

Appreciation and emotional well-being during COVID-19: The role of sense of coherence

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Published by Psychreg Ltd
ISSN: 2515-138X



Appreciation and sense of coherence have been widely researched for their relationship to well-being. However, the relevance of these concepts regarding their relationship with each other, as well as the current state of well-being, adds a unique perspective to the literature. In the present study, we investigate the role of appreciation towards emotional well-being in the context of COVID-19, and whether the sense of coherence mediates this relationship. Participants ($N = 234$) were presented with measures of appreciation, sense of coherence, and well-being. Results indicate that appreciation leads to emotional well-being and sense of coherence mediated this relationship. Further, results indicate positive correlations between all the three variables. Findings contribute to the literature on positive functions served by appreciation, specifically towards emotional well-being. Additionally, this study points to the mediating mechanism through which appreciation exerts its positive effects by pointing out the role of sense of coherence in this link.

Keywords: appreciation; emotion; emotional well-being; mediation; sense of coherence

The coronavirus outbreak (COVID-19), which was reported to have originated from a seafood market in Wuhan, China, was announced as a global public health emergency by the World Health Organization on 30th January 2020 (WHO, 2020). As a consequence of the rapid development of the pandemic situation worldwide, a number of measures were taken at the global, private, and public economic levels (Xiong et al., 2020). These changes, accompanied by drastic alterations in individual working conditions, introduction of 'work from home policy', initiation of virtual mediums of information dissemination, along with more extreme adjustments in the form of job losses, financial concerns, and unanticipated migration, became immediate concerns for many during the pandemic (Haleem et al., 2020).

Epidemic outbreaks such as H1N1 and SARS have been found to be associated with negative sequelae of events leading to possible increase in depression and anxiety symptoms (Brooks et al., 2020). Coronavirus outbreak, being a similar health emergency, has also posed challenges for mental health of individuals in terms of anxiety and depression (Li et al., 2020), and psychological distress (Moccia et al., 2020; Ogwuche et al., 2020). This, in turn, has called for development of special guidelines for emergency psychological crisis interventions worldwide and thus the need for deliberation on the role of mental health professionals in attending to such concerns (Banerjee, 2020; Cullen et al., 2020; Relajo et al., 2016).

Rajkumar (2020), in his review investigating the role of mental health during COVID-19 found 'subsyndromal' mental health issues emerging as a common response to the outbreak. Similarly, research studies have pointed to the need for increased attention to psychological factors associated with an outbreak such as the role of affective temperament and attachment styles (Moccia et al., 2020). Other researchers have explored situational factors associated with the pandemic in relation to mental health. For instance, Tell et al. (2020) in their study investigated the psychological impact of COVID-19 on stay-at-home orders and daily quality of life and found it to be associated with greater health anxiety, financial stress, and loneliness (Dey & Relajo-Howell, 2021).

Role of appreciation

Appreciation is defined as 'acknowledging the value and meaning of something – an event, a person, a behaviour, an object – and feeling a positive emotional connection to it' (Adler & Fagley, 2005, p.81). The construct of appreciation as detailed by Adler & Fagley (2005) includes a number of components namely: (a) the 'have' component (focus on what one has instead of the lack); (b) 'awe' component (deep and spiritual connection to something e.g., nature); (c) 'rituals' component (performing of acts likely to engender a sense of appreciation); (d) 'present moment' component (here and now); (e) 'self/social comparison' (downward comparison to self/others as a way to foster experience of appreciation); (f) 'gratitude' component (a sense of being thankful in response to a favour / benefit received from a person); (g) 'loss/adversity' component (experience of positive feelings for what one has in response to the loss/adversity suffered); and (h) the 'interpersonal' component of appreciation (feeling a sense of positivity about the people in life).

Appreciation has been previously associated with several cognitive and emotional aspects that are relevant to subjective well-being and life satisfaction¹ (Adler & Fagley, 2005). It has been found to play a unique role in predicting life satisfaction while controlling for the influence of the Big 5 personality factors and gratitude (Fagley, 2012). Appreciation as a higher order construct, along with the lower eight components contribute towards subjective well-being, specifically, the 'have' component of the appreciative world view towards life satisfaction (Fagley, 2012). Research has also linked appreciation to mental health, e.g., a study by Lim (2017) found appreciation to positively predict mental health among Korean students, whereas in the workplace, appreciation has been associated with improved peer relationships and increased value and meaning in work (Fagley & Adler, 2012).

Given the positive functions associated with appreciation, the present study seeks to expand on the positive functions served by appreciation in the context of the current COVID pandemic.

Sense of coherence

Sense of coherence (SOC) is one conceptual idea that has received widespread attention in health and well-being literature (Almedom, 2005; Geyer, 1997). One of the key proponents of this approach, Antonovsky (1987) introduced the concept and defined it as a 'global orientation, a pervasive feeling of confidence that

¹Life satisfaction is "conscious cognitive judgement of one's life" (Pavot & Diener, 1993, p.164) and is understood to be the cognitive aspect of subjective well-being (Diener et al., 2002).

the life events one faces are comprehensible, that one has the resources to cope with the demands of these events, and that these demands are meaningful and worthy of engagement' (p. 19).

The components of SOC (Antonovsky, 1987) include 'comprehensibility' which refers to the cognitive perception of the events or being cognitively able to make sense of the events, 'manageability' which refers to the perception of an individual that they have the required resources to manage the event and 'meaningfulness' which refers to the conviction of the individual that the demands placed are worthy of time and effort.

The development of the construct and the Orientation to Life scale to measure it (Antonovsky, 1987) has been followed by widespread research on SOC. It has since been linked to a number of positive outcomes such as less stress in the workplace (Albertsen et al., 2001), better quality of life (Eriksson & Lindström, 2007), mitigating effect on life stressors (Flannery & Flannery, 1990) and work engagement (Van der Colff & Rothmann, 2009). Further, SOC also enhances the ability to employ adaptive coping strategies, resulting in higher self-esteem, psychological and physical well-being (Pallant & Lae, 2002).

SOC emerges as a relevant construct during the current pandemic as it has been associated with a period of uncertainty and stress (Ruiz-Frutos et al., 2020). SOC is thus understood as the capability which is likely to enable individuals to better manage stressful situations and has also been previously associated with the development of resilience (Gómez-Salgado et al., 2020).

Present study

In the present study, we aim to investigate appreciation as a construct in relation to well-being in the current context of COVID-19 situation. The features of appreciation that we consider in this study should enable a perception that sees life as comprehensible, manageable, and meaningful. This understanding of the importance of appreciation in increasing SOC can thereby contribute to well-being. Further, we consider the role of these factors in understanding positive coping during the current COVID-19 pandemic situation.

We pre-registered the study (including the hypotheses) after the collection of the data (https://osf.io/gkd5m/?view_only=e92431ed73d44220ae3a4a141e599e26; blinded for review). In line with this, we had the following hypotheses:

- H1. Appreciation, SOC and emotional wellbeing will be positively correlated.
- H2. Appreciation will lead to emotional well-being.
- H3. The relationship between appreciation and emotional well-being will be mediated by SOC.

Power considerations

Sample size determination for conducting mediational analysis have been discussed in literature by MacKinnon et al., (2002) based on different methods of mediational analysis, particularly structural equation modelling (SEM; Cole & Maxwell, 2003; Holmbeck, 1997; Kenny et al., 1998) and bootstrapping (MacKinnon et al., 2004; Shrout & Bolger, 2002). Currently, widely known guidelines about minimum sample size for conducting mediational analyses are suggested based on the power 0.80 by Fritz & MacKinnon, (2007, p.14). For the present study, we aim to compute a mediated regression model, with dependent variable emotional well-being, the independent variable of appreciation and mediator sense of coherence. For the mediation analysis, thus we estimated effect sizes for path *a* i.e., the total effect of the independent variable on dependent variable and path *b* i.e., the indirect effect of the independent variable on the dependent variable through the mediator variable. Based on previous research on appreciation and sense of coherence and emotional well-being conceptually closely related to our study (Fagley, 2018; Togari et al., 2008) we estimated medium effect size (f^2) for both paths *a* and *b*. The sample size calculation, thus for mediation analysis with power = .80, effect size = .26; .39 for a bootstrapping test resulted in a suggested sample size of $N = 126$ for a percentile bootstrap and $N = 115$ for a bias-corrected bootstrap. Considering 10% oversampling, we aimed to obtain a sample of $N = 140$.

Procedure and participants

Participants were invited to the study via an online survey exchange website (www.surveycircle.com). Participants voluntarily agreed to take part and provided consent before participation. The inclusion criteria for the present study were adults above the age of 18 years. No exclusion criteria were applied to obtain a demographically diverse sample. The final sample thus consisted of 234 participants (73 females, 160 males

and 1 participant who identified as non-binary), aged from 18 to 64 ($M = 26.46$, $SD = 6.55$) years. 55.55% of the participants reported to be students, 26.49% were full-time employees, 7.26% were employed part-time, 5.12% reported to be unemployed, 3.41% were self-employed, 0.85% were retired and 1.28% preferred not to say. With regard to ethnicity, 49.14% of our participants reported to be Asians, 32.47% reported to be Caucasians, 4.27% reported to be Latino/Hispanic, 2.13% reported to be African Americans, 1.28% reported to belong from two or more ethnic backgrounds, 0.42% reported to be native Americans and an additional 10.25% participants did not report or reported as unknown ethnicity.

When entering the study, participants were first presented with basic information about the study and asked for consent. Then, they provided demographic information about their age, gender, employment status, ethnicity and the country they resided in. Following that, participants were asked to respond to a series of questions assessing appreciation, then another questionnaire assessing SOC and finally a questionnaire assessing Emotional Wellbeing (see below). Finally, participants were thanked for their participation and were debriefed about the purpose of the study. The study was conducted in accordance with the code of ethics set by the World Medical Association ('Declaration of Helsinki'; World Medical Association, 2013).

Measures

Appreciation. Participant' appreciation levels were measured via the 18-item short version of the Appreciation scale developed by Adler & Fagley (2005). Participants rated on a scale of 1 (strongly disagree/never) to 7 (strongly agree/more than once a day) their level of appreciation for events in general. Sample items included 'I do things to remind myself to be thankful, ' and 'I reflect on how fortunate I am to have basic things in life: food, clothing and shelter.' In our study, the appreciation scale yielded good internal consistency estimates with Cronbach' s Alpha = 0.933.

Sense of coherence

In our study, we used the SOC-13 that captures a respondent's attitude or feelings towards an object/concept by selecting on a scale from 1 (never have this feeling) to 7 (always have this feeling). Exemplary items include 'When you talk to people, do you have the feeling that they do not understand you?' and 'Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?' In the present study, internal consistency estimates are Cronbach's Alpha = 0.54.

Well-being

The Fordyce Emotion Questionnaire (Fordyce, 1988) was used to assess the current level of well-being. It consists of two items, namely, 'In general, how happy or unhappy do you usually feel? choose the response that best describes your average happiness?' and 'Most of time I feel happy, unhappy or neutral. ' In the present study, we estimated well-being using the first item only due to missing, incomplete or incorrectly filled responses by the participants for the second item. Respondents were asked to indicate their level of well-being on a 0–10–point scale ranging from 'feeling extremely happy' to 'feeling extremely unhappy'.

Study materials are available at the Open Science Framework, blinded for review: https://osf.io/gsudt/?view_only=96db6d5f7cd34b9b97e59999c00e54b3

RESULTS

Means, standard deviations and correlations (including 95% confidence intervals) between all variables are shown in Table 1. As can be seen therein, appreciation correlated positively with both emotional well-being ($r = .45$, $p < .001$) and SOC ($r = .29$, $p < .001$), thus confirming our first hypothesis.

Table 1
 Means, Standard Deviation, and Correlations with Confidence Intervals

Variables	<i>M</i>	<i>SD</i>	1	2
Appreciation	92.67	17.99		
Emotional well-being	6.79	1.93	.45** [.34, .54]	
Sense of coherence	56.83	7.79	.29** [.17, .41]	.40** [.29, .51]

N = 234. Values in square brackets indicate the 95% confidence interval for each correlation.

* *p* < .05

** *p* < .01

To test the hypothesis that appreciation fosters emotional well-being (H2) we conducted simple linear regression analysis. The results of the regression indicate that appreciation significantly predicted in emotional well-being ($F(1, 234) = 57.69, p < .001, R^2 = .19$) thus, confirming hypothesis 2.

The relationship between appreciation and emotional well-being was also found to be significantly mediated by a SOC, confirming hypothesis 3 (Table 2). As Figure 1 illustrates, the regression coefficient between appreciation and emotional well-being and the regression coefficient between SOC and emotional well-being was found to be significant. The standardized indirect effect was $(.13) * (.07) = .04$. We tested the significance of this indirect effect using bootstrapping procedures. Unstandardized indirect effects were computed for each of 10,000 bootstrapped samples, and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. The bootstrapped unstandardized indirect effect was .01, and the 95% confidence interval ranged from .00 to .02. The indirect effect was statistically significant ($p < .001$). The results thus align with our hypothesis (H3) of the mediation of SOC in the relationship between appreciation and emotional well-being.

Table 2
 Means, Standard Deviation, and Correlations with Confidence Intervals

Effect	<i>b</i>	95% CI	
		Lower	Upper
Total	0.05	0.03	0.06
Direct	0.04*	0.02	0.05
Indirect (mediation)	0.001**	0.01	0.02

* *p* < .05

** *p* < .01

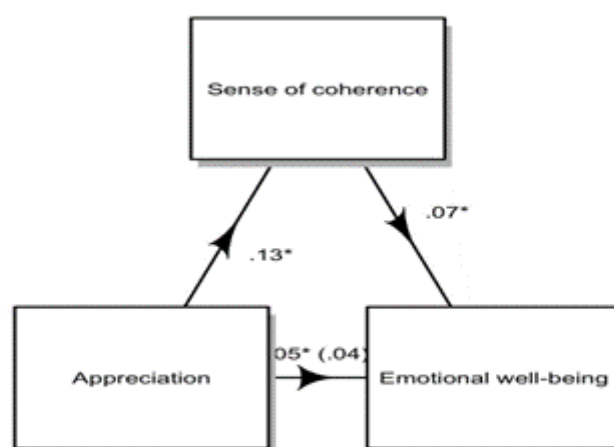


Figure 1
Standardised Regression Coefficients for the Relationship Between Appreciation and Emotional Well-Being as Mediated by SOC (* $p < .05$)

DISCUSSION

The present study examined the role of appreciation in emotional wellbeing and the mediating role of SOC in this link during the current pandemic (COVID-19). Our study supported this relation as results indicated that individuals who reported higher rates of appreciation, also reported higher rates of SOC and well-being.

Appreciation has been previously acknowledged for promoting wellbeing (Adler & Fagley, 2005; Fagley & Adler, 2012) and enhancing 'adaptive coping to negative events' (Watkins et al., 2003, p.449), thus as a consequence also highlighting its significance during a pandemic due to its association with psychological distress (Brooks et al., 2020; Tull et al., 2020). We found appreciation to positively predict well-being and this relationship was mediated by SOC. In the context of the pandemic, the findings contribute to the existing line of work (Antonovsky & Sagy, 1986) which demonstrates that a strong sense of coherence (SOC) is associated with a more positive perspective to stressful situations. This can be corroborated by Gallagher et al. (1994) who linked weak SOC with the choice of avoidant coping strategies, which would consequently affect well-being (Vainio & Daukantaite, 2016). Both subjective and psychological well-being are hence, found to be embedded in and supported by SOC (Feldt et al., 2000; Pallant & Lae, 2002).

SOC leads to well-being as it is likely that a high SOC would enable an individual to see the world as comprehensible and manageable as well as help in striving for inner meaning and purposefulness. This belief in the meaningfulness of the world has been previously associated with posttraumatic Growth (PTG) (Forstmeier et al., 2009) and meaning-based coping (Lethborg et al., 2006). Life experiences are a factor that have an influence on SOC, it is these experiences which then lead to the development of GRR (Generalised Resistance Resources) which in turn is proposed to be related to one's sense of coherence (Hochwalder, 2012). The study adds to the finding that appreciation can also be considered as a GRR that has an influence on sense of coherence. While it is understood that a sense of coherence (SOC) can change in response to different life experiences, in the current paper it is worthwhile to note whether appreciation can account for those changes in sense of coherence (Schnyder et al., 2000). These findings also point to the need for increased research to understand the sources and correlates of sense of coherence (see Antonovsky, 1979), Antonovsky, 1987; Volanen et al., 2006; & Hochwalder, 2012).

Lastly, since Sense of coherence, a personality trait has been understood to be a 'psychologically-based stress resistance resource' (Kovi et al 2017). It is postulated that a sense of appreciation would allow for a sense of

meaning and comprehensibility via SOC. Particularly in the context of adversity and trauma, appreciation of life comes with 'a sense of reordered priorities – a recognition of what is important' (Janoff-Bulman, 2004, p. 33). This struggle with comprehensibility to make sense of distressing events often becomes a pathway to 'questions of value or significance' (Janoff-Bulman, 2004, p. 33) in individual lives. Comprehensibility, the range to which an individual is able to make sense of hardships (Adler and Fagley, 2012), also happens to be a cognitive component of SOC. This appreciation of the preciousness of life and the resources on offer, can thus also be linked to a healthy level of wellbeing in the presence of sense of coherence (SOC).

Sense of coherence leads to well-being because a high SOC enables an individual to see the world as comprehensible and manageable as well as strive for inner meaning and purposefulness as reflected by meaningfulness, these are the concepts which also form a part of both psychological and subjective well-being (Krok, 2015). This belief that the world is meaningful has been previously associated with PTG (Forstmeier et al., 2009) as well as meaning-based coping (Lethborg et al., 2008).

Psychological stability during a stressful event is then understood to be the result of developing an appreciative understanding of the situation within a coherent perspective of the world.

In conclusion, the present research suggests that coping with stressful life events is understood to be a complex phenomenon than has been previously suggested (Folkman & Moskowitz, 2004). It is important to develop a greater understanding of the factors that can enable positive experiences, even in the presence of ongoing stressors. The present study sought to illuminate these factors as well as to explicate the link between them. Therefore, the present research suggests that psychological stability or well-being during a stressful event can be understood to be the result of developing an appreciative understanding of the situation within a coherent perspective of the world.

CONCLUSION

Coping with stressful life events is being recognised as a more complex phenomenon than has been previously understood (Folkman & Moskowitz, 2004). Thus, it is important to develop a greater understanding of the factors that can enable positive experiences in the presence of ongoing stressors. The present study thus illuminates these factors and explicates the link between them.

Future research on appreciation is warranted since appreciation appears to contribute unique variance in the prediction of life satisfaction and positive affect beyond that contributed by emotional self-awareness, optimism, and spirituality. Considering there are state level and trait level differences in appreciation, as suggested by the authors appreciation as a skill can be learnt, trained and developed (Adler & Fagley 2005)

Future research in this direction can establish how this mediation may vary with respect to age, gender and social support, especially as Antonovsky (1987) contends that SOC tends to stabilise by the age of 30, and majority of our participants fall below that age. It may also be worthwhile to investigate the role of sense of coherence in a non-pandemic situation as environmental changes are associated with changes in SOC (Feldt et.al., 2000).

Both demographic and other psychosocial factors that were not specifically explored in the present study, may have implications in the associations between SOC, appreciation and well-being. For a more comprehensive picture of the shared effect of the variables, longitudinal studies to assess temporal variations would provide better opportunities.

Despite the nature of our findings that are discussed above, the present work comes with certain limitations. Firstly, the generalisability of the results is limited since the study is not longitudinal in nature and hence does not consider variations over time. Secondly, young adults are overrepresented in the sample and the survey was also only accessible to those who used the internet and digital devices as the study was conducted using an online platform. Finally, considering our sample, generalisability to a particular country or population is limited.

Future research in this direction can establish how this mediation may vary with respect to age, gender and social support, especially as Antonovsky (1987) contends that SOC tends to stabilise by the age of 30. It may also be worthwhile to investigate the role of SOC in a non-pandemic situation as environmental changes are associated with changes in SOC (Feldt et al., 2000).

Both demographic (age, gender, employment status) and other psychosocial factors (mental health and physical health status) that were not specifically explored in the present study can be further explored.

Further, for a more comprehensive picture of the shared effect of the variables, longitudinal studies to assess temporal variations would provide better opportunities.

Funding: No funding was received.

Acknowledgements: No acknowledgment to report.

Conflict of interests: The authors declare no competing interests.

Ethical approval: The study was conducted in accordance with the code of ethics set by the World Medical Association ('Declaration of Helsinki'; World Medical Association, 2013).

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