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Life Aspirations and Health in Canada: A Patient-Oriented Study

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Research in self-determination theory has focused on intrinsic and extrinsic aspirations and their unique antecedents and consequences. Most studies, however, have focused on mental health and less on physical, emotional, and social health. Studies on life aspirations and health have also been limited in demographic representation, scope, and measurement. The present study addresses these issues by examining, among a diverse sample of Canadian medical patients, how the relative centrality of intrinsic versus extrinsic aspirations relates to one's overall health status. A total of 261 (64%) participants completed an online survey, containing demographic questions and two questionnaires—the Aspirations Index and Short-Form Health Survey. Factor analysis was first performed to confirm hypotheses about aspiration factor loadings. Pearson coefficients were then used to assess how the aspiration, demographic, and health items intercorrelated. Controlling for significant demographic factors, hierarchical regression analyses were then conducted to determine how the relative centrality of intrinsic versus extrinsic aspirations related to health status. The intrinsic and extrinsic aspirations loaded according to hypotheses. Regression analyses showed that placing more importance on, and particularly attaining, intrinsic aspirations related positively to physical, emotional, mental, and social health. Conversely, placing more importance on, and particularly attaining, extrinsic aspirations related negatively to these health outcomes. Findings add to the research base and raise new and important questions about how different life aspirations relate to human health and functioning.

Public Significance Statement

Research suggests that, regardless of demographic background, people will function better when their aspirations are more intrinsic (e.g., relationships) versus extrinsic (e.g., wealth). In support of this idea, results from this study showed that prioritizing and attaining intrinsic aspirations related to better physical, emotional, mental, and social health, whereas prioritizing and attaining extrinsic aspirations related negatively to these outcomes.

Keywords: goals, aspirations, health, well-being

We all want to live a life that is full. As Frank Sinatra wrote in his classic, “I did it my way,” we also want to live freely, in our own unique way. The question is: how do we achieve this kind of prosperity, and what goals do we pursue, avoid, and let go of along the way? Sadly, in the pursuit of “success” and happiness, many will end up sacrificing their health and well-being for money and possessions, social status, and physical looks, only to realize that these pursuits were not as fulfilling as they had imagined, and that they often came at substantial personal costs—for example, lost time with family and friends, compromised values, regrets about the past, and worries about the future (Van Hiel & Vansteenkiste, 2009). Indeed, the dark side of the “American Dream” has been studied fairly extensively, including the antecedents and consequences of pursuing different life aspirations (Kasser & Ryan, 1993, 1996, 2001; Niemiec, Ryan, & Deci, 2009).

Within self-determination theory and goal contents theory (GCT) in particular, research has looked at extrinsic aspirations (e.g., image/

status, fame, wealth) and intrinsic aspirations (e.g., meaningful relationships, personal growth, community contributions, and physical health) and how the pursuit of each kind relates to health and well-being. In general, this research has demonstrated that intrinsic aspiring tends to promote mental health, whereas extrinsic aspiring tends not to (Kasser & Ryan, 2001). Studies have further shown that the attainment of intrinsic aspirations is positively associated with well-being, while the attainment of extrinsic aspirations tends not to be (Kasser & Ryan, 1993, 1996, 2001; Niemiec, Ryan, & Deci, 2009). This is not to say that extrinsic aspirations are inherently bad. Rather, it is the overprioritization of extrinsic aspirations (i.e., in the overall pattern of aspiring) that GCT proposes will undermine people's motivation, health, and well-being. A large systematic review and meta-analysis have now confirmed these predictions across a wide variety of populations (Bradshaw et al., 2023).

Studies have also examined the consequences of pursuing various aspirations in different age groups and cultures and with different health-related outcomes. For example, Williams et al. (2000) found that high school students with stronger extrinsic aspirations were more likely to engage in high-risk behaviours, such as tobacco, marijuana, and alcohol use. Similar findings have been reported in college and university students, with increased drug and alcohol use, television watching, compulsive buying, and poorer relationships with others (Kasser & Ryan, 2001; Otero-López et al., 2021;

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Williams et al., 2000). Cross-cultural research also shows that intrinsic aspiring predicts greater life satisfaction (Martela et al., 2019; Martos & Kopp, 2014; Ryan et al., 1999), subjective vitality (Kasser & Ryan, 1993, 1996; Yamaguchi & Halberstadt, 2012), and mindfulness (Brown et al., 2009), as well as empathy, prosocial, and pro-environment behaviours (Fu et al., 2018; Sheldon & Kasser, 1995; Unanue et al., 2016). On the other hand, extrinsic aspiring has been shown to predict greater symptoms of psychological distress and ill-being (Martos & Kopp, 2014; Ryan et al., 1999; Sheldon & Krieger, 2014).

Together, these studies highlight how investing in superficial goals (e.g., material possessions) tends to impede happiness and well-being compared to those that are more humanistic (e.g., close relationships with others). According to GCT, this is because extrinsic aspirations are contingent on social comparisons, which constrain people's sense of autonomy, competence, and relatedness, compared to intrinsic aspirations, which readily satisfy these basic psychological needs (Ryan & Deci, 2017). Essentially, as people's social capital grows, they will quickly adapt, compare themselves to others, and inevitably desire more (Kasser et al., 2014). Fulfilment from extrinsic pursuits hence becomes perpetually unattainable, and more is always needed to keep receiving their so-called benefits (Csikszentmihalyi, 1999). Accordingly, studies show that extrinsic attainments tend to frustrate basic psychological needs and deter well-being (Niemi, Ryan, & Deci, 2009; Soenens et al., 2015), often provoking maladjustment and compensatory behaviours as a result (Kasser et al., 2014; Kasser & Ryan, 2001).

Interestingly, researchers have begun to study how people's aspirations relate to their health-related motivation and actual physical health—for example, their motivation to abstain from long-term tobacco use (Niemi, Ryan, & Deci, 2009), engage in physical activity (Sebire et al., 2009), and make healthy lifestyle choices (Bradshaw et al., 2018). These studies have shown that aspiring to physical health and investing in intrinsic goals (e.g., exercising more), but not those that are extrinsic (e.g., looking a certain way), enhances one's need satisfaction, physical health, and well-being (Gunnell et al., 2014; Nogueira Antunes et al., 2018; Ryan & Deci, 2017). Conversely, having stronger extrinsic aspirations has been linked to more physical symptoms, such as stomach aches, headaches, and back pains (Miquelon & Vallerand, 2006, 2008). Preliminary evidence thus suggests that pursuing different kinds of aspirations can influence not only people's mental health but their health behaviours and risk for physical illness. That said, research on aspirations and health is still evolving, and additional studies are needed in this area.

Kasser and Ryan (1996) explored relations of intrinsic versus extrinsic aspirations to various health and well-being outcomes, including physical symptoms across the lifespan. However, their sample was primarily female, health status itself was not assessed (only transient symptoms), and a composite measure was used as their dependent variable, which is perhaps less informative for interventions. Miquelon and Vallerand (2006) also found significant relations between college students' aspirations and physical health, but they too used a composite measure of physical symptoms, and only at one time point, under stressful conditions. They subsequently found that self-realization, stress, and types of coping mediated the relationship between people's goal motives and physical symptoms (Miquelon & Vallerand, 2008). Despite the addition of a self-rated health measure, though, that sample again consisted of only undergraduate students.

Similarly, Behzadnia et al. (2020) found links between people's intrinsic and extrinsic aspirations and physical health and activity levels; however, they focused solely on the elderly and did not find significant relations between aspirations and body mass index or blood pressure. Associations between aspirations and physical ailments where lifestyle tends to be implicated (e.g., physical functioning, bodily pain, and limitations in activities of daily living) have also not been reported in the literature. Hence, there is a significant paucity of research connecting the contents of people's aspirations to health problems that are commonly seen and managed in primary care, where patients, young and old, first tend to present. A better understanding of the association between aspirations and health status could not only improve health care providers' ability to care for their patients but also reduce significant costs for the health care system in turn.

A final set of issues is that of confounding factors and measurement inconsistencies in the literature. Previous studies have shown that demographic factors—in particular, age, gender, education, income, subjective financial status, ethnicity, and religiosity—can influence aspirations and therefore health and well-being (Martos & Kopp, 2014; Ryan et al., 1999). However, few studies have controlled for these factors (Martos & Kopp, 2014). A recent meta-analysis showed that GCT's principles held across males and females, age groups, socioeconomic statuses, and cultures/regions (Bradshaw et al., 2023). Accounting for these demographic factors is nonetheless considered important in the present study, however, given that it examines relations between intrinsic and extrinsic aspirations and self-reported health outcomes that have not yet been studied.

Furthermore, various studies on aspirations, health, and well-being have relied on simple correlational analyses without controlling for the overall importance placed on those aspirations. As Bradshaw et al. (2023) explain, this is problematic because GCT's claims are based on the relative centrality principle, and correlations between extrinsic aspirations and well-being that rely on simple scores (i.e., the mean across all extrinsic aspirations) tend to become negative once relative centrality scores (i.e., the mean across all extrinsic aspirations minus, or controlling for, the mean across all aspirations) are used (Kasser & Ahuvia, 2002; Kasser et al., 2014). The latter approach makes it more difficult to achieve statistically significant results, and the magnitude of those results tends to be smaller, but it is preferred because it partials out the beneficial striving component associated with both extrinsic and intrinsic aspirations.

The Present Study

The present study addresses these gaps in the literature in several important ways. First, it investigates how the relative centrality of intrinsic versus extrinsic aspirations relates to multiple dependent health variables that have yet to be investigated: general perceptions of physical health, physical functioning, role limitations due to physical health problems, bodily pain, vitality, mental health, and health-related interferences in one's social activities. Understanding how aspirations relate to these outcomes is important because they are common health issues that are often multifactorial and difficult to manage, and they represent significant costs in health care. Second, analyses are based on data from a heterogeneous sample of Canadian medical patients, aged 18–90 years old. This way, results are potentially more generalizable to the entire adult population rather than to a limited group of individuals (e.g., students). Finally, various

sociodemographic factors are controlled for that have previously been implicated but not accounted for in the aspirations, health, and well-being literature. Their inclusion helps in terms of testing GCT's universality principle and in terms of accuracy of findings.

The purpose of this study is to determine the relationship between the relative centrality of intrinsic versus extrinsic life aspirations and overall health status (physical, emotional, mental, and social functioning) while accounting for different demographic factors that are known to influence aspirations, health, and well-being. The overarching hypothesis is that placing more importance on and attaining intrinsic aspirations will be health-protective, whereas placing more importance on and attaining extrinsic aspirations will relate to poorer physical, emotional, mental, and social health—that is, in more frequent symptoms, health concerns, and role limitations (Behzadnia et al., 2020; Miquelon & Vallerand, 2006, 2008). The specific hypotheses were as follows:

Hypothesis 1: Prior studies have consistently shown that the importance and attainment scores for personal growth, meaningful relationships, and community contributions will load as intrinsic aspirations, whereas the importance and attainment scores for wealth, fame, and image/status will load as extrinsic aspirations (Bradshaw et al., 2023; Kasser & Ryan, 1996). However, the physical health aspiration has been shown to load as either intrinsic or intrinsic and extrinsic (Schmuck et al., 2000). A factor analysis was therefore performed in the present study to determine how each of the seven specific aspirations would load, prior to any analyses with the general (intrinsic and extrinsic) aspiration factors.

Hypothesis 2: Striving for and attaining different aspirations, regardless of their type, is considered positive from an organismic perspective (Bradshaw et al., 2023). The importance and attainment scores for the intrinsic aspirations are therefore expected to positively correlate, and each is expected to positively correlate with the importance and attainment scores for the extrinsic aspirations (Bradshaw et al., 2023; Kasser & Ryan, 1996).

Hypothesis 3: Based on prior studies (Kasser & Ryan, 1996), age is expected to negatively relate to extrinsic aspiration importance, and gender may or may not relate to intrinsic and extrinsic aspiration importance. Martos and Kopp (2014) also found that both income and subjective financial status positively related to aspirations and well-being, and that education and ethnicity were important factors to consider as well. A similar pattern is therefore expected to emerge in the present study, with these variables being significant correlates. Religiosity could relate to intrinsic or extrinsic aspirations since its relationship to health and well-being is thought to depend on the individual's motivation towards pursuing it (Ryan et al., 1993).

Hypothesis 4: Regardless of one's demographic, placing more importance on and attaining intrinsic aspirations (i.e., relative to extrinsic aspirations) will predict better physical, emotional, mental, and social health, whereas placing more importance on and attaining extrinsic aspirations (i.e., relative to intrinsic aspirations) will predict the opposite, in poorer health and overall functioning (Bradshaw et al., 2023).

Method

Participants and Procedure

Four hundred ten patients from an urban medical clinic in Calgary, AB, were invited to complete an online survey, running from November 2022 to May 2023. Inclusion criteria required that participants were 18–90 years old, could read and understand basic English, and had an active email address with access to a computer with internet. For recruitment, research posters were put up throughout the medical clinic, and patients were either verbally asked by their physician (author AN) if they were interested in participating, or they volunteered spontaneously. Those who were interested were sent an email invitation via a third-party address, containing a consent form, information about the study, and a link to the online survey tool.

The survey contained several demographic questions, followed by two previously validated questionnaires (see the Measures section). The demographic questions asked participants about their age (18–24, 45–49, 50–74, 75–90), gender (female, male, nonbinary/other), education (lower than high school, high school, or college/university or higher), income (\$49,000 and under, \$50,000–\$99,000, \$100,000 and over), subjective financial status (from 1 = *much worse* to 10 = *much better*, compared to other Canadians), culture/ethnicity (White, Black, Latino or Hispanic, Asian, Indigenous, Native Hawaiian or Pacific Islander, other), and religiosity (not at all important, somewhat important, very important). The psychometric instruments included the 35-item Aspirations Index, which is freely available online, and the Short-Form-12 Health Survey (SF-12), which required a license from Quality Metric Inc. To prevent participant identification and minimize response bias, all surveys were completely anonymous, and the data were reported in aggregate format. Reminder emails were therefore not sent out, and whether or not patients participated in the study could not have any influence on their medical care.

Ethics

This research received approval from the University of Calgary Conjoint Human Research Ethics Board (REB No. 22-1096).

Measures

Life Aspirations

The Aspirations Index (Kasser & Ryan, 1993, 1996, 2001) measures the relative strength of people's extrinsic versus intrinsic life aspirations. It has 35 items and captures seven categories of aspirations: wealth, fame, and image/status (extrinsic), meaningful relationships, personal growth, physical health, and community contributions (intrinsic). Each category has five items, and participants answer three questions for each item, using a scale from 1 (*not at all*) to 7 (*very*): the importance of each aspiration, their beliefs about the likelihood of attaining each aspiration, and the degree that they have already attained each aspiration. In this study, the importance and attainment dimensions were the focus. Higher scores indicate more aspiration importance and attainment. For various approaches to analyses, and evidence of the Aspirations Index's strong psychometric properties, see Kasser and Ryan (1996).

Health Status

The Short-Form-12 Health Survey (SF-12v2) measures a person's health-related quality of life. It is considered a reliable measure of health status and has been validated among a wide range of populations, cultures, and age groups (Al Omari et al., 2019; Wood Dauphinee et al., 1997). The SF-12v2 contains a subset of 12 items from the Canada (English) SF-36v2 Health Survey, with standardized response choices that are organized into eight single or multi-item scales—four for physical health: general health perceptions (GH), physical functioning (PF), role limitations due to physical health problems (RP), and bodily pain (BP)—and four for psychological health: role limitations due to emotional problems (RE), vitality (VT), general mental health (MH), and social functioning (SF). There are therefore eight health-related variables in total. Reverse scoring is done for several subscale items so that higher scores indicate better health outcomes for all the SF-12 subscales.

Data Analysis

Qualtrics and SPSS were used for the survey and analyses. Descriptive statistics and Cronbach's α reliability values were computed for the demographic and main study variables. To support GCT's proposition that aspirations can be categorized as intrinsic or extrinsic, the seven aspiration subscale scores for each dimension (importance and attainment) were first subjected to principal components factor analysis with varimax rotation. The Kaiser–Meyer–Olkin test was used to ensure the data and sample size were sufficient (Xie & DeVellis, 1992). Kaiser–Meyer–Olkin values above 0.6 indicate sample adequacy, and the maximum allowance for factor cross-loading was 0.4. Two overall mean importance and attainment scores were then computed by averaging the respective subscale scores (across all seven aspirations). Finally, four summary scores were computed, representing importance and attainment of intrinsic and extrinsic aspirations. Their relations to each other, and the demographic and health variables, were assessed with Pearson correlations. Chi-square was used to determine whether aspirations and health varied based on ethnicity. Four hierarchical regressions were then performed, for importance and attainment of intrinsic and extrinsic aspirations. For each regression, the significant demographic factors were entered as predictors in Step 1, the overall score for aspiration importance or attainment was entered in Step 2, and the summary score for intrinsic or extrinsic aspirations was entered in Step 3. The SF-12 health items were entered, one at a time, as dependent variables.

Results

Participants

Out of 410 invitations, 261 (64%) participants completed the survey. Not all participants completed all scale items. However, very few participants (approximately 3%) had missing data, and those that did completed the great majority of the survey questions. Analyses were therefore performed with the data that were obtained without replacing any missing values. Other than the fact that most participants were Caucasian, this sample was considered representative in terms of demographic and socioeconomic background. See Table 1 for a summary.

Table 1
Sample Characteristics (N = 261)

| Characteristics | Frequency (%) |
|----------------------------------|---------------|
| Age | |
| 24 and under | 31 (11.9) |
| 25–49 | 104 (39.8) |
| 50–74 | 96 (36.8) |
| 75 and over | 29 (11.1) |
| Gender | |
| Female | 127 (49.2) |
| Male | 130 (50.4) |
| Nonbinary/other | 1 (0.4) |
| Education | |
| Lower than high school | 5 (1.9) |
| High school | 65 (25.2) |
| College/university or higher | 188 (72.9) |
| Income | |
| \$49,000 and under | 83 (31.5) |
| \$50,000–\$99,000 | 115 (44.4) |
| \$100,000 and over | 63 (24.1) |
| Ethnicity/culture | |
| White | 221 (84.7) |
| Black | 1 (0.4) |
| Latino or Hispanic | 2 (0.8) |
| Asian | 16 (6.1) |
| Native Hawaiian/Pacific Islander | 1 (0.4) |
| Other | 20 (7.6) |
| Religiosity | |
| Not at all important | 156 (60.7) |
| Somewhat important | 72 (28.0) |
| Very important | 29 (11.3) |
| Subjective income | |
| 1–5 | 83 (31.5) |
| 6–10 | 173 (66.5) |

Factor Analyses of Aspirations

Each aspiration was first subjected to principal components factor analysis to support GCT's classification of intrinsic versus extrinsic aspirations. The Cronbach's α values for aspiration importance and attainment were as follows: relationships (.84 and .81), personal growth (.73 and .79), community (.85 and .87), physical health (.82 and .90), wealth (.85 and .82), fame (.85 and .80), and image/status (.82 and .83). These reliability values were satisfactory.

In line with a priori hypotheses, analysis of the seven aspiration subscale scores revealed two factors, as seen in Table 2. The first factor included only the intrinsic aspirations—meaningful relationships, personal growth, community contributions, and physical health—while the second factor included only the extrinsic aspirations—wealth, fame, and image/status. This was the case across the aspiration importance and attainment scores. Their respective Kaiser–Meyer–Olkin values of .710 and .808 ($p < .001$) were both acceptable. These results supported GCT's classification of aspirations into intrinsic and extrinsic categories.

Relations Between Aspirations, Demographic, and Health Status

Next, four summary scores were computed, reflecting the average importance and attainment of intrinsic and extrinsic aspirations. The Cronbach's α s for these factors ranged from .81 to .84. As seen in

Table 2

Loadings From Higher Order Factor Analyses of Aspiration Subscale Scores

| Aspirations | Importance | | Attainment | |
|-----------------|------------|-----|------------|-----|
| | 1 | 2 | 1 | 2 |
| Relationships | .74 | | .64 | |
| Personal growth | .83 | | .69 | |
| Community | .69 | | .56 | |
| Physical health | .65 | | .64 | |
| Wealth | | .81 | | .76 |
| Fame | | .81 | | .82 |
| Image/status | | .84 | | .83 |

Table 3, intrinsic aspiration importance and attainment positively correlated ($r = .47$), just as extrinsic aspiration importance and attainment positively correlated ($r = .61$)—all $p < .001$. Intrinsic and extrinsic aspiration importance also positively correlated ($r = .27$), as did intrinsic and extrinsic aspiration attainment ($r = .50$)—all $p < .001$. These findings further supported hypotheses and informed the following regression analyses.

In terms of demographics, age negatively related to intrinsic and extrinsic aspiration importance and positively related to intrinsic (but not extrinsic) aspiration attainment. Age also negatively related to several of the physical health items (RP, PF, BP) and positively related to all four psychological health items (RE, VT, MH, SF). Gender was not a significant correlate of aspirations or health status. Based on point biserial correlations, males earned a higher income than females and perceived a better income relative to the Canadian population. Education positively related to intrinsic aspiration importance and attainment, and to a weaker extent, extrinsic aspiration attainment. It also related positively to various physical (RP, PF, BP) and psychological (RE, VT, MH, SF) health items. Income positively related to intrinsic and extrinsic aspiration attainment, but not to aspiration importance in general. It also related positively to all of the physical and psychological health items, except VT. Subjective income positively related to all aspiration and health items. Further, there was a weak positive correlation between religiosity and extrinsic aspiration attainment. Last, chi-square results showed that intrinsic aspiration importance did not vary based on ethnicity ($p > .05$), but that intrinsic aspiration attainment did, $\chi^2(396) = 598.53$, $p < .001$. Conversely, extrinsic aspiration importance varied based on ethnicity, $\chi^2(410) = 571.12$, $p < .001$, but extrinsic aspiration attainment did not ($p > .05$). There were no significant differences in any of the health items based on ethnicity (all $p > .05$).

How Intrinsic Versus Extrinsic Aspirations Predict Health Status

Following these steps, two sets of regression analyses were performed (one for aspiration importance and one for aspiration attainment), in which all of the above demographic factors were entered into the prediction equation first, the overall score for the aspiration dimension (importance or attainment) was entered second, and the summary score for the respective intrinsic or extrinsic aspiration dimension was entered last. The SF-12 items showed good reliability (Cronbach α s between .71 and .92) and were entered, one at

a time, as dependent variables. This approach is analogous to that used by Kasser and Ryan (1993, 1996).

As shown in Table 4, overall aspiration importance related significantly to role limitations due to physical health problems. After controlling for this score, results showed that placing a relatively higher importance on intrinsic aspirations was associated with significantly better perceptions of one's general physical health. Conversely, placing a relatively higher importance on extrinsic aspirations was associated with significantly poorer physical health perceptions.

Overall aspiration attainment related to all of the SF-12 health items except bodily pain (see Table 4). Controlling for this score, results showed that attainment of intrinsic aspirations was associated with significantly better general health perceptions, improved physical functioning, fewer emotional and mental health disturbances, higher vitality, and fewer health-related interferences in one's social life. Conversely, the attainment of extrinsic aspirations related to poorer general health perceptions, reduced physical functioning, more emotional and mental health problems, lower vitality, and poorer social functioning.

Discussion

We are all pulled in different directions in life. Research shows, however, that we tend to focus on specific kinds of life aspirations, and that these aspirations can broadly be classified as intrinsic or extrinsic—each predisposing to different motivation, health, and well-being outcomes (Bradshaw et al., 2023). There is also evidence that intrinsic aspiring (e.g., for personal growth) is beneficial for health and well-being, while extrinsic aspiring (e.g., for large amounts of money) tends not to be. Nevertheless, little research had explored the link between people's aspirations and overall health status, which was the focus of this study. Results and their implications, strengths and limitations of this study, and directions for future work are discussed below.

Aspirations, Demographics, and Health Status

First, preliminary findings supported the distinction between intrinsic and extrinsic aspirations, as described by GCT. Factor analysis revealed that the seven aspirations each loaded neatly onto two factors—intrinsic and extrinsic—with similar factor loadings as other previous studies (e.g., Kasser & Ryan, 1996). Results further showed that the intrinsic and extrinsic aspiration importance and attainment scores each positively correlated, which too was expected based on GCT (e.g., Bradshaw et al., 2023). These preliminary results laid the foundation for the main analyses in this study and strengthened the generalizability of its findings.

Second, this study assessed various demographic factors that are known to influence aspirations, health, and well-being. As reported in prior studies (e.g., Bradshaw et al., 2023; Kasser & Ryan, 1996; Martos & Kopp, 2014; Ryan et al., 1999), age, gender, education, objective and subjective income, ethnicity, and religiosity were all significant correlates of aspirations and/or health. The strength and direction of these particular relations were not the focus of this study. Of note, however, once relative centrality scores were used in the subsequent regression analyses, the initially positive correlations between the extrinsic aspiration and health variables became negative (see Tables 3 and 4). This finding highlights the value of

Table 3
Intercorrelations Between Aspiration, Demographic, and Health Variables

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
|-----------------|--------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|---|
| 1. Age | — | | | | | | | | | | | | | | | | | | |
| 2. Gender | -.04 | — | | | | | | | | | | | | | | | | | |
| 3. Education | .04 | .01 | — | | | | | | | | | | | | | | | | |
| 4. Obj. income | .12 | .26** | .26** | — | | | | | | | | | | | | | | | |
| 5. Subj. income | .16* | .14* | .25** | .55** | — | | | | | | | | | | | | | | |
| 6. Religiosity | .12 | -.04 | -.01 | -.06 | .06 | — | | | | | | | | | | | | | |
| 7. Int Imp | -.27** | .24** | .20** | .15* | .33** | .13 | — | | | | | | | | | | | | |
| 8. Int Att | -.27** | .01 | -.04 | .12 | .21** | .04 | .46** | — | | | | | | | | | | | |
| 9. Ext Imp | .06 | .01 | .13* | .23** | .37** | .14* | .25** | .10 | — | | | | | | | | | | |
| 10. Ext Att | -.05 | .07 | .12 | .18** | .30** | -.03 | .28** | .56** | .61** | — | | | | | | | | | |
| 11. GH | -.21** | .12 | .17** | .20** | .21** | -.05 | .24** | .42** | .17** | .19** | — | | | | | | | | |
| 12. RP | -.13* | .03 | .28** | .23** | .26** | .04 | .21** | .28** | .15* | .44** | .59** | — | | | | | | | |
| 13. PF | -.16* | .06 | .20** | .20** | .24** | .01 | .10 | .18* | .15* | .46** | .53** | .59** | — | | | | | | |
| 14. BP | .29** | .01 | .17** | .22** | .27** | .08 | .07 | .43** | .15* | .39** | .39** | .27** | .47** | — | | | | | |
| 15. RE | .13* | .02 | .15** | .11 | .27** | .07 | .13 | .41** | -.02 | .18** | .27** | .26** | .35** | .27** | — | | | | |
| 16. VT | .26** | -.02 | .16* | .20** | .35** | .09 | .08 | .45** | -.07 | .17** | .37** | .21** | .36** | .26** | .49** | — | | | |
| 17. MH | .17** | .10 | .12 | .24** | .30** | .02 | .11 | .36** | -.05 | .11 | .38** | .32** | .46** | .34** | .65** | .56** | — | | |
| 18. SF | 2.47 | 1.51 | 2.71 | 1.93 | 6.46 | 1.67 | 5.88 | 4.71 | 2.99 | 2.95 | 3.12 | 2.59 | 3.99 | 3.93 | 3.84 | 3.00 | 3.42 | 4.02 | — |
| M | 0.85 | 0.51 | 0.49 | 0.74 | 1.91 | 0.89 | 0.71 | 0.91 | 1.02 | 1.01 | 0.93 | 0.59 | 0.99 | 1.10 | 1.03 | 0.89 | 0.88 | 1.08 | — |
| SD | | | | | | | | | | | | | | | | | | | |

Note. Age in years (1 = 18–24, 2 = 25–49, 3 = 50–74, 4 = 75–90); Gender (1 = female, 2 = male, 3 = nonbinary); Education (1 = less than high school, 2 = high school, 3 = college or university); Obj. income = objective income (1 = \$49,000 or less, 2 = \$50,000–99,000, 3 = \$100,000 or higher); Subj. income = subjective income (1 = much worse to 10 = much better); Religiosity (1 = not at all important, 2 = somewhat important, 3 = very important); Int Imp = intrinsic aspiration importance; Int Att = intrinsic aspiration attainment; Ext Imp = extrinsic aspiration importance; Ext Att = extrinsic aspiration attainment; GH = general physical health perceptions; PF = physical functioning; RP = role limitations due to physical health problems; BP = bodily pain; RE = role limitations due to emotional problems; VT = vitality; MH = mental health; SF = role limitations in one's social activities due to physical and/or mental health problems. Ethnicity excluded from table.
 * $p < .05$. ** $p < .01$ level, two-tailed.

Table 4

Relation of Intrinsic and Extrinsic Aspirations to Health Variables, Controlling for Age, Gender, Education, Objective and Subjective Income, Ethnicity, and Religiosity

| Factors | GH | RP | PF | BP | RE | VT | MH | SF |
|-----------------------|---------|--------|--------|------|---------|--------|---------|---------|
| Aspiration importance | | | | | | | | |
| Step 1 | | | | | | | | |
| Overall | .13 | .13* | .07 | -.01 | .02 | .04 | -.05 | -.01 |
| Step 2 | | | | | | | | |
| Intrinsic | .21* | .01 | .02 | -.14 | .11 | .01 | .10 | .12 |
| Extrinsic | -.23* | -.01 | -.02 | .14 | -.12 | -.01 | -.10 | -.13 |
| Aspiration attainment | | | | | | | | |
| Step 1 | | | | | | | | |
| Overall | .33*** | .21*** | .19** | .10 | .23*** | .26*** | .22*** | .18** |
| Step 2 | | | | | | | | |
| Intrinsic | .63*** | .25 | .35** | .14 | .67*** | .33* | .65*** | .72*** |
| Extrinsic | -.51*** | -.20 | -.28** | -.12 | -.55*** | -.27* | -.53*** | -.59*** |

Note. Aspiration scores for importance and attainment are entered hierarchically, yielding standardized regression coefficients. GH = general health perceptions; RP = role-physical; PF = physical functioning; BP = bodily pain; RE = role-emotional; VT = vitality; MH = mental health; SF = social functioning.

* $p < .10$. ** $p < .05$. *** $p < .01$.

controlling for the general striving component associated with all life aspirations prior to assessing relations between people's intrinsic versus extrinsic goal contents, health, and well-being (Bradshaw et al., 2023).

To assess these relations, an analysis with summary scores for intrinsic versus extrinsic aspiration importance and attainment was performed while controlling for the above demographic factors, plus the overall score for each aspiration domain—importance and attainment. In line with hypotheses, results showed that placing importance on and attaining intrinsic versus extrinsic aspirations each related, in opposite directions, to almost all of the SF-12 health items. When individuals placed relatively more importance on intrinsic aspirations, it related to better general physical health perceptions, whereas when individuals placed relatively more importance on extrinsic aspirations, it related to poorer general physical health perceptions. Placing importance on each type of aspiration was not associated with the other physical or psychological health items. With intrinsic aspiration attainment, there were positive associations with general physical health perceptions, physical functioning, vitality, and emotional, mental, and social health. Conversely, the attainment of extrinsic aspirations was negatively associated with these health items. These findings support GCT's relative centrality claims and add to the literature on how life aspirations relate to human health and functioning.

In terms of why placing importance on each type of aspiration differentially related to physical health perceptions, there are a few plausible reasons. First, when extrinsic aspirations crowd out intrinsic ones, they tend to frustrate basic psychological needs and deter well-being (Niemiec, Ryan, & Deci, 2009; Soenens et al., 2015). In line with this idea, Sheldon and Kasser (1995) found that personal strivings that helped secure extrinsic possible futures were associated with distracting daily activities, such as television watching and smoking, whereas personal strivings that helped secure intrinsic possible futures were associated with meaningful activities, such as helping friends and planning for one's future. An alternative is that extrinsically oriented individuals could actually experience illness more often, regardless

of their day-to-day activities—for example, with symptoms and conditions that were not assessed in the present investigation. This could occur as a consequence of chronic stress and psychological need deprivation. Need fulfilment and objective health outcomes are gaining attention in the literature (e.g., Reeve & Lee, 2019) and are a topic for future research.

With respect to the null association between aspiration importance and the other physical and psychological health items, there are a few things to consider. The first is the distinction between aspiration importance, likelihood, and attainment. One can desire image/status or fame but have little means or belief in attaining it, thereby minimizing the influence of aspiration importance on health status, compared to aspirations that one is more likely to achieve. At the same time, intrinsic aspirations (e.g., personal growth and relationships) are considered easier to attain than extrinsic aspirations, and placing more importance on these was also unrelated to most of the physical, emotional, mental, and social health items. This suggests that placing importance on aspirations, which requires no effort per se, may simply be insufficient to influence one's overall health status. In other words, when we consider not just transient states (e.g., situational motivation or affect) or physical symptoms but general health perceptions and physical well-being, which are more enduring (e.g., physical functioning), the importance of aspirations, alone, may play less of a direct role.

In terms of the opposing associations between intrinsic and extrinsic aspiration attainment and the physical, emotional, mental, and social health items, there are a few possible explanations. First, attaining health-related goals (e.g., weight loss) usually corresponds to improvements in physical health (e.g., less joint pain), resulting in brighter views about one's physical health. It was therefore unsurprising to observe that intrinsic aspiration attainment positively related to general physical health perceptions. It also follows that attaining intrinsically motivating goals would support one's emotional and mental functioning, as well as one's ability to engage in need-satisfying social activities, such as spending time with friends and loved ones. Conversely, attaining goals that are more superficial (e.g., image/status) is known to hinder basic psychological needs and

correlate with motivation that is more controlled, psychologically taxing, and less stable for self-esteem and well-being (Ryan & Deci, 2017). Hence, no matter the rewards, image, or fame that one achieves, it could feel like it was never enough. This likely explains why the attainment of extrinsic aspirations was associated with poorer emotional, mental, and social health, in the present study.

As others have discussed, the energy it takes to pursue extrinsic aspirations, combined with lower success rates in attaining them, can create significant stress that leads to detrimental psychological effects (Kasser & Ryan, 1996). Findings from the present study support this idea and further suggest that there may be physical health costs associated with extrinsic pursuits as well, including reductions in overall physical functioning. Take the goal of attaining more wealth. For most, this will require a substantial investment in time and energy (e.g., to work extra hard to gain the approval of one's employer and/or clients). This effort could easily interfere with other important, health-promoting activities, such as proper diet, regular exercise, and sleep, and also create or exacerbate chronic health problems (e.g., neck and back pain, headaches, and insomnia) due to prolonged periods of inactivity and excessive screen time. If extrinsic pursuits do in fact lead to habits such as increased substance use, television watching, and other adverse behaviours (Kasser & Ryan, 2001; Otero-López et al., 2021; Sheldon & Kasser, 1995; Williams et al., 2000), that too could obviously lead to physical health issues.

Practical Implications

Like other related studies in self-determination theory, this research can be applied in interventions to support healthy aging and well-being (Bradshaw et al., 2018; Niemiec, Ryan, & Deci, 2009; Sebire et al., 2009). In primary care, patients often present with physical, emotional, mental, and social health problems, but aspirations are seldomly considered. Findings from this study suggest that having these conversations with patients and helping them strive towards more intrinsic aspirations would benefit their health, regardless of demographic background. The finding that placing more importance on intrinsic versus extrinsic aspirations uniquely benefitted physical health perceptions can also inform health and wellness interventions. People tend to be more engaged and persistent in pursuing health-related goals, such as exercising more, eating better, or reducing one's substance use, when they feel autonomously motivated and competent in navigating those challenges (e.g., Bradshaw et al., 2018). The actual striving and attainment of aspirations, however, appears to be what matters most when it comes to health status—not the importance placed on aspirations. As mentioned, this presumably relates to the efforts that are required to attain one's aspirations, which are more likely to shape one's physical functioning, health, and well-being. Kasser and Ryan's (2001) study "be careful what you wish for: optimal functioning and the relative attainment of intrinsic and extrinsic goals" discusses this caveat in more detail.

Strengths, Limitations, and Future Directions

One strength of this study is that it assessed relationships between aspirations that are considered universal and multiple common yet unstudied health items. Data were also collected from patients of all different ages and backgrounds versus from a homogeneous

demographic. While a longitudinal design was not used, results shed new light on how placing importance on and attaining different aspirations might predict health on a scale that applies to the entire adult population. Additionally, this study looked beyond physical symptoms to examine links between aspirations and health-related quality of life. Findings also extend the research base on how demographic factors play a role, which can guide future research. The specific effects of these demographic factors were not the focus of this study, since various studies have already examined these with aspects of health and well-being. Rather, it was to account for and control for these demographic factors in order to accurately investigate how aspirations uniquely related to health status. In view of this objective, relative centrality scores were used, which provide a clearer window into how the contents of people's intrinsic versus extrinsic aspirations uniquely relate to their overall health and functioning compared to simple correlations.

With respect to limitations, the study relied on self-report data collected via surveys, and participants were from a single Canadian province. The sample was also heterogeneous in terms of age, gender, education, income, and religiosity, but participants were primarily Caucasian, and the youngest and oldest age groups were relatively underrepresented. These limitations create the potential for response bias and may reduce generalizability. The cross-sectional nature of this study also precludes any conclusions about causal relationships between variables. Another limitation is that only the higher order aspiration factors were studied (not the specific aspirations within each category). Results therefore provide more of a macrolevel view of how GCT's relative centrality claim holds with respect to health-related quality of life.

For future research, it would be valuable to explore the relationship between intrinsic versus extrinsic aspiration likelihood and the health items that were assessed in this study. Moreover, it would be helpful to investigate the relationship between the importance and attainment of different aspirations and more objective physical health outcomes. A few examples include blood pressure (average systolic and diastolic), body fat composition (using skinfold calipers, body circumference, or dual-energy x-ray absorptiometry), lipid levels (fasting HDL and LDL cholesterol and triglycerides), and insulin sensitivity (fasting blood glucose and HbA1C%). These markers are implicated in metabolic syndrome and are risk factors for cardiovascular disease. Challenges to consider when measuring these kinds of variables are that (a) participants must complete both surveys and blood work, which is time-consuming; (b) many will already be medicated for these conditions, which would need to be accounted for; (c) certain health parameters are inherently limiting, such as body mass index (relies heavily on height vs. weight); and (d) participants would need to follow the same protocol (e.g., measuring blood pressure with the same kind of equipment and technique) since variations in measurement can produce different results. In this sense, having oversight by a trained health care provider would be valuable.

Conclusions

In line with GCT, findings from this study suggest that, regardless of one's demographic background, placing relatively more importance on and attaining intrinsic life aspirations (e.g., personal growth, meaningful relationships, community contributions, and physical health) is associated with improved physical, emotional,

mental, and social health, while placing relatively more importance on and attaining extrinsic life aspirations (e.g., wealth, fame, and image/status) is associated with the opposite. Future studies are needed to extend these results and to differentiate how specific types of life aspirations might uniquely influence health conditions across the lifespan.

Résumé

La recherche sur la théorie de l'autodétermination s'est concentrée sur les aspirations intrinsèques et extrinsèques et sur leurs antécédents et conséquences uniques. Toutefois, la plupart des études se sont concentrées sur la santé mentale et moins sur la santé physique, émotionnelle et sociale. Les études sur les aspirations de vie et la santé ont également été limitées en termes de représentation démographique, de portée et de mesure. La présente étude aborde ces questions en examinant, au sein d'un échantillon diversifié de patients canadiens, comment la centralité relative des aspirations intrinsèques par rapport aux aspirations extrinsèques est liée à l'état de santé général d'une personne. Au total, 261 (64 %) participants ont répondu à une enquête en ligne, comprenant des questions démographiques et deux questionnaires—l'indice des aspirations et l'enquête de santé abrégée. Une analyse factorielle a d'abord été réalisée pour confirmer les hypothèses concernant les charges factorielles des aspirations. Des coefficients de Pearson ont ensuite été utilisés pour évaluer la corrélation entre les questions relatives aux aspirations, à la démographie et à la santé. En tenant compte des facteurs démographiques significatifs, des analyses de régression hiérarchique ont ensuite été effectuées pour déterminer comment la centralité relative des aspirations intrinsèques par rapport aux aspirations extrinsèques était liée à l'état de santé. Les aspirations intrinsèques et extrinsèques ont été réparties en fonction des hypothèses. Les analyses de régression ont montré que le fait d'accorder plus d'importance aux aspirations intrinsèques, et en particulier de les réaliser, était lié positivement à la santé physique, émotionnelle, mentale et sociale. Inversement, le fait d'accorder plus d'importance aux aspirations extrinsèques, et en particulier de les réaliser, est lié négativement à ces résultats en matière de santé. Les résultats viennent enrichir la base de recherche et soulèvent de nouvelles questions importantes sur la manière dont les différentes aspirations de vie sont liées à la santé et au fonctionnement de l'être humain.

Mots-clés : objectifs, aspirations, santé, bien-être

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