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The mask we wear: Chronological age versus subjective 'age inside'

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ABSTRACT

Objectives: Age inside is a type of self-reported, subjective age, that is unconstrained by years lived or physical health. The goal of this study was to explore: 1. How age inside is described and whether there is a relationship between age inside and chronologi-cal age; 2. Whether gender, income adequacy and education level associated with age inside or age inside perception; 3. Whether the associated variables be used to predict age inside and age in-side perception as the dependent variables, in separate regression models.

Method: Using a cross-sectional design, the data was collected via an online or in person questionnaire. Recruitment was done through doctor's offices and seniors centres, as well as word-of-mouth utilizing a non-probability, purposive, sampling method along with snowball sampling.

Results: Participants were 66 adults aged 65–90 years, (m_{age} = 73 years, SD = 6.5) all of whom reported at least one illness. The majority of participants identified an age inside of 20 to 40 years less than their chronological age (m_{AI} = 51 years, SD = 14.9). Gender (not sex) and self-reported health were associated with age inside.

Conclusion: Age inside may explain mid and later life purchases such as sailboats, and sports cars, new hobbies and new loves. With a youthful age inside, the older adult may be more interested in risk taking and radical changes than fitting into stereotypical elder roles and as such, may cause confusion and frustration for loved ones and health practitioners. Age inside has clinical value and could help explain some older adults' lack of compliance with medical directives due to the attitude 'they are for old people, I'm not old'. By acknowledging that the chronological age may not be reflective of the age of the person inside, policy makers and/or service providers might take a step back from programs for 'seniors' and create instead, programs that appeal to the young inside.

Chronological age is familiar, circumscribed by days, years - the moments lived. And, like biological sex, chronological age is often used to define and even constrain; determining whether people can legally drink alcohol or drive a car or when mandatory retirement occurs. However, chronological age has long been understood to differ from how people feel *inside*: their subjective age (Barak 2009; Choi and DiNitto 2014). Subjective age has been associated with factors including health, life satisfaction, self-esteem (Choi and DiNitto 2014) as well as "mental and physical well-being, social situation, and to mirror the age norms of a given society" (Uotinen, Rantanen, Suutama and Ruoppila 2006: 382). Multi-national research has shown that older adults in many countries report younger subjective age than their chronological age (Barak 2009). Understanding the role of age inside is important because research has shown that, among older adults, a 'younger' subjective age has been associated with higher life satisfaction (Westerhof, Barrett, Steverink 2005), good mental and physical health, and longer life (Kotter-Gruhn et al. 2016).

The lack of agreement between chronological age and subjective age has been explained as a "self-enhancing strategy that is especially typical in cultures that value individualism and are more youth-oriented" (Uotinen, et al. 2006: 383). It may be that people unconsciously seek to maintain a younger subjective age because it is higher status in many European and North American societies (Weiss and Lang 2012). The argument that a young subjective age is a coping strategy to address negative, age-related stereotypes has not been confirmed by empirical research (Barrett and Montepare 2015). Subjective age may also reflect individuals' continued identification with a chronologically younger self (Kotter-Gruhn, Kornadt and Stephan 2016), rather than eroding or altering the self-concept of self with increased years. The trend of plastic surgery, hair colour and fitness to maintain a youthful appearance can be seen as attempts to avoid the loss of status and stigma associated with 'getting old' (Linn and Hunter 1979). Younger subjective age is also associated with good health outcomes such as maintaining cognitive function, physical health and longevity (Kornadt, Hess, Voss and Rothermund, 2016).

The social construction of age layers a multifaceted set of expectations for behaviour and lifestyle. We group individuals into age ranges such as: childhood; adolescence; young adulthood; middle adulthood; and late adulthood (Feldman 2015). These age categorizations provide a "shared notion of reality that is widely accepted but is a function of society and culture at a given time. Thus, the age ranges within a period—and even the periods themselves—are in many ways arbitrary and culturally derived" (Feldman 2015: 6).

Some longitudinal studies found that subjective age is consistent over time (Uotinen, et al. 2006), however, other researchers have suggested that losses in functional health results in changes in subjective age (Furstenberg 2002; Weiss and Lang 2012; Westerhof et al. 2003). Interestingly, adolescents tend to report a subjective age older than their chronological age whereas those in middle and older age reported younger subjective age (Barett and Montepare 2015; Kornadt et al. 2016; Montepare and Lachman 1989). Subjective age has been defined in a number of ways, often relative to physical and mental health (Kotter-Gruhn, et al. 2016). Other researchers considered subjective age as "felt age", a global construct, ascertained by asking 'how old do you feel'? (Uotinen, et al. 2006). Kastenbaum, Derbin, Sabatini and Artt (1972) proposed a multifaceted model of subjective age that included the components: look age; feel age; do age; and interest age. Kastenbaum et al.'s (1972) model has not been widely used; only the idea of 'felt age' has carried forward (Brothers, Miche, Wahl, and Diehl 2017).

Felt age has been measured by asking people 'how old do you generally feel in years' (Teuscher 2009). Participant's chronological age is subtracted from the subjective age or 'felt

age' difference is then used in analyses as subjective age perception (SAP) (Bergland, Nicolaisen and Thorsen 2014). Results suggested age, sex and good physical health and mental health were significant in predictors of larger SAP in many participants (Bergland et al. 2014).

This study hypothesized that there are two other important subjective ages: *age inside* and *age outside.* These are distinct from the felt age and globally defined subjective age which generally involve a cognitive age or perceived age, factoring illness, disability and societal expectations (Barrett 2005; Kaufman and Elders 2003; Montepare 2009; Teuscher 2009). *Age inside* is the age people attach to their 'self' at a particular time in the lifecourse. *Age inside* reflects the perception that the *self* is a certain age, often many decades younger than the chronological age. The age individuals believe that they appear to be, irrespective of the way they actually look, is termed *age outside. Age outside* is reflected in statements such as 'when I look in the mirror I don't recognize the person looking back at me – I think of myself as so much *younger.*' Both *age inside* and *age outside* are related to the discord between the aging face, which is like a mask - with its wrinkles and sagging skin - and a much younger person who exists behind the mask. This research project is focused on *age inside.* Subsequent research projects are planned to explore *age outside* and its' relationships with *age inside* and chronological age.

Lifecourse and Subjective Age

Subjective age and lifecourse theory have been integrated by a number of researchers, who point out that aspects of lifecourse theory such as agency, timing, linked lives, and time and space are relevant to life experience (Barrett and Montepare 2015). According to lifecourse theory, agency is an important component of subjective age, interacting with historical events and personal traits such as gender or ethnicity to create an age identity unique to each individual (Elder 1994). Time and place are also important

to consider. Individual and historical events play a role in personal development, both at the time of the event and at later points in life (Elder 1994). Subjective age "operates at a social level, entailing sociocultural and structural dimensions" (Barrett and Montepare 2015, p. 56). The historical period in which an individual's lifecourse unfolds impacts "features of the life course, such as its overall length and the likelihood and timing of transitions like marriage and grandparenthood" (Barrett and Montepare 2015, p. 66). The impact of these events may depend on their timing; when in the individual's lifecourse they occur. For example, the death of a parent is always difficult, but the effects are different if it happens during childhood versus when the child is in their seventies.

One of the realities of modern times is the "reduced mortality and fertility mean that aging occurs in taller and narrower family structures…with more generations alive at once and fewer in each one" (Settersten and Hagestad 2015, p. 35). This family structure is important in the consideration of the linked lives aspect of lifecourse theory. The principle of linked lives theorizes that the experiences of family and friends influence the lifecourse outcomes of individuals (Sanderson and Burnay, 2017). When families are small and generations overlapping, "family relationships become more important, active and intense because there are fewer relationships in which to invest, they are of longer duration and they exist across several generations" (p. 35). Events in the lives around us such as divorcing parents, death of a beloved family member, job loss for a significant other may play a role in subjective age.

Age Inside

Complex models of subjective age have been developed. For example, Kornadt, et al. (2016) examined the role of multiple life domains at various ages. These researchers asked participants how old they felt in terms of seven domains: "family, friends/social relations, leisure, personality, finances, work, and physical/mental fitness/health/appearance"

(Kornadt et al. 2016, p. 4). Their results demonstrated the chronological age did not play a significant role in in subjective age for middle aged and older adults. Important for our study, with older adults, Kornadt et al. (2016) found that older adults felt younger than middle aged adults in terms of the domains of personality, work and finances. These researchers suggest that "other factors must be assumed to also influence these evaluations" (Kornadt et al. 2016, p. 7).

In the present study, we suggest that the key factor is an abiding, resilient inner self, whose subject 'age inside' is not dependent on health or illness, family or situation, but on a particular point in the lifecourse. This study hypothesized that the age that participants identify with their inner self, the *age inside*, is disconnected from the physical body, reflecting instead the 'inner person' or the identity. The identity (the self) is developed through social interaction and is constructed over time (Mead 1962). Other researchers have suggested that there is a 'youthful self' inside the aging body (Featherstone, Hepworth and Turner 1991). *Age inside* is a form of identity that may be important in understanding a variety of health issues such as ensuring compliance with initiatives such as increased health protective behaviours. However, *age inside* under development here, differs from other concepts such as 'subjective age' which has been associated with education, health, self-esteem and financial satisfaction (Steitz and McClary 1988). Specifically, *age inside* is used here to describe the age that the individual identifies with him/herself, *irrespective of chronological age and physical health*, situated in a time and place within the lifecourse.

The aims

Age inside reflects the hypothesis that the inner self or individual personality is rooted in a particular age or time of life (that varies for each individual), and acknowledges that *age inside* may change over time. The age that is declared as the *age inside* is how old the person reports their inner 'self' to be. In fact, to ensure that *age inside* could not be attributed to a halo effect due to excellent health in older age, all participants included in this study had at least one illness.

This study addressed the following questions: 1. How is *age inside* described and is there is a relationship between *age inside* and chronological age? 2. Are gender, income adequacy and education level associated with *age inside* (AI) or *Age Inside Perception* (AIP)? 3. Can the associated variables be used to predict AI and AIP as the dependent variables, in separate regression models?

Methods

Sixty-six people were recruited through a non-probability, purposive, sampling method along with snowball sampling. Participants were over 65 years old, community dwelling, able to consent and participate in an interview, and English speakers. A cross-sectional, observational design was used. Participants were recruited through posters at seniors' centres, waiting areas of doctors' offices and through word of mouth. They were offered the option of doing the interview online or in-person. Online surveys were completed in 15 - 30 minutes. In-person interviews took 1 hour or more and were conducted in the participant's home, workplace or at local health care settings. The in-person interviews took longer than the online surveys due to the inclusion of social niceties (e.g. greetings, ice-breaking chatting). Participants were given the option of having a family member or friend with them at the interview.

A non-probability sampling method was chosen, in part because without a recruitment budget we required participants to self-select to be involved in the research (Maxwell, 1997; Palys, 2008; Mann, 2012). Snowball sampling, where participants were encouraged to refer other people who might be appropriate for the study, was also used. Both self-selected and snowball sampling allowed us to have continuous enrollment in the study as it was ongoing.

Inclusion criteria: (1) Age 65 years or older; (2) self-identification as having an illness; (3) community dwelling; (4) ability to participate in an interview; (5) informed consent for study participation, and (6) English fluency. *Exclusion criteria:* Significant cognitive impairment as ascertained by inability to comprehend and answer the survey questions. We accepted all eligible and interested participants until the requisite number of participants had been enrolled.

Ethics clearance was obtained from The Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (HSREB ROMEO/TRAQ#: 6013128). Care was taken to ensure participants' physical and emotional comfort and their full understanding of the project prior to consenting to participate. There were no ethical concerns with regard to the interviews, since there were no questions that were likely to trigger an emotional response. The data collected via the online surveys were stored at FluidSurveys.com and password protected. No identifying data were collected.

All participants (online and in person) were provided with a letter of information (LOI)– consent form which provided an overview of the types of questions that would be asked, an explanation of the benefits and risks to participants, notification that no identifying information would be collected and indicated that data would be stored for seven years at Queen's University. It also informed participants of their right to withdraw from the study at any time without any repercussions. This consent form did not record any identifying information.

Dependent variables: age inside (AI) and age inside perception (AIP)

Participant's *age inside* was measured by self-report, using the following question: "For many people their age in years does not reflect the age that they really identify with, inside. How old are you inside?" The answer was recorded as string rather than numerically in order to capture possible variations in *age inside.* The *age inside*

was then transformed into two variables: a continuous variable (AI) and a categorical variable (AI$_{cate}$). The categorical variable (AI$_{cate}$) was coded as: young adult (17-29; coded 1), adult (30-44 years coded 2); middle age (45-59; coded 3), late adulthood (60-74; coded 4) and older adult (75 years and above; coded 5); excluding those who gave unquantifiable answers (e.g. younger and older (e.g. 20 and 100 years) and those who just said 'younger'). We also looked at *Age Inside Perception* (AIP), the difference between AI and chronological age in years. To derive *Age Inside Perception (AIP), age inside* was subtracted from chronological age to ascertain how the age of the 'inner self' compared with the chronological age. AIP was a continuous variable.

Independent variables: sex, gender, self-reported health, education level, and income adequacy. Sex, self-reported gender, self-reported health, education level and income adequacy have all been predictive of subjective age in other research, so this information was collected. Participants were given the option of identifying their sex as: male, female or other. A single item self-reported gender scale (SR-Gender; Carver 2018) was used to record gender, asking "Most of the time would you say you are:" Answer choices were: very feminine; mostly feminine; a mix of masculine and feminine; neither masculine or feminine; mostly masculine; or very masculine. Health was measured several ways. To ensure that participants had an illness, participants were asked questions modeled on those in the Research on Early Life and Aging Trends and Effects (RELATE) Cross-National Study (McEniry 2015). Items included here were the following Yes/No questions: "Have you lost 5 kg (10 lbs) or more without trying in the last year?"; "Has a doctor or nurse ever told you that you have cancer or a malignant tumour, excluding minor skin cancers?"; "Has a doctor or nurse ever told you that you had a heart attack, coronary heart disease, angina, congestive heart failure, or other heart problems?"; "Has a

doctor or nurse ever told you that you have chronic lung disease such as chronic bronchitis, emphysema, or asthma?"; "Has a doctor or nurse ever told you that you have had a cerebral embolism, stroke, attack or thrombosis?"; "Has a doctor or nurse ever told you that you have an illness (not mentioned in the questions above)? If your answer to this question is "yes" - what is that illness?" These yes/no questions were used to ascertain whether the participant was in fact aging with an illness. Participants were also asked "Are you in any pain" with potential answer choices: No (scored as 4); Sometimes (scored as 3); Often (scored as 2); All the time (scored as 1). Self-reported health (SR-Health) was assessed by asking participants the question: "Generally, how do you feel about your health?" The available choices were: Most of the time it is very good (scored as 5); Most of the time it is good (scored as 4); Most of the time it is fair (scored as 3); Most of the time it is poor (scored as 2); Most of the time it is very poor (scored as 1).

Results

The background and health of participants

A summary of demographic and health variables is shown in Table 1. Chronologically participants were between 65 and 90 years (m_{age}=73 years, SD = 6.5). Fifty-seven percent were baby boomers (between 65 and 70 years old) and 43% were from the silent generation (71 years to 90 years). Over half (58.5%), of the participants were married or common-law, 27.7 per cent were widowed or single, 13.8 per cent were separated or divorced. Most (66.6%) had a completed a college diploma, undergraduate degree or a graduate (Masters or PhD or MD) degree. The majority of participants reported that their income met their needs 'reasonably well' (54.5%) or 'very well' (33.3%). Only 9.1 per cent felt that their income did not meet their needs.

All of the participants were aging in place, living in their own home or apartment. As shown in Figure 1, all participants reported at least two illnesses including: cancer (20%;); heart disease (17%); chronic lung disease (17%); stroke (6%); other illness (50%), which included diabetes, kidney disease, arthritis, thyroid disease among others.
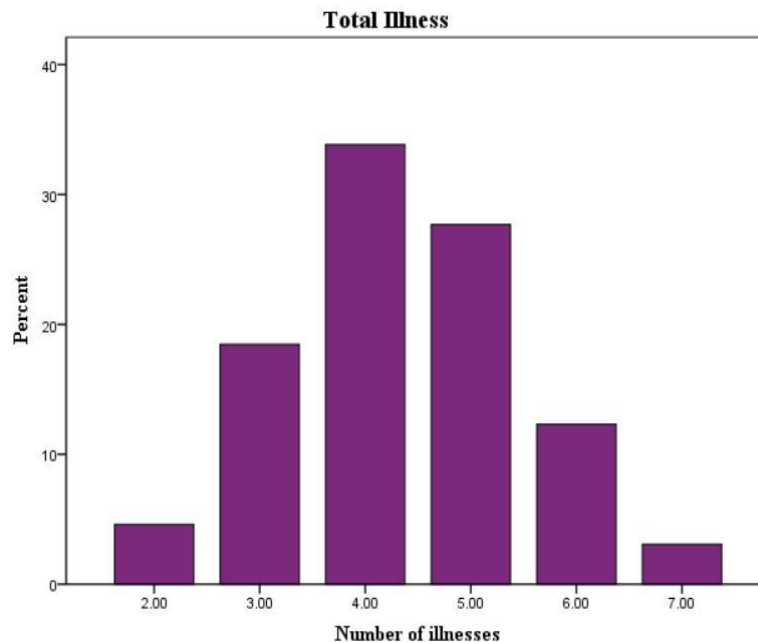
Figure 1 Total number of illnesses

Pain was a regular experience for 59.1 per cent. Despite the presence of illness, the

overwhelming majority of these participants considered that their health status was good

(45.5%) or very good (40.9%). Over half reported their sex was female (61.5%) and 38.5 per cent were male; although given the opportunity, no participant chose the 'other sex' category. Genders included 'very feminine' (24.2%), 'mostly feminine' (32.3 %), a mix of masculine and feminine (4.5%), 'very masculine' (18.5%), 'mostly masculine' (15.2%) and neither masculine or feminine (4.5%).

Table 1. Description of participants

	Range	Mean	SD	Median	
Chronological Age (years)	65-90	73	6.5	71	
Age Inside (years)	17-85	51	14.9	50	
		n			*%*
Education level					
Completed high school or less		21			31.8
College		15			22.7
University (undergraduate)		14			21.2
University (graduate)		15			22.7
Self-Reported Health Status					
Very good		27			40.9
Good		30			45.5
Neutral		6			9.1
Poor		2			3.0
Pain					
Always		5			7.6
Often		7			10.6
Sometimes		27			40.9
None		26			39.4
Illnesses (Count)					
One illness		0			0
Two illnesses		3			4.6
Three illnesses		12			18.5
Four illnesses		22			33.8
Five illnesses		18			27.7
Six or more illnesses		10			15.4
Income adequacy					
Not adequate or not very well		6			9.1
Reasonably well		36			54.5
Very well		22			33.3
Self-Reported Gender					
Very feminine		16			24.2
Mostly feminine		21			32.3
Mix of masculine and feminine		3			4.5
Mostly masculine		10			15.2
Very masculine		12			18.2
Neither masculine or feminine		3			4.5
Sex					
Female		40			61.5
Male		25			38.5
Marital status					
Widow/Widower/Single		18			27.7
Married/common-law		38			58.5
Separated/divorced		9			13.8
Categories of Age Inside (years)					
17-29 years		3			4.5
30-44 years		14			21.2
45-59 years		15			22.7
60-74 years		15			22.7
75+		4			6.1
Missing or unquantifiable		15			22.7
Age Inside Perception (AIP)					
7 to 19 years younger		15			32.3
20 to 40 years younger		21			45.6
41 to 70 years younger		5			7.6
Same as chronological age		5			7.6

Main Analysis

1. Research question: How is age inside described in this sample? Is there a relationship between age inside and chronological age?

Age inside (AI).

The majority of participants provided an *age inside* that was numerical (e.g. 45 years), however 19 participants provided an *age inside* that was a range (e.g. 20 to 30 years) or an unquantifiable response (e.g. "younger", or "sometimes 20 years old and sometimes100 years old", or "younger and older"). Where *age inside* was a numerical age range, the midpoint of the range was used as *age inside* score (e.g. 40 or 50 years old was coded as 45 years old). Those who gave unquantifiable answers were excluded from the analysis.

For those whose *age inside* was numerical, a*ge inside* ranged from 17 to 85 years old with a mean age of 51 years (m_{AI} = 51 years, SD = 14.9). For a small group of participants (4.6%) *age inside* was in the 'young adult' range (17-29 years). Twenty-eight percent reported their *age inside* was in the 'adult' range (30-44 years) and 29.4 per cent were middle-aged (45-59 years). Young-old (60-74 years) was reported by another 29.4 per cent and a few (7.8%) reported their age inside was seventy-five or older. Table 2 shows the correlation between *age inside* and chronological age, which was not significant (r=.209, p > .05) indicating that *age inside* is independent of chronological age. A one way ANOVA was performed to considering the generation or life course cohort of participants and *age inside*, it was not significant (F(1,49) = .846, p = .362) for the participants from the baby boomer generation (N=29) as compared with the silent generation (N=22).

Age Inside Perception (AIP).

AIP represents the perception of how old the person associates with their inner self as compared to their chronological age. It is the *age inside* subtracted from 'chronological age' to give the number of years between the two ages. None of the participants whose *age inside* unquantifiable (29.2%) were included in the calculation of AIP. For the majority of participants with numerical *age inside*, their *age inside perception* was 20 to 40 years less than their chronological age, with a mean AIP of 23 years. Considering those participants whose *age inside* was numerical, the range of AIP was from zero (no difference) to seventy as follows: AIP of seven to 19 years (32.3%); AIP of 20 to 40 years (45.6%); AIP of 41 to 70 years (7.6%); and AIP of zero (7.6%). As shown in Table 2, the correlation between *age inside perception* and chronological age was not significant (r=.224, p > .05) indicating the independence of the two variables. The one way ANOVA generation and AIP was not significant (F(1,44) = 1.540, p = .221) for the participants from the baby boomer generation (N=28) versus the silent generation (N=18).

2. Research question: Is there an association between age inside and sex, gender, income adequacy and education level?

As shown in Table 2, the variables sex, income adequacy and education level, as well as physical health related variables (number of illnesses, pain) were not significantly correlated with *age inside* (AI) or *age inside perception* (AIP). Only gender (AIr = .336, p < .05 and AIPr = -.386, p < .01) and SR-health status (AIr = -.328, p < .05 and AIPr = .342, p < .05) were significantly correlated with both AI and AIP.

Table 2. Pearson Correlations between Age Inside, AIP and independent variables

		Age inside	AIP (Chronological age *minus* Age Inside)
Age	Corr. Coef.	.209	.224
	Sig. (2 tailed)	.141	.135
Gender	Corr. Coef.	.336*	-.386**
	Sig. (2 tailed)	.016	.008
Sex	Corr. Coef.	.194	-.285

	Sig. (2 tailed)	.174	.055
Income Adequacy	Corr. Coef.	.202	-.156
	Sig. (2 tailed)	.160	.305
Education Level	Corr. Coef.	.227	-.151
	Sig. (2 tailed)	.109	.315
Pain	Corr. Coef.	-.122	.059
	Sig. (2 tailed)	.395	.698
Illnesses	Corr. Coef.	-.029	.066
	Sig. (2 tailed)	.840	.662
Health Status	Corr. Coef.	-.328*	.342*
	Sig. (2 tailed)	.019	.020
Quality of life	Corr. Coef.	-.193	.134
	Sig. (2 tailed)	.174	.376

*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed). ***Correlation is significant at the 0.001 level (2-tailed).*

Table 3 shows the mean scores for the variables AI and AIP by gender and by self-reported health. Participants who felt very feminine reported the youngest AI, and those who were very masculine reported the highest AI. The mean scores of AIP for each gender (Table 3), the very masculine participants reported an AIP of 19 years younger than their chronological age. The very feminine participants reported an AIP of 31 years younger than their chronological age – almost twice the AIP of the very masculine. However, these differences were not significant in a one-way ANOVA ($F(5,45) = 1.549$, $p = .194$).

## Table 3. Mean AI and AIP by Gender (in years) and Self-reported Health.

Gender	Age Inside (AI)	Age Inside Perception (AIP)
Very feminine	44.6	31.3
Mostly feminine	50.2	25.6
Both masculine and feminine (androgynous)	47.5	21.5
Mostly masculine	54.8	15.9
Very masculine	55.3	19.2
Neither masculine or feminine	-	-
SR-Health	**Age Inside (AI)**	**Age Inside Perception (AIP)**
Very poor (scored 1)	-	-
Poor (scored 2)	-	-
Neutral (scored 3)	61	11.75
Good (scored 4)	52.14	20.73
Very good (scored 5)	47.75	27.4

Both AI and AIP demonstrated marked differences according to the SR-Health of participants, all of who were aging with illness. There were no participants who scored their health as 'very poor' and only three per cent reported 'poor' health (their AI and AIP are not given to preserve confidentiality). However, those who reported their health to be very good also had a mean *age inside* that was approximately five years younger than those who reported their health as 'good'. And those in 'good' health reported an AIP of almost 10 years younger than those whose health was 'neutral'. Further, those whose health was reported as 'very good' had an AIP of 27 years younger than their chronological age.
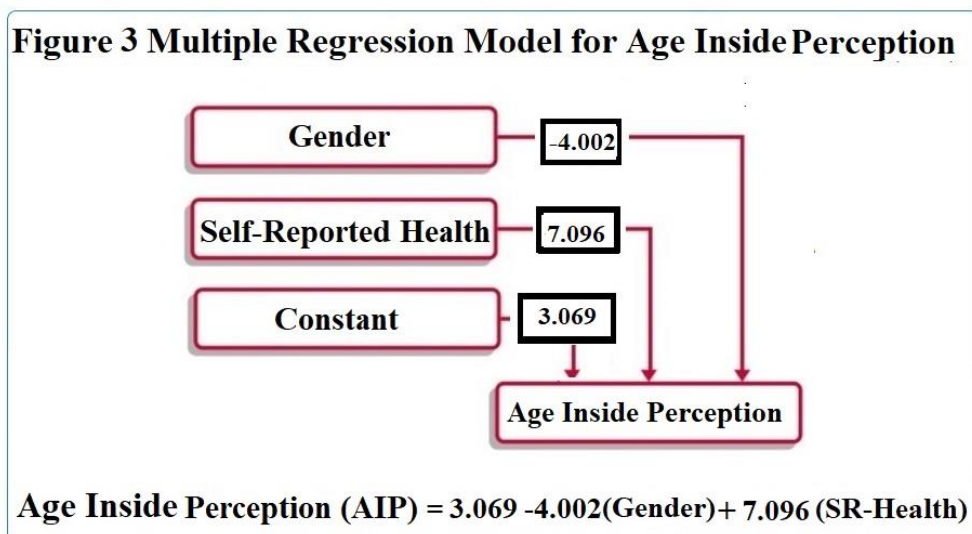
Regression analysis

3. Can the associated variables be used to predict AI and AIP as the dependent variables, in separate regression models?

Figure 2 Multiple Regression Model for Age Inside (AI)

Age Inside (AI) = 70.615 + 3.090 (Gender) − 6.396 (SR-Health)
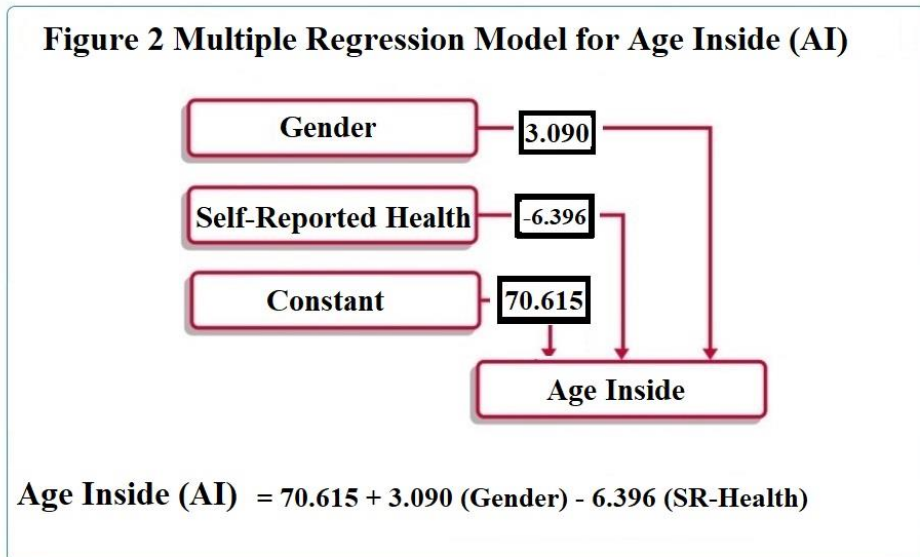
Two multivariate linear regressions were performed, using SPSS: 1. Using *Age Inside* (AI) as the dependent variable and gender and self-reported health (SR-Health) as independent variables; 2. Using *Age Inside Perception* (AI) as the dependent variable and gender and self-reported health (SR-Health) as independent variables. The assumptions were met for the multiple regression analysis. Using the formula provided by Soper (2014) we confirmed that 42 participants provided enough power to detect a moderate effect size (f^2 = 0.25), with statistical power of 0.8, type I error (α = 0.05) and two predictor variables in a multiple regression analysis. Missing data was excluded listwise.

The first multivariate linear regression with Age Inside (AI) as the dependent variable (Figure 2) was significant (R^2 =.208, F(2, 48)=6.289, *p*<.01) with gender and self-reported health (SR-Health) as independent variables. The Beta coefficients for the predictors revealed that gender (β = .317, p<.05) and SR-Health (β = -.309, p<.05) contributed significantly to the model.

Figure 3 Multiple Regression Model for Age Inside Perception

Age Inside Perception (AIP) = 3.069 − 4.002(Gender) + 7.096 (SR-Health)

The second multivariate linear regression with Age Inside Perception (AIP) as the dependent variable (Figure 3) and gender and self-reported health (SR-Health) as independent variables

was also significant (R^2 =.243, F(2, 43)=6.884, p<.01). Gender (β = -.356, p<.05) and SR-Health (β = .307, p<.05) contributed significantly to the model. Table 4 gives the statistics for these regression analyses.

Table 4. Summary of Multiple Regression Analysis for Variables Predicting Age inside and Age Inside Perception

Variable	Age Inside			Age Inside Perception		
	B	SE B	β	B	SE B	β
SR-Health	-6.396	2.669	-.309	7.096	3.080	.307
Gender	3.090	1.257	.317	-4.002	1.498	-.356
R^2	.208			.243		

Discussion

The social construction of age results in certain behavioural expectations of people of certain chronological ages. And, from a lifecourse perspective, this socially constructed chronological age is influenced by macro-level time and place variables such as historical period, cohort, and micro-level, often intersectional variables such as education level, financial status and physical health (Barak 2009; Choi and DiNitto 2014). Subjective age has been associated with variables such as education, health, self-esteem, financial status, sex, and physical health status (Barak 2009; Choi and DiNitto 2014). Feeling younger has been linked to improved memory function (Levy 2003) and higher levels of subjective well-being (Kleinspehn-Ammerlahn, Kotter-Grühn and Smith 2008). *Age inside* is a type of subjective age hypothesized to be independent of the physical body, and as such it was explored among a group of individuals aging with illness.

The *age inside* concept under development here, is reflective of the hypothesis that the *age inside* is the age a person *identifies with their inner self* and it is not correlated with the person's physical health, education, income adequacy or chronological age. *Age inside*, as operationalized here, reflects the hypothesis that there is a 'self' that resides in each individual and is unconstrained by years lived. In this sample of people aging with illness, *age inside* was not associated with chronological age, sex, physical health, education, or income adequacy. Perhaps this was because most participants, although living with illness, did not see themselves as 'sick', the majority of whom self-reported their health as good or very good. A*ge inside* and *age inside perception* were both significantly associated with self-reported health and gender.

Participants who *self-reported* being healthier also had a younger *age inside*, suggesting that the important criteria may not be health or illness in absolute terms, but the way it makes the person feel (Table 5). This differs from other researchers who found, for example, that "good physical health proved to significantly predict younger felt age compared to those in poorer physical health" (Bergland 2014:16). It may be that the emphasis, in *age inside*, on the perceived age of the *inner self*, means that this type of subjective age is not circumscribed by physical health in absolute terms. Perhaps the variations in *age inside* among those aging with illness reflects psychological strengths such as resilience or coping skills or even optimism.

Only self-reported gender and self-reported health had an important role in predicting the *age inside* of this sample (Table 5). Better self-reported health was found among those with greater differences between their *age inside* and their chronological age, suggesting that feeling that your health is 'very good' may be an important element in your *age inside*, irrespective of your actual diagnoses. Gender

was also a significant predictor of both *age inside* and how much younger participants felt than their chronological age (referred to here as *age inside perception*). 'Very feminine' participants reported an *age inside perception* over one and a half times larger than that of the

'very masculine'. The 'very feminine' tended to associate their *age inside* with a self on average three decades younger than their chronological age. Whereas the 'very masculine' had an *age inside* of approximately two decades younger.

TABLE 5. *Overview of Age Inside*

Age Inside	Factors associated with Age Inside	Relationship to Age Inside
As people reach older adulthood their *age inside* reflects the age of the inner self and is different from chronological age	Gender	Femininity was associated with younger *age inside* and a greater difference between chronological age and *age inside* in this cohort.
	Self-reported health	Better self-reported health was also associated with younger *age inside* and a greater difference between chronological age and *age inside* in this cohort.

The results of this small study suggests that for older adults, even among people aging with illness, the age of the inner self – their *age inside* - is frequently considerably younger than their chronological age. In fact, the mean *age inside* for this sample of people aging with illness was 51 years, and there was an average difference of two decades between *age inside* and chronological age. So unlike other conceptions of subjective age, age inside was not constrained by objective physical health. Nor was it associated with chronological age.

The sample size in this research project was too small to consider it much more than a pilot study. Future research is recommended to ascertain whether older adults with younger *age inside* identities engage in behaviours stereotypically associated with a socially constructed expectation for younger chronological ages. And, if so, do they do so to elicit responses from others or as a form of self-expression of their *younger* inner self? Moreover, does the younger *age inside* result in the perception by others that they are in fast younger than their chronological age? Then, according to Kleinspehn-Ammerlahn, Kotter-Grühn and Smith (2008) "interpersonal interactions that occur in such a scenario may facilitate positive well-being and also contribute to better health" (385). The impact of linked lives on *age inside* is important

to understand. In fact, future research needs to delve into the influence of other lifecourse principles, including timing and time and place, to better understand the development of *age inside.*

The persistence of a young *age inside* may reflect the desire to retain the higher status of youth (Weiss and Lang 2012) or the identification with a younger self (Kotter-Gruhn et al 2016) or the rejection of the stigma associated with old age (Linn and Hunter 1979). Of maybe, a youthful *age inside* simply reflects an inner self that does not change with passing years – an identity established at a certain point that results in considering the world through young eyes. Perhaps the self does not age at the same rate as the physical body. Whatever the reason for the discrepancy between chronological age and *age inside* there is no question that it exists.

Acknowledging *age inside* may lead to the development of new intergenerational understanding. A chronologically 85-year-old person who has an age inside of 25 and a chronologically 25-year-old might be able to find common ground and mutual respect. Other impacts of a youthful *age inside* may be that these people choose to work past 'retirement age' or have different patterns of saving and spending. It could also have relevance in policy

and service provision. If people do not *identify* themselves as 'seniors' or 'elders' but instead consider themselves as young or middle aged adults, service provision aimed at seniors may well fail. Considering that older adults may identify with significantly younger *age inside* might explain why sexually transmitted disease is a major, and often ignored, health issue for older adults. Acknowledging that people are not bound by chronological age, leads us to look into the eyes of the person next to us and consider the person inside, not their wrinkles or infirmities.

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