to be the carers for older people. Older students had more positive attitudes (Ayoglu et al., 2013; Goncalves et al., 2011; Holroyd et al., 2009; Runkawatt et al., 2013; Williams et al., 2007) and this was attributed to more mature views about the reality of ageing and experience with older people. However, Xiao et al. (2013) went against this trend finding that younger Chinese students had more positive attitudes and explained this as the students not being aware of working conditions such as restricted resources and lower pay in the aged care industry. From an educational point of view, special consideration and sensitivity needs to be made for younger students and males when addressing ageing issues. Henry et al. (2011) developed and tested a simulated learning activity called the 'Aging Game' where students played the role of an older person with common physical disabilities in various scenarios and were then required to reflect on this experience. Their results showed greater familiarity with what it feels like to be an older person with increased understanding and empathy.

Researchers often attributed traditional cultural values of obedience, respect and providing protection for the older person usually found in non-Western countries for positive attitudes of undergraduate nurses (Celik et al., 2010; Pan et al., 2009; Rejeh et al., 2011; Usta et al., 2012; Xiao et al., 2013; Zverev, 2013). Further discussion considered the importance of maintaining these values in light of the changes occurring in traditional multi-generational families. Moving away from extended families and more independent lifestyles of young people was viewed as having an impact on the value placed on the older person (Usta et al., 2012; Xiao et al., 2013). This is an important issue for consideration in curriculum development and implementation. The virtual learning tool developed by Edwards et al. (2008) provided a platform to include learning activities in relation to cultural values. The

project applied aged care theory to authentic situations in a variety of settings to develop competencies in aged care. This was facilitated by reflection and self-assessment. Students reported that they enjoyed this method of learning and many said it made them think more deeply and positively about older people.

Undergraduate nursing education has been criticised for not doing enough to mitigate poor attitudes (Rejeh et al., 2011). A number of academics have stated that course work about older people is essential to acquire knowledge, understanding, skills and to dispel myths (Bleijenberg et al., 2012; Flood and Clark, 2009; King et al., 2013; Runkawatt et al., 2013; Usta et al., 2012; Vefikulucay, 2008). King et al. (2013) found a stand-alone gerontological nursing course produced positive attitudes toward older people as did Baumbusch et al. (2012) and Rodgers and Gilmour (2011) with an integrated adult/older adult course. However, Holroyd et al. (2009) found no significant difference across the student cohorts (by year) in an integrated four-year Baccalaureate program with a drop in positive attitudes and rise in negative attitudes at beginning of second and fourth years. Through analysis of the curriculum, it was noted this result may have been a reflection of educators with limited gerontological knowledge, and recent clinical placements in settings such as long term care, acute medical and surgical where the focus was on praxis and not specifically care of older people (Holroyd et al., 2009). These claims are supported by others (Goncalves et al., 2011; Runkawatt et al., 2013; Xiao et al., 2013).

Quality clinical placements are important to improve and maintain undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people (King et al., 2013; Rodgers and Gilmour, 2011). In an innovative and comprehensive study by Brown et al. (2008) it was found that enriched clinical environments allowed students to develop a person centred focus about 'care' rather than 'surviving' their clinical placements with older people. Enrichment involved improvement of the learning environment by

focusing the student's attention and efforts with learning objectives, and the nursing staff preparedness to welcome, orientate and work with the students. Through this process, students were able to feel comfortable to question interventions. Staff were able to communicate their enthusiasm for nursing older people were seen as valued experts with appreciation for the environmental and resource constraints placed on them. During final clinical placements, whether in acute or aged care environments, students were able to reflect on their experiences and viewed older patients as people. It was found that mentorship from expert gerontological nurses and enriched environments ensured positive clinical placement experiences for students and a change in perceptions of working with older people for the better.

A concerning limitation was that most of the reviewed studies did not define the concept of interest and the different terms of 'attitude', 'perspective' and 'perception' were sometimes used interchangeably. Additionally, conceptual clarity was difficult to determine when attitudes, perspectives or perceptions were intertwined with nursing older people generally and choosing aged care as a career option. This makes it difficult to interpret and accept the findings and make comparisons with other studies.

Generalisation of results was limited by the domination of a single study sites, the use of convenience sampling, cross-sectional studies and small sample sizes. Kogan's Attitudes Toward Old People scale (Kogan, 1961) or some variation or translation has been utilised in many of the reviewed studies. This instrument, while consistently used over the past 50 years has been criticised as not reflecting the current social context (King et al., 2013; Rodgers and Gilmour, 2011; Runkawatt et al., 2013). Societal views toward ageing, advancing medical technologies and social and community environments have changed, therefore Kogan's original instrument needs to be reviewed, revised and validated to provide reliable and

contemporary information reflecting today's undergraduate nurses' attitudes toward older people.

### **A RESEARCH AGENDA**

The personal and external multi-faceted influences on the undergraduate nurse attitudes, perspectives and perceptions toward older people and working with older people makes it clear which issues to prioritise for future research. More precise identification of age cut-offs, for example < 25 years of age and > 25 years of age would be useful to help with the refinement of curriculum activities. Quite a number of the studies discussed here only had female representation or a few males in the samples making it difficult to get an accurate determination of the influence of gender. This is not surprising given the ratio of females to males enrolled in undergraduate nursing courses generally. Therefore further research which targets male students alone or bigger sample sizes would be beneficial. The influence of culture in the nursing care of older people is shaping up as a fascinating area of research. The positive orientation of Eastern cultures could be incorporated into Western nursing curricula and work done in Eastern cultures to counteract the current social pressures that are disenfranchising the role of older people in society. Whether or not students have personal and work experience with older people has delivered conflicting results, however these are important factors and clearer definition of what is meant by these terms would be a good starting point. Other questions are, in what year of study is gerontological nursing theory and practice introduced for the best impact, how much, what type and who delivers it? Most researchers have called for delivery by expert gerontological nurses but how to recruit and retain such persons to faculty are difficult issues to address. Additionally, the perpetual problem of whether to have integrated or stand-alone exposure of gerontological nursing needs to be resolved. Clinical placements present a whole gamut of research questions to be answered. Which type of setting such as long term care or acute care is best for students,

what preparation and clinical supervision do students need are just some suggestions of where to start. As well as research addressing the substantial number of methodological limitations identified previously through better definition and design, there is an urgent need for more contemporary, psychometrically reliable and valid tools particularly for assessing attitudes. Finally, the development, implementation and evaluation of innovative curriculum activities to increase the knowledge, attitudes and practices of undergraduate nurses must be continued.

## **CONCLUSION**

In this paper, we have evaluated undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people. Current evidence tells us that the answer is positive and students are responsive to innovative teaching strategies. This is the point from which to conduct further research to maintain and improve these results. It has been established that attitudes, perspectives and perceptions are related to a variety of multi-faceted factors. These factors include age, gender and culture as well as personal, work and educational experiences. This is useful information for faculty involved in curriculum design and for governments and industry partners with an interest in growing the gerontological nursing workforce. An extensive research agenda has been proposed to move this field of study forward. This agenda proposes further exploratory work with more rigorous designs so that with the ultimate goal of better nursing care for older people is achieved.

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Table 1: Strategy for literature search and process of rejection and acceptance of papers for inclusion in the literature review.

<b>Database</b>	<b>Total number of papers reviewed</b>	<b>Reduction following title and abstract review</b>	<b>Duplicates removed</b>	<b>Papers retrieved and examined</b>	<b>Papers that fit inclusion criteria</b>
CINAHL	4	1	0	4	4
Medline	4	2	0	2	2
PubMed	646	24	7	18	16
PSYCH INFO	1	0	0	0	0
Healthsource/Academic Edition	78	9	0	10	8
Hand Search	5	0	0	5	2
<b>TOTAL</b>	738	36	7	39	32

Table 2: Research of undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people: Methodological details and findings

Author/s and year of publication	Country	Aim	Method	Tool	Number of nursing students and year of nursing program if reported	Number of Sites	Attitude, perspective and perception findings
Part A: Research that tested the impact of curriculum activity on attitudes, perspectives and perceptions (n = 9)							
King et al. (2013)	United States of America	Test a stand-alone course and clinical rotations	Longitudinal, mixed methods	KATOP	80 Junior Year	1	Positive
Baumbusch et al. (2012)	Canada	Test an integrated introductory course	Pre/Post-test	PCOP	43 1 <sup>st</sup> Year	1	Positive
Rodgers and Gilmour (2011)	New Zealand	Test an integrated theoretical and clinical program	Pre/Post test	KATOP	56 1 <sup>st</sup> Year	1	Positive
Henry et al. (2011)	United States of America	Test the Aging Game	Mixed methods	ASD	127	1	Positive
Holroyd et al. (2009)	Canada	Test an integrated program	Cross-sectional, comparative	KATOP	197 1 <sup>st</sup> to 4 <sup>th</sup> Years	1	No significant difference
Chen and Walsh (2009)	Taiwan	Test a creative-bonding intervention and a friendly visit	Randomised Controlled Trial	RKATOP (Mandarin Chinese version)	194 4 <sup>th</sup> Year	1	Positive



Edwards et al. (2008)	Australia	Test a virtual learning environment	Qualitative	Study specific questionnaire	42	1	Positive
Walsh et al. (2008)	United States of America	Test a creative-bonding intervention and a friendly visit	Randomised Controlled Trial	RKATOP	22 Senior Year	1	Positive
Brown et al. (2008)	United Kingdom	Test 'enriched' environments of learning and care	Longitudinal, mixed methods	PWOP Focus groups Case studies	718 1 <sup>st</sup> & 2 <sup>nd</sup> Years	4	Positive
Part B (i): Research that studied attitudes (n =20)							
Xiao et al. (2013)	Australia China	Compare attitudes	Cross-sectional, comparative	NSATE (English and Chinese version)	262 Australian 204 Chinese 1 <sup>st</sup> Year	2	Mixed
Runkawat et al. (2013)	Sweden Thailand	Compare attitudes	Cross-sectional	KATOP	241 Thai 299 Swedish 1 <sup>st</sup> to 4 <sup>th</sup> Years	2	Positive
Zverev (2013)	Malawi	Assess attitudes	Cross-sectional	KATOP	305 1 <sup>st</sup> to 4 <sup>th</sup> Years	1	Positive
Matarese et al. (2013)	Italy	Assess Italian version of KATOP	Cross-sectional	KATOP	1637 1 <sup>st</sup> to 3 <sup>rd</sup> Years	2	Positive
Ayoglu et al. (2013)	Turkey	Assess attitudes	Cross-sectional	KATOP (Turkish version)	339 1 <sup>st</sup> to 4 <sup>th</sup> Years	1	Positive
Swanlund and Kujath (2012)	United States of America	Assess attitudes	Cross-sectional	ATOP	50 1 <sup>st</sup> to 4 <sup>th</sup> Years	1	Positive
Bleijenbergh et al. (2012)	The Netherlands	Compare attitudes	Longitudinal	KATOP (Dutch version) ASD	113 1 <sup>st</sup> , 4 <sup>th</sup> Years	1	Positive

				(Dutch version)			
Usta et al. (2012)	Turkey	Assess attitudes	Cross-sectional	AAS	145 1 <sup>st</sup> to 4 <sup>th</sup> Years	1	Positive
Erdemir et al. (2011)	Turkey	Assess Turkish version of KATOP	Cross-sectional	KATOP	177	1	Positive
Evers et al. (2011)	Canada	Examine attitudes	Mixed Method	Semi-structured interviews	51 4 <sup>th</sup> Year	1	Positive
Goncalves et al. (2011)	Portugal	Assess attitudes	Cross-sectional	ATHOP	141	1	Positive
Kucukgucu et al. (2011)	Turkey	Assess Turkish version of KOP	Cross-sectional	KATOP	237	1	Positive
Celik et al. (2010)	Turkey	Determine attitudes	Qualitative	Semi-structured interviews	42 2 <sup>nd</sup> Year	1	Positive
Wang et al. (2010)	Taiwan	Assess attitudes	Cross-sectional	KATOP	95 1 <sup>st</sup> Year	1	Positive
Yen et al. (2009)	Taiwan	Assess Chinese version of KATOP	Repeated measures	KATOP	84 Sophomore to Senior	1	Positive
Lambrinou et al. (2009)	Greece	Assess attitudes	Cross-sectional	KATOP (Greek version)	277 First and Final Years	1	Positive
Wang et al. (2009)	Taiwan	Assess attitudes	Cross-sectional	KATOP	84	1	Positive
Henderson et al. (2008)	Australia	Assess attitudes	Cross-sectional	NSATE	262 1 <sup>st</sup> Year	1	Positive
Bernardini Zambrini et al. (2008)	Spain	Assess attitudes	Cross-sectional	ASD	57 Final Year	1	Negative
Koren et al. (2008)	United States of America	Assess attitudes	Cross-sectional	AGED Inventory	200 First to Fifth Semester	1	Positive

Part B (ii): Research that studied perspectives (n =2)							
Rejeh et al. (2011)	Iran	Explore perspectives	Qualitative	Semi-structured interviews	25 Senior Level	2	Positive
Flood and Clark (2009)	United States of America	Assess perspectives	Cross-sectional	PCOP	110 Senior Level	1	Positive
Part B (iii): Research that studied perceptions (n =1)							
Pan et al. (2009)	Taiwan	Assess perceptions	Cross-sectional	PWOP	362 1 <sup>st</sup> , 3 <sup>rd</sup> & 4 <sup>th</sup> Years	1	Positive

PCOP = Perspectives on Caring for Older Patients Scale (Burbank et al., 2002); KATOP = Kogans' Attitudes Toward Old People scale (Kogan, 1961); KATOP (Turkish version: Ugurlu et al., 2011); KATOP (Greek version: Lambrinou et al., 2005); KATOP (Dutch version: Beullens and Martens, 2000); ASD = Aging Semantic Differential (Rosencranz and McNevin, 1969); ASD (Dutch version: Beullens and Martens, 2000); AGED Inventory = Age Group Evaluation and Description Inventory (Knox et al., 1995); RKATOP = Revised Kogans' Attitudes Toward Old People scale (Hilt and Lipschultz, 1999); RKATOP (Mandarin Chinese version: Chen and Walsh, 2009); PWOP = Perceptions of Working with Older People Scale (Nolan et al., 2006); NSATE = Nursing Students' Attitudes Towards the Elderly Questionnaire (Johnson, 1992); NSATE (Chinese version: Xiao et al., 2013); ATOP = Attitudes Toward Old People questionnaire (Tuckman and Lorge, 1953); ASS = Ageism Attitude Scale (Vefikulucay, 2008); ATHOP = Attitudes Towards Hospitalized Older People (McLafferty, 2005).

Table 3: Psychometric properties of instruments used to measure undergraduate nurses' attitudes, perspectives and perceptions toward older people

<b>Instrument</b>	<b>Author/s that established psychometric properties for instruments used in the studies reviewed in this paper</b>	<b>Content Validity Index (CVI)/Content Validity /Construct Validity</b>	<b>Reliability (Cronbach's Alpha)</b>
Kogans' Attitudes Toward Old People scale (KATOP)	Kogan, 1961	Not reported	0.83
KATOP (Chinese version)	Yen et al., 2009	CVI = 0.92	0.82
KATOP (Italian version)	Matarese et al., 2013	CVI = 0.81	0.76
KATOP (Turkish version)	Erdemir et al., 2011	CVI = 0.94	0.84
KATOP (Turkish version)	Kucukguclu et al., 2011	Construct validity reported	0.89
KATOP (Turkish version)	Ayoglu et al., 2013	Not reported	0.82
KATOP (Greek version)	Lambrinou et al.,	Not reported	0.80

version)	2005		
KATOP (Dutch version)	Beullens and Martens, 2000	Not reported	0.74
Perspectives on Caring for Older Patients Scale (PCOP)	Baumbusch et al., 2012	Not reported	0.80
Age Group Evaluation and Description Inventory (AGED Inventory)	Knox et al., 1995	Content and construct validity reported	0.75
Aging Semantic Differential (ASD)	Henry and Ozier, 2011	Not reported	0.91
Revised Kogans' Attitudes Toward Old People scale (RKATOP)	Hilt and Lipschultz, 1999	Not reported	0.79
RKATOP (Mandarin Chinese version)	Chen and Walsh, 2009	Face validity reported	0.88
Perceptions of Working with Older People Scale (PWOP)	Pan et al., 2009	Not reported	0.73
Nursing Students'	Johnson, 1992	Content validity	Reported as reliable

Attitudes Towards the Elderly Questionnaire (NSATE)		reported	but not detailed
NSATE (Chinese)	Xiao et al., 2013	Not reported	0.79
Attitudes Toward Old People questionnaire (ATOP)	Tuckman and Lorge, 1953	Not reported	0.62
Ageism Attitude Scale (ASS)	Vefikulucay, 2008	Not reported	0.80
Attitudes Towards Hospitalized Older People (ATHOP)	McLafferty, 2005	Not reported	0.70

**Research Highlights**

- With the ageing of the world's population, undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people is of international interest to the nursing profession, governments and service providers because of poor workforce recruitment and the complexity of nursing care required for older people.
- This review showed that undergraduate nurses' attitudes and perspectives toward older people and perceptions of working with older people are positive and a research agenda to move this area of research forward has been proposed.
- This review provided a comprehensive evidence base to support nursing educators involved in curriculum design and for governments and industry partners with an interest in growing the gerontological nursing workforce.