



HeartMath Personal and Global Coherence Data Collected Before and After COVID-19

Stephen D. Edwards^a and David J. Edwards^b, Psychology Department, University of Zululand, Private Bag X1001, KwaDlangezwa 3886, South Africa; Email: edwards.davidjohn@gmail.com^b, edwardsd@unizulu.ac.za^b

This brief report summarises HeartMath personal and global coherence patterns of data collected before and after the COVID-19 pandemic. Findings indicated that COVID-19 data correlated significantly with all baseline data, as well as being significantly different from all baseline data. The best predictors of COVID-19 data were personal and global coherence data collected from HeartMath electronic devices, the Inner Balance and Global Coherence Applications (apps) respectively, as well as Schumann Resonance power spectrum data from the HeartMath Institution based magnetometer in Boulder Creek, California. Related meditation experiences, global research and health implications are discussed.

Key words: *HeartMath; Global Coherence Initiative; COVID-19; Meditation; Case Study*

Introduction

As from 31 December 2019, the World Health Organisation (2020) declared COVID-19 a pandemic, requiring emergency management. International lockdowns in many countries are a reminder of the intimate interconnectedness of planet earth and its global village as predicted by Vernadsky (Bischof, 2007) and de Chardin (1959) in the concept of noosphere or mind sheath emerging from the biosphere. Today, this includes enveloping technological communication and information systems, such as the internet, Skype, smartphones and Global Consciousness Project (GCP) which registers significant statistical effects in relation to notable global events such as the death of Nelson Mandela and international peace days (Nelson, 2011).

The Institute of HeartMath, Global Coherence Initiative (GCI) emphasises the earth's magnetic field (Childre et al., 2016). GCI currently includes six ultrasensitive, magnetic field detectors, installed strategically around the planet, which provide correlational data in this regard. GCI

data are also particularly correlated with the electromagnetic field of the human heart and monitored through heart rate variability patterns, especially coherent heart rhythms and resonances (McCraty et al., 2018). Clearly, large scale, scientific studies are needed to investigate comprehensive correlational and causative patterns in relation to COVID-19 and GCI magnetometers.

Motivation for the present pilot case study arose from GCP and GCI research, as well as observed increases in personal and global coherence scores on HeartMath designed electronic recording devices, Inner Balance (IB) and Global Coherence (GC) applications respectively. These increases also related to compassionate healing meditations with intention to increase coherence and resonance using longer heart-breath cycles, which have continued during COVID-19 times, i.e., 2020.

The broad research question concerned whether all events associated with the COVID-19 pandemic, including contagion, collective consciousness, public stress, trauma and healing in an ecological context of planetary pollution, would correlate with GCI Magnetometer data. In view of HeartMath postulates and predictions, the research hypothesis was that significant differences would be observed.

Method

The pilot study investigated empirical and experiential information from IB and GC apps, as well as GCI data derived from magnetometer recordings of Schumann Resonances of the magnetic field of the planet. Thus the study contained differentiated perspectives, i.e., individual and collective, objective and subjective, researcher and participant (Fetters et al, 2017). Through their respective measuring, monitoring and biofeedback function, IB and GC apps facilitated quantitative records of meditation sessions, which were compared with GCI Schumann Resonance derived data.

The study integrated quantitative measurements with qualitative descriptions of some experiences. The investigation consisted of a review of HeartMath practices from 1 January 2019 to 22 April with this data available from a previous study (Edwards, 2019). These data were compared with COVID-19 data collected from 1 January to 11 June 2020. It should be noted that continuous data were only recorded by the HeartMath Institute California based magnetometer over this 18 month period. All other magnetometer recordings were interrupted at some stage. However no attempt was made to standardise data.

Meditation sessions were in prone, yogic *savasana* position. They inclusively embraced various wisdom traditions, African ancestral consciousness, Christian, Islamic, Hindu, Buddhist and Taoist, typically monitored by HeartMath technology to provide coherence biofeedback. The investigation took part over the Easter period. The first author was involved



in pastoral counselling for the local Christian church, where he gave a lecture on the “Intersection of Science, Philosophy and Religion – The Role of the Heart in Life, Love and Light.” on 14 March, less than two weeks before the South African COVID-19 lockdown.

However rigorous, transparent and objective the attempts by the authors, critical reflexivity reveals many inevitable limitations of heuristic case studies, such as bias, expectations, assumptions, personal knowledge of instruments etc. These limitations are all readily acknowledged. Although case studies are unique, providing data that are not generalisable, they have advantages of facilitating original, detailed and in depth exploration of phenomena, experiences and events that may illuminate theory and stimulate further exploration.

Basic statistical analysis included non-parametric analysis for correlated data and differences between independent samples, i.e. Spearman and Man Whitney U test, respectively. This was followed by simple linear regression to examine which variables predicted COVID-19.

Instruments

The HeartMath Global Coherence Initiative website provides Schumann Resonances Power graph summary information in a Spectrogram Calendar, which illustrates dynamic changes occurring in the Schumann Resonances region of the magnetic field. The sum of the power in all frequencies, detected by the respective site magnetometers from 0.32 to 36 Hertz, is calculated for every hour. A 24-hour moving average of this data, plotted for each site and updated hourly, is freely available for public research purposes.

The GC app was used specifically for global coherence healing meditations and the IB app for shorter personal healing after physical exercise. The GC app is in beta phase testing at present. It records mean coherence levels at individual, group and global levels. Although GC mean scores are available per session, sessional data is continually updated, which means achievement data were unreliable for calculation purposes. It provides individual, group and global coherence records per day, week, month and year. At the time of writing 13-6-2020, the individual, group and global year records were 667,385; 7131; and 23,408,300 respectively.

Ethical Considerations

The study followed ethical standards in accordance with the Declaration of Helsinki. Institutional approval was obtained from the Zululand University research committee, project number S894/97. The authors are registered clinical psychologists and licensed HeartMath coaches and mentors. Although working independently from the HeartMath Organisation, through regular communication, they remained fully informed as to HeartMath initiatives to manage the coronavirus through recognition and transmutation of negative emotions and actions, such as fear and over-care, and promotion of renewing and positive emotions to raise

human consciousness, spirituality and related health behaviour. Similarly, as registered psychologists, they were informed as to psychological knowledge and interventions related to COVID-19. Such knowledge and affiliation did not indicate any conflict of interest as the focus of the study was to promote personal, social and global health, as well as provide knowledge and instruction in the case of unique experiences related to a unique event, the South African COVID-19 lockdown.

Results

Results follow in the form of quantitative and qualitative findings with their accompanying tables, and global coherence meditation sessions, respectively.

Quantitative Findings

Table 1 refers to Spearman correlation coefficients, with 5 and 10 percent significance levels indicated by single asterisk (*) and double asterisks (**) as per usual statistical convention. GC and IB refer to coherence scores from these respective apps. GC1, GC2, GC3, GC4, GC5 and GC6 refer to Global Coherence Magnetometer readings from California, Saudi Arabia, Lithuania, Canada, New Zealand and Hluhluwe, South Africa, respectively. GCTOT refers to total magnetometer readings. COVID-19 categorised 2019 scores as 0 and 2020 scores as 1.

Table 1. Spearman correlation coefficients

	GC	IB	GC1	GC2	GC3	GC4	GC5	GC6	GCTOT
GC									
IB	.597**								
GC1	.397**	.307**							
GC2	-.469**	-.295	-.163*						
GC3	-.143	.151*	-.129*	.199**					
GC4	.245**	.379**	.373**	.230**	.338**				
GC5	-.003	-.192**	.115	.407**	.049	.201**			
GC6	-.265**	-.301**	-.124	.151*	.272**	-.112	.194**		
GCTOT	-.166*	-.150	.130*	.544**	.413**	.390**	.566**	.689**	
COVID-19	.554**	.421**	.194*	-.768**	-.179**	-.139*	.517**	-.307**	-.577**

Table 1 indicates a pattern in which 37 out of 45 possible correlations were significant. In particular, COVID-19 was significantly correlated with all other variables. Table 2 provides focussed clarification.

Table 2 refers to baseline (2019) and COVID-19 (2020) means for GC and IB coherence scores. GC1, GC2, GC3, GC4, GC5 and GC6 refer to Global Coherence Magnetometer readings from California, Saudi Arabia, Lithuania, Canada, New Zealand and South Africa, respectively. GCTOT refers to total magnetometer recorded readings. All magnetometer readings were taken at noon (12-1pm) on the same day as the meditation data respectively. Nonparametric Mann Whitney U test for independent samples and t statistics for simple linear regression follow.

Table 2. Baseline (2019) and COVID-19 (2020) means

	GC	IB	GC1	GC2	GC3	GC4	GC5	GC6	GCTOT
Baseline	4.41	5.13	40.26	122.18	111.12	83.16	141.95	269.57	768.24
COVID-19	6.18	6.10	58.75	27.14	91.44	56.82	61.33	205.52	529.76
Mann Witney U	6.81**	6.34**	3.01**	11.94**	2.79**	2.16*	8.04**	4.77**	8.66**
Regression t	4.70**	3.74**	2.30**	-1.05	-1.725	-1.05	-2.31*		-2.4**

Table 2 indicates that COVID-19 was associated with significant differences from baseline data on all variables as measured on the Mann Witney U test. Simple regression analysis indicated that this was particularly positively predicted by data from the Global Coherence app (GC = 4.70**), Inner Balance app (IB = 3.74**) and California Magnetometer (GC1 = 2.30**). It should be noted that the South African, Bonamanzi magnetometer was excluded from the regression analysis owing to its atypical pattern, which is clearly observable in Figure 1. This could be a reflection of lightening activity. Figure 2 provides a graphic illustration that 9 out of 10 highest of the first researcher’s personal coherence scores recorded by the Inner Balance app occurred during the COVID-19 period.

Figure 1: Refers to a snapshot of Schumann Resonances Power as available in the form of live data from the HeartMath Global Coherence Initiative website - <https://www.heartmath.org/gci/gcms/live-data/>

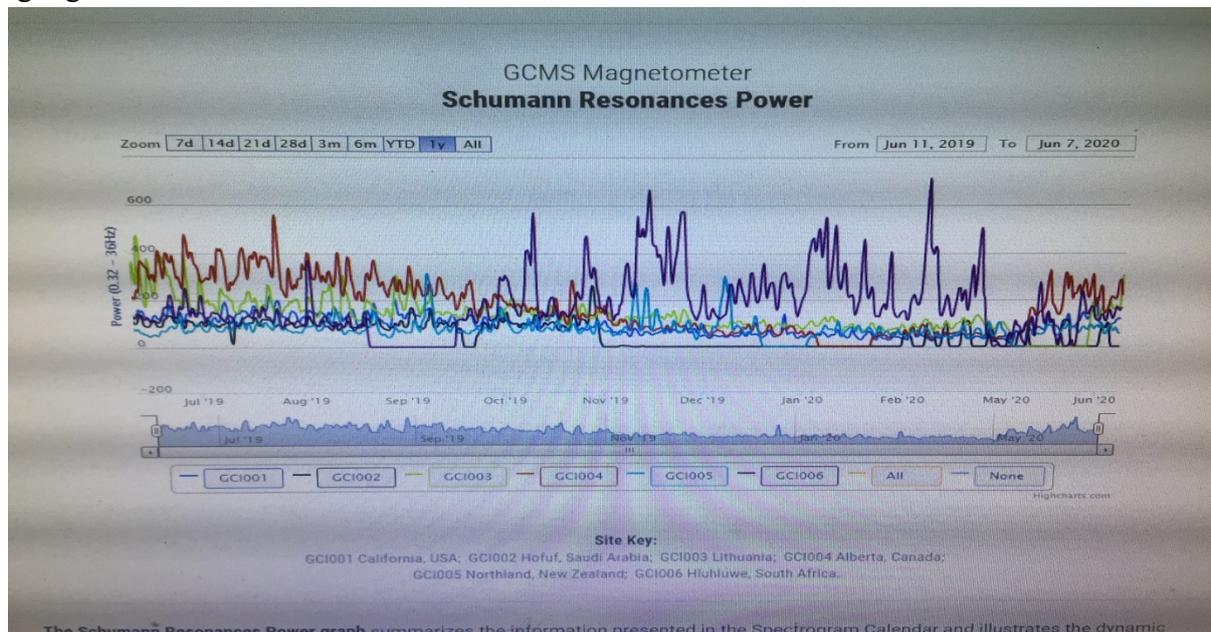
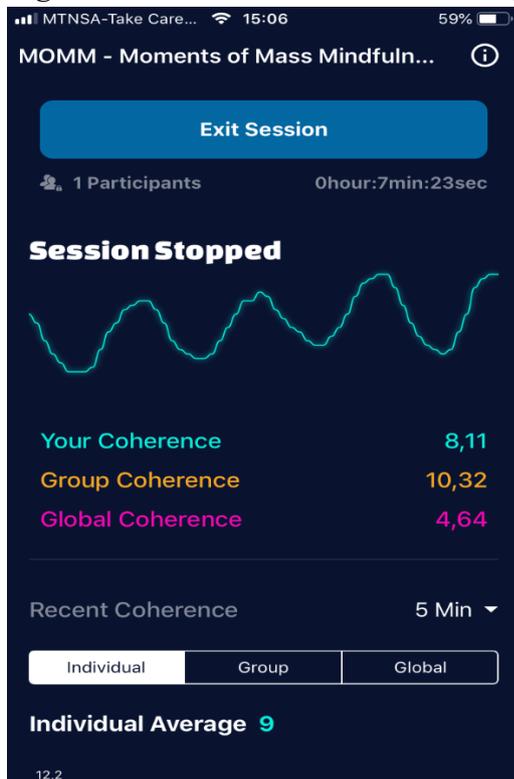


Figure 2: Compassionate healing meditations as evidenced by 9 out of 10 highest coherence scores achieved during COVID-19



Figure 3: Global Coherence Initiative (GCI) Moments of Mass Meditation Example



Qualitative Findings

Qualitative experiential data that arose from sequential GC meditations follow, each with their identifying date. The meditations diary typically has no experiential descriptions and some a very few words. The following five healing meditations were most relevant from the global coherence perspective.

GC: 1-4-2020. This meditation focussed on a videotaped communication for electronic transmission to local church parishioners, with its message of the heart as universal, integral physical, emotional, mental, social, ecological and spiritual organ. The focus was on regular heart rhythm which relates to renewing emotion, associated with any positive feeling, such as contented, peaceful, happy, loving, appreciative, grateful etc. Relaxation, resilience and resistance and general healing builds from such renewing feelings.

GC: 10-4-2020. Easter “Good Friday.” Lengthening the heart coherence rhythm to about ten seconds or more per in breath, as well as per outbreath, so as to experience a heart-beat based, respiration pattern of three or less cycles per minute. Listening to the heart rhythm aligning with the glistening sounds of silence and surging sea has profoundly amplified experiences of alignment with the all, or interconnectedness of everything; physical, mental, social, ecological, spiritual etc. This pattern developed more or less at the same time as hearing of COVID-19. Some intuitive healing sense spoke of aligning with and cleansing polluted planet, contaminated atmosphere, and hopelessly lost humanity with its related, negative spin offs on all sentient beings.

GC: 11-4-2020. Holy Saturday, where tradition has it that Jesus healed all in the underworld. Meditation was experienced as “Centred in God in heart rhythm”. This structured HeartMath session especially focussed on Jesus in terms of Easter process of resurrection, being cared for by Mary Magdalene in consciousness as interpreted by Cynthia Bourgeault, Markus Borg and Teilhard de Chardin. Locally consciousness was with the Zionist group, the largest religious group in South Africa with over 2 million members, who traditionally would have met in mass at Moria over the Easter weekend. Others would also have gathered in worship at the sea, on mountains and traditional places. There would be mass grieving, both for ancestors, the deceased, and the fact that they had not been able to congregate owing to the lockdown. Thought also was of our local people in Ndwedwe who had to return home for lockdown. The church is trying to provide extra support for suffering poverty stricken families, many of whom are unemployed and have lost relatives from HIV/AIDS. One TV program was on a poverty stricken, Zulu grandmother, tragically mixing sand with maize to make food last longer for her grandchildren.

GC: 12-4-2020. Easter day. Prayer of the Heart, kenotic release and alignment with the All, perfection, Omega point, love, Risen Christ, Sacred Heart, radiating love and healing



vibrational consciousness to all. Considerable focus was on doctoral students especially one who needed support and encouragement to keep following her integrity of intuition. Special love was felt for Siphwe Ngcobo, National Psychology Society Chairperson, who was tragically murdered. How vulnerable, yet how directed, humanity can be in consciousness, life, love, light! The language of the heart requires one to mention its social aspects as so clearly expressed in the Zulu idiom: “*umuntu umuntu ngabantu*” - I am because we are - with its additional emphasis on the individual as a community of persons, especially those with whom life-long relationships have been shared. The reality that we are this, seems so much more potent in the context of lockdown, where consciousness includes Jesus Christ, Nelson Mandela, Giordano Bruno, and so many others over the years.

GC: 13-4-2020. Sublime sensations of singing silence, surging sea, soft rain, moist soil, still succulents, wet tarmac smell. We will rest till rain stops and play with onomatopoeic poetry to tell stories of lock-down. Poetry is only possible from meditation. It arises from heart-beat coherence and accompanying joyful peace, as one consciously uses the breath, like a violin fiddle playing upon the harmonic heart strings. That is the person-world relationship at the ecological level. At another psychophysiological level, the analogy is of the heart conducting the orchestra of the bodily systems so that all eventually sing in tune as the level of meditation deepens. Then there is the global reaching out in healing through electromagnetic radiations.

Discussion

Findings indicated that COVID-19 data correlated significantly with all baseline data. As a form of repeated measures, this finding provides empirical support for the HeartMath GCI hypothesis of profound planetary interconnectedness at both personal and global levels. The research hypothesis of significant differences in GCI magnetometer data before and after COVID-19 times was supported with regard to the magnetometer data recorded from all GCI sites as well as the coherence records from both GC and IB apps. The best predictors of COVID-19 data were personal and global coherence data collected from HeartMath electronic devices, the GC and IB apps respectively, as well as Schumann Resonance power spectrum data from the HeartMath Institution based magnetometer in Boulder Creek, California, notably, the only site with uninterrupted data.

It needs mentioning that this study may inevitably appear biased in terms of HeartMath and Christianity, reflecting particular scientific and wisdom traditions, South African culture and the Easter season. Atheistic inclined persons, those of other scientific, wisdom, cultural, religious and/or spiritual orientations, should either take this into account or, if preferred, discount it, and use alternative methods and practices. The intention is global coherence, health promotion and planetary healing for all. Its message is that scientific and wisdom traditions, integral life practices and the collaboration of international organisations have great potential for global healing if intrinsic planetary interconnectedness becomes more fully recognised.



COVID-19 may well continue to be a required catalyst in interconnected planetary collaboration for health promotion and sustainable ecology.

Assagioli (1985) and de Chardin (1959) are in accord in describing a supreme synthesis of the personal will with the universal will, a tuning in, and participating in the rhythms of universal life in all their planetary and cosmic energy. Such descriptions resonate with the HeartMath coherent moment of healing awareness and consciousness. In Indian and Chinese philosophy, terms such as *sattva* and *wu-wei* respectively apply. It is the researchers' opinion that HeartMath GC and IB apps were instrumental in enhancing this experience of supreme synthesis, stemming from the first author's spontaneous lengthening of the cardiorespiratory cycle at a time when aware of COVID-19. This intuitive, heartfelt, global healing response to distinct planetary needs, including greater global consciousness, international collaboration and sustained health promotion, was accompanied by intention to increase coherence and resonance. Certainly the observed increase in coherence, indicating increased potential for global healing, served to continue this practice over 2020. Similar findings have been observed in other studies using longer heart-breath cycles (Brown & Gerbarg, 2009).

Clearly, large scale, scientific studies are needed to fully investigate correlational and causative patterns in relation to COVID-19 and Global Coherence Initiative magnetometers. From an everyday healing perspective, the HeartMath approach is that deep heart wisdom provides ultimate answers for those who listen and hear. Patients ultimately tell healers of how to solve their problems. In traumatic times, such as COVID-19, the HeartMath approach and Global Coherence Initiative may also assist with improved noosphere, deeper understanding and acting on environmental psychology, as well as psychological atmosphere, in an all embracing form of energy science and praxis. Correlation does not imply causation. However it does not exclude mutual influence. Interconnectedness implies human environment interactions, as well as moral imperatives to promote sustainable ecological health, through meditation, research and appropriate action.

Conclusion

This is a preliminary pilot case study. However, preliminary collected data indicate highly significant patterns. COVID-19 data correlated significantly with all baseline data, as well as being significantly different from all baseline data. The best predictors of COVID-19 data were personal and global coherence data as well as data from the HeartMath Institution based magnetometer in California. Further large scale, scientific studies, for example, using randomised controlled trails, are needed to explicate and explain findings in much greater depth and detail. The HeartMath Research Centre has complete access to more complete data and statistics to conduct more scientific large scale research in future with regard to investigations and interventions. Clearly a better data analysis system of standardised scores (e.g., z scores) is needed to exclude critical phases over stopping and starting times to look at pre-post



correlational/causative and other patterns in GCI investigations. Ongoing healing interventions continue in the form of CGI care room meditations and Add heart programmes.

This study used HeartMath electronic devices for measurement, monitoring and meditation purposes. These are not essential for continued health promotion, improved and sustainable ecology. Various forms of healing meditation are readily available to all. Many already practice heart conscious intentionality in seeking greater Being, healing and returning a polluted planet to a sacred state and/or promoting personal, social and global health, coherence and wisdom in humanity. In alignment with most scientific and wisdom traditions, COVID-19 may be regarded as an opportunity that reminds humanity of the vital importance of the everyday practice of power tools of the heart such as appreciation, forgiveness, non-judgement, peacefulness, care and love, as well as potential to promote coherent communication and planetary collaboration.

Acknowledgements

This work is based on research supported by the University of Zululand. Any opinion, finding and conclusion or recommendation expressed in this material is that of the author(s) and UNIZULU does not accept any liability in regard thereto. This contribution would not have happened without the HeartMath Global Coherence Initiative and in particular the dedicated work of the Research Director, Dr Rollin McCraty.



REFERENCES

- Assagioli, R. (1985). *The act of will*. Penguin.
- Bischof, M. (2007). Vernadsky's noosphere and slavophile sobornost. In L. V. Belousov, V. L. Voeikov & V. S. Martynyuk (Eds.), *Biophotonics and coherent systems in biology* (pp. 279–297). Springer.
- Brown, R. P., & Gerbarg, P. L. (2009). Yoga breathing, meditation, and longevity. *Annals of the New York Academy of Sciences*, 1172, 54–62. <https://pubmed.ncbi.nlm.nih.gov/19735239/>
- Childre, D. L., Martin, H., Rozman, D., & McCraty, R. (2016). *Heart intelligence. Connecting with the intuitive guidance of the heart*. HeartMath.
- de Chardin, P. T. (1959). *The phenomenon of man*. Collins.
- Edwards, S. D. (2019) Empirical and heuristic phenomenological case study of the HeartMath Global Coherence Initiative. *International Journal of Environmental Research and Public Health*, 16, 1245. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6480448/>
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2017). Achieving integration in mixed methods designs - Principles and practices. *Health Services Research*, 48, 2134–2156. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4097839/>
- McCraty, R., Atkinson, M., Timofejeva, I., Joffe, R., Vainoras, A., Landauskas, M., Abdullah Alabdulgader, A., & Ragulskis, M. (2018). The influence of heart coherence on synchronization between human heart rate variability and geomagnetic activity. *Journal of Complexity in Health Sciences*, 1(2), 42-48. <https://doi.org/10.21595/chs.2018.20480>
- Nelson R. (2011). Detecting mass consciousness: Effects of globally shared attention and emotion. *Journal of Cosmology*, 14, 1. <http://journalofcosmology.com/Consciousness102.html>
- World Health Organization (2020). Rolling updates on coronavirus disease (COVID-19). <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.