

## Anxiety and categorisation effects in student nurses' attitudes towards young and older patients: A dual pathway model



Esther van Leeuwen\*, Misha Oosterhuis, Sofie Ruyter

Department of Social and Organisational Psychology, Leiden University, the Netherlands

### ARTICLE INFO

Article history:  
Accepted 26 January 2016

Keywords:  
Student nurses  
Anxiety  
Geriatric care  
Nurse education

### SUMMARY

**Background:** Student nurses often have a negative attitude towards older patients due to negative stereotypes, which may explain their reluctance to work in geriatric care.

**Objectives:** The aim of this study was to investigate a dual effect (direct and indirect via anxiety) of patients' age on student nurses' attitudes towards their patients.

**Design:** Quantitative survey study with 2 between-subjects conditions (patient age: young patients vs. older patients; both  $n$ 's = 52).

**Setting:** Two schools for higher vocational education in the Netherlands.

**Participants:** 104 student nurses between the ages of 16–30 in the third or fourth year of their nursing education ( $M_{\text{age}} = 21.58$ ,  $SD = 2.22$ ; 93 women).

**Results:** Attitudes towards older patients were more negative than those towards young patients. Older patients also elicited less anxiety compared to young patients, and anxiety had a weaker relationship with attitudes towards older patients than attitudes towards younger patients. Attitudes towards younger patients, but not towards older patients, were depressed by anxiety.

**Conclusions:** Older patients generate more negative attitudes among student nurses, but can also improve attitudes indirectly by lowering intergroup anxiety. Older people may be therefore be especially suitable as a patient group to receive care from young nurses in training, who can mature in their profession without being anxious over making a wrong impression.

© 2016 Elsevier Ltd. All rights reserved.

The growing size of the older population stretches health care systems to their limits. Older people are more likely to have health problems and are disproportionately represented in hospitals and other care facilities (World Health Organization, 2016). Parallel to the growing older population is the increasing demand for health care professionals that are willing to work with the older. And therein lies a problem: because gerontological nursing is viewed as unchallenging and attitudes towards older are often negative, recruitment and retention of nurses in this field is difficult (Brown et al., 2008). However, there may be a bright spot in the sense that, especially among a relatively unexperienced population like student nurses, caring for older patients raises less anxiety than caring for patients their own age. In the current study, we compared student nurses' attitudes and anxiety towards young and older patients. We examined the notion that, whereas older patients engender a more negative attitude than young patients due to the large age difference with student nurses, much of this effect

is counteracted by the fact that older patients elicit less anxiety than young patients.

### Age as a Social Category

Age is an important dimension on which we categorise others as well as ourselves (North and Fiske, 2012). In fact, age has been proposed as the most important dimension of interpersonal categorisation (Jönson, 2013). Although multiple stereotypes of older people exist which become salient in different contexts, overall attitudes towards older people tend to be negative (Adams-Price and Morse, 2009; Jönson, 2013). In fact, Liu et al. (2013) argued that healthcare professionals are particularly susceptible to ageist stereotyping due to their repeated exposure to ill and infirm older people. They often view older people as unproductive, depressing, and sickly, and believe that cognitive impairment is a natural consequence of aging. This may explain why student nurses are reluctant to pursue a career in geriatric care. Programmes aimed at improving students' attitudes typically focus on providing better education and establishing more contact with older patients. However, these programmes are met with mixed success (Bousfield and Hutchison, 2010; Liu et al., 2013; Nochajski, Waldrop, Davis, Fabiano,

\* Corresponding author at: Department of Social and Organisational Psychology, Leiden University, Wassenaarseweg 52, 2333 AK, the Netherlands.  
E-mail address: [E.A.C.van.Leeuwen@fsw.leidenuniv.nl](mailto:E.A.C.van.Leeuwen@fsw.leidenuniv.nl) (E. van Leeuwen).

& Goldberg, 2009; Williams et al., 2007). The root of the problem may therefore not lie in students' limited knowledge of or exposure to older patients, but in the fact that they are an outgroup that is simply very different from their ingroup of young nursing staff on a number of dimensions.

By definition, patients belong to a different social group than their caregivers. Patients are physically or mentally impaired and rely on help, which is provided by their able-bodied caregivers. However, compared to student nurses, older patients could be seen as a 'double outgroup': they are patients *and* belong to a different generation than their caregivers. In contrast, young patients may be seen by student nurses as both outgroup members (i.e., patients), and ingroup members (i.e., of similar age). Literature on crossed categorisations shows that people who are seen as both ingroup and outgroup members (mixed groups) are evaluated more positively than people who are seen as double outgroup members (Crisp et al., 2006). On top of that, the general stereotype of older people is more negative than that of younger people (North and Fiske, 2012). We therefore expected that student nurses' attitudes towards their patients would be affected by the age category of these patients:

**Hypothesis 1.** Student nurses will have a more negative attitude towards older patients than towards young patients.

### Intergroup Anxiety

One variable that could further affect nurses' attitudes towards their patients is intergroup anxiety. Intergroup anxiety is a type of anxiety that people experience when anticipating or engaging in intergroup interaction (Stephan, 2014; Stephan and Stephan, 1985). It refers to negative outcome expectancies - e.g., fear of negative evaluations, or fear of being misunderstood (Bousfield and Hutchison, 2010; Vorauer et al., 2000). Research has shown that intergroup anxiety leads to more negative attitudes towards the outgroup (Bousfield and Hutchison, 2010; Greenland et al., 2012; Islam and Hewstone, 1993). Research also found that young people's anxiety in dealing with older people suppressed their willingness to help older people (Bousfield and Hutchison, 2010; Van Leeuwen and Jongh, 2015).

Intergroup anxiety is typically measured in a general way, by assessing the experience of a set of emotions such as anxious, apprehensive, and worried (Bousfield and Hutchison, 2010; Stephan, 2014). Greenland et al. (2012) proposed an anxiety measure that focuses more specifically on concerns about how one appears to outgroup members (self-anxiety), and concerns about how one is being treated by those outgroup members (other-anxiety). In the context of nursing students, self-anxiety appears particularly relevant. Clinical experiences can be stressful for nursing students, who have relatively little healthcare experience (Koh, 2012). An important part of this stress may stem from their anxiety over how they appear when executing their profession. Good and respectful treatment of patients is important regardless of their age or their ailment, but beginning students may be anxious of making a mistake, or fear that they inadvertently express inappropriate emotions and behaviours (e.g., when confronted with an unattractive physical ailment).

Interestingly, it can be argued that it is the group of young patients that is more likely than the group of older patients to trigger anxiety among student nurses. Concerns about being evaluated are higher when dealing with people who are somehow related to the self. People compare themselves predominantly with others that are similar to them - i.e., comparable others (Suls et al., 2002). As a result, they care more about what their friends and peers think of them more than what a complete stranger who is three or four times their age thinks of them. Indeed, criticism from ingroup members is taken to heart much more than the same criticism from outgroup members (Hornsey et al., 2002). Given that young patients, because they share

the same age category, are closer to student nurses than older patients, it could be expected that student nurses experience more anxiety when dealing with young patients compared to older patients:

**Hypothesis 2.** Student nurses will report more anxiety in dealing with young patients than in dealing with older patients.

Prior research on the anxiety-attitude relationship showed a negative relationship between intergroup anxiety and attitudes towards the outgroup (e.g., Bousfield and Hutchison, 2010; Greenland et al., 2012). However, we expected anxiety to play a weaker role in determining student nurses' attitudes towards older patients compared to young patients. That is, we not only expected that older patients would engender less anxiety, but also that anxiety related to interacting with older patients would be a weaker predictor (if any) of student nurses' attitudes towards these patients. The reason for this is twofold. First, older patients are more clearly outgroup than young patients. Older patients are a double outgroup, and one that is also subject to a range of negative stereotypes (North and Fiske, 2012), whereas young patients share at least one salient category membership with student nurses: their age. Attitudes towards older patients may therefore be more strongly marked by the fact that they so clearly constitute the outgroup than attitudes towards young patients. By comparison, other factors such as anxiety should play a weaker role. Second, the fact that people care more about the opinions of similar others than those of different others should suppress the anxiety - attitude relationship. Self-anxiety in the current context has as much to do with how patients think of a student nurse as with how the student nurse thinks of him/herself (cf. Greenland et al., 2012). Since older patients' opinions were expected to matter less to student nurses than young patients' opinions, anxiety in dealing with older patients should also be less strongly related to their attitudes towards these people. We therefore expected that the effect of anxiety on attitude would be moderated by patients' age:

**Hypothesis 3.** Intergroup anxiety will be negatively related to student nurses' attitudes towards young patients, but not or to a weaker extent for older patients.

We now have an interesting situation in which student nurses were expected to have a more *negative* attitude towards older patients compared to young patients due to the fact that the former represent a double outgroup and the latter a partial ingroup, and also to have a more *positive* attitude towards older patients because older patients engender less anxiety than young patients, and anxiety depresses students' attitude towards their patients. This leads to a dual pathway model which is depicted in Fig. 1. In this moderated mediation model, the independent variable patient age simultaneously moderates its own indirect effect (via anxiety) on attitude towards patients:

**Hypothesis 4.** The effect of patients' age on student nurses' attitude towards their patients will be mediated by anxiety, but only for young patients and not for older patients.

### Nursing Education in the Netherlands

This study was conducted among a sample of student nurses in the Netherlands. These students were enrolled in a school for higher

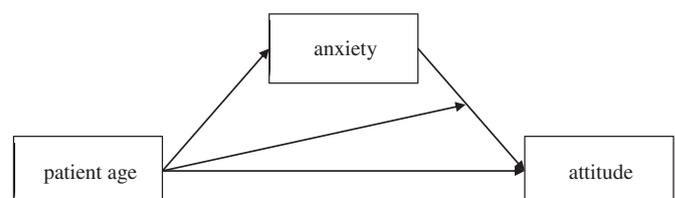


Fig. 1. Overview of hypotheses.

vocational education, which prepares students during a four-year educational programme for a professional career as a nurse. The education combines theory with practical experience acquired during various internships, which start in the second year of the programme. Students are qualified upon completion to work in all EU member states in, e.g., psychiatric or mental health care, geriatric care, or addition care. All participants in our research were in their third year of the four-year programme, and had experience with working with older patients.

## Method

### Participants

A total of 108 student nurses participated in this study. Although there is no universally agreed boundary to define 'young' students, in this study we used an age range of 16–30. As a result, four people were omitted from further analyses (aged 32, 43, 44, and 48)<sup>1</sup>, leaving 104 students as the final sample ( $M_{\text{age}} = 21.58$ ,  $SD = 2.22$ ; 93 women).

### Design

We employed a between-subjects design with two conditions (patient age: young patients vs. older patients; both  $n$ 's = 52).

### Procedure

Participants were student nurses in the third year of their four-year education programme who were recruited at two schools for higher vocational education in the Netherlands. We first obtained written permission from the schools to approach their students, and oral permission from the teachers of the classes in which recruitment took place. A research assistant announced and briefly described the study to students at the beginning or end of a class, requested participation and stressed that participation was strictly voluntary. Next, a paper questionnaire was distributed. Upon completion of the questionnaire, participants were thanked and debriefed.

### Materials

Participants were first asked whether they had health care experience with patients between 16 and 30 years (in the young patients condition) or patients of 65 years and older (in the older patients condition). Those that reported having no experience with this age category were either assigned to the other condition or withdrawn from the study. The questionnaire then assessed participants' age and identification with their age category of young people (adopted from Doosje et al., 1995; "I see myself as a young person", "I identify with people my own age"; 1 = *not at all*, 5 = *very much*;  $r = .41$ ). The main purpose of these questions was to enhance the salience of participants' age category. Overall, participants' level of identification with young people was significantly above the scale midpoint,  $M = 3.98$ ,  $SD = .69$ ,  $t(103) = 21.78$ ,  $p < .001$ , indicating that age was a meaningful and salient social category for participants.

Next, participants in the *young patients condition* were asked to think back to the last time they had provided health care to a young patient, defined as someone between the ages of 16 and 30. They were then asked to indicate the patient's (estimated) age, and to complete the remaining questions that all pertained to this patient. Participants in the *older patients condition* were asked to think of the last time they had helped an older patient, defined as 65 years or older. The remaining of the questionnaire contained the dependent variables.<sup>2</sup> *Anxiety* was

<sup>1</sup> Omitting these four participants did not significantly change any of the results reported in this paper.

<sup>2</sup> In addition to the variables reported here, the questionnaire also included measures of empathy and other-anxiety for exploratory reasons. Neither empathy nor other-anxiety were affected by the manipulation.

assessed with seven items that were adopted from Greenland et al.'s (2012) self-anxiety scale (e.g., "I was anxious I would say something I would regret later", "I was anxious about making a mistake that made me look prejudiced"; 1 = *not at all*, 5 = *very much*;  $\alpha = .87$ ). *Attitude* towards the patient was measured with a set of ten adjective pairs adopted from Bousfield and Hutchison (2010; e.g., "independent-dependent", "grumpy-pleasant"; "hostile-friendly";  $\alpha = .71$ ).

### Ethical Considerations

The study was conducted in full compliance with APA ethical standards. Informed consent was obtained from all participants before the study. It was stressed that participation in the study was voluntary, and participants were free to stop the questionnaire at any time without negative consequences. Permission from the schools and class teachers was also obtained. Upon completion, participants were fully debriefed and given contact information of the lead researcher in case they had further questions or comments.

### Data Analyses

Data were analysed in SPSS version 21. All scales were created by averaging the items.

## Results

### Manipulation Check

The reported (estimated) age of the patient was analysed in an analysis of variance with experimental condition (patient age) as independent variable. A significant effect indicated that the manipulation was successful,  $F(1, 101) = 1950.96$ ,  $p < .001$ ,  $\eta_p^2 = .95$ . Participants in the young patient condition indicated thinking of a much younger person ( $M = 22.60$ ,  $SD = 4.26$ ) than those in the older patient condition ( $M = 79.57$ ,  $SD = 8.25$ ). Moreover, the mean age of these patients fell clearly within the intended age categories of 16–30 or 65 + .

### Hypothesis 1

Analysis of variance with patient age as independent variable and attitude towards patients as dependent variable revealed a significant effect,  $F(1, 101) = 4.07$ ,  $p = .046$ ,  $\eta_p^2 = .04$ . Confirming **Hypothesis 1**, participants reported a more favourable attitude towards younger patients ( $M = 3.88$ ,  $SD = .52$ ) than towards older patients ( $M = 3.68$ ,  $SD = .47$ ).

### Hypothesis 2

A significant effect of patient age was also found in the analysis of variance with anxiety as dependent variable,  $F(1, 101) = 5.83$ ,  $p = .017$ ,  $\eta_p^2 = .06$ . In line with **Hypothesis 2**, participants reported more anxiety in dealing with younger patients ( $M = 2.68$ ,  $SD = .79$ ) than in dealing with older patients ( $M = 2.26$ ,  $SD = .98$ ).

### Hypothesis 3

In order to examine the third hypothesis, a regression analysis was conducted in which attitude was regressed on patient age (coded –1 for young patients, 1 for older patients), anxiety (centred around the mean), and their interaction term. The overall analysis was significant,  $F(3, 99) = 4.22$ ,  $p = .007$ ,  $R_{\text{adj}}^2 = .09$ . More importantly, the interaction term was also significant,  $B = .16$ ,  $t = 2.88$ ,  $p = .005$ . The slopes are presented in **Fig. 2**. Simple slope analyses revealed that anxiety was negatively associated with attitude towards young patients,  $B = -.20$ ,  $t = -2.37$ ,  $p = .02$ , whereas a non-significant positive trend was

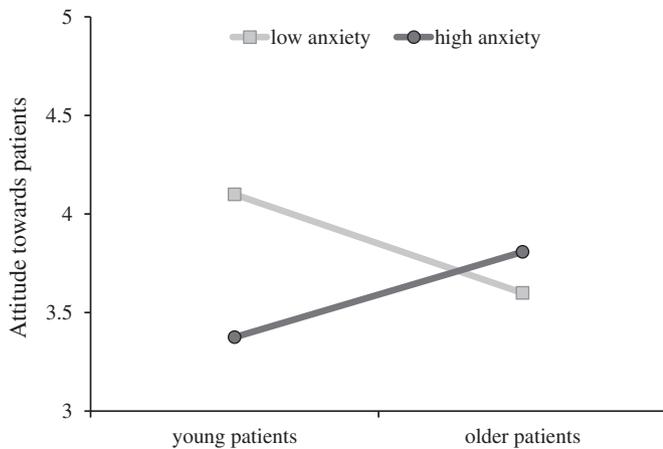


Fig. 2. Interaction effect of patient age and anxiety on attitude towards patients.

observed with respect to attitude towards older patients,  $B = .11$ ,  $t = 1.65$ ,  $p = .10$ . This confirms *Hypothesis 3*.

#### Hypothesis 4

In order to examine the fourth hypothesis, we examined our model in a moderated mediation analysis as specified by model 74 of Hayes' PROCESS macro for SPSS (Hayes, 2013). This model tests for a mediated relationship along with moderation of the second mediated pathway by the predictor. In our case, patient age was the predictor variable, anxiety was the mediator, and attitude was the dependent variable. Patient age was also a moderator between anxiety and attitude. We used 5000 bootstrap samples. Confidence intervals are significant when they do not contain zero.

The analysis first confirmed the earlier analyses reported in this section. An overview of these findings is depicted in Fig. 3. Patient age was a significant predictor of anxiety,  $B = -.21$ ,  $p = .017$ , 95%CI =  $-.39, -.04$ . Patient age was also a significant predictor of attitude,  $B = -.11$ ,  $p = .030$ , 95%CI =  $-.21, -.01$ , and moderated the relationship between anxiety and attitude,  $B = .16$ ,  $p = .005$ , 95%CI =  $.05, .27$ . The analysis also produced tests of the indirect effect of patient age on attitude via anxiety, separately for younger and older patients. As predicted in *Hypothesis 4*, anxiety was a significant mediator for younger patients,  $B = .04$ ,  $s.e. = .03$ , 95%CI =  $.01, .12$ . Unexpectedly, anxiety was also a significant mediator for older patients, but in the opposite direction,  $B = -.02$ ,  $s.e. = .02$ , 95%CI =  $-.07, -.00$ . These results show that anxiety depressed student nurses' attitudes towards their younger patients. They also suggest that anxiety may even boost student nurses' attitudes towards their older patients.

#### Discussion

The aim of this study was to investigate a dual pathway model to explain the effect of patients' age on student nurses' attitudes towards

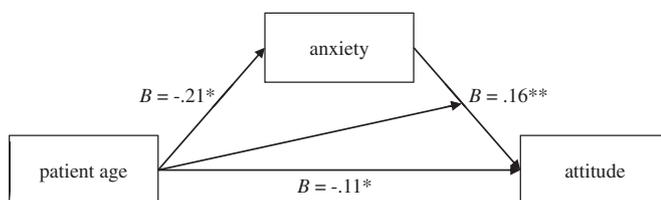
their patients. Based on the fact that older patients constitute a double outgroup whereas young patients share the same age category with student nurses, we expected and found that attitudes towards older patients were more negative than those towards young patients. However, also as expected, older patients were found to elicit less anxiety compared to young patients, and anxiety in caring for older patients had a weaker relationship with attitudes towards these patients than anxiety in caring for young patients. Moderated mediation analysis confirmed our model in demonstrating that attitude towards young patients, but not towards older patients, was depressed by anxiety.

#### Theoretical Implications

The observation that attitudes towards older patients were more negative than those towards young patients is consistent with a large number of studies on ageism (e.g., Koh, 2012; North and Fiske, 2012). The finding that young patients elicited less anxiety than older patients, however, is relatively new, and perhaps even somewhat counterintuitive. Research conducted within the framework of the contact hypothesis has shown that having less or poor quality contact with an outgroup increases intergroup anxiety (e.g., Bousfield and Hutchison, 2010; Islam & Hewstone, 1993). Young people generally have less contact with older people than with people their own age, and should therefore experience more anxiety towards older patients than towards young patients. But young and older people should not be mixed up with young and older patients. Patients are a specific group of people that are characterised by incompetence and dependency relative to their caregivers (Adams-Price and Morse, 2009). And although patients are people too (of course), in a nursing context their patient status is highly salient and will likely overrule individuating attributes (e.g., an independent successful news reporter will still be seen as dependent when a patient). It therefore matters less how much contact student nurses had with young or older people in general, than how much contact they had with young or older people *as patients*. And given the fact that older patients are a dominant demographic group within the healthcare system, it seems likely that student nurses have had as much contact with older patients as with young patients.

Intergroup anxiety can stem from a number of concerns. In the current study, we focused on self-anxiety, or the concern for making a mistake or appearing prejudiced when dealing with the outgroup (Greenland et al., 2012). Although such concerns in general are widely recognised (e.g., Van Leeuwen and Jongh, 2015), little attention has been paid to how specific categorisation contexts can affect these concerns. We reasoned that young patients prompt more anxiety than older patients because student nurses care more about what people within their own age group think of them. In line with this reasoning, student nurses experienced more anxiety in dealing with young patients, and their anxiety also had a stronger influence on their attitude towards young patients. It should be noted, however, that anxiety in this context may be specific to relatively unexperienced health care workers. As nurses mature, they likely feel more confident in handling various patients and their anxiety will decrease.

Unexpectedly, we observed a trend in the current study whereby anxiety was positively related to attitudes towards older patients. Moderated mediation analyses suggested that anxiety may indeed have boosted student nurses' attitudes towards their older patients. Although weak and unexpected findings should be interpreted with great care, the idea that a moderate level of anxiety can boost attitudes towards older patients is interesting. It has been argued that caring for older people is unpopular because it is unchallenging and unrewarding (Brown et al., 2008; Koh, 2012). Indeed, Happell (2002) found that one of the primary reasons for student nurses' reluctance to work with older people was that the work was seen as basic and required little skills or knowledge. If something in the context of working with older patients raises student nurses' anxiety, then this may in fact be beneficial in rendering that healthcare setting more challenging. Of course, future



Boot indirect effect for young patients:  $.04$ ,  $s.e. = .03$ , 95%CI =  $.01, .12$ .  
 Boot indirect effect for older patients:  $-.02$ ,  $s.e. = .02$ , 95%CI =  $-.07, -.00$ .

Fig. 3. Tests of the dual pathway model.

research should first attempt to replicate this unexpected finding before looking at possibilities of increasing anxiety in contact with older patients with the aim of making older care more stimulating to nursing staff.

### Practical Implications

In student training programmes, anxiety may play a major role in patient contact. Given the observation that it was the group of young patients, rather than older patients, that triggered most anxiety, training programmes could pay special attention to decreasing anxiety in dealing with young patients. As reasoned in the previous, it is easy to assume that student nurses feel more comfortable with young patients because these are of a similar age – but in a nursing context, young patients are actually more anxiety provoking than older patients because they are *both* similar to (in terms of age) and different from (due to their patient status) young nurses. Indeed, people with whom we share both similarities and differences elicit the strongest comparisons (Suls et al., 2002), and it is from these comparisons that anxiety results. In nursing education, more attention could be paid to the role of categorisation and social comparison processes, in order to better prepare students for interactions with patients from different age categories. Knowing why caring for certain patients can be more anxiety provoking than caring for other patients can help students understand their emotional reactions to these situations, and potentially help reduce anxiety in the longer term.

The findings from the current study also explain why existing programmes aimed at improving attitudes towards older patients through increased intergroup contact are not always successful (Nochajski, Waldrop, Davis, Fabiano, & Goldberg, 2009; Williams et al., 2007). If anxiety (or, indeed, lack of familiarity with older patients) is not the main problem, then neither is increasing contact with this group the primarily solution. Intergroup contact is a useful tool to reduce negative intergroup attitudes, provided this contact occurs under conditions of equal status (Pettigrew & Tropp, 2006). However, patients, and particularly older patients, are by definition not of equal status as their caregivers. Instead of reducing prejudice, contact with older patients could even increase prejudice, since repeated exposure to ill and infirm older people affirms the negative stereotype of this group as sickly, depressing, and cognitively impaired (Liu et al., 2013).

One factor that may positively affect student nurses' willingness to work with older patients is related to their concern about how they are seen by older people. Van Leeuwen and Jongh (2015) found that young people became more willing to help older people when they were led to believe that older people viewed young people as unhelpful and self-centred. Through helping older people, these negative images of the ingroup could be refuted. Such impression management concerns can be activated by both patients and third parties (e.g., senior nursing staff). For example, a subtle reference to how older people view young nurses (cf. Van Leeuwen et al., 2014), or stimulating young nurses to look at themselves through the eyes of older patients (cf. Hopkins et al., 2007), could go a long way in activating a wish to make a positive impression on older people.

### Limitations and Suggestions for Future Research

Before closing, it is important to acknowledge some limitations to the current study. We asked students to recall the last time they had worked with an patient or a young patient. Respondents may have been unable to remember exactly how they felt when interacting with a particular patient, or their responses may be distorted (e.g. a social desirability bias whereby an attitude is presented more favourably than it really is). Moreover, despite instructions they may not have chosen the last patient they interacted with, but someone that left a more lasting (positive or negative) impression. Future research should therefore

employ a context wherein anxiety and attitude are assessed directly after the nurse–patient interaction.

Another limitation to the current study relates to the fact that we did not completely control for the type of interaction between student nurse and patient. Although participants were instructed to think of an interaction in which they provided healthcare to a patient, some types of care are more invasive or difficult than others. Changing a bandage may differ from assisting a patient with a visit to the toilet. It is possible that more personal or difficult tasks elicit more anxiety than neutral or simple tasks. Future research could look into this.

### Conclusion

Young student nurses generally have more negative attitudes towards older patients than towards younger patients. A reluctance to work with older patients is therefore a growing concern in geriatric care. The current study, however, showed that there is hope yet. Although student nurses are expected to be somewhat anxious in dealing with patients due to their relative inexperience, they showed less anxiety towards older patients compared to younger patients. As such, older people may be especially suitable as a patient group to receive care from young nurses in training, who can practice and develop their acquired skills without being exceedingly anxious over making a wrong impression.

### References

- Adams-Price, C.E., Morse, L.W., 2009. Dependency stereotypes and aging: the implications for getting and giving help in later life. *J. Appl. Soc. Psychol.* 39, 2967–2984. <http://dx.doi.org/10.1111/j.1559-1816.2009.00557.x>.
- Bousfield, C., Hutchison, P., 2010. Contact, anxiety, and young people's attitudes and behavioral intentions towards the older. *Educ. Gerontol.* 36, 451–466. <http://dx.doi.org/10.1080/03601270903324362>.
- Brown, J., Nolan, M., Davies, S., Nolan, J., Keady, J., 2008. Transforming students' views of gerontological nursing: realising the potential of “enriched” environments of learning and care: A multi-method longitudinal study. *Int. J. Nurs. Stud.* 45, 1214–1232. <http://dx.doi.org/10.1016/j.ijnurstu.2007.07.002>.
- Crisp, R.J., Walsh, J., Hewstone, M., 2006. Crossed categorization in common ingroup contexts. *Personal. Soc. Psychol. Bull.* 32, 1204–1218. <http://dx.doi.org/10.1177/0146167206289409>.
- Doosje, B.E.J., Ellemers, N., Spears, R., 1995. Perceived intragroup variability as a function of group status and identification. *J. Exp. Soc. Psychol.* 31, 410–436.
- Greenland, K., Xenias, D., Maio, G., 2012. Intergroup anxiety from the self and other: evidence from self-report, physiological effects, and real interactions. *Eur. J. Soc. Psychol.* 42, 150–163. <http://dx.doi.org/10.1002/ejsp.867>.
- Happell, B., 2002. Nursing home employment for nursing students: valuable experience or a harsh deterrent? *J. Adv. Nurs.* 39, 529–536. <http://dx.doi.org/10.1046/j.1365-2648.2002.02321.x>.
- Hayes, A.F., 2013. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Press, New York.
- Hopkins, N., Reicher, S., Harrison, K., Cassidy, C., Bull, R., Levine, M., 2007. Helping to improve the group stereotype: On the strategic dimension of prosocial behavior. *Personal. Soc. Psychol. Bull.* 33, 776–788. <http://dx.doi.org/10.1177/0146167207301023>.
- Hornsey, M.J., Oppes, T., Svensson, A., 2002. “It's OK if we say it, but you can't”: responses to intergroup and intragroup criticism. *Eur. J. Soc. Psychol.* 32 (3), 293–307. <http://dx.doi.org/10.1002/ejsp.90>.
- Islam, M.R., Hewstone, M., 1993. Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychological Bulletin* 19, 700–710 (doi:0803973233).
- Jönson, H., 2013. We will be different! ageism and the temporal construction of old age. *The Gerontologist* 53, 198–204. <http://dx.doi.org/10.1093/geront/gns066>.
- Koh, L.C., 2012. Student attitudes and educational support in caring for older people - a review of literature. *Nurse Educ. Pract.* 12, 16–20. <http://dx.doi.org/10.1016/j.nepr.2011.04.007>.
- Liu, Y.-E., Norman, I.J., While, A.E., 2013. Nurses' attitudes towards older people: a systematic review. *Int. J. Nurs. Stud.* 50, 1271–1282. <http://dx.doi.org/10.1016/j.ijnurstu.2012.11.021>.
- North, M.S., Fiske, S.T., 2012. An inconvenienced youth? ageism and its potential intergenerational roots. *Psychol. Bull.* 138, 982–997. <http://dx.doi.org/10.1037/a0027843>.
- Nochajski, T.H., Waldrop, D.P., Davis, E.L., Fabiano, J.A., Goldberg, L.J., 2009. Factors that influence dental students' attitudes about older adults. *Journal of Dental Education* 73, 95–104.
- Pettigrew, T.F., Tropp, L.R., 2006. A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology* 90, 751–783. <http://dx.doi.org/10.1037/0022-3514.90.5.751>.
- Stephan, W.G., 2014. Intergroup anxiety: theory, research, and practice. *Personal. Soc. Psychol. Rev.* 18, 239–255. <http://dx.doi.org/10.1177/108868314530518>.
- Stephan, W.G., Stephan, C.W., 1985. Intergroup anxiety. *J. Soc. Issues* 41, 157–175.

- Suls, J., Martin, R., Wheeler, L., 2002. Social comparison: why, with whom, and with what effect? *Curr. Dir. Psychol. Sci.* 11, 159–163. <http://dx.doi.org/10.1111/1467-8721.00191>.
- Van Leeuwen, E., Jongh, L., 2015. The effects of negative images on young people's willingness to help elderly people. *J. Community Appl. Soc. Psychol.* 25, 276–281. <http://dx.doi.org/10.1002/casp>.
- Van Leeuwen, E., Oostenbrink, J.-J., Twilt, A., 2014. The combined effects of meta-stereotypes and audience on outgroup and ingroup helping. *Group Dyn. Theory Res. Pract.* 18, 189–202. <http://dx.doi.org/10.1037/gdn0000005>.
- Vorauer, J.D., Hunter, A.J., Main, K.J., Roy, S.A., 2000. Meta-stereotype activation: evidence from indirect measures for specific evaluative concerns experienced by members of dominant groups in intergroup interaction. *J. Pers. Soc. Psychol.* 78 (4), 690–707. <http://dx.doi.org/10.1037//0022-3514.78.4.690>.
- Williams, B., Anderson, M.C., Day, R., 2007. Undergraduate nursing students' knowledge of and attitudes toward aging: comparison of context-based learning and a traditional program. *J. Nurs. Educ.* 46, 115–120.
- World Health Organization, 2016. Aging Health (Retrieved from <http://www.int/medicacentre/factsheets/fs404/en/> (11/1/16)).