

Predicting mental health from the Apter Motivational Style Profile during the COVID-19 pandemic – the importance of planfulness and goal orientation

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The research reported here examines the utility of Reversal Theory variables, amongst others, as predictors of mental health during the 2020-21 covid pandemic. 135 participants completed an author-generated 'Lockdown Questionnaire', The Apter Motivational Style Profile for research (AMSP-R), the Multidimensional Mortality Awareness Measure, and questions about demographic factors. Dependent variables were three self-report questionnaires measuring eudaimonic well-being, depression, and health anxiety. AMSP-R variables were found to be bivariately associated with the dependent variables. Results from multiple regression analyses between significant bivariate correlates and the three dependent variables notably showed that telic AMSP scores emerged as the leading independent predictor of eudaimonic well-being. Other predictors of outcome variables included mortality fearfulness, disengagement and acceptance, difficulty managing health conditions during lockdown, physical activity, highest level of educational attainment, and political orientation. It can be inferred from the study's main finding that those during the pandemic who adopted a goal-oriented and planful mindset appear to have been more resilient during this time of chronic adversity than those who did not. Conversely, it is plausible that happier people tend to be able to engage in greater goal activity. Both explanations, however, are not mutually exclusive. The finding has implications for ongoing public health messaging to help people manage their mental health during the continuing pandemic.

Keywords: pandemic, mental health, goal orientation

Introduction

The Coronavirus disease 2019 (COVID-19), which began in the latter months of that year, was declared a global pandemic by the World Health Organization on the 11th of March 2020. Subsequently, many people across the world have experienced various forms of quarantine and social isolation (Satici et al., 2020). At the same time, they have had to assess the severity of the health threat from the virus ongoing and accommodate to changing health policy requirements such as mask-wearing and social distancing, such measures often having been politicised by opponents of them. During the pandemic, most working age adults have had to make unprecedented adjustments to the pattern of their everyday occupational lives, with many experiencing the move to remote, online working, or simply being laid off work, placed

on furlough or made redundant. These social impacts have in turn adversely affected mental health (Wright et al., 2021).

Data produced by the UK Office for National Statistics (ONS, 2020) suggested that around 72% of individuals in Great Britain were worried about the effects of COVID-19 on their life, with many reporting high levels of anxiety (32%), diminished well-being (42%), and loneliness (23%) (Dawson & Golijani-Moghaddem, 2020). Mental health is defined by the World Health Organization (1996) as "a state of well-being in which an individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". It is clear that the pandemic has produced a set of stressors that do not constitute "normal" life, and that the opportunity for many people to contribute productively has been severely restricted. The current pandemic environment has been compared to that of a natural disaster or mass international conflict, in the sense that a pervasive and invisible enemy is being fought (Fiorillo & Gorwood, 2020).

The key to understanding the maintenance of equilibrium between the challenges faced and an individual's resources

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with regard to coping with social, physical, and psychological challenges (Dodge et al., 2012) is measuring mental health pre-cursors in a pandemic context. Aspects of personality such as coping and response dispositions alludes to, as potential predictors, a kaleidoscope of individual differences, which include cognition, motivation, and emotion.

Reversal Theory (RT) (Apter, 1982), with its focus upon multiple motivational styles and upon states as well as response dispositions, is well-placed to address such pluri-formity. In particular, The Apter Motivational Styles Profile – Research version (AMSP-R), a development from the original seventy-item measure (Apter et al., 1998), is a notable operationalisation of such multiple psychological facets. Such self-report measurement computes four fundamental pairs of metamotivations: conforming versus rebelliousness, serious-mindedness versus playfulness, self versus other, and mastery (controlling) versus sympathy (giving up control). Thereby, such a framework provides a potential understanding of the motives underpinning health behaviours, whether they be protective or destructive.

Mortality awareness, a variable that has been explicated conceptually and operationally in the form of the Multidimensional Mortality Awareness Model and Measure (MMAMM) (Levasseur et al., 2015), is another candidate variable of relevance to predicting mental health during a life-threatening pandemic. This model specifies five types of mortality awareness: mortality legacy - the need to create a legacy to live on beyond death; mortality fearfulness - the anxiety attached to the impossibility of escaping the end of one's life; mortality acceptance - the integration of the emotional and physical reality of death; mortality disempowerment - the realization of personal insignificance and of vulnerability in the face of death awareness; and mortality disengagement, which is about the refusal to acknowledge death and a feeling of immortality. This model is relevant to the ongoing pandemic because many individuals are having to confront their own possible mortality, perhaps for the first time, given almost constant reminders of COVID-19 mortality rates in mass media reports.

In addition to psychological dimensions to the experience of the pandemic, there are also contextual aspects that must be considered and measured, such as proximity to community facilities (e.g., shops, parks, public transport links), caring responsibilities, and housing. For the purposes of the ensuing study, we constructed a questionnaire containing other predictor variables that assessed different aspects of the pandemic and lockdown experience.

The study reported here measures to what extent psychological constructs as operationalised by the AMSP-R, the MMAMM, and scores on an author-constructed pandemic context questionnaire predict three different facets of mental health: eudaimonic well-being, depressive affect, and health anxiety.

We hypothesise that individuals will experience levels of well-being that are correlated with both their experience in lockdown and their preferred motivational style. However, it is plausible for either telic or paratelic dominance to be associated with better mental health during adversity. Similar arguments can be made about the five forms of mortality awareness in the MMAMM. This present study therefore is exploratory.

Method

Participants

135 participants took part. In terms of gender, 25 (18.5%) participants were male and the remaining 110 (81.5%) were female. All respondents were adults aged 18 years or older. With regard to partner status, 41% of the sample identified as “single”, 33% as “in a relationship”, 19.3% as “married”, and 8% as “cohabiting”. 19% of respondents identified as parents. The highest attained level of education achieved by 28% of the sample was self-designated as an undergraduate degree, with 45% stating A levels (at aged 18), 9% as GCSEs (at aged 16), and 17% as a postgraduate degree or qualification. In terms of each participant's annual earnings, it was found that 61.5% of the sample earned up to £15,000 a year; only 14% of respondents declared earning over £30,000 a year (£29,600 per annum being the UK national average). Regarding political affiliation, the largest number of respondents (40%) indicated they would vote for the Labour party at the next election, with 11-16% of respondents indicating a voting preference for either Green, Liberal Democrat or Conservative. In terms of cultural identity, 81.5% identified as White/European, 1.5% as Black/African, 1.5% as Black/Caribbean, 1.5% as Latin American/Hispanic, 3% as East Asian/Chinese/Japanese, 2% as South Asian/Indian/Pakistan, 8% as having multiple ethnic identities, and 0.7 percent as “other”.

Materials

A series of eight questionnaires were presented to participants. The following four were included to measure independent predictor variables:

The Pandemic and Lockdown Experience and Context (PLEC-Q) was the author-devised questionnaire (Ahmed et al., 2020). It was composed of 98 items with a focus on contextual aspects such as: proximity to local resources, difficulty managing a health condition during lockdown, physical activity, frequency of media engagement, COVID-19 information seeking, proximity to covid, frequency of social media use, negative effects of the infodemic, satisfaction with parenting delivery, distressed parenting, lockdown-related dysphoria, the negative impact of the pandemic on the quality of relationships, and belief in efficacy of masks, social distancing, and hand washing.

The Multidimensional Mortality Awareness Measure (Levasseur et al., 2015) is a 36-item questionnaire that measures five forms of mortality awareness (MA): legacy MA; fearfulness MA; disempowerment MA; disengagement MA; and acceptance MA. The questionnaire and associated subscales have been found to have acceptable levels of reliability (Cronbach's Alpha coefficient of internal reliability ranging from 0.59 to 0.87) and construct validity (Willoch & McDermott, 2020; McEwan et al., 2018).

The Apter Motivational Styles Profile – Research version (AMSP-R) is a 40-item psychometric instrument derived from the original 70-item Motivational Style Profile (Apter et al., 1998). It measures self-perceived frequency (i.e., *dominance*, as reversal theory calls it) of the eight fundamental metamotivational states, namely conforming, rebelliousness, telic, paratelic, self-mastery, other-mastery, self-sympathy, and other-sympathy. Apter et al. (1998) reported acceptable reliability and concurrent validity data for the subscales, with alpha coefficients ranging between .76 and .81.

The State Anxiety Measure (Spielberger, 1972) was constructed from its original form as first established by Spielberger, Gorsuch, and Lushene (1970). All items are rated on a 4-point scale, with higher scores indicating greater anxiety. The scale was assessed on male and female samples of high school students for test-retest intervals ranging from one hour to 104 days. The magnitude of the reliability coefficients decreased as a function of interval length, with the range for the state-anxiety scale being .16 to .62. This low level of stability for the state-anxiety scale is expected since responses to the items on this scale are thought to reflect the influence of whatever transient situational factors exist at the time of testing.

The following three questionnaires were included to measure dependent outcome variables:

The Eudaimonic Well-Being Questionnaire (EWBQ) (Waterman et al., 2010) was developed to measure well-being and how it is conceptualized in the philosophy of eudaimonism (that “right” action leads to well-being). Eudaimonic well-being (EWB) refers to quality of life derived from the development of a person's potentials and their application in the fulfilment of personally expressive, self-concordant goals. It has emerged as both a complement and contrast to subjective well-being (SWB) for understanding and studying quality of life. Aspects of eudaimonic well-being assessed by the EWBQ include self-discovery, perceived development of one's best potentials, a sense of purpose and meaning in life, intense involvement in activities, investment of significant effort, and enjoyment of activities as personally expressive. The internal consistency of the scale is high (as reported by Waterman et al., 2010) and confirmatory factor analysis indicated that the EWBQ items load onto a common factor. The distribution of scores approximate to a normal curve.

The Health Anxiety Inventory (Salkovskis et al., 2002) is a self-rated measure spanning the full range of the construct, for example, from mild concern to overwhelming hypochondriasis. The measure also aims to differentiate between individuals suffering from health anxiety and those with a tangible physical illness but who are not excessively concerned about their health. The scale has been found to be reliable and to have high internal consistency (Salkovskis et al., 2002). Furthermore, a development and refinement of the scale (intended to reflect more fully the range of symptoms of, and reactions to, hypochondriasis) has been found to be reliable and valid (Satici et al., 2020).

The Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001) is a nine-item, multi-purpose instrument for screening, diagnosing, monitoring, and measuring the severity of depression and incorporates DSM-IV depression diagnostic criteria. A PHQ-9 score ≥ 10 has a sensitivity of 88% and a specificity of 88% for major depression. PHQ-9 scores of 5, 10, 15, and 20 represent mild, moderate, moderately severe, and severe depression, respectively.

Finally, the eighth questionnaire collected demographic information from the respondents.

Procedure

Participants were recruited through volunteer sampling via an online Qualtrics survey platform link that was posted and shared via on-campus hard copy fliers (containing QR codes), multiple social media platforms such as Twitter, Facebook, Instagram, and via email connections within undergraduate student research project sharing resources. These platforms also included participant recruiting forums such as Survey Circle, Survey Assemble, and Survey Tandem.

After clicking on the link to the questionnaire, participants were initially presented with an invitation letter that detailed the elements of the study and what their participation would involve. In the letter the confidentiality and anonymity of the study was emphasised and information regarding withdrawal and final contact details of the researchers were supplied. Following this, every participant was asked to indicate informed consent. Thereafter, this led to the beginning of the questionnaires, which took an average of 35 to 40 minutes to complete. At the end of the questionnaires, all participants were given the opportunity to read a debriefing letter that gave participants additional information about the study and about what would happen to the information they had provided. It also listed possible support contacts for anyone who had been adversely affected by their participation. Participants then were reminded of the author's contact details and thanked for their participation.

Table 1
Pearson product moment correlation coefficients (one-tail tests) for psychological and pandemic experience variables with scores on three dependent measures.

	Health Anxiety	PHQ-9 Depression	Eudaimonic Well-being
Rebelliousness AMSP	-0.09	-0.03	0.08
Conformity AMSP	-0.02	0.25**	0.25**
Telic AMSP	-0.23**	0.06	0.47**
Paratelic AMSP	-0.14	0.17*	0.13
Self-mastery AMSP	-0.24**	0.05	0.38**
Other-mastery AMSP	-0.26**	0.19*	0.39**
Self-sympathy AMSP	0.12	0.29**	0.06
Other-sympathy AMSP	-0.27**	0.26**	0.22**
Mortality legacy	0.11	0.05	0.24**
Mortality fearfulness	0.37**	0.21**	-0.19*
Mortality acceptance	-0.32**	0.18*	0.10
Mortality disempowerment	0.27**	0.15*	-0.29**
Mortality disengagement	-0.35**	-0.21**	0.07
State anxiety	0.41**	0.68**	-0.37**
Proximity to local resources	-0.02	-0.24**	0.05
Belief in efficacy of masks	-0.12	0.19*	0.12
Distressed parenting	0.38*	0.24	-0.28
Satisfaction with parenting delivery	0.30	-0.19	-0.35
Difficulty managing health condition during lockdown	0.23**	0.44	-0.19
Lockdown dysphoria	0.31**	0.53**	-0.27**
Negative impact of the pandemic on quality of relationships	0.21**	0.22**	-0.25**
Physical activity	-0.21**	-0.32**	0.28**
Frequency of media engagement	-0.09	-0.05	0.16*
COVID-19 info seeking	-0.01	0.15*	0.04
Frequency of social media use	0.08	0.22**	-0.19*
Negative impacts of infodemic	0.11	0.32**	-0.01
Highest level of educational attainment	0.04	-0.08	0.29**

Note. * $p < .05$ ** $p < .01$; where $N=135$ respondents except for Distressed parenting $N=24$ and Parenting delivery $N=19$.

Results

The raw data was exported from the Qualtrics Platform into SPSS software for initial coding and screening. Any missing data was identified, though this was very infrequent, and re-coded by insertion of median values. Next, pandemic experience and context variables were computed. Cronbach's Alpha Coefficients were computed for these author-devised conceptual subscales: proximity to local resources (items 19, 21-24) .70; managing health condition during lockdown (101, 103, 104a) .59; negative impact of the pandemic on quality of relationships (104b, 105, 106) .58; physical activity (39, 41, 43) .45; frequency of media engagement (64, 66, 67, 68) .48; frequency of social media use (74, 75, 76) .66; covid information seeking (69, 70, 71, 72) .77; negative effects of infodemic (79, 80, 81, 82) .84; lockdown dysphoria (99, 100, 101) .78; satisfaction with parenting delivery (93, 96) .60; distressed parenting (90, 91, 92, 94, 95) .83; and belief in the efficacy of masks (48, 49, 50, 51) .84.

Bivariate correlations

Scores on AMSP subscales, mortality awareness subscales, state anxiety total, and pandemic experience scores were correlated with those on the eudaimonic well-being, health anxiety, and PHQ-9 depression questionnaires. The results are shown in Table 1. The table shows which variables were found to be statistically significant correlates of the three key measures of well-being. A notable feature of the table is that the Telic AMSP variable is seen to have the strongest relationship with high scores for eudaimonic well-being, while it is related to low scores for health anxiety. Other notable reversal theory correlates of high eudaimonic well-being were self-mastery and other-mastery AMSP, again with an inverse relationship for health anxiety. Conforming AMSP and other-sympathy AMSP were weakly correlated with both PHQ-9 depression and eudaimonic well-being. Notably, AMSP rebelliousness was not found to correlate with any one of the three dependent vari-

Table 2
Regression analysis predicting eudaimonic well-being.

	β	t	p
Telic AMSP	0.30	2.87	.005**
Highest level of educational attainment	0.16	2.01	.048*
Physical activity	0.14	1.88	.06
Negative impact of the pandemic on quality of relationships	-0.14	-1.88	.06
Mortality fearfulness	-0.14	-1.58	.12
Difficulty managing health condition during lockdown	-0.11	-0.51	.13
Mortality legacy	0.13	1.50	.14
Annual earnings (before tax)	0.13	1.47	.14
Other-sympathy AMSP	-0.16	-1.38	.17
Frequency of social media use	-0.09	-1.23	.22
Frequency of media engagement	-0.10	-1.08	.28
Self-mastery AMSP	0.92	1.05	.30
Mortality disempowerment	-0.08	-1.02	.31
Other-mastery AMSP	0.12	0.92	.36
Conformity AMSP	0.07	0.82	.42
COVID-19 info-seeking	0.04	0.47	.64

Note. β = standardized regression coefficients. * $p < .05$ ** $p < .01$

ables. As expected, state anxiety is highly correlated with PHQ-9 depression scores.

Measures of pandemic experience and context variables in Table 1 were also correlated with the three dependent variables. High scores on the Health Anxiety Scale were most strongly correlated with high scores for “distressed parenting.” High scores on the PHQ-9 depression scale were most strongly correlated with high scores for “lockdown dysphoria,” indicating that individuals who had reported symptoms of depression were more likely to experience lockdown as a dysphoric experience. High scores for eudaimonic well-being were correlated with high scores for “educational attainment” and “physical activity” and with low scores on “lockdown dysphoria” and “negative impact of the pandemic on quality of relationships.” COVID-19 info-seeking, frequency of social media use, and the negative impacts of the infodemic are all correlated with PHQ-9 depression, indicating that increased engagement with information networks was associated with greater depressive affect.

Multivariate correlational analysis - regressions

Three separate regression analyses were performed, one for each of the three dependent outcome variables. In each analysis, only those independent variables that were significant bivariate correlates (at $p < .05$) were entered into the regressions. The results of the regression analysis with Eudaimonic well-being as the dependent outcome variable are shown in Table 2.

From Table 2 it can be seen that Telic AMSP is the leading significant independent predictor of Eudaimonic well-being scores, with highest level of educational attainment also reaching statistical significance (Adjusted $R^2 = .39$).

For the regression predicting health anxiety scores, three variables emerged as independent predictors: high mortality fearfulness ($\beta = .28, t = 3.36, p = .001$), low mortality disengagement ($\beta = -.20, t = -2.39, p = .018$), and high difficulty managing health conditions during lockdown ($\beta = .16, t = 2.04, p = .043$; Adjusted $R^2 = .30$).

For the regression predicting PHQ-9 depression scores, five variables emerged as independent predictors: high difficulty managing health conditions during lockdown ($\beta = .28, t = 3.91, p = .001$), low physical activity ($\beta = -.20, t = -2.85, p = .005$), low mortality disengagement ($\beta = -.21, t = -2.87, p = .005$), high mortality acceptance ($\beta = .20, t = 2.35, p = .02$), and low political conservatism ($\beta = -.15, t = -1.97, p = .05$; Adjusted $R^2 = .44$).

Discussion

The bivariate correlational analyses showed several associations between the predictor and dependent variables, with some AMSP variables notable among them. The Telic AMSP variable had the strongest relationship with scores on the eudaimonic well-being subscale. As expected, the state anxiety total score had the strongest relationship with those on the health anxiety and the PHQ-9 depression scales, while “distressed parenting” was the second most significant correlate of health anxiety, with “lockdown dysphoria” the second most significant correlate of PHQ-9 depression scores. In subsequent regression analyses, the most statistically significant independent predictors of eudaimonic well-being were scores on “Telic AMSP” and highest level of educational attainment, with higher scores on each being associated with greater levels of well-being. Significant independent predictors of health anxiety were mortality fearfulness, mortal-

ity disengagement, and difficulty managing health conditions during lockdown. Significant independent predictors of the PHQ-9 depression scores were found to be difficulty managing a health condition during lockdown, physical activity, mortality disengagement, mortality acceptance, and political orientation.

With respect to Reversal Theory (Apter, 1982) telic AMSP scores can be seen as a critical predictor of well-being, albeit some other independent variables appeared as notably significant predictors. Reviewing the content of the telic AMSP subscale indicates what exactly is predicting well-being. Examples of items from the subscale are: I work for long term goals; I plan ahead; and I want to do things that are meaningful. It is evident that this operational definition of telic AMSP focuses on planning of goal-oriented activity that is important or meaningful. Thus, the focus is on purposeful activity. From this it would appear that having a forward-looking orientation focused upon a goal was protective of well-being during the pandemic. However, consideration should also be given to the content of the well-being measure used here. Items within it include: my life is centred around a set of core beliefs that give meaning to my life; and it is important to me that I feel fulfilled by the activities that I engage in. Consideration of item content as above shows that the correlation between telic AMSP and eudaimonic well-being as measured here is about a relationship between self-reported planfulness and goal-orientation with a greater likelihood of experiencing a rewarding and meaningful life. This can be viewed in some ways as an elaboration and construct validation of the telic state; on the other hand, it should be noted that the two constructs are conceptually similar and that such similarity may account in part for the association between them.

Such an association, however, resonates with the aphorism: “*scratch the surface of a happy man and you’ll find a project*”. Doubtless such an association applies to all people. During the pandemic however, much mention was made about the efficacy of daily exercise, which no doubt was important and is made mention of in reviews such as that by Usher et al. (2020). Indeed, in our study an independent association in regression analysis between physical activity and scores on the depression questionnaire was found. However, notably no mention is made in Usher et al.’s (2020) review of the protective importance of purposeful activity, planfulness or goal-orientation. The absence of focus on this as a mental health promotion strategy is conspicuous, despite pre-pandemic literature arguing for the importance of goal-setting to well-being (Emmons, 2003). Many facets of mental health during the pandemic have been documented and studied (Aknin et al., in press) yet the benefits of a planful goal-orientation has been neglected. What empirical work that has taken place on goal-setting during the pandemic has focused on its erosion during this period

(Ritchie et al., 2021), rather than on the advantages of such an orientation for mental health. The pandemic and associated lockdowns restricted occupational activity, with many experiencing redundancy or furlough (ONS, 2020). In such a circumstance, arguably it was even more crucial that people dispossessed of meaningful daily activity should be encouraged to re-discover substitute activity in other forms whilst enduring long periods at home. Previous research has found that a sense of purpose moderates the relationship between daily stressors and daily well-being (Hill et al., 2018). A focus thereby upon fostering purposive activity through targeted public health messaging would help people manage their mental health during the ongoing COVID-19 pandemic and associated lockdowns and would be likely to do so during any future global health emergency. De Jong et al. (2020) for example, have argued for the use of life-crafting interventions to enable people to re-set objectives, make new plans, and overcome barriers to achieve goals that were damaged by the constraints of the pandemic.

Variables other than those measured within the AMSP were found to predict scores on health anxiety and depression. Notably in relation to the former, aspects of mortality awareness were found to be related to health anxiety. It is perhaps unsurprising that self-perceptions of mortality were found to be related to health anxiety in a circumstance in which everyone’s very existence was under threat. Also notable was the finding that difficulties in terms of ongoing health conditions were found to be predictive of depression. Again, this finding makes intuitive sense in that those who were already ill might struggle the most with the prospect of being infected by a potentially life-threatening illness. Indeed, it became clear early on in the pandemic that pre-existing health vulnerabilities made one susceptible to the worst effects of the virus.

Methodological limitations to the current study include sample size, reliance on self-report, and a cross-sectional rather than a longitudinal design. The results presented here are in need of follow-up in a larger sample and over-time, using a repeated measures format, given the potential implications of these findings for protecting the mental health of whole populations during such periods of universal adversity.

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