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Running title: Ageism among psychology students

**Ageism among psychology students:
A comparative analysis between Belgium and Quebec (Canada)**

**L'âgisme parmi les étudiants en psychologie : Etude comparative
entre la Belgique et le Québec (Canada)**

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**Ageism among psychology students:
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ABSTRACT

This study aimed to examine ageist attitudes in psychology students who may become the healthcare professionals. We also compared cultural differences between attitudes in Belgium and Quebec. We hypothesized that psychology students would have more positive attitudes toward older people in Quebec than in Belgium. Quebec has indeed more invested in age-friendly initiatives that may promote socio-economic factors associated with better attitudes toward older people. A total of 236 psychology students participated in this study (81 Belgian students and 155 Quebec students). The students completed different self-reported questionnaires to assess their attitudes toward older people. As predicted, the results showed that students in Quebec were overall less negative toward older adults. Since negative attitudes may influence students' choice to work with older people and may also have damaging consequences in the assessment and/or healing context, we discuss different directions to improve these attitudes.

Keywords: attitudes toward older people; age-friendly initiatives; older people's social participation; cross-country differences; psychology students; education.

RESUME

Cette étude visait à évaluer les attitudes âgistes chez les étudiants en psychologie qui sont, potentiellement, de futurs professionnels de la santé. Cette étude visait également à examiner si les attitudes des étudiants québécois étaient plus favorables que les attitudes des étudiants belges. Le Québec est en effet engagé dans différentes initiatives favorables aux aînés qui peuvent promouvoir différents facteurs socio-économiques associés à des attitudes plus positives envers eux. Un total de 236 étudiants en psychologie (81 belges et 155 québécois) ont répondu à différents questionnaires mesurant leurs attitudes. Les étudiants québécois exprimaient en effet des attitudes globalement moins négatives envers les aînés. Étant donné que les attitudes négatives peuvent influencer le choix de travailler avec des personnes âgées et avoir des conséquences néfastes dans le contexte de l'évaluation et de soin, nous discutons différentes pistes visant à améliorer ces attitudes.

Mots-clés : attitudes envers les personnes âgées ; initiative pro-âgés ; participation sociale des personnes âgées ; différences inter-culturelles ; étudiants en psychologie ; éducation.

Introduction

Across the world, the Stereotype Content Model (SCM) has shown that although older people are considered to be warm by younger individuals, they are often stereotyped as physically and cognitively incompetent (Cuddy, Fiske, & Glick, 2008). Older people are stereotyped as warm but incompetent because they are considered to be non-competitors and are seen as occupying low positions in the social hierarchy. According to the Behavior from Intergroup Affect and Stereotypes (BIAS) map, pity should be the predominant affective response to this ambivalent stereotype. Furthermore, this emotional response provokes biased behaviors toward older people, such as active helping behavior (e.g., helping older people for their groceries or across the street even if they do not ask for it), or alternatively, passive harm (e.g., benign neglect such as institutionalization intended to help older adults that may isolate them) (Cuddy et al., 2008). These negative attitudes (including stereotypes, affective responses, and behaviors) toward older adults are part of the concept of ‘ageism’ (Butler, 1969) and may have detrimental consequences on older adults’ health. For example, active helping behaviors directed toward older adults have been shown to decrease their self-confidence in relation to the task at hand, as well as their performance in comparison to a control situation or only verbal encouragements (Avorn & Langer, 1982).

This paper focuses on attitudes among healthcare students and more particularly, among psychology students. Existing studies have shown that psychology students may display indifferent (e.g., Chonody, Webb, Ranzijn, & Bryan, 2014) or negative attitudes toward older people (e.g., Allan & Johnson, 2009), even more so than nursing or social work students (Gonçalves et al., 2011). Moreover, compared with nursing and social work undergraduates, psychology students have been shown to express the lowest level of interest in working with older adults. This lack of interest may be explained by psychology students’

negative attitudes toward older people (e.g., Bryant & Koder, 2015; Chonody et al., 2014; Koder & Helmes, 2008a). Actually, only a few of the clinical psychologists who graduate every year will work with older people and there is a shortage of psychologists who specialize in geropsychology (e.g., Hoge, Karel, Zeiss, Alegria, & Moye, 2015; Koder & Helmes, 2008b; Lee, Volans, & Gregory, 2003), notably because they think that older people are resistant or unable to change, have limited opportunities, are rigid and inflexible to new ideas, and overall are too near the end of life to embrace change (Lee et al., 2003). Such observation is challenging given that psychology students may become the healthcare professionals of tomorrow. Considering the projected increase in the population of older people (i.e., over 60 years) worldwide that will nearly double from 12% to 22% between 2015 and 2050 (World Health Organization, 2015), practitioners in psychology and social work, who already encounter greater numbers of older adults as their clients (Chonody et al., 2014), will increasingly be led to deal with questions related to aging. There is therefore a need for more psychologists to specialize in geropsychology and work with older adults. Taking into account these considerations, we believe it is important to examine the content and the valence (positivity vs. negativity) of attitudes toward older people among psychology students that may predict their willingness to work with older adults.

With this in mind, we investigated psychology students' attitudes toward older people in two French-speaking communities: Quebec (a province in Canada) and Belgium. We chose to compare Belgium and Quebec because 85% of people in Quebec live in cities that are age-friendly (Gouvernement du Québec, 2016). Moreover, while 30% of the population is covered by the World Health Organization Global Network for Age-friendly Cities and Communities (i.e., network established to foster the exchange of experience and mutual learning between cities and communities worldwide) in Quebec, only 8.65% of the population is covered by this network in Belgium (World Health Organization, 2018). This

greater involvement of Quebec in age-friendly initiatives matters, because intergenerational contact is one of the two most efficient interventions to reduce ageism (see Burnes, Sheppard, Henderson Jr, Wassel, Cope, Barber, & Pillemer, 2019 for a meta-analysis). These initiatives are likely to promote positive attitudes toward older people both directly and indirectly.

As a matter of fact, these initiatives actively try to improve attitudes toward older people by encouraging better public images of aging that depict older people in realistic and non-caricatured ways (World Health Organization, 2007). Moreover, since age-friendly initiatives adapt structures and services in order to make them available for older people, these initiatives may indirectly promote better attitudes toward older people by facilitating their participation in society (for instance through paid employment or voluntary work) and positive intergenerational contacts (World Health Organization, 2007). More precisely, promoting older adults' social participation is likely to allow older adults to maintain high personal living standards and good objective wealth, which in turn will lead to more favorable perceptions of their status (Vauclair et al., 2015). It has indeed been shown that older people are believed to be perceived as more competent in countries where more older people participate in paid or volunteer work (Bowen & Skirbekk, 2013; Vauclair et al., 2015).

Moreover, both paid and volunteer work may contribute to more positive perceptions of competence by allowing older people to engage in important roles and establishing meaningful contact with younger individuals (Bowen & Skirbekk, 2013). Besides engagement in paid and volunteer work, age-friendly initiatives also promote opportunities for positive intergenerational contacts by planning intergenerational events, encouraging older people to participate in civic or historical education at school, or take care of children in public spaces, as well as by supporting young people who help older people on a voluntary basis (World Health Organization, 2007). Increasing positive contact between members of

Ageism in Belgian and Quebec psychology students

different age groups can also in turn help reduce ageism by challenging the negative expectations that young people have about older adults (Levy, 2018).

Taking into account these arguments, it is not surprising to notice that greater engagement in age-friendly initiatives is actually linked to a higher engagement in paid and volunteer work of older adults in Quebec in comparison to Belgium. In 2015, the employment rate of older adults (i.e., employed persons as a percentage of the total population of the same age) in Quebec was 45.3% for people aged 60-64 years and 9% for individuals aged 65 years and older (Institut de la statistique du Québec, 2015). In Belgium, employment rate for each age group in 2015 was 23.9% and 2.6%, respectively (Eurostat, n.d.). In addition, in Quebec 27.3% of people aged 55 years and over did volunteer work in 2010 (Fleury, 2012). In contrast, data collected in Belgium between October 2014 and January 2015 showed that these percentages decreased to 13.3% for people aged between 50 and 59 years and to 10.3% for people aged 60 years or older (Marée, Hustinx, Xhaufclair, De Keyser, & Verhaeghe, 2015). These observations support the hypothesis that psychology students would have more positive attitudes toward older adults in Quebec than in Belgium.

Finally, higher participation in paid and volunteer work among older adults in Quebec also suggests that older adults contribute to the economy of the province. Related to this suggestion, North and Fiske (2015) demonstrated that young adults expect older adults to not consume more than their fair share of resources such as in healthcare or the use of pensions. Therefore, it is likely that older people in Quebec, because they are still engaged in society, may less be seen as violating these stereotypes than older people in Belgium, leading to more positive attitudes toward them. In addition, young adults also expect older adults to relinquish desirable resources (e.g., money) and positions (e.g., employment) to younger generations, who wish to succeed them. When young adults consider that older people prevent them from

accessing these enviable resources, they have more negative attitudes toward them. We suggest that older adults may be less seen as violating these expectations in countries where youth unemployment is lower, which is the case in Quebec in comparison to Belgium. Indeed, in 2013, while the youth unemployment rate among people aged 15-24 years was 13% in Quebec (Institut de la statistique du Québec, 2017), it was about twice more important (i.e., 23.7%) in Belgium (Organisation for Economic Co-operation and Development, 2016).

Building upon these different interrelated factors, we examined the content and valence of attitudes (stereotypes, affective responses, and behaviors) toward older people among psychology students and hypothesized that Quebec students would have more positive attitudes toward older people than Belgian students would. As the present study compares, for the first time, Belgium and Quebec, it was impossible to determine, *a priori*, which dimension of ageism may be impacted by the socio-economic differences between these countries. Consequently, the students completed different questionnaires and tasks to explore the multiple dimensions of ageism (see Iversen, Larsen, & Solem, 2009).

Method

Participants

A total of 236 psychology students were included in the present study. Eighty-one students were recruited in Liège (Wallonia, Belgium) and 155 were recruited in Montreal (Quebec, Canada). All participants were native French speakers who were taking part in a class on aging in the third or fourth year of their university program. While this course was part of the mandatory program for Belgian students enrolled in clinical psychology, it was an optional course for Quebec students. They had never taken such a class or received any

course on aging or ageism as indicated on a self-reported question (i.e., “Have you ever taken a class or received a course on aging or ageism?”). This study was conducted in accordance with the principles outlined in the Declaration of Helsinki (1975, revised in 2000).

Data collection

Participants completed the study in a collective one-session testing that lasted about 25 minutes at the very beginning of the university session (the first and second lessons in Belgium and Quebec, respectively). They were told that the study was about aging. It was emphasized that the participation in the study would have no impact on their final evaluation or other involvement in their university studies. Participants always started with a written consent form and a short demographic form followed by two open-ended Image-of-Aging questions (Levy & Langer, 1994). After that, they completed the DS-36 social desirability scale (Tournois, Mesnil, & Kop, 2000). Participants also completed simple questions regarding percentage estimations concerning older people within the population, and finally two questionnaires on attitudes toward older people (1) the Fraboni Scale of Ageism Revised (FSA-R; Boudjemadi & Gana, 2009) and 2) the Aging Semantic Differential (ASD; Boudjemadi & Gana, 2009). The order of presentation of the open-ended Image-of-Aging questions (reference to an older person vs. a young adult) and the attitudes toward older people questionnaires (FSA-R vs. ASD) was counterbalanced across participants using four different versions of the evaluation. Different scales and questions on ageism were chosen to explore the different dimensions of ageism (i.e., stereotypes, affective attitudes, and behavioral reaction; see Iversen, Larsen, & Solem, 2009).

Measures

Image-of-Aging questions and percentage estimations. Participants were asked to write down the first five words that came to mind when thinking about an older person and when thinking about a young adult (Levy & Langer, 1994). We did not specify any age to consider when thinking about an older person or a young adult in order not to constraint participants to an age group that may not be representative of their own perception of youth or old age. This measure is interesting since it allows respondents to produce their own representations of aging without pre-established statements (see Schroyen, Missotten, Jerusalem, Gilles, & Adam, 216). We also elaborated questions in which the participants had to provide a free answer regarding the percentage of 65+ older adults within the population who suffer from depression, loneliness, dementia, or hearing loss; live in a community dwelling or medical assisted housing institutions; are dependent (require assistance in their daily life); and use the Internet to communicate with close relatives (i.e., family, friends, etc.). They were also asked to estimate the percentage of 80+ older adults within the population who suffer from dementia and live in a community dwelling or medical assisted housing institutions. This task provides a degree of “overestimation” of the negative stereotype on aging.

DS-36. The DS-36 is a 36-item French questionnaire designed to assess two facets of social desirability: (1) auto-deception (the tendency to give favorable but honest self-descriptions) and (2) hetero-deception (the tendency to give an excessively favorable self-description to others). Internal consistency (Cronbach’s alpha = .86 and = .82) and test-retest reliability ($r = .81$ and $r = .74$) have been shown to be satisfactory for auto-deception and hetero-deception, respectively (Tournois et al., 2000). All items are scored on a Likert scale

Ageism in Belgian and Quebec psychology students

ranging from 1 (totally false) to 7 (totally true). Higher scores indicate a greater tendency toward auto- and hetero-deception.

FSA-R. The FSA-R (Boudjemadi & Gana, 2009) is an explicit measure of ageism. The FSA-R is built upon 23 questions each associated with a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A higher score means a higher degree of ageism. Internal consistency (Cronbach's alpha = .80) and test-retest reliability ($r = .89$) have been shown to be satisfactory (Boudjemadi & Gana, 2009). Besides the total score, three factors can be derived from the scale: Stereotypes, which indicate negative stereotypes about older adults; Affective attitudes, or the negative emotional attitudes toward older adults; and Separation, which examines the tendency to avoid contact with older adults.

ASD. The ASD has been translated in French by Boudjemadi and Gana (2009) who demonstrated good internal reliability (Cronbach's alpha for the total score = .90). It is composed of 26 bipolar adjectives. For each proposition, participants had to indicate how they judged an older adult on a seven-point Likert scale (in Quebec) or on a visual analog scale of 10 cm (in Belgium). A higher score indicates more ageism. In addition to the total score, the questionnaire can be factorized into four factors. The Instrumentality factor measures the perception of the ability and willingness of an older person to accomplish a goal (e.g., "Busy/Idle"). The Autonomy factor designates to what extent older people are viewed as relying on social life and is assessed by items such as "Productive/Unproductive". The Acceptability factor represents how older people are perceived by others in terms of sociability and if they please to others (e.g., "Generous/Frugal"). Finally, the Integrity factor represents how young adults view older adults' self-image with items such as "Despairing/Hopeful".

Statistical analyses

Preliminary analyses were conducted using a student's *t*-test and chi-squared analyses to establish whether demographic characteristics of age and gender were similar across groups (Table 1). Words given by the participants in response to the Image-of-Aging questions were first regrouped with semantically associated words for the young and for the older adults (e.g., illness, disease, and health problems regrouped in disease). A total of 245 words for the older adult and 280 words for the young adult were then evaluated by three independent judges in Quebec and three in Belgium in order to assess their valence on a 11-item scale ranging from -5 = extremely negative to +5 = extremely positive. The intraclass correlation coefficient (ICC) was higher than .90 for words about young adults (ICC = .94) and older people (ICC = .95) between the Quebec and Belgian judges, so that the words were evaluated similarly regardless of the country of the judges. Moreover, the values of the ICC remained high ($\geq .87$) when considering the Belgian and Quebec judges separately, which led us to include all judges in the analyses. For each participant, we finally calculated a total score by creating a mean for the valences of words produced, with a higher score indicating a more positive vision of older adults.

Percentage estimations were analyzed by comparing the two groups of participants using a bilateral student's *t*-test on overestimation indexes for questions concerning people older than 65 and older than 80. For both targeted age groups, the overestimation index was computed in two steps: 1) For each question, we subtracted the data available in the scientific literature from the raw estimation given by each student¹, except for the use of the Internet, which was inverted. 2) We then computed an overall overestimation score as the average across students by group of the sum of the overestimation scores computed for each question. The higher the score, the higher the degree of ageism is.

For each questionnaire, the Belgian and Quebec groups were compared using Multivariate Analysis of CoVariance (MANCOVA) for each questionnaire on the subtotal scores as dependent variables. Adjustment was made for the auto- and hetero-deception scores of social desirability (DS-36) as covariates. Because the sample size of the two groups of students was unequal, the MANOVAs and subsequent Analyses of Variance (ANOVAs) were computed using the type I sums of squares (Tabachnick & Fidell, 2007). The evaluation results of assumptions of normality, homogeneity of variance-covariance matrices, linearity, and multicollinearity were satisfactory.

Analyses were computed using R statistical software version 3.3.1 (R Core Team, 2016, Vienna, Austria), and a p -value $< .05$ (corrected if necessary) was used as a significant threshold for all the analyses.

Results

Sample characteristics

Participants' demographic characteristics, social desirability, and ageism scores are presented in Table 1. Quebec students were comparable to Belgian students in terms of age and gender distribution.

Image-of-Aging questions

As shown by the word clouds based on the 50 most frequent words given (Figure 1), words cited when students thought about an older person were negative in almost 50% of cases, regardless of the country (46% in Belgium and 48% in Quebec). In a similar way, few words with a negative valence were cited in reference to a young adult in both countries (only 8% in Belgium and 2% in Quebec). In Quebec, the three most cited words for an older person

were ‘wisdom’ (37%), ‘disease’ (30%), and ‘slowness’ (27%), while in Belgium, they were ‘wisdom’, ‘experience’, and ‘slowness’ (26% for each of the three words). By comparison, the three most cited words for a young adult in Belgium/Quebec were ‘vitality’ (33%) / ‘health’ (26%), ‘dynamic’ (28%) / ‘vitality’ (24%), and ‘lack of concern’ (19%) / ‘beauty’ (24%), respectively.

ANOVAs conducted in order to investigate differences between the two groups regarding the valence of the produced words for a young adult and an older person did not reveal any significant difference (all $F_s < 1$, $d = .10$ for an older person and $d = .23$ for a young adult). Overall, words given for a young adult were significantly more positive than words given for an older adult [$t(109) = 13.08$, $p < .001$, $d = 1.68$].

Table 1

Raw means (standard-deviations) for the demographics, social desirability and representation of aging for the Belgian and Quebec students.

Tableau 1

Moyennes (écart-type) pour les données démographiques, la désirabilité sociale et les représentations du vieillissement pour les étudiants belges et québécois.

	Mean (SD)		Signif.
	Belgium (<i>n</i> = 81)	Quebec (<i>n</i> = 155)	
Demographics			
Age (years)	22.44 (3.4)	22.25 (2.7)	NS
Sex (F/M)	78/3	131/24	NS

Ageism in Belgian and Quebec psychology students

DS-36

Auto-deception (18-126) ^a	64.34 (12.2)	68.44 (15)	*
Hetero-deception (18-126) ^b	78.85 (12.8)	79.85 (14.3)	NS

Image-of-Aging questions

An older person	0.23 (1.49)	0.09 (1.28)	NS
A young adult	2.15 (0.87)	2.34 (0.80)	NS

Overestimation between percentage estimations and scientific data^c

Total 65+	174.37 (91.19)	142.62 (81.60)	**
Total 80+	49.71 (36.83)	73.84 (35.02)	**

FSA-R^d

Total (23-115)	50.35 (7.8)	47.96 (9.7)	***
Stereotypes (10-50)	25.83 (4.2)	24.22 (5.2)	*
Separation (8-40)	14.39 (3)	14.59 (3.8)	NS
Affective attitudes (5-25)	10.17 (2.2)	9.15 (2.5)	**

ASD^e

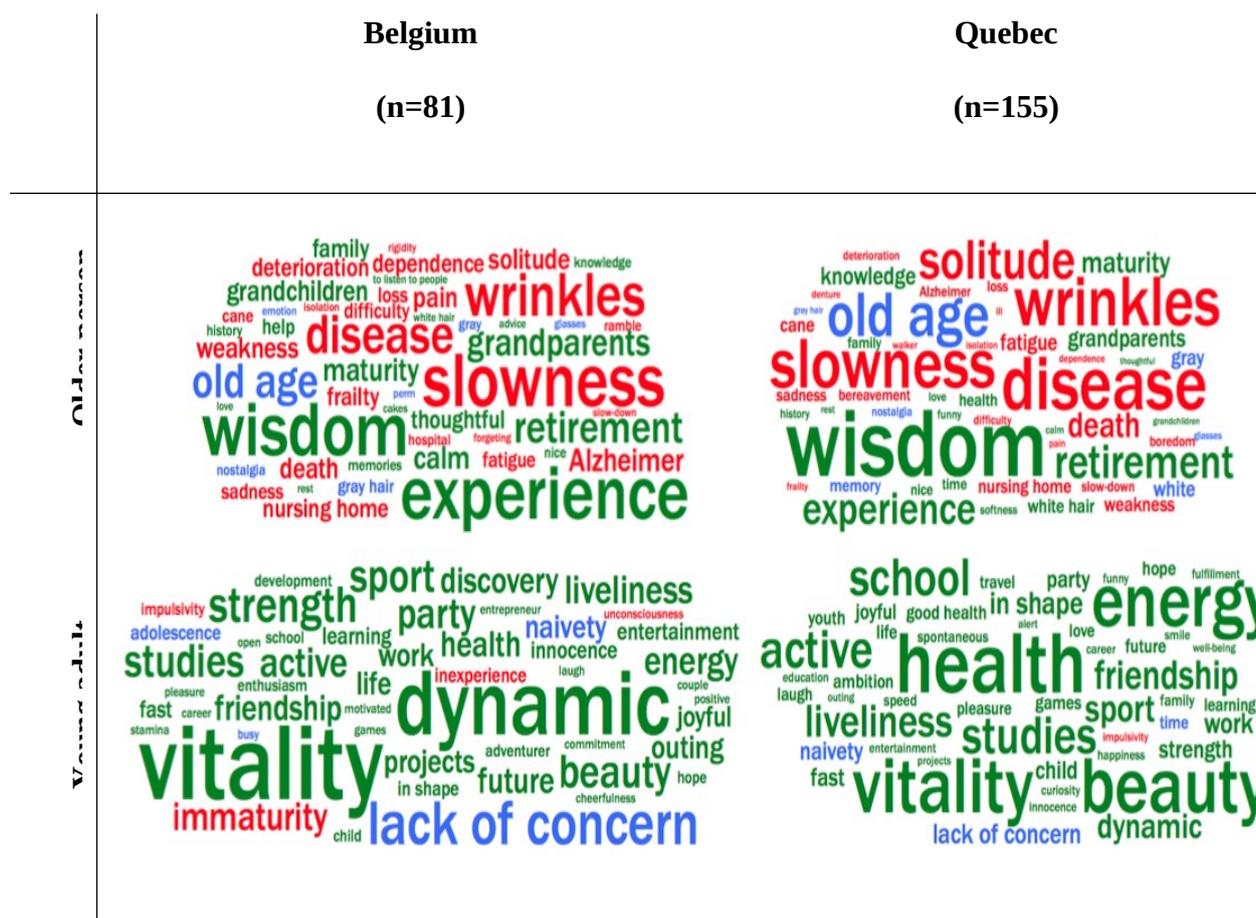
Total (26-182)	123.31 (24.9)	119.03 (24.6)	***
Instrumentality (6-42)	29.78 (6.8)	30.68 (7.6)	NS
Autonomy (8-56)	39.93 (9)	40.24 (8.9)	NS
Acceptability (7-49)	26.93 (7.8)	24.4 (8)	*
Integrity (5-35)	26.29 (5.8)	23.98 (6.1)	**

Note. DS-36= social desirability questionnaire; FSA-R= Fraboni Scale of Ageism Revised; ASD= Aging Semantic Differential; Signif., significance of the *t* tests (demographics, Image-of-Aging, percentage estimations) and of the MANCOVA (FSA-R and ASD) tests; NS= non-significant; SD, standard deviation.

* = $p < .05$; ** = $p < .01$; *** = $p < .001$. ^a Data missing for 12 participants (11 in the Quebec group); ^b Data missing for 7 participants in the Quebec group; ^c Data missing for 9 participants in the Quebec group; ^d Data missing for 19 participants (18 in the Quebec group); ^e Data missing for 18 participants (17 in the Quebec group).

Percentage estimations

Comparison of the overestimation indexes between the two groups (see Table 1) indicated that students in Belgian reported higher estimations than students in Quebec for people over 65 years old [$t(150.14) = 2.61, p < .01, d = .37$], but the reverse was observed for people over 80 years old [$t(158.06) = 4.82, p < .001, d = .68$].



Ageism in Belgian and Quebec psychology students

Figure 1. Word clouds of most frequent words given by psychology students in Belgium and Quebec when they thought about an older person and a young adult. *Note.* Red denotes negative words (-5 to -1), green denotes positive words (+1 to +5), and blue denotes neutral words (-1 to +1).

Figure 1. Nuage de mots pour les mots les plus fréquemment donnés par les étudiants belges et québécois lorsqu'ils pensent à une personne âgée ou à une personne jeune. *Note.* Rouge pour les mots connotés négativement (-5 à -1), vert pour les mots connotés positivement (+1 à +5), et bleu pour les mots neutres (-1 à +1)

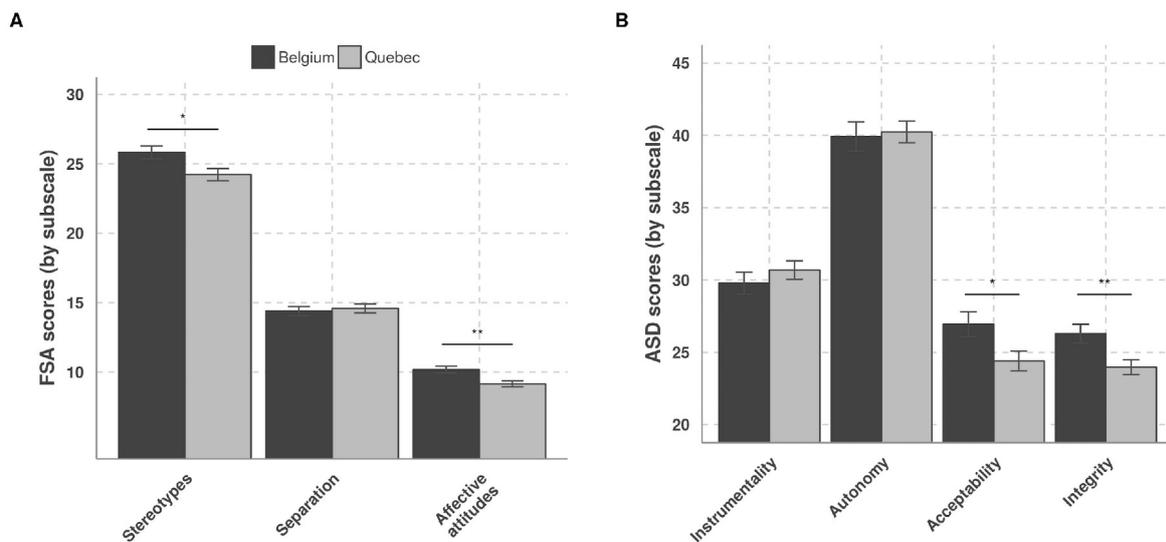
FSA-R

Using Wilks's criterion, the MANCOVA revealed a significant difference in combined FSA-R scores between the groups [$F(3, 198) = 6.63, p < .001$, Wilks' lambda = .91, $\eta^2_p = .09$]. There was a significant relationship with the auto-deception score of the social desirability scale (DS-36) [$F(3, 198) = 3.40, p < .05$, Wilks' lambda = .95 $\eta^2_p = .05$], but no significant relationship with the hetero-deception score on these scores [$F(3, 198) < 1$, Wilks' lambda = .99, $\eta^2_p = .01$]. Subsequent ANCOVAs were thus conducted with only the auto-deception subtotal as covariate, which indicated a significant difference between the two groups for the Stereotypes score [$F(1, 201) = 6.56, p = .01, \eta^2_p = .03$] and the Affective attitudes subscale [$F(1, 201) = 12.22, p < .01, \eta^2_p = .06$]. However, the Separation score did not reach significance [$F(1, 201) < 1, \eta^2_p = .00$] after controlling for the auto-deception score. For the Stereotypes and Affective attitudes subscales, the Belgian group exhibited a higher degree of ageism compared to the Quebec group (Figure 2A).

ASD

The MANCOVA using Wilks's criterion revealed a significant difference in the combined scores of the ASD between the groups [$F(4, 198) = 4.89, p < .001$, Wilks' lambda = .91, $\eta^2_p = .09$]. There was a significant relationship with the auto-deception score of the social desirability scale (DS-36) [$F(4, 198) = 4.65, p < .01$, Wilks' lambda = .91, $\eta^2_p = .09$], but no significant relationship with the hetero-deception score on these scores ($F(4, 198) < 1$, Wilks' lambda = .99, $\eta^2_p = .01$). Subsequent ANCOVAs were thus conducted with only the

auto-deception subtotal as covariate, which indicated a significant difference between the two groups for the Acceptability [$F(1, 202) = 5.54, p < .05, \eta^2_p = .03$] and the Integrity scores [$F(1, 202) = 8.58, p < .01, \eta^2_p = .04$]. However, the Instrumentality and Autonomy scores [$F < 1, \eta^2_p = .00$] did not reach significance after controlling for the auto-deception score.



Similarly to the FSA-R scores, the Acceptability and Integrity scores were higher in the Belgian group compared to the Quebec group, indicating a higher degree of ageism (Figure 2B).

Figure 2. Scores on the FSA-R (A) and the ASD (B) for the Belgian and Quebec students.

Note. * $p < .05$; ** $p < .01$.

Figure 2. Scores moyens obtenus à la FSA-R (A) et à l'ASD (B) pour les étudiants belges et québécois. Note. * $p < .05$; ** $p < .01$.

Discussion

The aim of this study was to investigate attitudes toward older people among psychology students living in two countries (Belgium and Quebec, Canada). We hypothesized that Quebec students would have more positive attitudes toward older people than Belgian students because Quebec has invested in different age-friendly initiatives that may promote more positive attitudes toward older people, both directly (i.e., by encouraging better public images of aging) and indirectly (i.e., by promoting older adults' social participation and positive intergenerational contacts).

As hypothesized, the answers given on the FSA-R indicated that Quebec students had less negative stereotypes and less negative feelings toward older people in comparison to Belgian students. Moreover, ageism as assessed by the ASD showed that Belgian students perceived older people as being less able to foster and maintain social interactions and less personally satisfied, optimistic, and peaceful with themselves. On the contrary, no difference was observed in the Autonomy and Instrumentality scores of the ASD. These dimensions may be less related to quality of contact with older people (i.e., having better contacts with older people is probably more related to perceiving them as generous than busy") and, therefore, may be less influenced by cross-country differences. These significant results may be interpreted in the lights of the fact that more older adults participate in paid and voluntary work in Quebec (Bowen & Skirbekk, 2013; Eurostat, n.d.; Fleury, 2012; Institut de la statistique du Québec, 2015; Marée et al., 2015; Vauclair et al., 2015) certainly because Quebec has more invested in programs such as age-friendly cities. In particular, higher

participation of older people in Quebec society may increase the perception of their status (Vauclair et al., 2015). Age-friendly cities also create opportunities to establish meaningful and positive relationships between generations (Levy, 2018). This may, in turn, explain why Quebec students felt more positive toward older people (e.g., ‘Older people should be encouraged to speak out politically’), expressed less negative stereotypes (e.g., ‘Most old people should not be trusted to take care of infants’) and perceived them as being more ‘Generous’ and ‘Pleasant’. Besides these socio-economic explanations, a cultural factor may also impact the perception of older adults. As pointed out by North and Fiske (2015), Quebec students are more individualistic than Belgium ones. The authors showed that cultural individualism predicted more positive evaluations toward older adults in industrialized societies. In modernized countries, individualism may lead people to place an increased emphasis on individual welfare and respect, which might heighten appreciation for older adults’ experience and insight.

Percentage estimations concerning older people within the population remained far from reality with some differences between countries: while Belgian students displayed significantly more ageism toward people aged 65 years and over, Quebec students had a significant higher overestimation score for people over 80 years old. A possible explanation for this effect might lie in the fact that the quality of the Canadian healthcare system has been called into question, especially regarding healthcare access for people suffering from chronic diseases such as diabetes, dementia, heart failure and chronic lung disease (Schneider, Sarnak, Squire, Skah, & Doty, 2017). In this situation, people aged 80 years and older, who encounter more health problems and need more medical assistance (Tey, Lai, & Teh, 2016), may strain

the Quebec health care and social support system. Such perceptions of oldest old individuals as being a pressure on the Quebec healthcare systems may lead to more negative attitudes toward them in Quebec (North & Fiske, 2015). Despite these differences, it is important to highlight that students of both countries overestimated the percentage of older people who suffer from depression, loneliness, dementia, or hearing loss, live in institutions, and are dependent. In a previous study, Cherry et al. (2014) also found that people tended to overestimate the effects of aging on memory and the likelihood and incidence of Alzheimer's disease among older adults. These misconceptions about aging may reflect a lack of knowledge regarding aging and older adults. Since a lack of knowledge has been associated with more negative attitudes toward older people in previous studies (e.g., Barnett & Adams, 2018; Cherry et al., 2016; Stahl & Metzger, 2013), increasing knowledge concerning the aging process can serve to work against ageist behaviors (e.g., Harris & Dollinger, 2001; Lytle & Levy, 2019; Ragan & Bowen, 2001).

Similarly to the percentage estimations, words produced for the Image-of-Aging questions indicated that younger individuals were perceived more positively than older people in both groups even if representations of older people did not differ between Quebec and Belgium. These findings are in accordance with literature comparing attitudes toward young and older adults (Hummert, 2011). Moreover, if the proportion of negative words cited when students thought about an older person appeared similar in Belgium and in Quebec, almost half of the words were negative, regardless of the country. Concerning words cited in reference to an older person, they are in accordance with the SCM (Cuddy et al., 2008): older people appeared mainly characterized by an intellectual and physical decline (e.g., slowness,

disease) in both groups. Some of the words reported also suggest a more positive/warmer stereotype similar to grandparents.

Overall, these results of negative (or neutral) attitudes toward older adults among psychology students are overwhelming considering the fact that these attitudes may influence their choice to work with older people (e.g., Koder & Helmes, 2008a; Lee et al., 2003). Moreover, such ageist attitudes may also have damaging consequences in the assessment and/or healing context for psychology students who will actually become healthcare professionals. First, psychologists may overlook cognitive decline or psychological distress if they consider them to be unavoidable in the aging process (Régner et al., 2016). Second, negative stereotypes about older people may lead therapists to inadvertently collude with aging self-stereotypes of their clients and to agree with depressed clients negative erroneous cognitions. This is particularly damageable since understanding negative age stereotypes is especially important in scenarios where depressed clients primarily locate the origin of their problems in their age or their experience of aging (Laidlaw & Kishita, 2015). Directly linked to this argument, older (versus younger) depressed patients may be considered by healthcare professionals as less able to develop an adequate therapeutic relationship, more likely to have a poorer prognosis, and as being less appropriate for therapy (Helmes & Gee, 2003). Finally, negative attitudes of psychologists may also influence older adults' physical and psychological health. According to the BIAS Map (Cuddy et al., 2008), psychologists who consider older people as incompetent (i.e., helpless) are more prone to help them even if they do not need to, which can have deleterious consequences on their abilities (Avorn & Langer, 1982).

Given these detrimental consequences, it is crucial to think about the way the attitudes of psychology students and other healthcare students may be improved at the individual level. As mentioned earlier, improving education and knowledge about aging can help to reduce ageism (e.g., Harris & Dollinger, 2001; Lytle & Levy, 2019; Ragan & Bowen, 2001). Interestingly, this strategy has been considered in the Positive Education about Aging and Contact Experiences (PEACE) developed by Levy (2018). This model also suggests that promoting positive contact experience with older adults is another key strategy that should be interconnected with education in order to reduce ageism.

Regarding education, most of the content actually delivered in psychology training programs emphasizes training in diagnosis and assessment of older adults (at a psychological and neuropsychological level) at the expense of interventions (Pachana, Emery, Konnert, Woodhead, & Edelstein, 2010). This may send to students the message that when interacting with an older population, the goal is more oriented around finding and labeling problems rather than embarking on rehabilitation or therapy (Pachana et al., 2010). Therefore, students should also know that even if ageism emerges from a kernel of truth, age stereotypes are more severe than most actual deficits. In this perspective, we suggest that asking students who take a class on aging to complete questions regarding percentage estimations as done in this study, and then to compare their percentage estimations to accurate facts about aging (e.g., actual rate of Alzheimer's disease and depression), may help them to be aware of their negative stereotypes.

In addition to exaggerate age-related deficits, age stereotype may also mask age-related gains, such as improvements in emotion regulation abilities (Scheibe & Carstensen, 2010). According to models such as the Strength and Vulnerability Integration model (Charles, 2010), these emotion regulation abilities may help older adults to cope with stressful events (e.g., decline in physical health, decrease in the level of autonomy) and maintain their well-being, provided that encountered stressful events are controllable and avoidable. This kind of information should help students to understand that even if some older people do experience negative emotions, the majority do not (Karel, Gatz, & Smyer, 2012), and growing older can also be a time of achieving continual gains and personal growth (Scheibe & Carstensen, 2010).

Knowledge of such information is actually wished by psychology students. A study conducted among trainees in psychology showed that many of them believed that their education should involve more aging-related topics, such as normal human aging and successful aging (Lee et al., 2003). In other words, there is a need for more education regarding the aging process, in particular about the positive experience of getting older for healthy older adults, who comprise the vast majority of older people (Chonody et al., 2014). Exposing students to these different aging contents early in their training (i.e., at the undergraduate level) has been shown to be effective to increase accurate knowledge about aging and decrease negative attitudes toward older people (e.g., Harris & Dollinger, 2001; Wurtele & Maruyama, 2013). In addition to counter ageist stereotypes, such courses could increase students' interest in working with older adults (e.g., Boswell, 2012; Woodhead et al., 2013).

Enhancing knowledge about aging among psychology students is especially relevant since they are likely to see primarily hospitalized or institutionalized older persons who are in ill-health during their psychology internships, which may confirm already negative images held of older persons. This highlights the importance of familiarizing students first with healthy community-dwelling older persons, before assigning them to be involved with institutionalized older patients who require special attention and care (Chonody, 2015). According to the PEACE model (Levy, 2018), these contacts should be individualized, cooperative, and equal in status, and they should promote the sharing of personal information. All these characteristics have indeed been associated with more positive attitudes toward older people (for a review, see Levy 2018). Similarly, previous research has shown that negative attitudes toward older people may stem in part from lack of positive contact between generations (e.g., Bousfield & Hutchison, 2010; Christian, Turner, Holt, Larkin, & Cotler, 2014). These results highlight that contact quality (i.e., positive vs. negative), which may be a proxy for some or all of the four aforementioned conditions (Levy, 2018), matters more than contact quantity (i.e., time spent together) to reduce ageism. We believe these positive contacts should be promoted at the societal level with initiatives such as age-friendly cities (World Health Organization, 2007). For example, by providing older people with opportunities to share their knowledge and expertise with other generations (e.g., older people participating in civic or historical education at school), these politics offer an opportunity to address negative attitudes toward older people in the general population and even in early childhood.

Limits and future directions

Contribution to the literature notwithstanding, the current study has several limitations that should be considered in future research. First, this study did not include different groups of healthcare students (i.e., nursing, medical or social work students). Even if it has been shown that psychology students may display more negative attitudes toward older people than nursing or social work students (Gonçalves et al., 2011), such comparisons based on the measures included in the present study would have provided more information about the specificity of the attitudes of psychology students.

Second, the fact that the course was an optional course for Quebec students but a mandatory one for Belgian students can contribute to explain differences in attitudes. It is indeed likely that Quebec students who made the choice to take this class were more interested in getting more knowledge about aging-related topics (e.g., dementia) and displayed more positive attitudes at the first place.

The third limitation we would like to address is related to the hypothesis that age-friendly initiatives, by promoting participation of older adults in paid and volunteer work, are associated with attitudes toward older people, because they may raise the perception of their status and/or allow the establishment of meaningful contact between generations. In future studies, it would be interesting to investigate more deeply these different variables (i.e., engagement in paid and volunteer work, quality of contact between generations) as well as other variables (e.g., public discourse, performance of the healthcare system) that may be associated with more positive attitudes toward older people. Furthermore, individual

situations and characteristics may also contribute to each personal evaluation of ageism. For instance, the quality of contact between children and their grandparents appears to be one of the key determinants of their representations about aging (Flamion et al., 2019). Future research may then include these types of factors as possible moderator of the relationship between socio-economic factors and ageism.

Moreover, the reverse relationship between socio-economic factors and attitudes could also be argued. In particular, we cannot exclude the possibility that negative perceptions of older people's competence may constitute an obstacle that prevents older adults from participating in paid and voluntary roles.

We suggested that the lower youth unemployment rate in Quebec contributed explaining less negative attitudes toward older people among Quebec students. However, youth unemployment in itself has never been examined as a possible determinant of cross-country differences in ageism. Its association with ageism should therefore be considered in future research.

Finally, we acknowledge that our study mainly focused on the cognitive dimension of ageism (i.e., the stereotypes). However, stereotypes may fail to translate into actual behaviors (for a review, see Voss, Bodner, & Rothermund, 2018). In other words, holding negative stereotypes about older adults does not necessarily imply that these negative stereotypes cause discriminatory behaviors. Future research would benefit from measuring actual ageist behaviors of future healthcare professionals.

Conclusion

Our study found that Belgian students in psychology have generally more negative attitudes toward older people than psychology Quebec students. Since these differences might be explained by existing socio-economic differences between Belgium and Quebec (e.g., age-friendly initiatives that increase older adults' participation in paid and volunteer work), it is conceivable that the observed differences extend to the general population of young people. Indeed, the socio-economic factors, which were hypothesized to be associated with differences in ageism, may concern all of them. Addressing issues such as the presence of negative attitudes toward older people in the general population and particularly among psychology and healthcare students is mandatory, since such attitudes may make them reluctant to work with older people. These attitudes may also lead them to adopt behaviors that are damaging for older people's health when working with them.

Endnotes

1. For instance, Quebec students estimated that about 36.6% of 65+ adults suffer from depression, whereas only about 10% of these adults present signs of significant depression (Préville et al., 2008). The overestimation index was thus computed as follows: $36.6 - 10 = 26.6$.

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