A Nationally Representative Study of Emotional Competence and Health

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Abstract

Emotional Competence (EC), which refers to individual differences in the identification, understanding, expression, regulation and use of one's emotions and those of others, has been found to be an important predictor of individuals' adaptation to their environment. Higher EC is associated with greater happiness, better mental health, more satisfying social and marital relationships and greater occupational success. Whereas a considerable amount of research has documented the significance of EC, one domain has been crucially underinvestigated: the relationship between EC and physical health. We examined the relationship between EC and objective health indicators in two studies ($N_1 = 1310$; $N_2 = 9616$) conducted in collaboration with largest Mutual Benefit Society in Belgium. These studies allowed us (1) to compare the predictive power of EC relatively to other well-know predictors of health such as age, sex, Body Mass Index, education level, health behaviors (diet, exercice, smoking and drinking habits), positive and negative affects and social support; (2) to clarify the relative weight of the various EC dimensions in the prediction of health; and (3) to determine to what extent EC moderates the effect of already known predictors on health. Results show that EC is a modest but nonetheless significant predictor of health. When all predictors are entered in the model, it turns out to be the most important predictor of health, with age. Because findings also show that EC can attenuate (and sometimes compensate for) the impact of other risk factors, we argue that it deserves greater interest and attention from governments.

Keywords: emotional competencies, emotional intelligence, emotional skills, emotion regulation, emotion identification, emotion expression, emotion understanding, drug, health, healthcare use

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Although we all experience and witness all sorts of emotions throughout our lives, we markedly differ in the extent to which we identify, express, understand, regulate and use one's own and others' affects (Petrides & Furnham, 2003; Mayer & Salovey, 1997; Mikolajczak, Quoidbach, Kotous & Nelis, 2009). The concept of emotional competence—alternately labelled "emotional intelligence" or "emotional skills"—has been proposed to account for this idea. Individuals with high EC are thought to be able to identify their and others' emotions, express them in a socially acceptable manner, understand their causes and consequences, regulate them when there are not appropriate to the context or to their goals, and use them to enhance thoughts and actions (Mayer & Salovey, 1997). While those individuals are able to take advantage of emotions without letting the latter lead them astray, individuals with low EC have a hard time taking into account the information emotions convey while at the same time being commonly overwhelmed by them (see Mikolajczak, Quoidbach, Kotsou, & Nelis, 2009 for a review).

Past debates on the status of EC as intelligence (i.e., is EC an ability?) or trait (i.e., is EC a disposition?) have given birth to a tripartite model of EC (see Mikolajczak, Petrides, Coumans, & Luminet, 2009). Briefly, this model posits three levels of EC: knowledge, abilities and traits. The knowledge level refers to what people know about emotions and emotional competencies (e.g. *Do I know how* to constructively express my emotions?). The ability level refers to the ability to apply this knowledge in an emotional situation (e.g., *Am I able to* constructively express my emotions ?). The focus here is not on what people know but on what they can do. For instance, even though many people know that they should not shout when angry, many are simply not able to restraint from shouting. The trait level refers to emotion-

related dispositions, namely, the propensity to behave in a certain way in emotional situations (*Do I typically* express my emotions in a constructive manner?). The focus here is not on what people know or can do, but on what they typically do. For instance, some individuals may be able to express calmly their emotion if explicitly asked to do so, while not managing to do that spontaneously. These three levels of EC are loosely connected: knowledge does not always translate into abilities, which, in turn, do not always translate into usual behavior.

The literature indicates that the trait level of EC, on which we will focus in this paper, has a considerable impact on psychological, social and work adjustment. At a psychological level, higher EC is for instance associated with greater well-being (e.g. Austin, Saklofske & Egan, 2005) as well as decreased psychological disorders (e.g. Petrides, Pérez-González, & Furnham, 2007). At a social level, higher EC leads to more satisfying social and marital relationships (e.g. Schutte et al., 2001). Workwise, EC has been found to be associated with superior academic achievement and higher job performance (Petrides, Frederickson & Furnham, 2004; see O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011 for a meta-analysis). As shown by Nelis et al. (2011) and Kotsou, Grégoire, Nelis & Mikolajczak (2011), emotional competence is causally involved in these outcomes: when EC is enhanced through training, psychological, social and work adjustment improve. It is noteworthy that the relationship between EC and indicators of adjustment is not only statistically significant but that it is also practically meaningful. For instance a nurse with high EC is three times less likely to burnout than a nurse with low EC (Mikolajczak, Menil & Luminet, 2007). Likewise, a person with high EC is more likely to be chosen as a romantic partner than a person with low EC (Schutte et al., 2001).

Whereas a considerable amount of research has made much of the significance of EC, one domain has been crucially underinvestigated: the relationship between EC and physical health. While there is a profusion of research on EC and subjective health (see Schutte et al., 2007 and Martins, Ramalho & Morin, 2010 for meta-analyses), there is a dearth of study using objective indicators of health status. All studies published so far rely on self-reported criteria. However, there is converging evidence that there might be a true relationship between EC and health. First, EC has been shown to impact cortisol secretion in stressful situations (Mikolajczak, Roy, Luminet, Fillée et de Timary, 2007). If we consider the number of stressors one will face during his/her lifetime along with the ubiquitous functions of cortisol in the body, the accumulation of these differences in cortisol secretion may ultimately lead to different somatic health states. Second, EC is negatively related to substance abuse like tobacco, majijuana or alcohol (e.g. Riley & Schutte, 2003), which all have well-known deleterious effects on health. Third, EC has been inversely related to deliberate self-harm (Mikolajczak, Petrides & Hury, 2009), which is a cause of infection. Fourth, EC has been shown to decrease risky behaviors such as reckless driving (Brackett, Mayer & Warner, 2004), which are cause of accidents and injury.

In view of the foregoing, the goal of the current study was to examine the relationship between EC and objective health indicators. Study 1 examined this in a sample of 1310 members of the largest Mutual Benefit Society in Belgium. It also aimed to compare the predictive power of EC relatively to other well-know predictors of health such as age, sex, Body Mass Index (BMI), education level, health behaviors (diet, exercice, smoking and drinking habits), positive and negative affects and social support. Study 2 aimed to replicate the results in 9616 other members of the same Mutual Benefit Society as well as to clarify the relative weight of the various EC

dimensions in the prediction of health. It also sought to determine to what extent EC moderates the effect of already known predictors on health.

Method

Both studies were approved by the Internal Ethical Committee and conducted in accordance with the guidelines provided by the law department of the MC-CM.

Study 1

Participants and procedure. A stratified sample of 10.000 adults (> 18 years old) drawn from the database of the largest Mutual Benefit Society in Belgium (i.e., the Mutualité Chrétienne – Christelijke Mutualiteit, abbreviated in MC-CM) was contacted by mail by the MC-CM and invited to complete a Survey on emotions and health. The sample was stratified on gender, age, socio-economical status, and province in order to be as representative as possible of the Belgian population. Among this sample, 1646 subjects (16%) answered the whole questionnaire and gave their consent for coupling it with the health data in possession of the MC-CM. Among this sample, 1310 subjects (13%) were members of the MC-CM for the whole period under study (2000-2011). The final sample thus consisted in these 1310 subjects (M_{age} = 51.2, *SD* = 16.1; 58% female).

Measures.

Demographics. Participants were asked to indicate their province, age, sex, education level (*primary School, Junior high school, high school, college, university [master], post-graduate [Ph.D., MBA]*), marital status (*single, in a relationship, divorced/separated, widowed*), number of children, type of occupation if they have a job (*temporary worker, worker, employee, state employee, freelancer*), type of status if they do not have a job (*housewife/househusband, student, retired, unemployed, disabled*), height and weight (to compute their body-mass index).

Emotional Competence was assessed using the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF). This measure comprises thirty 7-point items (from *strongly agree* to *strongly disagree*) providing a global EC score. The TEIQue shows excellent psychometric properties (see Petrides, 2009). In this study, the internal consistency (α) of the scale was .89. Examples of items are *"Expressing my emotions is not a problem for me*" and "*When I am sad, I find it easy to cheer myself up"*.

Trait Positive Emotions were measured using 10 items rated on a 5-point scale (ranging from "*never*" to "*very often*"): interested, pleased, happy, enthusiastic, joyful, proud, mismerized, serene, grateful and enjoyed. The internal consistency (α) of the scale was .85.

Trait Negative Emotions were evaluated using 11 items rated on a 5-point scale (ranging from "*never*" to "*very often*"): anxious, angry, guilty, jealous, furious, annoyed, ashamed, nervous, sad, fearful, stressed. The internal consistency (α) of the scale was .86.

Social support was appraised via two items targetting emotional and tangible support, respectively (ex. *On how many people —including, possibly, your relatives—can you count for…*). The internal consistency (α) of the scale was .80.

Health behaviors were assessed using 10 items of the 13-item questionnaire used by the Public Health Institute in Belgium (three items were removed because they were related to emotion management and were thus redundant with the EC questionnaire). Four items measure diet habits (α = .70; sample item: *I avoid eating too much salt by cooking with a limited quantity of salt and by avoiding adding salt during the dinner. I avoid salty snacks (like crisps)*), three measure exercising habits (α = .61; sample item: *I do sport (e.g. running, swimming, aerobic,…) for 15 to 30*

minutes at least three times a week), one smoking habits (*I smoke more than 2 cigarettes a day*) and one drinking habits (*I drink at least two glasses of alcoholic beverages a day*). All items are rated on a three-point likert-scale (nearly never-sometimes-nearly always). The internal consistency (α) of the global scale was .64.

Consumption of non-reimbursed health-related services. Participants were asked to report on a five-point likert scale (never, less than once a year, once or twice a year, three to five times a year, more than five times a year) the frequency of their visits to psychologists, mental health centers, balneotherapy centers, acupuncturists, osteopaths, chiropractors, masseurs, aromatherapists, energytherapists, healers. As these items were not expected to show high internal consistency, no alpha was computed.

Consumption of non reimbursed drugs. Participants were asked to report on a five-point likert scale (never, rarely, several times a month, several times a week, nearly each day) the frequency with which they take painkillers, muscle cream, sleeping pills, vitamins and food supplements, homeopathic treatment, alternative medicine (e.g. medicinal plants). As these items were not expected to show high internal consistency, no alpha was computed.

Objective healthcare consumption. Participants' consent for coupling the data allowed us to retrieve the following information from the MC-CM records for each respondent over the last 11 years: number of visits to doctors (general practitioners and specialists), number of days spent in hospitals (by type of hospital), and the Defined Daily Dose (DDD), a typical indicator of medication consumption based on the average maintenance dose per day (DDD were obtained separately for each class of the Anatomical Therapeutic Chemical [ATC] Classification System). Finally, we

also obtained the total costs (in euros) to the Belgian government for each of these expenses.

Results and dicussion. Table 1 presents the correlations between the various health predictors and both self-reported and objective health outcomes. As shown in this table, with the exception of tobacco and alcohol which predictive power is lower than expected, all other predictors (i.e., age, sex, education, BMI, PA, NA, social support, diet habits, physical activity habits) are significantly related to drug and health care consumption. Note that diet habits do not predict drug consumption after bonferroni correction for multiple comparisons. Yet, globally, our study fully replicates previous studies showing the importance of each of these variables regarding health. As we expected, emotional competence was also a significant predictor of health outcomes. Given the intercorrelations among predictors, we then performed stepwise regression analyses to identify the strongest predictors of each outcome. Except from PA and NA, which correlate highly with EC (but which correlations with health are lower), all other predictors (EC, age, sex, education, BMI, social support, Diet habits, Exercice habits, and tobacco & alcohol habits) were entered in the model. The significant predictors of each outcome are reported in Table 2, by order of importance. As shown in Table 2, EC and age are the two most important predictor of health outcomes: both come 6 times in the fist position. EC has nevertheless the highest occurrence in the table (13 times), followed by age (9 times), sex and exercice (7 times each), education and social support (5 times each), BMI (4 times), tobacco & alcohol habits (2 times) and Diet habits (1 time). While the importance of age was expected, our results indicate that EC is a neglected but significant predictor of health. Implications for health and health policies will be discussed in the general discussion, along with study 2's implications.

Study 2

Study 2 aimed to replicate the results of Study 1 in a larger sample and to clarify the relative weight of the various EC dimensions in the prediction of health. Therefore, a longer (and newer) instrument has been used to measure EC. Additionally, Study 2 also sought to determine to what extent EC moderates the effect of already known predictors on health.

Participants and procedure. A stratified sample of 200.000 adults (> 18 years old) was created and contacted by email by the MC-CM. Participants were invited to complete a Survey on emotions and health. Among this sample, 16.999 subjects answered the whole questionnaire and gave their consent for coupling it with the health data in possession of the MC-CM. Among this sample, 9616 subjects were members of the MC-CM for the whole period under study (2001-2012). The final sample thus consisted in these 9616 subjects (M_{age} = 56.53, *SD* = 13.3; 59% female).

Measures.

Demographics. Participants were asked to indicate their province, age, sex, education level (see study 1), height and weight (to compute their body-mass index).

Emotional Competence was assessed with the *Profile of Emotional Competence* (PEC; Brasseur, Grégoire, Bourdu & Mikolajczak, 2013). This 50 five-point item (from *strongly disagree* to *strongly agree*) measure was especially designed to provide a separate subscore for each emotional competency. It thus provides 10 subscores (identification of one's emotions, identification of others' emotions, understanding of one's emotions, understanding of others' emotions, expression of one's emotions, listening to others' emotions, regulation of one's emotions, regulation of others' emotions, use of one's emotions, use of others' emotions), forming 3 global scores: an intrapersonnal EC score (α = .86), an interpersonal EC

score (α = .89) and a total EC score (α = .92). Examples of items are "*during an argument, I can't identify if I am sad or angry*" and "*my emotions inform me of what is important to me*".

Trait Positive Emotions were measured using 10 items rated on a 5-point scale (ranging from "*never*" to "*very often*"): appeased, relax, at ease, serene, enthusiastic, happy, mismerized, joyful, representing low and high arousal emotions, respectively. The internal consistency (α) of the scale was .88.

Trait Negative Emotions were evaluated using 21 items rated on a 5-point scale (ranging from "*never*" to "*very often*"), representing low and high arousal levels of the most common negative emotions. The internal consistency of the scale was excellent (α = .91).

Social support was appraised as in Study 1. The internal consistency (α) of the scale was .79.

Health behaviors were assessed as in Study 1. The internal consistency (α) of the scale was .67 (.69 for diet habits and .60 for exercice habits).

Consumption of non reimbursed drugs was assessed as in Study 1. As these items were not expected to show high internal consistency, no alpha was computed.

Objective healthcare consumption was obtained as in Study 1. We also obtained the total amount of money spent for each subject, all expenses combined (i.e., including emergency calls etc).

Results and discussion. Table 3 presents the correlations between the various health predictors and both self-reported and objective health outcomes. Except for the fact that all correlations (but BMI) are weaker than in study 1, results globally replicate its findings: tobacco and alcohol's predictive power was again lower than expected, but emotional competence (both intrapersonal and interpersonal factors),

age, education, BMI, PA, NA, social support, diet habits, physical activity habits were significantly related to drug and health care consumption. As in study 1, diet habits did not predict drug consumption after Bonferroni correction. However, contrary to study 1, sex did not come out as a significant predictor after Bonferroni correction.

Table 4 provides a global overview of the correlation between EC and the total amount of expenses to be borne by the mutual benefit society and by the patient. The results confirm those of Table 3: the higher the EC, the lower the healthcare expenses for both the mutual benefit society and the patient. Although the correlations may seem weak at first sight, they are nevertheless practically significant: A comparison after mean-split between people with below-average EC ("low EC"; N = 5410) and people between above-average EC ("High EC"; N = 4207) indicate that, taken together, people with low EC in the database have cost EUR 39,756,421 more than people with high EC over the last 11 years, which means a cost of approximately EUR 3,614,220 more per year. Considering that this difference concerns a sample of less than 10.000 subjects, it is easy to imagine the differential cost that it bears for the mutual benefit society if all its members are taken into account, not to speak about the whole Belgian population. Small correlations can thus bear significant consequences.

As in Study 1, we also performed stepwise regression analyses to identify the strongest predictors of each outcome. EC, age, sex, education, BMI, social support, diet habits, physical activity habits, and tobacco & alcohol habits were entered in the model. The significant predictors of each outcome are reported in Table 5, by order of importance. As shown in this table, intrapersonal EC seem to be the most important predictor of health outcomes, coming 5 times in the fist position. Both intrapersonal EC and age have the highest occurrence in the table (12 times), immediately followed by education (11 times) and social support (10 times). Sex comes next (9 times),

followed by physical activity and BMI (8 times each), interpersonal EC (7 times), diet habits and tobacco and Alcohol habits (4 times each).

As indicated in the introduction, a further aim of study 2 was to examine which facets of EC are the most predictive of health outcomes. As shown in Table 6, although both factors were significant, *intra*personal emotional competencies were more predictive of health outcomes than *inter*personal emotional competencies. Note that only intrapersonal EC was predictive of mental-health outcomes (i.e., visits to the psychiatrist; hospitalization in a psychiatric hospital). Among the *intra*personal facets, emotion regulation was the most predictive of mental-health outcomes whereas emotion understanding was the most predictive of all other outcomes (drug consumption, doctor consultation and hospitalization in general hospitals). Among the *inter*personal facets, none significantly predicted mental health outcomes whereas three (i.e. identification, understanding and utilization of others' emotions) significantly predicted the other health outcomes. Among those three, the ability to understand others'emotions was the most predictive.

As indicated in Table 7, EC was not equally predictive of all types of drugs, which suggests that EC may be more specifically related to the functioning of certain body systems. EC was indeed particularly predictive of drug consumption of type A (alimentary tract and metabolism), type B (blood and blood forming organs), type C (cardio-vascular system), type G (genito-urinary and sex hormones), type M (musculo-skeletal system) and N (nervous system). Intrapersonal competencies (only) were also related to drug consumption of type R (respiratory system). EC was by contrast not related at all to drug consumption of type D (dermatologicals), type J (antiinfective agents for systemic use), type L (antineoplasic and immunomodulating

agents), type P (antiparasite products, insecticide and repellents), type S (sensory organs) and type V (various).

A last aim of study 2 was to examine whether high EC could moderate the impact of certain known risk factors for health. A systematic test of moderation effect was performed, searching for any significant interaction between EC and age, sex, education, BMI, social support, diet habits, physical activity and tobaco & alcohol use, respectively. As shown in Table 8, two third of interactions were significant (three were marginally significant). All interactions involving objective health outcomes are graphically represented and commented in the supplementary material (see Figures 1 to 30). Figures 2, 4, 12 and 18 are reproduced in Figure 1 because they are particularly representative of the pattern of interactions found. Globally, analyses indicated first that EC moderates the effect of sex, age and BMI on drug consumption. Vulnerable people (men, older adults and people with higher BMI) take more drugs. People with low EC as well. However, and this is where the variable interact, vulnerable people with *low* EC take significantly more drugs (nearly 200 more doses annually) than vulnerable people with *high* EC (see Fig. SM 2). Analyses also indicated that EC moderate the effect of education, BMI, diet habits and physical activity on doctor consultations. The same type of interaction was found: vulnerable people (i.e., people with low education, high BMI, unhealthy diet habits and low physical activity) with *low* EC consult the doctor more (nearly 15 more times over 11 years) than vulnerable people with *high* EC (see Fig. SM 4). Analyses then indicated that EC moderated the effect of age, social support, diet habits, physical activity and smoking & drinking habits on visits to the psychiatrist. The profile of interaction indicated that vulnerable people (young adults, people with low social support, or unhealthy diet habits, low physical activity and high tobacco and alcohol use) consult

more the psychiatrist, but only if they have low EC. As shown in Figure SM12, there was a specific profile of interaction for tobacco and alcohol use, suggesting that low EC in people with high tobacco and alcohol use may actually reduces the propensity to seek the help of a psychiatrist (possibly through denial).

As expected, EC also moderated the effect of age, education, BMI, social support, diet habits, physical activity and smoking & drinking habits on hospitalizations. Globally, people with high EC are hospitalized less often. The profile of interaction further indicated that vulnerable people (young adults, people with low education, high BMI, low social support, unhealthy diet habits, low physical activity and high tobacco and alcohol use) spend more days at the hospital but only if they have low EC (see e.g. Figure SM 18). That is, EC attenuates the effect of other risk factors. The profile of interaction for general and psychiatric hospital is roughly the same (see supplementary material).

General Discussion

Modern medicine dates back to the 19th century and originally established itself on a purely biomedical model: health is biologically determined. The 20th century questioned this assumption and a bio-psycho-social conception of health progressively emerged and gained popularity. According to this multifactorial conception, health is the product of multiple biopsychosocial factors in interaction. The main challenge for the 21th century is to understand how these predictors interact and to identify modifiable predictors, namely, predictors that we can act upon.

As EC can be taught (Kotsou et al., 2011; Nelis et al., 2011), the present research forms part of this approach. It served a fourfold purpose: (1) to examine the relationship between EC and objective health indicators, (2) to compare the predictive power of EC relatively to other well-know predictors of health such as age, sex,

education level, Body Mass Index (BMI), social support and health behaviors (diet, physical activity, smoking and drinking habits), (3) to clarify the relative weight of the various EC dimensions in the prediction of health and (4) to determine to what extent EC moderates the effect of already known predictors on health.

Results show that EC is a significant predictor of health outcomes. When all predictors were entered together in the model, it even turned out to be the most significant predictor with age, being more important than sex, education, BMI, social support, diet habits, physical activity and smoking and drinking habits. Given the multiple direct and indirect influences of emotions on health, this finding is not that surprising. Indeed, emotions influence health via multiple pathways: physiological, such as sympathetic (See Kreibig, 2010 for review) or neuroendocrine (Aguilera, Kiss, Luo & Akbasak, 1995; Buchanan, al'Absi & Lovallo, 1999) activation, immune changes (see Kiecolt-Glaser, McGuire, Robles & Glaser, 2002 and Segerstrom & Miller, 2004 for reviews), DNA damage (Irie, Asami, Nagata, Ikeda, Miyata & Kasai, 2001; see Gidron, Russ, Tissarchondou & Warner, 2006 for review), gut permeability (see Collins, 2001) pathways on the one hand, and health behaviors pathways on the other hand, such as risky behaviors (Cooper, Agocha & Sheldon, 2000), emotional eating (Geliebter & Aversa, 2003), or substance abuse (Cooper, Frone, Russell & Mudar, 1995). On the whole, negative emotions have a deleterious impact on health, whereas positive emotions have a protective one (see Salovey, Rothman, Detweiler & Steward, 2000 for review). Considering that people with high emotional competencies experience more positive emotions and less negative emotions (e.g., Brasseur et al., 2013), less physiological activation in negative conditions (e.g., Mikolajczak, Roy, Luminet, Fillée et de Timary, 2007) and less health damaging behaviors (Brackett, Mayer & Warner, 2004), the effects observed in this study were expected.

Although the main hypothesis of this study was supported, correlations are admittedly small in magnitude. This is likely due to two factors: the measurement error of emotional competence (which was measured by questionnaire) and the number and diversity of the predictors of health. As pointed earlier, health is the product of numerous interacting predictors, ranging from biological and psychological to social and environmental. Each predictor alone can therefore explain only a small portion of the variance. Nevertheless, it is noteworthy that small does not mean trivial. On the basis of the figures reported in the Results section, the population with below-average EC cost annually nearly 4 billion more to the Belgian social security than the population with above-average EC. Knowing that Belgium is a small country of only about 11 million people, the consequences reported on a European scale (739 million people) are everything but trivial. Small correlations can thus translate into huge numbers.

The importance of EC regarding health contrasts with the lack of interest of governments for EC and with the dearth of health promotion actions targeting EC. So far governments (at least occidental ones) have mainly focused on three predictors: physical exercise, diet habits and alcohol/tobacco consumption. The current research suggests that emotion and stress management may represent the much needed and so far missing wheel. Inasmuch as physical exercise and healthy diet habits are taught in schools, and as children/adolescents advised against smoking and drinking, one could imagine integrating the development of emotional competences in the school curriculum. The other channels by which health is usually promoted (radio, television, leaflets in doctors' waiting rooms) can also be used for older generations.

Beyond its practical implications, this research also adds to the literature on emotion and health. The examination of the relative importance of the various EC

dimensions in the prediction of health first confirms that two dimensions that were already brought to light by research on alexithymia[1] -- the ability to identify and express one's emotion – are indeed significant predictor of health outcomes. It also indicates that the ability to regulate one's emotions, which has been thought—yet not shown—to be related to health is indeed predictive of health outcomes. Whereas it was by far the most predictive dimension of *mental* health outcomes (consumption of psychotrops [i.e., ATC class N] visits to the psychiatrist, days spent at the psychiatric hospital) and of self-reported indicators (i.e., consumption of non-reimbursed drugs), it was not the most predictive dimensions of *physical* health outcomes, as explained below.

The most predictive dimension of physical health outcome was the ability to understand one's emotions. This dimension refers to the ability to understand why we feel what we feel and to understand the message conveyed by emotions (in terms of unsatisfied needs for example). It is interesting that this dimension turns out to be the most predictive of physical health outcomes because this branch has clearly been the least researched so far in the literature on emotional intelligence or emotional competence or even emotions in general. While there is a whole field of research on emotion identification (i.e., alexithymia; see Taylor, 2004 for a review of 25 years of research), emotion expression (alexithymia; emotional disclosure; see Pennebaker, 2012 for a synthesis) and emotion regulation (see Gross, 2007 for an overview), there is no such line of research on emotion understanding or emotion utilization. The

[1] Alexithymia is a multi-faceted construct comprising (a) a difficulty identifying feelings as well as distinguishing between feelings and the bodily sensations of emotional arousal; (b) a difficulty describing feelings to others; (c) a restricted imagination, as evidenced by a paucity of fantasies; and (d) a cognitive style that is literal, utilitarian, and externally oriented (Taylor & Bagby, 2000). There is a large body of evidence showing that alexithymia is associated with a number of psychiatric and psychosomatic disorders (for overviews, see Corcos & Speranza, 2003; Lumley, Stettner, & Wehmer, 1996).

current results clearly suggest that these dimensions, at least emotion understanding, deserve greater attention and interest. Future research will not only need to uncover the antecedent and consequences of low vs high levels of emotion understanding but, most importantly, it will have to specify the processes (i.e., mechanisms) through which it exerts its effects.

Although informative, the current results suffer from some limitations. The first one lies in the fact that, albeit objective, health care consumption is an indirect indicator of health status. Some people (e.g. homeless) are in very bad health condition but do not consult doctors. Others are in objectively good health condition but make overuse of health care (due to a need for attention, hypocondria,…). Fortunately, the former constitute only a minority of people (probably not represented in our sample) as the social security system in Belgium makes health care easily accessible. The latter may be more represented in our sample but are unlikely to have severely biased the results. Indeed, while it is true that these people may have biased the results related to doctor consultations, they are less likely to have biased those related to reimbursed drug consumption or hospitalizations because only "true" health problems lead to the prescription of reimbursed medicine or hospitalization. The second limitation concerns the direction of the effects. Because these results are correlative, it cannot be excluded that the causality between EC and health is bidirectional. While it is true that the level of health may possibly influence the level of emotional competence and that the relationship may be circular, experimental studies indicate that there is at least a causal relationship between emotional competence and health. Indeed, increasing the level of emotional competence (e.g., via EC training) leads to a reduction of stress hormones and somatic complaints (Nelis et al., 2011; Kotsou et al., 2011).

Conclusion

In conclusion, health is the product of multiple factors, in constant interaction. Identifying the strongest predictors and, more particularly, the predictors that we can act upon if one of the major stake of the 21st century. This study contributes to this endeavour by showing that EC is a neglected but nonetheless important predictor of health. Because it can attenuate (and sometimes even compensate for) the impact of other risk factors, it certainly deserves greater interest and attention. This is particularly the case since EC can be taught and increased, and that it could therefore be included in school curricula.

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Table 1.

Non Parametric Two-tailed Correlations (Spearman's Rho) among Predictors and Health Outcomes over 11 Years (Study 1)

	Non reimbursed health services	Non reimbursed drugs	Drug consumption in DDD	Expenses for reimbursed drugs	Doctor consultation (visits to GP and SP)	Expenses for doctor consultation	Visits to psychiatrist	Expenses for visits to psychiatrist	Days spent at the hospital (all types)	Expenses for hospitaliza-tions (all types)	Days spent at the general hospital	Expenses for days spent at the general hospital	Days spent at the psychiatric hospital	Expenses for days spent at the psychiatric hospital
Emotional competence	.05***	-.18***	-.18***	-.22***	-.13***	-.14***	-.14***	-.14***	-.10***	-.10***	-.09**	-.09***	-.13***	-.07*
Age	-.30***	.11***	.40***	.44***	.28***	.31***	-.06*	-.06*	.17***	.20***	.17***	.20***	.00	.02
Sex (men = 1)	.15***	.24***	.12***	.04	.18***	.16***	.06*	.06*	.05	.04	.05	.03	.01	.04
Level of Education	.20***	-.11***	-.24***	-.27***	-.18***	-.22***	.04	.04	-.16***	-.17***	-.15***	-.17***	-.03	-.05
Body Mass Index	-.11***	-.01	.19***	.21***	.15***	.15***	-.02	-.02	.10***	.11***	.09***	.11***	.02	.00
Positive affectivity	.02	-.16***	-.10***	-.12***	-.07**	-.08**	-.14***	-.14***	-.07*	-.06*	-.06*	-.06*	-.10***	-.02
Negative affectivity	.13***	.24***	.05	.08**	.11***	.10***	.17***	.17***	.06*	.03	.03	.02	.13***	.07*
Social Support	.13***	-.13***	-.21***	-.23***	-.15***	-.17***	-.07*	-.07*	-.10***	-.11***	-.10***	-.10***	-.09***	-.07*
Health Behaviors (diet habits)	-.03	.06*	.07*	.07*	.11***	.10***	-.02	-.02	.00	.00	.01	.01	-.06*	-.02
Health behaviors (exercice habits)	.15***	-.06*	-.18***	-.18***	-.12***	-.13***	-.02	-.02	-.17***	-.18***	-.18***	-.18***	-.07**	-.05
Health behaviors (drinking and smoking)	.09**	.07*	.01	-.03	.09**	.08**	-.02	-.02	.05	.04	.04	.03	-.05	.00

Note. DDD = Daily Defined Doses; GP = general practitioner; SP = specialized practitioner

***p< ≤ 0.001; **p ≤ 0.01 ; *p ≤ 0.05 (correlations > .11 hold after Bonferroni correction)

Table 2.

Results of Stepwise Regressions Identifying the Significant Predictors (by Order of Importance) of each Outcome when Entering All Predictors in the Model (Study 1)

Non reimbursed health services	Non reimbursed drugs	Drug consumption in DDD	Expenses for reimbursed drugs	Doctor consultation (visits to GP and SP)	Expenses for doctor consultation	Visits to psychiatrist	Expenses for visits to psychiatrist	Days spent at the hospital (all types)	Expenses for hospitaliza-tions (all types)	Days spent at the general hospital	Expenses for days spent at the general hospital	Days spent at the psychiatric hospital	Expenses for days spent at the psychiatric hospital
Age	Sex	Age	**EC**	Age	Age	**EC**	**EC**	**EC**	Age	**EC**	Age	**EC**	Soc. Sup.
Phys. Act.	**EC**	**EC**	Age	Sex	Sex	Education	Education	Age	Phys. Act.	BMI	Phys. Act	Tob & Alc	
Sex	Age	BMI		BMI	**EC**	Sex	Diet Hab.	Phys. Act.	**EC**	Tob & Alc	**EC**		
EC	Soc. Sup.	Phys. Act.		**EC**	BMI			Sex		Phys. Act.			
	Phys. Act	Education		Soc. Sup.	Education								
		Sex		Education	Soc. Sup.								
		Soc. Sup.											

Note. DDD = Daily Defined Doses; BMI = Body Mass Index; Diet Hab. = Diet Habits; EC = Emotional competence; GP = general practitioner; NA = Trait Negative Affectivity; PA = Trait Positive Affectivity; Phys. Act. = Physical activity; Sos.Sup. = Social support; SP = specialized practitioner; Tob. Alc. = Tobacco & Alcohol habits

$^{***}p \leq 0.001$; $^{**}p \leq 0.01$; $^{*}p \leq 0.05$

Table 3. *Non Parametric Two-tailed Correlations (Spearman's Rho) among Predictors and Health Outcomes over 11 Years (Study 2)*

	Non reimbursed drugs	Drug consumption in DDD	Expenses for reimbursed drugs	Doctor consultation (visits to GP and SP)	Expenses for doctor consultation	Visits to psychiatrist	Expenses for visits to psychiatrist	Days spent at the hospital (all types)	Expenses for hospitaliza-tions (all types)	Days spent at the general hospital	Expenses for days spent at the general hospital	Days spent at the psychiatric hospital	Expenses for days spent at the psychiatric hospital
Global EC	-.05***	-.14***	-.15***	-.11***	-.13***	-.05***	-.05***	-.08***	-.08***	-.07***	-.07***	-.07***	-.02
Intrapersonnal EC	-.09***	-.15***	-.15***	-.13***	-.14***	-.09***	-.09***	-.09***	-.08***	-.08***	-.08***	-.08***	-.02
Interpersonal EC	.00	-.10***	-.11***	-.08***	-.09***	.00	.00	-.05***	-.05***	-.05***	-.05***	-.04***	-.01
Age	-.02*	.35***	.36***	.24***	.27***	-.15***	-.15***	.11***	.17***	.10***	.14***	-.09***	-.02
Sex (men = 1)	-.20***	.04***	.09***	-.08***	-.05***	-.05***	-.04***	.00	.02*	.01	.03**	.01	.00
Level of Education	-.06***	-.17***	-.20***	-.19***	-.22***	.07***	.06***	-.13***	-.13***	-.11***	-.12***	-.03**	-.01
Body Mass Index	-.03**	.27***	.25***	.13***	.15***	-.01	-.01	.10***	.11***	.10***	.11***	.01	.02*
Negative affectivity	.25***	.08***	.09***	.13***	.13***	.21***	.21***	.08***	.06***	.07***	.05***	.12***	.02*
Stress	.25***	.09***	.10***	.15***	.15***	.20***	.20***	.08***	.06***	.07***	.05***	.10***	.02*
Sadness	.23***	.11***	.12***	.15***	.16***	.20***	.20***	.11***	.09***	.10***	.09***	.11***	.02*
Shame & guilt	.12***	.00	.00	.03*	.04***	.13***	.13***	.02	-.01	.01	-.01	.11***	.03***
Frustration	.18***	.07***	.08***	.09***	.10***	.16***	.16***	.08***	.06***	.07***	.06***	.09***	.01
Anger	.17***	.03**	.03**	.06***	.05***	.14***	.14***	.05***	.03***	.04***	.03**	.06***	.00
Positive affectivity	-.19***	-.10***	-.11***	-.14***	-.14***	-.19***	-.19***	-.09***	-.07***	-.08***	-.07***	-.09***	-.02
of low intensity	-.22***	-.08***	-.09***	-.14***	-.13***	-.19***	-.19***	-.08***	-.06***	-.07***	-.06***	-.09***	-.02
of high intensity	-.12***	-.10***	-.12***	-.11***	-.12***	-.16***	-.16***	-.08***	-.06***	-.07***	-.07***	-.08***	-.02
Social Support	-.07***	-.14***	-.16***	-.13***	-.15***	-.09***	-.09***	-.08***	-.07***	-.07***	-.08***	-.08***	-.03**
HB_Diet habits	.04***	.06***	.05***	.07***	.07***	-.06***	-.06***	-.03**	.00	-.03*	-.01	-.07***	-.02*
HB_ Exercice habits	-.04***	-.18***	-.17***	-.13***	-.15***	-.08***	-.08***	-.14***	-.13***	-.15***	-.14***	-.07***	-.03**
HB_drinking & smoking	.02*	-.02	-.03***	.03***	.03*	-.03**	-.03**	-.01	-.01	.00	-.01	-.06***	-.01

Note. DDD = Daily Defined Doses; HB = Health behavior; GP = general practitioner; SP = specialized practitioner

***$p \leq 0.001$; **$p \leq 0.01$; *$p \leq 0.05$ (correlations > .07 hold after Bonferroni correction)

Table 4. *Non Parametric Two-tailed Correlations (Spearman's Rho) among Predictors and Global Health Expenses over 11 Years (Study 2)*

	Expenses for the MC-CM	Expenses for the client (user co-payement)	User additional charges[a]	Co-payement + additional charges
Global EC	-.12***	-.11***	-.01	-.08***
Intrapersonnal EC	-.13***	-.13***	-.04***	-.10***
Interpersonal EC	-.09***	-.07***	-.01	-.04***
Age	.26***	.25***	.14***	.22***
Sex (men = 1)	.03*	-.03**	-.09***	-.05***
Level of Education	-.18***	-.12***	-.02*	-.09***
Body Mass Index	.16***	.16***	.02*	.12***
Negative affectivity	.10***	.11***	.05***	.09***
Stress	.11***	.13***	.07***	.12***
Sadness	.13***	.13***	.07***	.12***
Shame & guilt	.01	.01	-.02	.00
Frustration	.08***	.09***	.03**	.07***
Anger	.05***	.06***	.04***	.06***
Positive affectivity	-.12***	-.13***	-.06***	-.12***
of low intensity	-.10***	-.12***	-.07***	-.12***
of high intensity	-.11***	-.11***	-.03**	-.09***
Social Support	-.13***	-.11***	-.02*	-.08***
HB_Diet habits	.03**	.04***	.04***	.04***
HB_ Exercice habits	-.16***	-.15***	-.06***	-.13***
HB_drinking & smoking	-.01	-.01	.01	.01

Note. [a]User additional charges apply when the patient require non reimbursed services (e.g. single room).

***$p \leq 0.001$; **$p \leq 0.01$; *$p \leq 0.05$ (correlations > .XX hold after Bonferroni correction)

Table 5.

Results of Stepwise Regressions Identifying the Significant Predictors (by Order of Importance) of each Outcome when Entering All Predictors in the Model (Study 2)

Non reimbursed drugs	Drug consumption in DDD	Expenses for reimbursed drugs	Doctor consultation (visits to GP and SP)	Expenses for doctor consultation	Visits to psychiatrist	Expenses for visits to psychiatrist	Days spent at the hospital (all types)	Expenses for hospitaliza-tions (all types)	Days spent at the general hospital	Expenses for days spent at the general hospital	Days spent at the psychiatric hospital	Expenses for days spent at the psychiatric hospital
Sex	Age	Phys. Act	Age	Education	**EC_intra**	**EC_intra**	**EC_intra**	Phys. Act	Phys. Act.	Phys. Act.	**EC_intra**	**EC_intra**
EC_intra	BMI	Age	Phys. Act.	Age	Education	Education	Phys. Act.	Age	**EC_intra**	Age	Age	BMI
Soc. Sup.	Phys. Act.	Sex	Education	Phys. Act.	Sex	Sex	Soc. Sup.	Education	Soc. Sup.	Sex	Tob & Alc	
Education	**EC_intra**	Education	Sex	Soc. Sup.	Soc. Sup.	Soc. Sup.	Tob & Alc	**EC_intra**	Age	Education	BMI	
EC_inter	Diet Hab.	BMI	**EC_intra**	Sex	**EC_inter**	Age	BMI	Sex	Education	**EC_intra**	Soc. Sup.	
Diet Hab.	Soc. Sup.	**EC_intra**	Soc. Sup.	**EC_intra**	Age	**EC_inter**	Age			Soc. Sup.	**EC_inter**	
Age	Education		**EC_inter**	BMI	BMI		Education					
	EC_inter		Tob & Alc	**EC_inter**								
	Sex		BMI	Tob & Alc								
			Diet Hab.	Diet Hab.								

Note. DDD = Daily Defined Doses; BMI = Body Mass Index; Diet Hab. = Diet Habits; EC = Emotional competence; GP = general practitioner; NA = Trait Negative Affectivity; PA = Trait Positive Affectivity; Phys. Act. = Physical activity; Sos.Sup. = Social support; SP = specialized practitioner; Tob. Alc. = Tobacco & Alcohol habits

$^{***}p \leq 0.001$; $^{**}p \leq 0.01$; $^{*}p \leq 0.05$

Table 6.

Non Parametric Two-tailed Correlations (Spearman's Rho) among Emotional Competencies and Health Outcomes over 11 Years (Study 2)

	Non reimbursed drugs	Drug consumption in DDD	Expenses for reimbursed drugs	Doctor consultation (visits to GP and SP)	Expenses for doctor consultation	Visits to psychiatrist	Expenses for visits to psychiatrist	Days spent at the hospital (all types)	Expenses for hospitaliza-tions (all types)	Days spent at the general hospital	Expenses for days spent at the general hospital	Days spent at the psychiatric hospital	Expenses for days spent at the psychiatric hospital
Identification self	-.05***	-.09***	-.10***	-.08***	-.09***	-.06***	-.06***	-.06***	-.05***	-.05***	-.05***	-.06***	-.01
Identification other	.03**	-.11**	-.12***	-.07***	-.08***	.03**	.03**	-.05***	-.06***	-.04***	-.05***	-.03**	-.01
Expression self	-.07***	-.11***	-.12***	-.09***	-.10***	-.06***	-.06***	-.06***	-.06***	-.05***	-.06***	-.07***	-.03**
Listen other	.04***	-.02	-.03*	.03*	.01	.03*	.03*	.00	.00	.01	-.01	-.01	.01
Understanding self	-.10***	-.14***	-.15***	-.13***	-.14***	-.08***	-.08***	-.10***	-.10***	-.10***	-.09***	-.07***	-.01
Understanding other	.00	-.12***	-.14***	-.10***	-.12***	.04***	.04***	-.08***	-.08***	-.07***	-.07***	-.03**	.00
Regulation self	-.16***	-.09***	-.09***	-.12***	-.12***	-.17***	-.17***	-.07***	-.05***	-.06***	-.05***	-.09***	-.02*
Regulation other	-.01	-.05***	-.05***	-.03**	-.04***	-.02*	-.02*	-.01	-.01	-.01	-.01	-.04***	-.02
Use self	.11***	-.08***	-.08***	-.03**	-.04***	.09***	.09***	-.03**	-.04***	-.03**	-.04***	.00	-.01
Use other	-.07***	-.09***	-.09***	-.10***	-.11***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.05***	-.02*
Intrapersonal EC	-.09***	-.15***	-.15***	-.13***	-.14***	-.09***	-.09***	-.09***	-.08***	-.08***	-.08***	-.08***	-.02
Interpersonal EC	.00	-.10***	-.11***	-.08***	-.09***	.01	.01	-.05***	-.05***	-.05***	-.05***	-.04***	-.01
Global EC	-.05***	-.14***	-.15***	-.11***	-.13***	-.05***	-.05***	-.08***	-.08***	-.07***	-.07***	-.07***	-.02

Note. DDD = Daily Defined Doses; GP = general practitioner; SP = specialized practitioner
***$p \leq 0.001$; **$p \leq 0.01$; *$p \leq 0.05$ (correlations > .06 hold after Bonferroni correction)

Table 7. *Non Parametric Two-tailed Correlations (Spearman's Rho) among Emotional Competencies and Drug ATC Classes (Study 2)*

	A	B	C	D	G	H	J	L	M	N	P	R	S	V	TOT
Identification self	**-.07*****	**-.07*****	**-.07*****	-.01	.05***	-.02	-.02	0.01	-.04***	**-.11*****	0.01	-.04***	-.01	-.02	**-.09*****
Identification other	**-.08*****	**-.11*****	**-.14*****	-.01	**.14*****	-.04***	-.02	0.01	**-.07*****	-.06***	0.03**	-.02*	-.02	-.01	**-.11*****
Expression self	**-.09*****	**-.08*****	**-.10*****	-.02	.05***	**-.07*****	-.03*	.00	-.06***	-.14***	.00	-.05***	-.04**	-.02	**-.11*****
Listening other	-.01	-.04***	-.05***	.02	**.15*****	.01	.04***	.01	.01	.02	.04***	.02*	.02	.00	-.02
Understand. self	**-.12*****	**-.09*****	**-.10*****	-.03**	.01	-.06***	-.06***	-.01	**-.09*****	**-.17*****	-.01	**-.08*****	-.02	-.02*	**-.14*****
Understand. other	**-.11*****	**-.11*****	**-.16*****	-.03*	**.14*****	**-.07*****	-.05***	-.03**	**-.11*****	**-.08*****	.02	-.04***	-.03**	.00	**-.12*****
Regulation self	**-.07*****	-.01	-.01	-.05***	**-.10*****	-.05***	-.06***	.02	-.03**	**-.21*****	-.03	-.06***	-.01	-.02	**-.09*****
Regulation other	-.02*	-.03**	-.04***	.00	.05***	.00	.02*	.00	.01	-.05***	.00	-.02	.01	.00	-.05***
Use self	-.04***	**-.10*****	**-.12*****	.00	**.12*****	-.02*	-.02	-.01	-.06***	.01	.02	-.03**	-.04***	-.02	**-.08*****
Use other	-.06***	-.03**	-.06***	-.02	-.04***	-.05***	-.03**	-.01	-.05***	**-.12*****	-.01	-.04***	-.01	.00	**-.09*****
Intrapersonal EC	**-.11*****	**-.09*****	**-.11*****	-.04***	.03**	-.06***	-.06***	.00	**-.08*****	**-.19*****	-.01	**-.07*****	-.03**	-.03*	**-.15*****
Interpersonal EC	**-.08*****	**-.09*****	**-.12*****	-.01	**.11*****	-.04***	-.01	-.01	-.06***	**-.08*****	.02	-.03**	-.01	-.01	**-.10*****
Global EC	**-.10*****	**-.10*****	**-.12*****	-.02*	**.07*****	-.05***	-.04***	.00	**-.08*****	**-.15*****	.00	-.05***	-.02*	-.02	**-.14*****

Note. A. Alimentary tract and metabolism, B. Blood and blood forming organs, C. Cardio-vascular system, D. Dematologicals, G. Genito-urinary system and sex hormones, H. Systemic hormonal preparations excl. sex hormones and insulins, J. Antiinfective for systemic use, L. Antineoplasic and immunomodulating agents, M. Musculo-skeletal system, N. Nervous system, P. Antiparasite products, insecticide and repellents, R. Respiratory System, S. Sensory organs, V. Various.

$^{***}p \leq 0.001$; $^{**}p \leq 0.01$; $^{*}p \leq 0.05$ (correlations > .07 hold after Bonferroni correction)

Table 8. Systematic Examination of the Moderating Effect of EC (i.e. EC x Other Predictor) on Healthcare Consumption (Study 2)

	Non reimbursed drugs	Drug consumption in DDD	Doctor consultation (visits to GP and SP)	Visits to psychiatrist	Days spent at the hospital (all types)	Days spent at the general hospital	Days spent at the psychiatric hospital
Sex	$F_{(1,9319)} = 1.54$	**$F_{(1,9319)} = 7.39^{**}$**	$F_{(1,9319)} = 2.28$	$F_{(1,9319)} = 2.23$	$F_{(1,9319)} = 1.88$	$F_{(1,9319)} = 0.08$	$F_{(1,9319)} = 3.08^{\dagger}$
Age	**$F_{(1,9613)} = 11.48^{***}$**	**$F_{(1,9613)} = 18.94^{***}$**	$F_{(1,9613)} = 0.61$	**$F_{(1,9613)} = 14.66^{***}$**	**$F_{(1,9613)} = 9.31^{**}$**	$F_{(1,9613)} = 0.46$	**$F_{(1,9613)} = 10.54^{***}$**
Education	$F_{(1,9556)} = 0.76$	$F_{(1,9556)} = 2.23$	**$F_{(1,9556)} = 6.46^{*}$**	$F_{(1,9556)} = 0.01$	**$F_{(1,9556)} = 4.92^{*}$**	**$F_{(1,9556)} = 11.33^{***}$**	$F_{(1,9556)} = 0.84$
BMI	$F_{(1,9571)} = 2.03$	**$F_{(1,9571)} = 8.90^{**}$**	**$F_{(1,9571)} = 3.64^{*}$**	$F_{(1,9571)} = 3.53^{\dagger}$	**$F_{(1,9571)} = 6.85^{**}$**	**$F_{(1,9571)} = 15.48^{***}$**	$F_{(1,9571)} = 1.15$
Social support	**$F_{(1,9613)} = 18.53^{***}$**	$F_{(1,9613)} = 0.46$	$F_{(1,9613)} = 0.41$	**$F_{(1,9613)} = 9.05^{**}$**	**$F_{(1,9613)} = 53.54^{***}$**	**$F_{(1,9613)} = 23.31^{***}$**	**$F_{(1,9613)} = 37.69^{***}$**
HB_Diet habits	**$F_{(1,9613)} = 10.37^{***}$**	$F_{(1,9613)} = 0.07$	**$F_{(1,9613)} = 5.97^{*}$**	**$F_{(1,9613)} = 8.52^{**}$**	**$F_{(1,9613)} = 16.84^{***}$**	**$F_{(1,9613)} = 12.51^{***}$**	**$F_{(1,9613)} = 8.25^{***}$**
HB_ Exercice habits	**$F_{(1,9571)} = 26.05^{***}$**	$F_{(1,9613)} = 3.25^{\dagger}$	**$F_{(1,9613)} = 3.83^{*}$**	**$F_{(1,9613)} = 26.39^{***}$**	**$F_{(1,9613)} = 43.31^{***}$**	**$F_{(1,9613)} = 41.81^{***}$**	**$F_{(1,9613)} = 18.51^{**}$**
HB_drinking & smoking	$F_{(1,9613)} = 0.00$	$F_{(1,9613)} = 0.64$	$F_{(1,9613)} = 1.15$	**$F_{(1,9613)} = 4.76^{*}$**	**$F_{(1,9613)} = 20.48^{***}$**	**$F_{(1,9613)} = 4.75^{*}$**	**$F_{(1,9613)} = 23.39^{***}$**

***= $p \leq 0.001$; **= $p \leq 0.01$; *= $p \leq 0.05$; $^{\dagger}p \leq 0.1$

Figure 1. Examples of Interaction Effects of Emotional Competence with Known Predictors of Health Outcomes (Study 2)

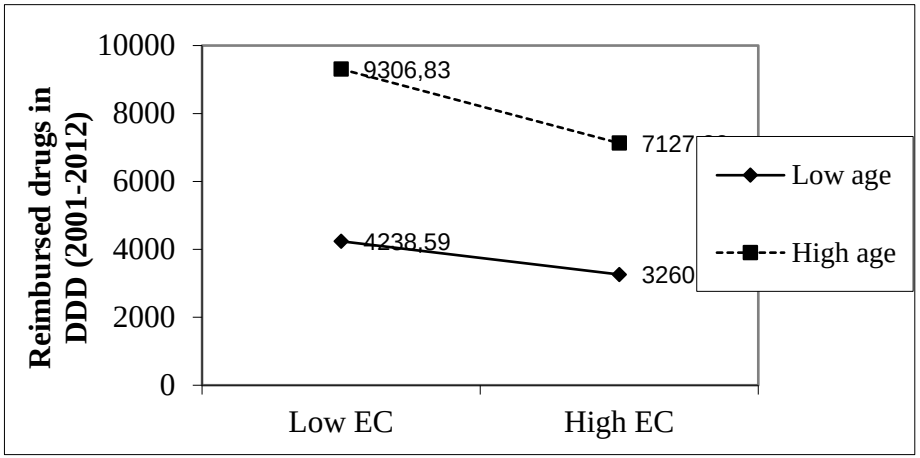

Figure SM 2. Age x EC interaction on reimbursed drugs (in DDD)
Over 11 years, an old adult with low EC has taken 2180 more doses [nearly 200 more on an annual basis] than an old adult with high EC (the difference in young adults is 979 doses).

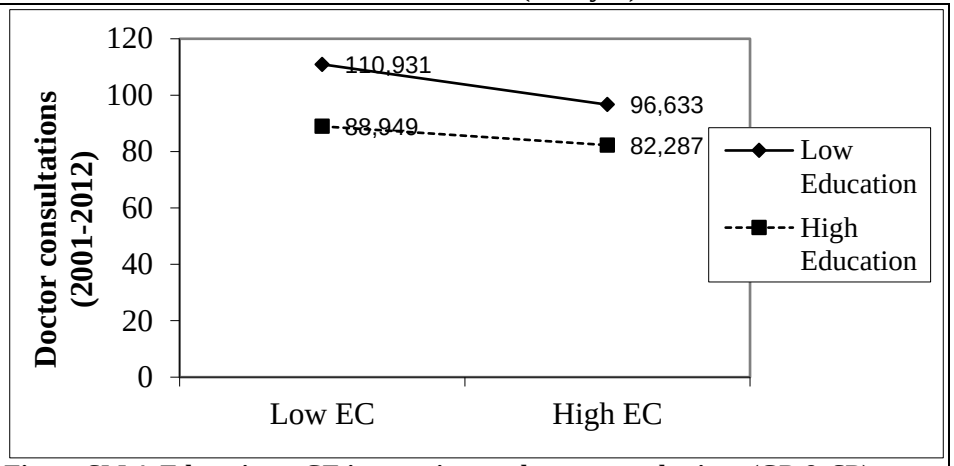

Figure SM 4. Education x CE interaction on doctor consultations (GP & SP)
A person with low education and low EC has consulted the doctor 14 more times than a person with low education and High EC (the difference for people with high education is 7 times).

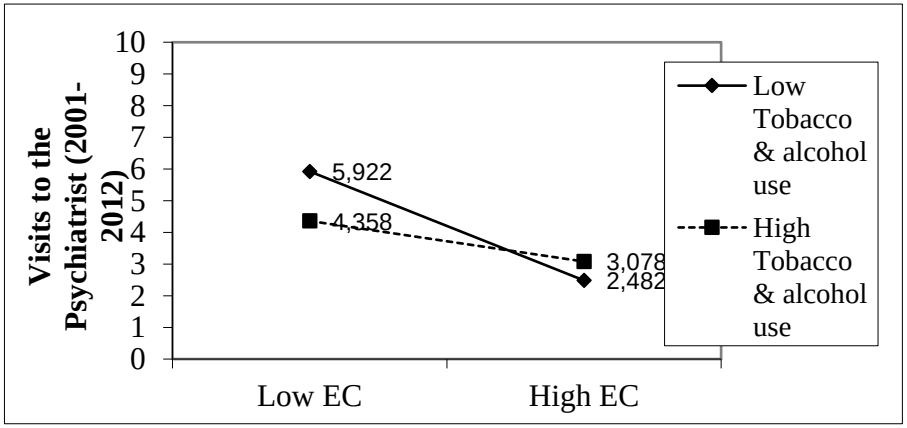

Figure SM 12. Tobaco and alcohol use x CE interaction on visits to the psychiatrist
This graph suggests that low EC may increases denial in substance users and, therefore, reduce their propensity to seek help

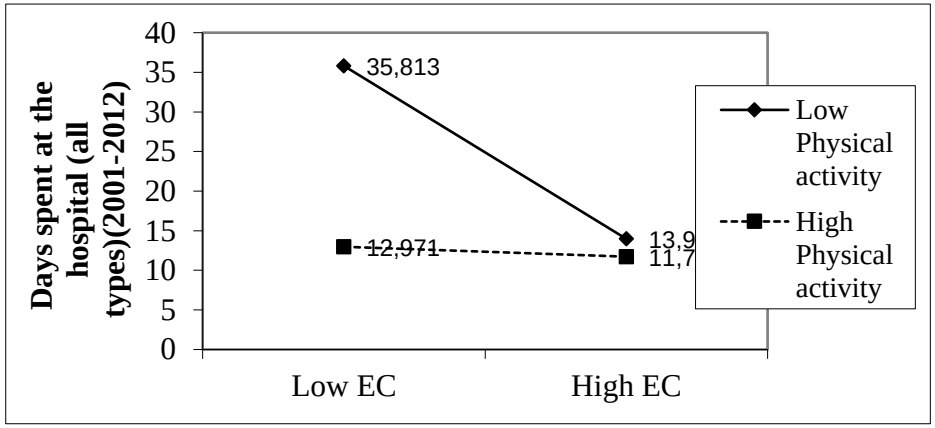

Figure SM 18. Physical activity x CE interaction on days spent at the hospital
A person with low physical activity (PA) and low EC has spent 22 more days at the hospital than a person with low PA and high EC (the difference for people with high PA is 1 day). → High EC compensates for low physical activity.