"When life gives you lemons"

Character strengths and wellbeing under stressful situations

Nicole Casali, Tommaso Feraco, and Chiara Meneghetti

Memory & Learning Lab Meeting

November 3rd, 2021

Outline

- COVID-19 effects: why studying character?
- Are character strengths associated with mental health outcomes under COVID-19? (Study 1, cross-sectional)
- Do strengths converge into the hypothesized virtues in Italian speakers? (Study 2, validation)
- Does character sustain mental health and growth over time? (Study 3, longitudinal)
- Does training character strengths and mindfulness increase wellbeing? (Study 4, in progress)

Introduction: COVID-19 and mental health (1)

Prevalence of depression during the COVID-19 outbreak: A meta-analysis of community-based studies

Juan Bueno-Notivol[a], Patricia Gracia-García[a,c], Beatriz Olaya[b,c,*], Isabel Lasheras[d], Raúl López-Antón[c,e,f], Javier Santabárbara[c,d,f]

Psychiatric Quarterly (2020) 91:1033–1045
https://doi.org/10.1007/s11126-020-09796-5

REVIEW ARTICLE

Mental Health During the Covid-19 Outbreak in China: a Meta-Analysis

Xin Ren[1] · Wanli Huang[1] · Huiping Pan[1] · Tingting Huang[1] · Xinwei Wang[1] · Yongchun Ma[1]

Published online: 8 July 2020

Review article

Prevalence of mental health problems during the COVID-19 pandemic: A systematic review and meta-analysis

Tianchen Wu, Ph.D[a], Xiaoqian Jia, Ph.D[b,c], Huifeng Shi, Ph.D[a], Jieqiong Niu[a], Xiaohan Yin[a], Jialei Xie[a], Xiaoli Wang, Ph.D[a,c,*]

Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis

Sofia Pappa[a,b,*,1], Vasiliki Ntella[c,1], Timoleon Giannakas[c], Vassilis G. Giannakoulis[c], Eleni Papoutsi[c], Paraskevi Katsaounou[c,d]

One Year of Evidence on Mental Health in the COVID-19 Crisis - A Systematic Review and Meta-Analysis

Xi Chen, Jiyao Chen, Meimei Zhang, Richard Z. Chen, Rebecca Kechen Dong, Zhe Dong, Yingying Ye, Lingyao Tong, Bryan Z. Chen, Ruiying Zhao, Wenrui Cao, Peikai Li, Stephen X. Zhang

doi: https://doi.org/10.1101/2021.02.01.21250929

A systematic review and meta-analysis of longitudinal cohort studies comparing mental health before versus during the COVID-19 pandemic

Eric Robinson, Angelina R. Sutin, Michael Daly, Andrew Jones

doi: https://doi.org/10.1101/2021.03.04.21252921

RESEARCH Open Access

Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis

Nader Salari[1,2], Amin Hosseinian-Far[3], Rostam Jalali[4], Aliakbar Vaisi-Raygani[4], Shna Rasoulpoor[5], Masoud Mohammadi[4*], Shabnam Rasoulpoor[4*] and Behnam Khaledi-Paveh[2]

Introduction: COVID-19 and mental health (2)

- Booming research on the negative psychological consequences of COVID−19 pandemic:
  - Prevalence of 33.7% for symptoms of depression (n = 14), 31.9% for anxiety (n = 17), and 29.6% for stress (n = 5; Salari et al., 2020);
  - Small but significant increases in symptoms from pre- to during the pandemic: SMC = .22 for depression, .13 for anxiety (n = 65; Robinson et al., 2021)

- Few studies on the individual characteristics associated with mental health under COVID-19

- Some evidence of positive effects too (Chew et al., 2020):
  - Increase in compassion and empathy;
  - Self-empowerment;
  - Posttraumatic growth (Chen et al., 2021; Gander & Wagner, 2020; Stallard et al., 2021; Yu et al., 2021).

Introduction: Posttraumatic growth

Positive changes in self-perception, interpersonal relationships and philosophy of life reported after individuals have encountered major stressors that significantly challenge or invalidate how they see the world (Tedeschi & Calhoun, 1995)

Five domains:

- Improved relationships with others;
- Openness to new possibilities;
- Greater appreciation of life;
- Enhanced personal strength;
- Spiritual development.

Introduction: Character strenghts

Peterson & Seligman (2004)

Introduction: Character and adversity

- "Strengths and virtues determine how an individual copes with adversity" (Peterson & Seligman, 2004, p. 17)

- Character strengths' adversity functions (Niemiec, 2019)

	Prior	During	After
Adversity function	Buffering: Protecting from	Reappraisal: Reinterpreting	Resilience: Recovering from

Introduction: Previous evidence

- Character strengths have been linked to subjective wellbeing (Bruna et al., 2019; Harzer, 2016; Martínez-Martí & Ruch, 2014; Park et al., 2004), general mental health (Petkari & Ortiz-Tallo, 2018), depression and anxiety (Freidlin et al., 2017; Huta & Hawley, 2010; Kim et al., 2018; Tehranci et al., 2018), both cross-sectionally and longitudinally (Duan, 2016; Gander et al., 2020; Hausler et al., 2017)
- Strengths have also been cross-sectionally associated with posttraumatic growth following traumatic life events (Peterson et al., 2008), or earthquakes (Duan & Guo, 2015)
- Posttraumatic growth is positively related to mental health (Helgeson et al., 2006; Sawyer et al., 2010) and could serve as a buffer against distress and depression (Silva et al., 2012; Veronese et al., 2017; Wang et al., 2017)
- Only one study (Gander & Wagner, 2020) looked at these relations longitudinally in relation to the COVID-19 pandemic

Methods: Rationale and objectives

- Paucity of cross-sectional and longitudinal evidence of how individuals' characteristics may be associated with positive outcomes in response to highly stressful events such as COVID-19 pandemic

- Aims:

➢ Examine changes in mental health in the Italian general population over time (Time 1, April 2020; Time 2, December 2020 – January 2021)

➢ Examine the associations between character strengths at Time 1 with mental health at Time 1 and Time 2, and posttraumatic growth experienced between Time 1 and Time 2.

Methods: Hypotheses

Hypothesis 1: Persistent low mental health at Time 2 (Daly et al., 2020; O'Connor et al., 2020; C. Wang et al., 2020)

Hypothesis 2: Character, as a single general factor composed of the six virtues (Ng et al., 2017) directly relates to both mental health (at Times 1 and 2) and posttraumatic growth (Study 1; Duan & Guo, 2015; Gander et al., 2020; Martínez−Martí et al., 2020; Peterson et al., 2008; Petkari & Ortiz−Tallo, 2018).

Hypothesis 3: Posttraumatic growth is positively associated with mental health at Time 2 (Cheng et al., 2006; Helgeson et al., 2006; Sawyer et al., 2010)

Hypothesis 4: Posttraumatic growth mediates the relation between character strengths at Time 1 and mental health at Time 2 (Silva et al., 2012; Veronese et al., 2017; Wang et al., 2017)

Methods: Participants

T1 (April 7th – 28th 2020)

944 participants (241 males, *Mage* = 37.24 years, *SDage* = 14.50)

T2 (December 20th 2020 – January 10th 2021)

484 (51.3%) accepted to be contacted again; of them, 244 (52.5%) took part to both assessments

244 participants (54 males, *Mage* = 36.05 years, *SDage* = 14.04)

Methods: Materials

Construct	Measure	References	Alpha	Time–point
Character strengths	Values in Action Inventory of Strengths–120 (VIA–IS–120)	Peterson & Seligman (2004); Feraco et al. (2021)	.67 – .90; .65 – .90	T1 only
Mental health	General Health Questionnaire–12 (GHQ–12)	Goldberg (1978); Giorgi et al. (2014)	.85; .79	T1 and T2
Posttraumatic growth	Posttraumatic Growth Inventory (PTGI)	Tedeschi & Calhoun, 1996; Prati & Pietrantoni (2014)	.93; .96	T2 only
(General distress)	Depression, Anxiety, and Stress Scales-21 (DASS-21)	Lovibond & Lovibond (1995); Bottesi et al. (2015)	.90; .96	T1 only
(COVID-19-related self-efficacy)	Self-efficacy measure for COVID-19 (SEC)	Developed for the study	.85	T1 only

Data analysis: The VIA–IS

Analytical approaches:

1. Perform exploratory factor analysis (usually a PCA) on one's sample (Study 1; Heintz & Ruch, 2020; Martinez-Martí & Ruch, 2017; Peterson et al., 2008; Petkari & Ortiz-Tallo, 2018; Weber et al., 2013)

2. Consider the 24 character strengths individually (Study 1; Karris Bachik et al., 2020; Gander et al., 2020; Martinez-Martí & Ruch, 2014)

3. Use a confirmatory approach (e.g., rely on the original 24 strengths – 6 virtues structure (Study 2; Anjum & Amjad, 2020; McGrath, 2014; Ng et al., 2017)

4. Consider character as a general factor (Study 3; Ng et al., 2017)

Results: Study 1 (cross-sectional)

Regression models Time 1 (N = 944)

	DASS–21		GHQ–12		COVID-Self-efficacy	
Predictor	β	CI	β	CI	β	CI
Age	−.06	[−.13, .01]	.09	[.02, .17]	.02	[−.05, .09]
Gender	**−.30***	[−.44, −.17]	−.20	[−.35, −.07]	**.26***	[.13, .39]
Student	.11	[−.06, .28]	.23	[.05, .40]	−.10	[−.26, .06]
Day of survey	−.01	[−.02, .00]	−.01	[−.01, .01]	.01	[.00, .02]
Work change	**.06***	[.03, .10]	.04	[.00, .08]	−.04	[−.07, .00]
Having a child at home	−.16	[−.29, −.03]	−.01	[−.14, .13]	.03	[−.09, .16]
Transcendence	**−.48***	[−.56, −.40]	**−.38***	[−.47, −.29]	**.48***	[.40, .56]
Interpersonal	.05	[−.02, .12]	.08	[.01, .15]	−.06	[−.13, .01]
Openness	**.13***	[.06, .21]	−.02	[−.10, .06]	.04	[−.03, .12]
Restraint	.02	[−.05, .08]	.07	[.00, .14]	.01	[−.06, .06]
R^2		.22		.13		.26

Transcendence
Transcendence
Courage
Transcendence
Courage
Moderation
Humanity

Hope
Spirituality
Zest
Gratitude
Perseverance
Self-regulation
Love

Casali, N., Feraco, T., Ghisi, M., & Meneghetti, C. (2021). "Andrà tutto bene": Associations Between Character Strengths, Psychological Distress and Self-efficacy During Covid-19 Lockdown. *Journal of Happiness Studies*, *22*(5), 2255-2274. https://doi.org/10.1007/s10902-020-00321-w

Results: The VIA–IS

- CFA replicating the original strengths and virtues' structure (Peterson & Seligman, 2004)
- Tested on Sample 1 (N = 16722) and replicated on Sample 2 (same as Study 1)
- Acceptable fit indices for the hierarchical model (Sample 1: CFI = .90, TLI = .90, SRMR = .08; Sample 2: (CFI = .90, TLI = .89, SRMR = .08), excluding love of learning due to unidimensionality issues

Feraco, T., Casali, N., & Meneghetti, C. (2021) Do strengths converge into virtues? An item-, virtue-, and scale-level analysis of the Italian Values in Action Inventory of Strengths-120. *Journal of Personality Assessment*. https://doi.org/10.1080/00223891.2021.1934481

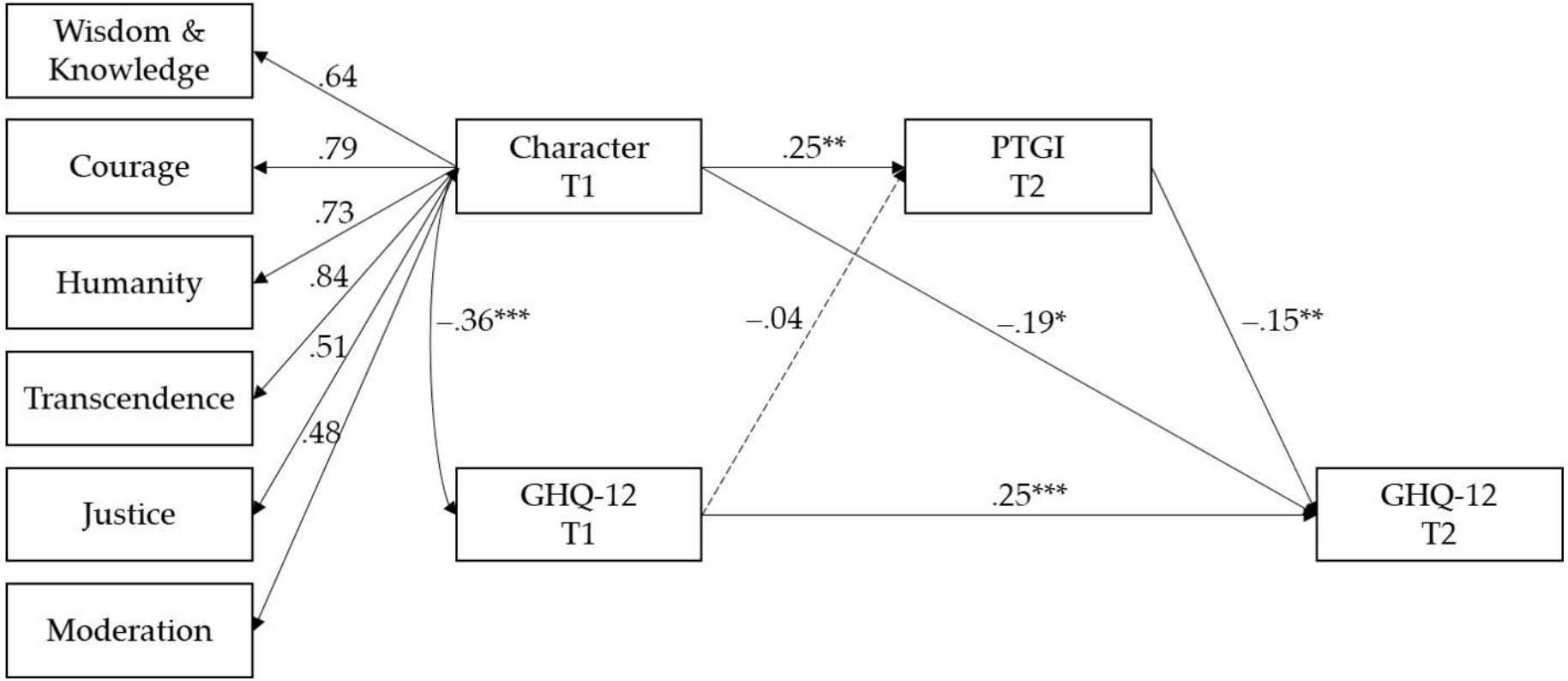
Results: Study 3 (longitudinal)

H1: Mental health

- Scores in the GHQ-12 obtained at Times 1 and 2 were compared with the standardized cut-offs (Goldberg, 1997), and with one another
- 83% of participants reported a worse general mental health state than usual at Time 1; and at Time 2 the proportion increased to 91%; this difference was significant ($t(253) = –2.83$, $p = .005$)

Casali, N., Feraco, T., & Meneghetti, C. (2021). Character strengths sustain mental health and post-traumatic growth during the COVID-19 pandemic. A longitudinal analysis. *Psychology & Health*. https://doi.org/10.1080/08870446.2021.1952587

Results: Study 3



CFI = .92; NFI = .86; SRMR = .05
Indirect effect through PTG: $\beta = -.04$, $p = .01$
Gender and age effects on character only: $\beta = -.21$ and $\beta = .35$, respectively

General discussion

- Study 1: Transcendence was the second-order factor most associated with better mental health and higher self-efficacy regarding how best to approach the situation brought on by the pandemic (Martínez-Martí & Ruch, 2014; Martínez-Martí et al., 2017; Petkari & Ortiz-Tallo, 2018; Shoshani & Slone, 2016; Weber et al., 2013) → **Reappraisal function (Niemiec, 2019): support individuals' positive reframing of the situation, making them perceive a sense of purpose beyond themselves and so feel less distressed and more effective**

- Study 2: Hierarchical model resulted in an acceptable fit, in line with the results obtained using other methods (Anjum & Amjad, 2020; Duan et al., 2012; McGrath, 2014, 2016; Ng et al., 2016) and could also be replicated in a smaller independent sample (Sample 2) → **CFA, guided by solid theoretical assumptions, can make the VIA-IS uniform, replicable and usable across studies, and thereby strengthen the value of its associations with other outcomes**

- Study 3: Individuals generally endowed with a good character tend to experience better mental health both during the first and second Italian lockdowns and to be better able to interpret stressful events in a positive light, which in turn sustains their mental health → **Resilience function: grow from stress, thrive in adverse situations**

Limitations and future directions

- Lack of pre-pandemic data and character measurement at Time 2: what about character growth? (Gander & Wagner, 2020)
- Gender imbalance (Heintz et al., 2019)
- Self-selection bias
- Lack on information on participants' history and COVID-19 infection

Moving forward:

- Better measurement of strengths (McGrath, 2018; Miller, 2019; Ng et al., 2017)
- More longitudinal data to assess character growth
- Fostering character strengths in the Italian population (Schutte & Malouff, 2019)
  → Study 4 (in collaboration with Dr Dandan Pang, University of Bern)