Short Communication

Personality psychology in times of crisis: Profile-specific recommendations on how to deal with COVID-19

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ABSTRACT

The early stages of the COVID-19 pandemic posed a twofold global health threat: Besides the evident danger to human life, the corona crisis is also a psychological crisis. Psychologists worldwide have contributed to cushion the distress that is laid on many societies and enforce adaptive coping strategies. However, psychological support in the past has often been broadly applied, has not been particularly parsimonious and has often been focused on severe psychological stressors. In this brief report we describe the development and application of a low-threshold tool that generates personality-specific recommendations on how to functionally cope with the psychological challenges of the corona crisis. The tool gained widespread attention in Germany and many other countries and was well received by users. It demonstrates how psychological knowledge from personality and health psychology can be combined to be of very concrete use for many people in a threatening situation. We also show that personality is related to health behavior in a crisis in a meaningful way, providing further evidence that personality-specific advice can be a useful approach for supporting persons to cope with the crisis.

1. Introduction

The current COVID-19 pandemic is a global health threat which scale has not been foreseen by many and has not been experienced before by most. The psychological implications of the pandemic have been a topic of consideration early on. Possible stressors are (a) a concrete threat to one's own and others' health, (b) reduced perceived situational control, (c) unforeseeable economic consequences, (d) lockdown-related stress (e.g., social isolation, boredom, lack of personal freedoms, danger of domestic violence, social stigma from infection) and (e) corrosion of social ties due to societal polarization and contrary interpretations of the situation ("Corona is a serious threat." vs. "Corona is exaggerated.") (see also Brooks et al., 2020).

Psychological associations around the world (e.g., BPS in UK: https://www.bps.org.uk/coronavirus-resources; APA in the US: https://www.apa.org/topics/covid-19/; DGPs in Germany: https://psychologische-coronahilfe.de/) and research groups have generated specific COVID-19 related-websites with (more or less) condensed psychological knowledge for laypersons. Furthermore, corona-specific emergency hotlines have been installed. Psychologists have contributed to closely monitor the psychological situation in the population and provided advice (e.g., to government officials) on how to impose and communicate measures to "flatten the curve" in a way that people actually comply (e.g., Betsch, 2020; Chater, 2020; Garfin et al., 2020; Van Bavel et al., 2020). Recently, some research has been published demonstrating the importance of personality for coping with the COVID-19-related stressors (Kroencke et al., 2020).

Since personality can be described as habitual patterns of behavior, thought, and emotion, it is relevant for coping with a diverse set of challenges in life. Although, human behavior in states of emergency might primarily seem like a matter of social psychology and while the role of personality in times of societal crisis is elusive and not well understood yet, we assume personality to be a key factor in coping with a pandemic situation. In the course of another research project on relations between personality and pandemic relevant behavior (see Glöckner et al., in prep) we developed a tool that aimed to support the broad population – but in an individualized, parsimonious, non-pathological manner. Participants received recommendations on how to cope with the psychological impact of the corona crisis based on their personality.

2. Development of personality-specific recommendations

We reviewed the psychological literature on epidemics/pandemics in April 2020. The databases *PsycINFO*, *PsycARTICLES*, *Psyndex* and *Google Scholar* were searched by combining the terms "psychology", "behavior", "pandemic", "epidemic", "personality" or "quarantine" and we also included literature by recommendation from colleagues and basic psychological work which we considered relevant. In total, we identified *n* = 17 relevant sources, which we reference in the supplementary material at OSF (see below.) Subsequently, we evaluated (a)

which stressors will probably occur, (b) how coping could work and (c) what role personality plays in epidemics/pandemics. Furthermore, we tried to identify what might be positive psychological side-effects (e.g., more time, slowing down, …) and what individuals might be affected by the stressors most (e.g. extraverts who need to meet others, …). For the latter aspect we heavily focused on the definitions of the Big-5 definitions its assumed sub-facets (see Goldberg, 1999).

Based on our findings we formulated specific recommendations for three levels (low = percentile rank 1–25, medium = percentile rank 26–74, high = percentile rank 75–100) for each respective Big-5 global
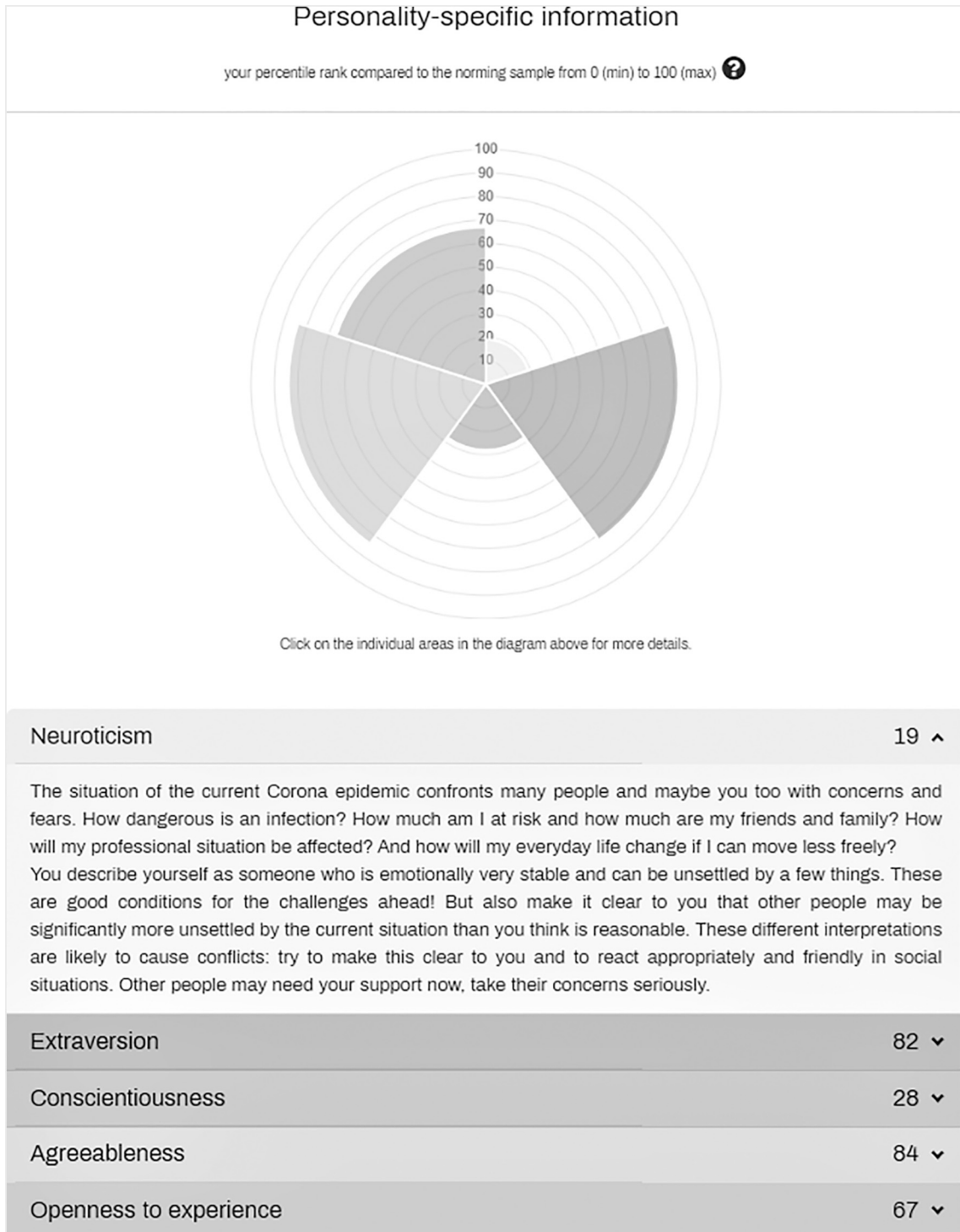

Fig. 1. Screenshot of the corona-recommendation section from the website.

personality factor, ergo 15 recommendations in total. Consequently, each participant only received five recommendations according to his/ her percentile rank: one for neuroticism, one for agreeableness, and so on. Our recommendations comprised generic advice on how to cope with boredom, social isolation, fear etc. but were only selectively presented to the participants: Individuals high on neuroticism received extensive recommendations on how to deal with feelings of uncertainty and were given information for counselling hotlines, while individuals low on conscientiousness received tips on how to better structure their everyday life to prevent boredom. The validity of the recommendations was ensured by several revisions and additional input from other personality and health psychologists. Most of our assumptions on what personality factors matter most could be corroborated by recent results (Glöckner et al., in prep).

3. Application of the tool

We constructed a website on which participants were able to take a short machine-learning based Big-5 personality test – the *IPIP30-NNet* (Glöckner et al., 2020). The IPIP30-NNet is a 30-item personality questionnaire that is based on the *IPIP-NEO* (Goldberg, 1999) and allows a precise estimation of the five global personality factors and its subfacets. Based on their results individuals received a detailed evaluation of their personality profile and five recommendations on how to cope with the challenges in the COVID-19 crisis (one recommendation per global factor based on the participant's respective percentile rank) – a screenshot is depicted in Fig. 1. Furthermore, individuals received general recommendations and links to corona-websites from well-known psychological association (APA, DGPs, etc.).

4. Reception from users

The webpage was provided for 6 weeks from April, 14th to May 31th 2020 in a relatively early stage of the pandemic, in which various quarantine measures applied (e.g., lookdown of schools, kindergartens and many companies, safety distance, meeting others for non-work-related purposes was often not allowed). In addition to traditional ways of conducting an online study, the tool was distributed and made public to a broader audience by a private television network and its online presence – the tool was not limited to a specific population. The online test was made available in German and in English. A total of 178,027 users visited the webpage from more than 50 countries but mainly Germany (94.6%), Swiss (1.4%) and Austria (1.4%), 70,285 of them completed the personality questionnaire. A total of $N = 2640$ participants (64% female, 35% male, 0.5% diverse, mean age $= 50$ years, $SD = 13$) gave quantitative and qualitative feedback to our advices by answering the questions: "Did you find the recommendations helpful?" ($1 =$ not at all, $5 =$ maximal helpful) and "Did the advice prompt you to think about your behavior in the current situation?" ($1 =$ not at all, $5 =$ maximal helpful). Data was matched with Big-5 personality data and data concerning how much they found the personality feedback accurate ("Do you find yourself in the feedback on your personality?" ($1 =$ not at all, $5 =$ perfectly so)) and were surprised by the feedback ("How surprised were you by your results?" ($1 =$ not at all, $5 =$ maximal surprise)). Furthermore, data was matched with a two-item measure of health behavior during the crisis ("I eat a balanced diet." and "I try to keep fit with sporting activities.", scale: (1) disagree completely to (7) fully agree, $\alpha = .68$).

All material, personality-specific recommendations, data and analysis scripts are provided at OSF: https://osf.io/cm8zr.

5. Results and evaluation

The data was analyzed using STATA15 and the full code is available at the link provided above. For the analysis, we used Pearson product-moment correlations (command: PWCORR) and OLS regressions (command: OLS).

Detailed descriptive statistics and intercorrelations are provided in Table 1. There were considerable interindividual differences in how helpful participants perceived the advice: 61% of the participants found the advice medium helpful or better (scores 3–5), whereas 39% found the advice not very helpful (scores 1–2) ($M = 2.78$, $SD = 1.20$). Persons tended to find the Big-5 personality feedback as accurate but some also did not accept their results ($M = 3.43$, $SD = 1.05$).

We conducted a post-hoc analysis to investigate which factors determine whether persons assess the provided individualized advice to be helpful and whether it prompted them to think about their behavior in the current situation. We did not pre-register hypotheses for this and therefore applied a Bonferroni corrected alpha level for the total 85 exploratory tests ($\alpha = .05 / 96 = .00052$). The personality profiles themselves were only weakly correlated to acceptance of the profile. Regression analyses reveal (see Table 2), that particularly persons high in extraversion and agreeableness found their individualized advice helpful. With increasing age and neuroticism, the provided advice was related to reflection about their behavior in the pandemic situation. The perceived helpfulness also increased with acceptance of the personality results and how surprised individuals were by this result. Hence, rejection of the personality results went along with rejection of the advice and more surprising personality results went along with interpreting the advice as more helpful and thinking more about behavior in the current situation.

More generally, the high visitors' rate on the website indicates that persons were very interested in receiving personality specific advice. In the time when the survey was run, most of the general advice was already available or provided on static webpages (e.g., provided by the psychological associations). Still, the offer of individualized advice received particular interest. Arguable, this might have helped to keep up vigilance and adherence to recommendations by thinking about them at least once again. We assume that the tool was easy to use, had a visually elegant design and the mere fact that it was implemented by professional psychologists, might have motivated persons to follow their personality-specific recommendations.

Moreover, in exploratory analyses (Table 1), we found that personality is related to coping behavior in the crisis and under lockdown conditions. Specifically, self-reported adaptive health behavior (i.e. eating a healthy diet and doing sports) increased with extraversion, conscientiousness, openness, agreeableness, and decreased with increasing neuroticism. This provides further evidence that it can be useful to provide personality-specific advice to cope with the crisis.

6. Limitations and future direction

Overall, a large proportion of the participants found the provided individualized advice helpful and it made them reflect about their behavior in the pandemic situation. Still, obviously not all of the participants can be reached by such a measure. Considering that the diagnostic took only 3 min, we find the rate of 61% ratings of at least medium usefulness of the provided advice at least promising. However, we did not validate our small "intervention" in the course of a randomized controlled trial and we only relied on the perceived accuracy and helpfulness reported by the participants themselves with very few, very basic questions and without any follow-up questionnaires. Although the feedback regarding the accuracy of the personality profile was somewhat mixed, this is often the case in personality assessment (Layne & Ally, 1980). Our approach is similar to the concept of *personality-targeted interventions* for prevention of substance abuse (Barrett et al., 2015), but less pathology-oriented. Note that the personality specific recommendations are in need of further refinement. Since there has been very few empirical evidence on how personality might be relevant to infection risk, pandemic behavior and psychological coping in a pandemic, we generated our recommendations primarily based on theoretical reasoning and not actual empirical evidence. A high number

Table 1

Descriptive statistics and intercorrelations of relevant study variables.

		M	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11
1	Advice helpful	2.78	1.20	1	5											
2	Advice reflection	2.65	1.23	1	5	**.63**										
3	Personality accur.	3.43	1.05	1	5	**.40**	**.29**									
4	Personality surprised	2.52	1.20	1	5	−.03	.04	**−.37**								
5	Sex	0.64		0	1	.02	.05	.00	.04							
6	Age	50	13.23	14	95	.04	.06	.01	−.04	−.08						
7	Neuroticism	2.77	0.57	1.46	4.28	−.05	.06	**−.12**	**.18**	**.21**	**−.20**					
8	Extraversion	3.09	0.48	1.68	4.19	**.10**	.07	**.11**	−.04	.02	−.02	**−.54**				
9	Conscientiousness	3.37	0.45	2.19	4.58	**.10**	.01	**.22**	**−.20**	.02	**.12**	**−.55**	**.33**			
10	Openness	3.40	0.45	2.10	4.41	.09	**.11**	.07	−.01	**.15**	−.02	**−.18**	**.44**	**.11**		
11	Agreeableness	3.28	0.42	2.18	4.34	**.17**	**.14**	**.12**	.02	**.30**	.04	**−.15**	**.18**	**.26**	**.32**	
12	Health behavior	4.38	1.66	1.00	7.00	.08	.09	.06	−.03	.08	.04	**−.31**	**.33**	**.33**	**.27**	**.17**

Notes. $N = 1014$ to 2640. Sex: female ($1 =$ yes, $0 =$ no). All $p < .00052$ (Bonferroni-corrected alpha level) are marked in bold.

Table 2

OLS Regression predicting the experienced helpfulness of the advice.

	(1)	(2)	(3)	(4)
	Advice helpful	Advice helpful	Advice reflection	Advice reflection
Sex	−.048	−.036	−.039	−.017
	(−2.29)	(−1.46)	(−1.82)	(−0.67)
Age	.045	.018	.091*	.059
	(2.26)	(0.77)	(4.50)	(2.44)
Neuroticism	.081	.042	.197*	.152*
	(2.97)	(1.28)	(7.04)	(4.44)
Extraversion	.089*	.09.	.127*	.113*
	(3.53)	(2.97)	(4.94)	(3.55)
Conscientiousness	.064	−.016	.025	−.019
	(2.70)	(−0.57)	(1.04)	(−0.65)
Openness	0.018	−0.023	0.058	0.048
	(0.82).	(−0.87)	(2.55)	(1.73)
Agreeableness	.153*	.142*	.130*	.076
	(7.05)	(5.58)	(5.90)	(2.88)
Personality accur.		.426*		.350*
		(17.27)		(13.61)
Personality surpr.		.122*		.147*
		(4.93)		(5.70)
N	2640	1606	2522	1577
adj. R^2	0.037	0.193	0.047	0.139

Notes. Standardized beta coefficients are reported; t statistics in parentheses. Sex: female ($1 =$ yes, $0 =$ no).

* $p < .00052$ (Bonferroni-corrected alpha level).

of publications on this matter can be expected in the near future. Hence, robust empirical evidence (and possibly elaborated theoretical models of human behavior in pandemic situations) might pose as a solid basis for personality-specific advice. First results from the study that was combined with the one that is described here (Glöckner et al., in prep), suggest that personality is unrelated to actual corona infection risk, but is meaningfully related to psychological coping processes, helping behavior and behavior that is deemed to slow the spreading of the corona virus. However, future research should focus on enhancing acceptance of the persons' individual personality profile in order to strengthen the tool's credibility to lay persons and therefore the perceived accuracy of the recommendations. Our approach is not intended to replace the traditional role of psychological assessment, but can rather be understood as an extension of psychological help. We think that our tool is a promising variant of applying psychological knowledge to enforce individualized functional coping with distressing global crises. With the knowledge developed from this research project and others even more detailed, precise and empirically grounded advice will be possible.

CRediT authorship contribution statement

Moritz Michels: Conceptualization, Investigation, Methodology, Project administration, Writing — original draft, Writing — review & editing; **Andreas Glöckner**: Conceptualization, Data curation, Formal analysis, Software, Validation, Visualization, Writing — review & editing; **Daniel Giersch**: Conceptualization, Funding acquisition, Resources.

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