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The dynamic origins of positive health and wellbeing

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Abstract

The causes of wellbeing and illbeing interact with feedback dynamics resulting in the same set of traits giving rise to a variety of health outcomes (multi-finality) and different traits giving rise to the same health outcome (equi-finality). As a result, a full understanding of health and its disorders must be in terms of a complex adaptive system of causes, rather than in terms of categorical diagnoses or sets of symptoms. The three domains of person-centered integrative diagnosis (PID) are considered here as interacting components of a complex adaptive system comprised of health status (functioning/wellness versus disability/disorder), experience of health (self-awareness/fulfillment versus misunderstanding/suffering) and contributors to health (protective versus risk factors). The PID domains thereby allow healthcare and health promotion to be understood in terms of measurable components of a complex adaptive system. Three major concepts of health are examined in detail to identify their dynamic origins: Psychological Maturity, Flourishing and Resilience. In humanistic psychology, psychological maturity (i.e. healthy personality, mental wellbeing) involves the development of high self-directedness, high co-operativeness and high self-transcendence, but self-transcendence is nevertheless devalued in individualistic and materialistic cultures except when people must face adversity and ultimate situations like suffering or the threat of death. Psychological Maturity develops through two complementary processes often labeled as Flourishing and Resilience. Flourishing is the development of one's potential to live optimally, especially as the result of favorable circumstances, whereas Resilience is positive adaptation to life despite adverse circumstances. As a result of the complex feedback dynamics between the processes of flourishing and resilience, each person is a unique individual who has a variety of paths for achieving positive health and wellbeing open to him or her. Person-centered health promotion and care can thereby be approached as a creative life project that can be conducted with the assistance of healthcare workers who are both therapeutic allies and well-informed experts.

Keywords

Complex adaptive system; co-operativeness; diagnosis; flourishing; happiness; health promotion; human development; maturity; personality; person-centered care; person-centered integrative diagnosis; resilience; self-directedness; self-transcendance; wellbeing

Introduction

The therapeutic utility of person-centered integrative diagnosis (PID) depends on the recognition and assessment of the causal mechanisms and processes that lead to both wellbeing and illbeing, rather than merely treating symptoms of disease [1]. In prior work, PID has been defined in general informational domains covering both positive health and ill health along 3 levels (health status, experience of health and contributors to health), each of which can be assessed by a variety of descriptive procedures (categories, dimensions and narratives) [2,3]. Here, we will describe preliminary results of ongoing research to develop a dynamical model of PID based on causal mechanisms and processes of positive health and wellbeing [1,4,5]. The causes of wellbeing and illbeing involve a complex adaptive network of components and processes that we are now beginning to be able to specify, measure and treat according to the principles of person-centered medicine.

Our work is grounded in evidence about the evolution of human beings with three aspects: body, thoughts and psyche [6,7]. Consequently, person-centered diagnosis and treatment recognizes the ternary nature of the whole human being in a way consistent with definitions of health as a complete state of physical, mental and social wellbeing, rather than merely the absence of disease [8]. Of course, complete mental and social wellbeing involves self-transcendent values like trust, mutual respect, honor, hope and charity, which necessarily imply spiritual wellbeing as an aspect of health [9–11]. Hence, complete health must involve the wellbeing of the ternary aspects of a whole human being (body, thought and psyche).

Our work is further grounded on extensive epidemiological and clinical evidence that the absence of mental and physical disorders does not assure the presence of indicators of positive health and subjective wellbeing, such as resilience, hardiness, life satisfaction, positive emotional balance, or self-realization of one's growth potential [12–18]. Wellbeing and illbeing have biological, psychological, social and spiritual causes that are only partially overlapping [11,15,19,20]. Consequently, the assessment and treatment of PID must address the causes of both wellbeing and illbeing [21,22].

Our work is additionally grounded in prior work distinguishing the three domains of PID: health status (functioning/wellness versus disability/disorder), experience of health (self-awareness/fulfillment versus misunderstanding/suffering) and contributors to health (protective versus risk factors) [2,3]. Extensive work on the development of personality and health has shown that the dynamics of wellbeing depend on complex feedback interactions among causal components underlying these three domains [5,12,18]. Empirically, the PID domains must be moderately correlated because of these feedback interactions [23,24]. The development of wellbeing must involve such a complex adaptive system because the same personality traits can lead to different health outcomes (i.e., multi-finality) and different sets

of personality traits can lead to the same health outcome (i.e., equifinality) [4,25]. As a result, linear stage models of the development of health and its components, like those of Erikson, Piaget and Kohlberg, are inadequate [11,24,26].

The perspective of PID is holistic; that is, we take the view that the components and processes of wellbeing involve all aspects of the person - body, thoughts and psyche. As a result, the physical, mental, social and spiritual aspects of health and wellbeing are inseparable, as shown empirically by their mutual dependence on personality functioning [12]. In contrast, many people in industrialized societies have an egocentric outlook of separateness that places a high value on materialistic concerns like money, possessions, appearances and fame [27,28]. Stressors associated with a materialist outlook of separateness and the resulting social inequity elicit concomitant increases in a wide variety of mental and physical disorders, which can be likened to the debilitating effects of an aggressive virus or meme [27–30]. The actual causes of mortality from physical disorders are largely attributable to individual differences in personality, lifestyle choice and stress [31]. Fortunately, even when people are not initially aware of the causes of their problems, interventions that enhance awareness are effective in motivating lifestyle change and thereby enhancing health [32,33]. Although the components of wellbeing described here may appear to be more relevant to mental health, what we present is actually a general model for the causes of all aspects of health. The only reason our integrative approach may seem surprising is the consequence of the loss of a person-centered perspective resulting from the artificial division of medical education by specialty.

Here, we will explore some ways that PID can also be understood in a way that is dynamic. We will examine available descriptions of some dynamic processes that link the three domains of PID as components of a complex adaptive system. In particular, we will examine descriptions and measures of psychological maturity [16,23] as a foundational concept for understanding the dynamic processes of Flourishing (in contrast to Languishing or Suffering) [22,34–36] and Resilience (in contrast to Frailty or Rigidity) [37–41].

A dynamic perspective of PID

Positive health is comprised of wellness and healthy functioning, whereas ill health is comprised of disorders and disabilities in the PID domain of health status [2,3]. Functioning is usually defined as the activities and natural abilities that allow people to shape and self-regulate their way of life with purpose, meaning and a personal sense of coherence [42,43]. A person's way of functioning involves their entire being, including their body, thoughts and psyche. Accordingly, functioning corresponds closely to personality, which is defined as the organization within the individual of the psychobiological systems by which a person shapes and adapts to an ever-changing internal and external environment [1,11]. For example, healthy functioning can be measured by a creative character profile combining self-directedness, co-operativeness and self-transcendence using the Temperament and Character Inventory [12,44] or related measures of psychological wellbeing including autonomy, environmental mastery, purpose in life, self-acceptance, positive relations with others and personal growth [14–16]. In adolescents, healthy functioning has been described in terms of competence, confidence, connection, character and caring [45]. In addition, intellectual

abilities, emotional style and values are important features of a person's functioning and health status.

Contributors to health and illness refer to protective and risk factors, respectively and may be intrinsic or extrinsic variables of a biological, psychological or social nature, according to the PID domain descriptions. Such risk and protective factors involve a person's intrinsic adaptability, plasticity, resilience and strengths or they involve extrinsic support or sources of adversity, such as trauma, abuse and neglect. In developmental psychology, plasticity is defined as the capacity for personal change in a developmental trajectory in response to variation in the person's context [46,47], with context including sexual, material, emotional/ social, intellectual and spiritual aspects in human beings [6]. In person-centered psychology, adequately healthy people are described as having a "relaxed openness to life" that allows them to counteract defensiveness and rigidity, maintaining a balance between fluidity and persistence in dealing in a flexible and meaningful way with the vicissitudes of life [48]. Every aspect of a person contributes to examples of plasticity that promote health, such as resilience and relaxed openness to experience and change [45,49]. Human beings are outstanding in their ability to live under an extremely wide range of conditions all over the world [50] and to adapt with resilience to adversity, stress and trauma [51,52]. In the PID domain model, resilience is a major intrinsic protective factor contributing to health. Likewise, healthy and mature functioning involves positive relationships with others and caring citizenship [16,53] and so healthy personal functioning implies the responsibility to provide adequate community services and extrinsic support for the health of others in accordance with what we want to be provided for ourselves.

The experience of health refers to the way a person's outlook on life influences their perception of their experiences. In particular, an experiential outlook of separateness predisposes a person toward suffering and negative emotions like feelings of self-pity, victimization, and resentment. On the other hand, an experiential outlook of unity and connectedness predisposes a person toward wellbeing and virtue, which are expressions of flourishing, which is sometimes called the "good life" or the "happy life". Virtues have been described as those qualities or powers that help a person to perfect their character, live well and flourish by self-actualization of their potential [54]. Virtue is an expression of an outlook of unity, which is a means to living a good life. Hence virtues help to regulate passions and guide conduct so that a person can enjoy living a "good life", that is, a life that not only realizes their potential, but also serves others well. Virtue is a major influence on the way a person perceives and experiences events in their life. Hence, virtue is the major influence on the PID domain of the experiences of health, often influencing a person's values and determining whether s/he experiences suffering and discontent, rather than acceptance with tranquility and a sense of fulfillment.

Healthy personality development

A self-transcendent outlook of unity is fundamental to healthy personality development, even though it may be devalued in materialistic and secular cultures [12,55]. The importance of an outlook of unity for health has been recognized by philosophers since antiquity [11]. In recent history, humanism and developmental lifespan psychology have been the most ardent

advocates for the crucial role of an outlook of unity and coherence for positive health [56–58], even more clearly than has positive psychology [59]. For example, the humanistic psychologist Gordon Allport said "The basic existentialist urge to grow, pursue meaning, seek unity is also a given. It is a major fact - even more prominent in man's nature than his propensity to yield to surrounding pressures [60]."

Recognizing the need for a dynamic balance between autonomy and coherence, Allport described the characteristics of psychological maturity as an adaptive set of seven functions: (1) self-extension (authentic and enduring involvement in significant life activities, such as work, family life or community service); (2) dependable ways of relating warmly to others, such as tolerance, empathy, trust and genuineness); (3) self-acceptance or emotional security (the ability to regulate and live with one's emotional states); (4) realistic perception and appraisal (seeing the world as it is in contrast to being defensive or distorting reality to conform to one's wishes); (5) problem-centeredness (resourceful problem solving); (6) self-objectification (self-awareness allowing a person to know oneself with insight and humor) and (7) a unifying philosophy of life, allowing comprehension and integration of one's goals and values [60]. According to Allport, a healthy person is constantly striving toward the unification of personality by integration of all aspects of his or her life.

Inspired by the descriptions of psychological maturity by Allport and other humanists, Carol Ryff developed reliable measures for several components of mental health, which she calls psychological wellbeing [16]. According to Ryff, psychological wellbeing has six dimensions: (1) Autonomy (self-determining and independent); (2) Purpose in life (self-directed goals); (3) Environmental mastery (competence in management, effectively using opportunities); (4) Self-acceptance (satisfied with self, acknowledging good and bad qualities); (5) Positive relations with others (warm relationships, empathy, intimacy) and (6) Personal growth (sees self as growing and expanding, open to new experiences and change and realizing his or her potential). Ryff's measures have been helpful in differentiating the psychobiological correlates of wellbeing and illbeing [15]. Empirical findings of Ryff and her colleagues show that the absence of symptoms of mental disorders does not assure the presence of positive emotions, life satisfactions or other indicators of wellbeing [35,61].

Unfortunately, Ryff's dimensions do not provide an adequate measure of self-transcendence or a unifying philosophy of life. Her measures are moderately explained by personality traits corresponding to high self-directedness, high co-operativeness and low Harm Avoidance [49]. As expected [56], Ryff's dimension of personal growth is positively correlated with self-transcendence, but only weakly [62].

In humanistic psychology, psychological maturity is comprised of high self-directedness, high co-operativeness, and high self-transcendence, which have been empirically shown to be predictive of emotional, psychological and social components of wellbeing [12]. However, in materialistic secular cultures, self-transcendence is devalued [55], except in the face of ultimate situations like suffering or terminal illness [63,64]. The general concepts of psychological maturity are closely related to other definitions of mental health and mental wellbeing, which have been described as a dynamic state in which the person is able to "develop their potential, work productively and creatively, build strong and positive

relationships with others and contribute to their community" [9,10]. These general descriptions of psychological maturity and wellbeing provide a foundation for understanding two more specific dynamic processes that promote health: Flourishing and Resilience.

Description and assessment of flourishing

Flourishing has been described in a variety of ways designed to capture the ancient Greek concept of eudaimonia, usually described as the "happy life" or the "good life". Eudaimonia involves an active life of doing good that leads to feeling good and self-realization of one's potential, which is an expression of virtue with acceptance of the human condition rather than hedonism [1,11,15]. In positive psychology, Flourishing, sometimes called authentic happiness, is suggested to derive from achieving meaning, positive social relationships, engagement and positive emotions [34]. Similarly, in Acceptance and Commitment Therapy, the development of positive health involves accepting your reactions and being present with flexibility from a self-transcendent outlook, choosing a valued direction and committing to it [65]. In epidemiological studies, flourishing is measured as the presence of subjective wellbeing (including emotional, psychological and social wellbeing) plus the absence of mental disorders during the past year [66]. Fewer than 20% of people were diagnosed as flourishing in a large survey of American adults [67]. Those diagnosed as flourishing reported the fewest missed days of work, the healthiest psychosocial functioning (i.e., self-directed, high resilience, high intimacy), the lowest risk of cardiovascular disease, the lowest number of chronic physical diseases with age, the fewest health limitations of activities of daily living and low healthcare utilization [67].

The results of Ryff and Keyes show the overlap of physical, mental and social wellbeing, as well as the inadequacy of focusing only on the presence of physical and mental disorders in assessing health [35,67]. Flourishing involves dynamic interactions between healthy functioning, contributions to health and the experience of health. In management, healthy functioning is sometimes described as working with goals and values that are SMART or even SMARTER (Significant/Specific, Meaningful, Attainable, Realistic, Timely, Ethical/Ecological and Rewarding) [68].

The effects of healthy functioning on intrinsic and extrinsic contributors to health, described by the AA aphorism "fake it till you make it", depend greatly on how self-transcendent a person's outlook is. People with an outlook of separateness may appear to act kindly toward others to advance selfish intentions, but such deception only fosters cynical distrust and alienation, leading to cardiovascular and other chronic health disorders [69]. Likewise, if a person wants to be virtuous or kind, they may be only trying to become something they are not. On the other hand, if they let go of self-interest by expressing genuine feelings of kindness without expecting anything back, then kindness is increasingly spontaneous and natural [1,70]. Hence, wellbeing depends on the extent to which a person is self-transcendent. It is not possible to diagnose and promote flourishing without considering the dynamic relationships among functioning, risk and protective factors and the person's outlook on life.

Description and assessment of resilience

Concepts of flourishing focus on how people can develop their potential to function optimally, especially as the result of a favorable environment [42]. In contrast, concepts of resilience focus on how people can maintain or regain health despite the experience of adversity, trauma and stress [10,38,51]. Hence, most work on resilience concerns the risk and protective factors that contribute to health. Such factors contribute to health through an interactive dynamic process that may be context- and time-specific and may vary from one life situation or life stage to another [10]. Early work was impaired by the use of a wide variety of divergent indicators of resilience, often with limited validation [71]. More recently, reliable scales have been validated as measures of resilience [40,72,73]. Such scales show incremental validity in predicting responses to stressors compared to general measures of personality and intelligence [40,52,74,75]. These scales do include some items related specifically to quick recovery and adaptation to stress and adversity, but they are dominated by items about personal and social competence that correspond to high self-directedness and high co-operativeness, just like the measures of maturity and psychological well-being that have been proposed as indicators of flourishing.

In psychosomatic medicine, Antonovsky studied the characteristics of resilient people in Israel who had been able to stay healthy and cope well with the adversities of concentration camps during World War II [43]. He described the characteristics that distinguished resilient people as a "sense of coherence" in the way they viewed the world with a global outlook of unity, rather than separateness. Antonovsky suggested that the sense of coherence in one's perception of life was the basic process that allowed them to maintain health and cope with challenges and adversity [76]. The sense of coherence is measured by his Orientation to Life questionnaire, which includes items about a person's ability to cope with challenges and difficulties, relate warmly and trust other people and be interested and open to life experiences [77]. Thus, Antonovsky's sense of coherence is a general measure of psychological maturity, rather than a specific measure of the processes of resilience, but it does emphasize the crucial role of a global outlook of unity in coping with stress and adversity.

Perhaps ancient philosophers, such as the Stoics, have provided the clearest description of the process of strengthening oneself to adapt to adversity on the basis of a global outlook of unity or sense of coherence. Stoics regarded the whole universe as one living being that was constantly evolving and as a result they sought a life of tranquility and harmony by practices of self-discipline guided by forethought, such as moderation, sublimation and anticipation of adversity, so that they would be resilient and patient [78]. They sought to use their forethought to develop wise judgment and strength of character, free from fear and selfish attachment to transient things, by ascetic exercises intended to cultivate mind-body transformations that would support a will that is pure and free. For example, the Stoic philosopher Philo encouraged people to imagine in advance various ways they might suffer adversity or endure disasters so that they would "not flinch beneath the blows of Fate because they have calculated its attacks in advance" [79]. From such anticipation of adversity, the Stoic hoped to develop fortitude or resilience, which combines patience (i.e., calm perseverance) and strength of character in the face of misfortune, hardship, pain or

delay, including the rational state of mind to be able to persevere or to change flexibly as needed.

Like an advanced form of cognitive-behavioral therapy extended to develop mindfulness and virtue, the Stoic becomes prudent, patient and resilient by cultivating a pure and free will to follow the Logos, the intelligence of universal reason that guides the evolution of all things (also called Fate, Fortune or Providence). According to Marcus Aurelius (Book 2, paragraph 5), "Hour by hour resolve firmly, like a Roman and a man, to do what comes to hand with correct and natural dignity and with humanity, independence and justice. Allow our mind freedom from all other considerations. This you can do, if you will approach each action as though it were your last, dismissing the wayward thought, the emotional recoil from the commands of reason, the desire to create an impression, the admiration of self, the discontent with your lot. See how little a man needs to master, for his days to flow on in quietness and piety: he has but to observe these few counsels...." [78].

Devotion to following the Logos allowed Stoics to act spontaneously in accord with reason and virtue, thereby remaining healthy and contented, despite the vicissitudes of life: according to Marcus Aurelius (Book 6, paragraph 33), "Pain of hand or foot is nothing unnatural, so long as hand and foot are doing their own work. Likewise, no pain is contrary to the nature of man, as man, so long as he is doing man's work. And if it accords with nature, it cannot be evil" [78]. For Stoics, "virtue is the only good and happiness consists exclusively in virtue [78]." Following Plato, the hinges of the door to the happy life are the cardinal virtues of prudence, courage (fortitude), justice and temperance in both Stoicism and Christianity [78,80].

In Stoic philosophy and practice, sublimation, anticipation, moderation and patience are non-defensive expressions of human forethought leading to acceptance of a universal "unity of order and providence" in which non-resistance to the unpleasant blows of fortune helps us to enlarge our consciousness, rather than to defend ourselves by repressing what is unpleasant from awareness. Providence imbues all of Nature with the spirit of divine Forethought, so human forethought allows a person to cultivate wisdom by living in accord with Nature (and hence the all-encompassing divine Forethought) as a means to being healthy and happy [81,82]. According to Marcus Aurelius (Book 6, paragraph 38), "Think often of the bond that unites all things in the universe and their dependence upon one another. All are, as it were, interwoven and in consequence linked in mutual affection" [78].

The Stoics have an approach to resilience that is echoed in the description of psychological adequacy by person-centered psychologists [48] and mindful cognitive-behavioral or psychoanalytic therapists [83]. For both Stoics and person-centered psychologists, people who are adequate (i.e., mature and resilient) have forethought, which is expressed as virtue, which gives rise to awareness, acceptance, openness to change and resilience. Hence, forethought allows the wise person to maintain tranquility and health despite life's vicissitudes.

Reciprocal interactions and the diversity of development

The Stoic processes of self-discipline underlying resilience are distinct and complementary to the processes of flourishing. Thus, forethought, particularly anticipation of adversity, prepares a person to be more resilient, inducing epigenetic changes, which strengthens the ability of a person to function wisely under either favorable or unfavorable conditions [84]. Healthy functioning in turn activates protective factors and reduces risk factors for illness while maintaining a positive outlook. Without such complementary processes allowing adaptation under either favorable or unfavorable conditions, contentment could not be complete: flourishing would depend on stability of favorable conditions and resilience under unfavorable conditions would depend on patient acceptance of hardship without hope of relief through change of conditions or personal plasticity.

Suffering is inevitable because the world is constantly in flux and many people do not act consistently in accord with virtue. Hence, complete health and fulfillment must involve the spiritual development of one's interior life. In fact, some forms of suffering can help a person to recognize that the unrestrained pursuit of material prosperity is unhealthy and ultimately foolish [85]. Healthy adaptation to adversity and ultimate situations promotes intrinsic resilience and happiness through self-transcendence and spiritual development. Self-denial is a spiritual path that does not depend on material possessions, social attachments or intellectual strengths.

Of course a person's exterior and interior lives are not fully separable, so there is a lack of depth to accounts of flourishing that relegate spirituality to an optional role [53,59]. At the same time, there is a lack of breath to accounts of spiritual life that neglect healthy ways of living in the material world and serving others. Complete health and happiness must involve all three aspects of the person – body, thoughts and spirit. Within an open network of reciprocal interactions, there are many different paths to wellbeing. Therefore, each person is free to seek fulfillment of his or her aspirations as a creative life project that is unique [1–3].

According to PID, in other words, the Experience of Health with a Stoic perspective (e.g., moderation) modifies both Risk Factors (e.g., discontent) and Health Status (e.g., greater resilience), reducing the impact of vulnerability factors and promoting wellbeing. Positive Health Status and reduction in Risk Factors, in turn, promote an Experience of Health that is health-promoting under either favorable or unfavorable conditions.

The causes of illbeing

In order to understand wellbeing, it is often helpful for healthcare workers to reflect on the causes of illbeing because they may have more experience with disease than health. The components and processes of illbeing are simply dysfunctional variants of the states that lead to positive health. Hence, the range of health functioning involves three core components: positive health status versus ill health (disorders and disabilities), contributors to health versus illness (predominance of risk over protective factors) and experience of health or illness (an outlook of separateness with low self-transcendence). The two complementary sets of processes of illbeing have been called Languishing instead of

Flourishing [66,86] and Frailty or Rigidity instead of Resilience. For example, languishing may involve alienation, competition and discontent, in contrast to flourishing, which involves engagement, coherence and contentment. Likewise, examples of the processes of inadequate adaptation to adversity typical of egocentric and materialistic people include processes like unsustainable self-indulgence, exploitation leading to social inequity and defensive rigidity instead of moderation, sublimation, anticipation and relaxed openness to change [27,28]. The same processes that debilitate individuals also weaken and destabilize civilization at societal and global levels [87,88], as expected in a complex adaptive network, which operates as a nested hierarchy of multiple levels of organization [11].

Future research directions

We are at a stage of knowledge in which there is sufficient empirical data to be sure that health is better conceptualized as a complex adaptive system that is dynamically self-organizing within a person as s/he adapts to an ever-changing internal and external environment, rather than a collection of independent diseases. Yet this insight is often blocked from dissemination in practice by strongly entrenched specialty training programs and managed care practices that tend to segment and de-humanize physicians to be detached objects with technical expertise, thereby reducing their potential to work in a personcentered way [89–91]. The International College for Person-centered Medicine and its journal therefore serves an important means for communication among professionals to share and stimulate an appreciation of the opportunities to transform healthcare training and practice [92].

Further work to refine the labels used to describe these causal pathways is also needed in order to develop reliable and specific measures of these processes, even though we can learn much using the terminology and measures previously developed. Some research projects are currently underway to evaluate the model of the feedback dynamics of the causes of wellbeing described here [12,93], but much further work is needed for many health conditions in different countries. Most prior research on development, however, has been limited to linear models [45,56,94], which fail to recognize the non-linear feedback dynamics of human development [26,95]. Innovative statistical methods appropriate for person-centered medicine need to be used in order to understand realistically the complex adaptive system dynamics of developmental trajectories within individuals [96–100]. There is also much need and value for doing research on the development of health and illness in a cross-cultural context, because such analyses will require sensitivity to and awareness of the context in which development occurs [26].

Implications for health promotion, care and training

The dynamics of wellbeing make clear that specialized treatment of symptoms and long-standing organ complications is a costly and ineffective way to promote the health of either individuals or general populations. Person-centered integrative care and commitment to integrative physical, psychological and social services as a rehabilitative safety net are essential for efficient health promotion of individuals and populations so that they can flourish in health [4,10]. Education about what people should do to reduce stress and modify

their lifestyle choices is also usually ineffective unless the whole person can be helped to become aware of the causes of their condition and motivated to make changes. In order to develop wellbeing, people must be aware of the causes of both their distress and disability as well as of the paths open to them to develop in health and happiness with community support as well as personal effort [5,10]. Fortunately, it is possible to motivate people to change, because we all, ultimately, want to be healthy and happy [1,32,33].

References

- Cloninger CR, Cloninger KM. Person-centered Therapeutics. International Journal of Person Centered Medicine. 2011; 1(1):43–52. [PubMed: 26052429]
- 2. Mezzich JE, Salloum IM, Cloninger CR, Salvador-Carulla L, Kirmayer LJ, Banzato CE, Wallcraft J, Botbol M. Person-centred integrative diagnosis: conceptual bases and structural model. Canadian Journal of Psychiatry. 2010; 55(11):701–708.
- 3. Salloum IM, Mezzich JE. Outlining the bases of person-centred integrative diagnosis. Journal of Evaluation in Clinical Practice. 2010; 17(2):354–356. [PubMed: 21114718]
- Cloninger CR, Cloninger KM. Development of instruments and evaluative procedures on contributors to health and illness. International Journal of Person Centered Medicine. 2011; 1(3): 446–455.
- 5. Cloninger CR, Zohar AH, Cloninger KM. Promotion of well-being in person-centered mental health care. Focus. 2010; 8(2):165–179.
- Cloninger CR. The evolution of human brain functions: the functional structure of human consciousness. Australian and New Zealand Journal of Psychiatry. 2009; 43(11):994–1006. [PubMed: 20001395]
- 7. Cloninger, CR. The Phylogenesis of Human Personality: Identifying the Precursors of Cooperation, Altruism, and Well-Being, in The Origins of Cooperation and Altruism. Sussman, RW.; Cloninger, CR., editors. New York: Springer; 2011. p. 63-110.
- 8. WHO. New York: World Health Organization; 1946. Definition of Health: Preamble to the Constitution of the World Health Organization.
- 9. Amering, M.; Schmolke, M. Recovery in Mental Health. World Psychiatric Association Evidence and Experience in Psychiatry. Herrman, H., editor. New York: John Wiley & Sons; 2009.
- 10. Herrman H, Stewart DE, Diaz-Granados N, Berger EL, Jackson B, Yuen T. What is Resilience? Canadian Journal of Psychiatry. 2011; 56(5):258–265.
- Cloninger, CR. Feeling Good: The Science of Well-Being. New York: Oxford University Press;
 2004. p. 374
- 12. Cloninger CR, Zohar AH. Personality and the perception of health and happiness. Journal of Affective Disorders. 2011; 128(1–2):24–32. [PubMed: 20580435]
- Manderscheid RW, Ryff CD, Freeman EJ, McKnight-Eily LR, Dhingra S, Strine TW. Evolving definitions of mental illness and wellness. Preventing Chronic Disease. 2010; 7(1):A19. [PubMed: 20040234]
- 14. Ruini C, Ottolini F, Rafanelli C, Tossani E, Ryff CD, Fava GA. The relationship of psychological well-being to distress and personality. Psychotherapy and Psychosomatics. 2003; 72(5):268–275. [PubMed: 12920331]
- 15. Ryff CD, Dienberg Love G, Urry HL, Muller D, Rosenkranz MA, Friedman EM, Davidson RJ, Singer B. Psychological well-being and ill-being: do they have distinct or mirrored biological correlates? Psychotherapy and Psychosomatics. 2006; 75(2):85–95. [PubMed: 16508343]
- Ryff CD, Keyes CL. The structure of psychological well-being revisited. Journal of Personality and Social Psychology. 1995; 69(4):719–727. [PubMed: 7473027]
- 17. Ryff CD, Singer BH, Dienberg Love G. Positive health: connecting well-being with biology. Philosophical Transactions of the Royal Society of London Series B, Biological Sciences. 2004; 359(1449):1383–1394.

18. Cloninger CR, Zohar AH, Hirschmann S, Dahan D. The psychological costs and benefits of being highly persistent: Personality profiles distinguish mood and anxiety disorders. Journal of Affective Disorders. 2011 In press.

- 19. Cloninger CR. Spirituality and the science of feeling good. Southern Medical Journal. 2007; 100(7):740–743. [PubMed: 17639764]
- 20. Cloninger CR, Abou-Saleh MT, Mrazek DA, Möller H-J. Biological perspective on psychiatry for the person. International Journal of Person Centered Medicine. 2011; 1(1):137–139.
- 21. Fava GA, Ruini C. Development and characteristics of a well-being enhancing psychotherapeutic strategy: well-being therapy. Journal of Behavior Therapy and Experimental Psychiatry. 2003; 34(1):45–63. [PubMed: 12763392]
- 22. Cloninger CR. The science of well-being: an integrated approach to mental health and its disorders. World Psychiatry. 2006; 5(2):71–76. [PubMed: 16946938]
- 23. Vaillant GE. Positive mental health: Is there a cross-cultural definition? World Psychiatry. 2012 In press.
- 24. Cloninger CR, Cloninger KM. The feedback dynamics of the components of well-being. World Psychiatry. 2012 In press.
- Cicchetti D, Rogosch FA. Equifinality and multifinality in developmental psychopathology. Development and Psychopathology. 1996; 8:597

 –600.
- 26. Cicchetti D, Toth SL. The past achievements and future promises of developmental psychopathology: the coming of age of a discipline. Journal of Child Psychology and Psychiatry. 2009; 50(1–2):16–25. [PubMed: 19175810]
- 27. James, O. Affluenza. London: Vermilion; 2007.
- 28. James, O. The Selfish Capitalist. London: Vermilion; 2008.
- 29. Pickett, K.; Wilkinson, R. The Spirit Level: Why greater equality makes societies stronger. New York: Bloombury Press; 2009.
- 30. Kasser, T. The High Price of Materialism. Cambridge, MA: MIT Press; 2002.
- 31. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. Journal of the American Medical Association. 2004; 291(10):1238–1245. [PubMed: 15010446]
- 32. Prochaska JO, Velicer WF, Rossi JS, Redding CA, Greene GW, Rossi SR, Sun X, Fava JL, Laforge R, Plummer BA. Multiple risk expert systems interventions: impact of simultaneous stage-matched expert system interventions for smoking, high-fat diet, and sun exposure in a population of patients. Health Psychology. 2004; 23(5):503–516. [PubMed: 15367070]
- Nigg CR, Burbank PM, Padula C, Dufresne R, Rossi JS, Velicer WF, Laforge RG, Prochaska JO. Stages of change across ten health risk behaviors for older adults. Gerontologist. 1999; 39(4):473–482. [PubMed: 10495586]
- 34. Seligman, ME. Flourish. New York: Free Press; 2011.
- 35. Keyes CL, Shmotkin D, Ryff CD. Optimizing well-being: the empirical encounter of two traditions. Journal of Personality and Social Psychology. 2002; 82(6):1007–1022. [PubMed: 12051575]
- 36. Fredrickson BL, Losada MF. Positive affect and the complex dynamics of human flourishing. American Psychologist. 2005; 60(7):678–686. [PubMed: 16221001]
- 37. Campbell-Sills L, Cohan SL, Stein MB. Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. Behavior Research and Therapy. 2006; 44(4):585–599.
- 38. Cicchetti D. Resilience under conditions of extreme stress: a multilevel perspective. World Psychiatry. 2010; 9(3):145–154. [PubMed: 20975856]
- 39. Cohn MA, Fredrickson BL, Brown SL, Mikels JA, Conway AM. Happiness unpacked: positive emotions increase life satisfaction by building resilience. Emotion. 2009; 9(3):361–368. [PubMed: 19485613]
- 40. Friborg O, Hjemdal O, Rosenvinge JH, Martinussen M, Aslaksem PM, Flaten MA. Resilience as a moderator of pain and stress. Journal of Psychosomatic Research. 2006; 61(2):213–219. [PubMed: 16880024]

41. Wagnild GM, Young HM. Development and psychometric evaluation of the Resilience Scale. Journal of Nursing Measurement. 1993; 1(2):165–178. [PubMed: 7850498]

- 42. Stevenson, A.; Lindberg, CA., editors. The New Oxford American Dictionary. Third ed.. New York: Oxford University Press; 2010. 2096.
- 43. Antonovsky, A. Unravelling the mystery of health. San Francisco: Jossey-; 1987.
- 44. Cloninger CR, Svrakic DM, Przybeck TR. A psychobiological model of temperament and character. Archives of General Psychiatry. 1993; 50(12):975–990. [PubMed: 8250684]
- 45. Bowers EP, Li Y, Kiely MK, Brittian A, Lerner JV, Lerner RM. The Five Cs model of positive youth development: a longitudinal analysis of confirmatory factor structure and measurement invariance. Journal of Youth and Adolescence. 2011; 39(7):720–735. [PubMed: 20397040]
- 46. Lerner RM. Diversity in individual context relations as the basis for positive development across the life span: A developmental systems perspective for theory, research, and application. Research in Human Development. 2004; 1(4):327–346.
- 47. Warren, AEA.; Lerner, RM.; Phelps, E., editors. Thriving and Spirituality Among Youth. Hoboken, NJ: John Wiley & Sons; 2012.
- 48. Combs, AW.; Snygg, D. Individual Behavior: A perceptual approach to behavior. New York: Harper and Row; 1959.
- 49. Schmutte PS, Ryff CD. Personality and well-being: reexamining methods and meanings. Journal of Personality and Social Psychology. 1997; 73(3):549–559. [PubMed: 9294901]
- Mascie-Taylor, CGN.; Bogin, B., editors. Human Variability and Plasticity. New York: Cambridge University Press; 1995.
- 51. Luthar SS, Cicchetti D, Becker B. The construct of resilience: a critical evaluation and guidelines for future work. Child Development. 2000; 71(3):543–562. [PubMed: 10953923]
- 52. Friborg O, Barlaug D, Martinussen M, Rosenvinge JH, Hjemdal O. Resilience in relation to personality and intelligence. International Journal of Methods in Psychiatric Research. 2005; 14(1):29–42. [PubMed: 16097398]
- 53. Pederson, C.; Seligman, MEP. Character Strengths and Virtues: A handbook and classification. New York: Oxford University Press; 2004.
- 54. Meara NM, Schmidt LD, Day JD. Principles and Virtues: A foundation for ethical decisions, policies, and character. Counseling Psychologist. 1996; 24:4–7.
- 55. Josefsson K, Cloninger CR, Hintsanen M, Jokela M, Pulkki-Råback L, Keltikangas-Järvinen L. Associations of personality profiles with various aspects of well-being: a population-based study. Journal of Affective Disorders. 2011; 133(1–2):265–273. [PubMed: 21463898]
- Dorner, J.; Mickler, C.; Staudinger, UM. Self-development at Midlife: Lifespan perspectives on adjustment and growth, in Middle adulthood: A lifespan perspective. Willis, SL.; Martin, M., editors. Thousand Oaks, CA: Sage; 2005. p. 277-318.
- 57. Rogers, CR. A Way of Being. Boston: Houghton Mifflin; 1995.
- 58. Tournier, P. The Best of Paul Tournier: Guilt & Grace, The Meaning of Persons, The Person Reborn, To Understand Each Other. New York: Iverson-Norman; 1977.
- 59. Cloninger CR. Book review of Peterson and Seligman's Character and Human Virtues. American Journal of Psychiatry. 2005; 162:820–821.
- 60. Allport, GW. Patterns and Growth in Personality. New York: Holt, Rinehart, & Winston; 1961.
- 61. Wang X, Zhang D, Wang J. Dual-factor model of mental health: Surpass the traditional mental health model. Psychology. 2011; 2(8):767–772.
- 62. Rozsa S, Cloninger CR. Healthy personality and well-being. 2012 In preparation.
- 63. Coward DD, Reed PG. Self-transcendence: a resource for healing at the end of life. Issues in Mental Health Nursing. 17(3):275–288. [PubMed: 8707546]
- 64. Jaspers, K. The Way to Wisdom: An Introduction to Philosophy. New Haven: Yale University press; 1954.
- 65. Hayes, SC.; Strosahl, KD.; Wilson, KG. Acceptance and Commitment Therapy. New York: Guilford Press; 1999.
- 66. Keyes CL. The mental health continuum: from languishing to flourishing in life. Journal of Health and Social Behavior. 2002; 43(2):207–222. [PubMed: 12096700]

 Keyes CL. Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. American Psychologist. 2007; 62(2):95–108. [PubMed: 17324035]

- 68. Meyer, PJ. Attitude is Everything: If you want to succeed above and beyond. Waco, TX: The Meyer Resource Group; 2003.
- Everson-Rose SA, Lewis TT, Karavolos K, Matthews KA, Sutton-Tyrrell K, Power LH. Cynical hostility and carotid atherosclerosis in African American and white women: the Study of Women's Health Across the Nation (SWAN) Heart Study. American Heart Journal. 2006; 152(5):982 e7– 982 e13. [PubMed: 17070176]
- 70. Fredrickson BL. The broaden-and-build theory of positive emotions. Philosophical Transactions of the Royal Society of London Series B, Biological Sciences. 2004; 359(1449):1367–1378.
- 71. Funk SC. Hardiness: a review of theory and research. Health Psychology. 1992; 11(5):335–345. [PubMed: 1425552]
- 72. Connor KM, Davidson JR. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). Depression and Anxiety. 2003; 18(2):76–82. [PubMed: 12964174]
- 73. Friborg O, Hjemdal O, Rosenvinge JH, Martinussen M. A new rating scale for adult resilience: what are the central protective resources behind healthy adjustment? International Journal of Methods in Psychiatric Research. 2003; 12(2):65–76. [PubMed: 12830300]
- Connor KM, Davidson JR, Lee LC. Spirituality, resilience, and anger in survivors of violent trauma: a community survey. Journal of Traumatic Stress. 2003; 16(5):487–494. [PubMed: 14584633]
- 75. Block JH, Kremen AM. IQ and ego-resiliency: Conceptual and empirical connections and separateness. Journal of Personality and Social Psychology. 1996; 70(2):349–361. [PubMed: 8636887]
- Lindstrom B, Eriksson M. Contextualizing salutogenesis and Antonovsky in public health development. Health Promotion International. 2006; 21(3):238–244. [PubMed: 16717056]
- 77. Ericsson M, Lindstrom B. Validity of Antonovsky's sense of coherence scale: A systematic review. Journal of Epidemiology & Community Health. 2005; 59:460–466. [PubMed: 15911640]
- 78. Aurelius, M. Meditations. New York: Penguin; 1964. edn.
- Hadot, P. What is Ancient Philosophy?. Cambridge, MA: Belnap Press of Harvard University Press; 2002.
- 80. Augustine. The happy life. New York: Cima Publishing Co.; 1948. edn.
- 81. Thorsteinsson, RM. Roman Christianity and Roman Stoicism. New York: Oxford University Press; 2010
- 82. Fletcher, H. Happiness as found in forethought minus fearthought. Google ebook. , editor. Chicago: Herbert S. Stone Co.; 1897.
- 83. Hayes, SC.; Follette, VM.; Linehan, MM., editors. Mindfulness and Acceptance: Expanding the Cognitive-Behavioral Tradition. New York: Guilford Press; 2004.
- 84. Cloninger CR, Cloninger KM. Development of instruments and evaluative procedures on contributors to illness and health. International Journal of Person Centered Medicine. 2011; 1(3): 446–455.
- 85. Garrigou-Lagrange, R. The Three Ways of the Spiritual Life. Google ebook., editor. 1938.
- 86. Cassell EJ. Diagnosing suffering: a perspective. Annals of Internal Medicine. 1999; 131(7):531–534. [PubMed: 10507963]
- 87. Ahmed, NM. A User's Guide to the Crisis of Civilization and How to Save It. New York: Pluto Press; 2010.
- 88. Introduction by Thomas Merton. , editor. Augustine. The City of God. New York: The Modern Library; 1993. edn.
- 89. IOM. Crossing the quality chasm: A new health system for the 21st Century. Washington, D.C: National Academies Press; 2001.
- Luhrman, TM. Of Two Minds: The Growing Disorder in American Psychiatry. New York: Alfred A. Knopf; 2000.

91. Mezzich JE. Psychiatry for the Person: articulating medicine's science and humanism. World Psychiatry. 2007; 6(2):65–67. [PubMed: 18235854]

- 92. Kirisci L, Reynolds M, Vanyukov M, Ridenour T, Hayes J, Mezzich JE. Developing an Institutional Informational Base and Bibliographical Clearinghouse. International Journal of Person Centered Medicine. 2011; 1(1):109–112. [PubMed: 22053286]
- 93. Hintsanen M, Pulkki-Råback L, Juonala M, Viikari JS, Raitakari OT, Keltikangas-Järvinenl L. Cloninger's temperament traits and preclinical atherosclerosis: the Cardiovascular Risk in Young Finns Study. Journal of Psychosomatic Research. 2009; 67(1):77–84. [PubMed: 19539821]
- 94. Staudinger, UM.; Lindenberger, U., editors. Understanding Human Development: Dialogues with Lifespan Psychology. London: Kluwer Academic Publishers; 2003.
- Cloninger CR, Svrakic NM, Svrakic DM. Role of personality self-organization in development of mental order and disorder. Development and Psychopathology. 1997; 9(4):881–906. [PubMed: 9449010]
- 96. Molenaar PC. The future of dynamic factor analysis in psychology and biomedicine. Bulletin de la Societe des Sciences Medicales du Grand-Duche de Luxembourg. 2006; 2006(2):201–213. [PubMed: 17124797]
- 97. Molenaar PC, Sinclair KO, Rovine MJ, Ram N, Corneal SE. Analyzing developmental processes on an individual level using nonstationary time series modeling. Developmental Psychology. 2009; 45(1):260–271. [PubMed: 19210007]
- 98. Ridenour TA, Hall DL, Bost JE. A small sample randomized clinical trial methodology using Nof-1 designs and mixed model analysis. American Journal of Drug and Alcohol Abuse. 2009; 35(4):260–266. [PubMed: 20180679]
- 99. Sterman, JD. Business Dynamics: Systems Thinking and Modeling for a Complex World. Boston, MA: Irwin McGraw-Hill; 2000.
- 100. Molenaar PC. Testing all six person-oriented principles in dynamic factor analysis. Developmental Psychopathology. 22(2):255–259. discussion 287–94.