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South African Study into Healing Planetary Pollution



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ABSTRACT

The accelerating destructive effects of pollution threaten the existence of all inhabitants of planet earth. Health promotion interventions inevitably include a dynamic harmony of various interacting planetary components and contexts, bio-psycho-social as well as spiritual, cultural and ecological. This study was based on a broad research question as to what would best heal polluted planet earth. As with most countries, South Africa is slowly recovering from the effects of COVID-19. It seemed timeous to investigate a local sample of knowledgeable and experienced persons with regard to their views on pollution prevention and health promotion. Sixteen local KwaZulu-Natal persons responded to an online google questionnaire. There were 5 men and 11 women, with a mean age of 55 and age range from 25 to 73 years. Data analysis using NVivo12 software indicated that participants' responses generally coalesced into a coherent health promotion theme including subthemes of awareness, education, regulation, and action to prevent human destructiveness, promote healing and the holistic integrity of nature. Unique local findings as well as those similar to other studies are discussed. Further research could include formal scales with larger local and international samples in interconnected, ecological and health promotion initiatives.

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I. INTRODUCTION

Planetary pollution is impacting the health and all natural environments of Planet Earth. For example, a systematic review (178 publications) of the psychological effects of air pollution indicated significant negative psychological, social and economic effects (Lu, 2020). COVID-19, a form of pollution itself, may be viewed as a contemporary ecological blessing in disguise in the effect of the lockdown reducing environmental pollution (Muhammad, Long, & Salman, 2020). However, the likelihood of further global pandemics (Saqr & Wasson, 2020) emphasizes the need for greater global consciousness and effective action.

A further potential noetic blessing in disguise has been the observed influence of COVID-19 on global consciousness (Nelson 2020). COVID-19 and related pandemics could well serve as catalysts in interconnected planetary collaboration for health promotion and regenerated ecology. Liu and MacDonald (2016, p. 311) argue for a greater awareness of both humanity's interconnectedness and differences, as well as a willingness to take appropriate moral actions. In this context, the golden rule of love applies (Küng, 1997), with resonances in many wisdom traditions, e.g. African Ubuntu, Christ's commandments, and Buddhist interdependent origination (Thwala et. al, 2021; Loy, 1997).

The COVID-19 pandemic provides a contemporary global frame for various other issues such as global warming, overpopulation, inequity, unemployment, poverty, illness, violence, corruption, crime and injustice. Long ago, Freud explained such destructive tendencies through the idea of Thanatos, the death instinct or drive. Freudian psychoanalysis is specifically aimed at stimulating creative life drives, through making the unconscious conscious, facilitating greater

consciousness, behaviour and health promotion (Freud, 1952). The obvious, desperate need for global, planetary healing provided motivation for this study.

Research question: This study was based on an open-ended research question as to what would best heal polluted planet earth.

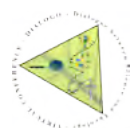
II. METHOD

Survey. A semi structured questionnaire was composed with the abovementioned rationale, with the intention to investigate people's experience of pollution and their recommendations on how best to heal our polluted planet. Prospective participants were required to provide five rank ordered responses to each of two questions (a) best ways of preventing planetary pollution (b) best ways of promoting planetary health.

Data collection. The online google questionnaire was sent to email addresses of persons the authors considered would have experience, knowledge and interest in pollution prevention and health promotion. This sample generally comprised the wider Umhlanga and Umhlatuze municipalities of KwaZulu- Natal, South Africa.

Instrument. The online questionnaire consisted of three open-ended questions, namely 1) Please rank order the five best ways of preventing planetary pollution; 2) Please rank order five best ways of promoting planetary health, and 3) Please add any further information you think relevant concerning your experience of pollution.

Participants. There were 16 participants, 5 men and 11 women, with a mean age of 55.1 (SD 16.8) and age range from 25 to 73 years. In terms of home language, 11 spoke English, 5 Afrikaans and 1 Zulu. Christianity was the main religion with 11 adherents, with 5 respondents not indicating any religion. The sample included: three retirees, two students, two lecturers, two



psychologists, and one each from the following occupations: health professional, artist, purchasing agent, technical sales manager, logistics specialist, lawyer and social science researcher respectively.

Data Analysis. Raw data were subjected to three levels of analysis. Firstly, QSR's NVivo 12's software (Richards, 2005) was used for inductive content analysis, provided a coarse sieve of the global twenty most frequently used words, with synonyms Nodes were created based on the final themes developed and for further data analysis. The second component of the analysis was the emergence of themes independently elicited by the two researchers. The third step in this study was to validate, integrate, and select relevant examples that were congruent with the themes. Finally, NVIVO 12 was also used to code and create nodes based on the final themes in the third step.

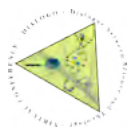
Ethical Considerations. The study complied with ethical standards in keeping with the Declaration of Helsinki, and as approved by the University of Zululand, community psychology project number S894/97. The authors are academics and clinical psychologists attached to this University.

III. RESULTS

Results. Word frequency provides valuable information on the location and comparison of individual words in a text and assists with finding possible themes (Nvivo 12 Plus).

Table 1: Global Twenty Most Frequent Words

Word	Length	Count	Weighted Percentage (%)	Similar Words
education	9	24	2.17	develop, educate, educating, education, schools, teach, teaching, training
recycling	9	20	2.13	recycle, recyclers, recycling, reuse, reusing
pollution	9	19	2.03	pollute, polluter, polluters, polluting, pollution
use	3	19	1.90	consumption, habits, practice, purposing, usage, use, uses, using
people	6	18	1.81	mass, people
government	10	19	1.47	authorities, control, controlled, controlling, governments, governments, organic, politically, regulation, regulations, rules
environment	11	12	1.28	environment, surroundings
waste	5	12	1.28	waste, wild
make	4	21	1.26	building, causing, construction, create, creating, get, getting, give, giving, make, making, take, takes, work



awareness	9	12	1.17	aware, awareness, conscious, mindful
less	4	11	1.17	less
power	5	11	0.99	electric, electricity, might, offices, power, strongly
living	6	17	0.95	alert, animal, beings, inhabit, live, lives, living, population, populations, support
sustainable	11	13	0.92	get, getting, maintenance, support, sustainable
nature	6	9	0.91	natural, naturally, nature, raw
control	7	15	0.89	accountability, accountable, contained, containers, control, controlled, controlling, ensure, ensuring, see
litter	6	8	0.85	litter, littering
plastic	7	8	0.85	plastic, plastics
products	8	10	0.83	generate, generated, generation, production, products
involved	8	12	0.77	involved, involving, need, needs, required, take, takes



Essential findings follow in the form of five overlapping themes, each with five participant's experiential descriptions followed by their respective codes in parentheses.

a) *Theme 1: Awareness, Consciousness, Mindfulness.*

This theme is implicit in all participants' responses. It was explicitly expressed by five in the following terms;

Bring awareness on health of the environment (E).

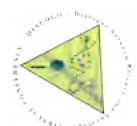
My answers include a wish list and I am aware not all is possible, but I feel strongly that conservation and healing of the planet, starts with me. I would ideally like to see positive things, like the Octopus story recently. I love the idea that someone got so close to something natural and to have their friendship develop (C).

Making people more conscious about their responsibilities (not sure how this might be accomplished though (L)

Become mindful of nature and people around you. Awareness campaigns (N).

Awareness of better alternatives to activities that create pollution, awareness of the effects of pollution on human, animal and plant life. Creating greater awareness of pollution prevention and

Graph 1: graphic representation of the 20 most commonly used words/themes



control amongst members of the public and industry (O)

b) Theme 2: Behavioral and Social Change.

This second theme, which includes various diverse factors, naturally followed the first theme, just as awareness and insight often naturally lead to action, and vice versa.

Practice clubbing when going to work (C).

Change people and their habits will follow (F).

Change from carbon-based fuel sources. Stop eating meat Change all plastic based products to earth friendly ones. Have fewer children. Sustainable farming. Sustainable energy. Wind, water, sun. Stop felling forests plant them. Have fewer children. Stop mass animal farming. Learn to live in a sustainable manner grow own veg...etc. (H).

I would like to say more education of the population, but just giving out information does not quite work. It is however also the attitudes of people that need to change. Although media attention might be important, more experienced input into the policies and laws to ensure that these are sustainable. (L).

I think living positively and mindful, removing all toxic elements from life, whether it is people, cigarettes, unhealthy lifestyles and thoughts, etc. Declutter your life and surroundings, be it too many friends, phones, things. Become passionate about something, like anti-poaching, etc., and make contributions. (N)

c) Theme 3: Education.

This theme includes informal and formal education, from basic to higher forms.

By setting an example by not trashing places with plastic. Rewarding big businesses that do not pollute the

environment. Fining businesses that pollute the environment (A)

Getting actively involved in conservation projects and promoting it (B)

Education and leadership (D)

Teach people about the health of the environment. Introduce curriculum in schools about the health of the environment (E)

Educating children from an early age to respect the earth (O)

d) Theme 4: Nature.

Great respect and love for the integrity of nature is passionately expressed.

Respect for nature and a teaching our kids a love for all and anybody. To allow nature/areas in nature to recover and not over burden it with farming and building new offices, etc. (C)

Recycling out of the materials. Implement better solutions to assist both humankind and the environment (E)

More corporate and governmental support for recycling/reusing/re-purposing. Re-connecting people with "Nature" that we have always been an integral part of. (F).

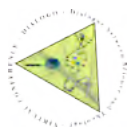
People lack respect for the planet, we are all responsible for litter and need to do our bit (J).

We live in a small community on a wet land, residents are very aware of rubbish lying around and pick up what they see. It is home to many birds and frogs and fish and has become a community project. We try and help the vagrants who occasionally inhabit the wet land and pollute the water. Only small in the greater plan, but a start! (M)

e) Theme 5: Regulation.

Recommendations related to regulation needed express great concern.

Campaigns to alert everyone to litter



and to promote a culture of discarding waste in designated places and of picking up any waste/litter seen (A).

Enough local recycling depots, education of usage. Littering and illegal dumping is a big problem. People have no respect for the environment. For example, informal recyclers are sorting and dumping plastic in the veldt. They burn the waste, causing air pollution. The residue is blown into the waterways. Informal settlements have no infrastructure for waste and sewage disposal. The litter and sewage flows into wetlands and waterways. Companies are not held accountable for dumping chemicals and oils into drains which lands into the rain water system. Ensure infrastructure/ maintenance is sufficient, ie sewage plants, power stations (G)

Recycle, reuse whatever possible. Do not litter. Reduce junk mail, go paperless where possible drink tap water. not bottled water. Use nontoxic cleaning materials.

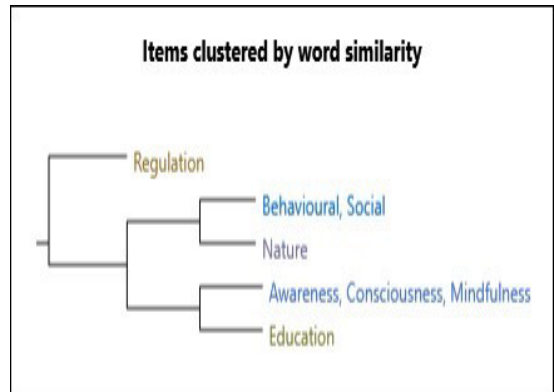
Plant trees, walk or cycle whenever possible. Grow organic vegetables, eat less meat. Dry clothes naturally. Plastic is the curse of our society. Litter and the lack of recycling is appalling (I).

Enforce strict rules (J).

Although media attention might be important, more experienced input into the policies and laws to ensure that these are sustainable. Enforceable regulations (not just policy statements or laws that are ignored). Ensuring that companies are required to take responsibility for their impact, and repair for the damage that is done (L)

Air pollution must be contained through government intervention, single use plastics must be banned (P).

Graph 2. Word similarity cluster in the shared themes



IV. DISCUSSION

The coherent, unifying theme that runs through all experiential descriptions is that of awareness, education, regulation and action to prevent human destructiveness, promote healing and the holistic integrity of nature (Jordan & Hinds, 2016). As indicated in Graph 1, the theme of awareness, consciousness and mindfulness incorporates words from other themes, and interconnects with behavioural changes, education and a need for policy and regulatory interventions. The sample were clearly skewed towards well educated, professional, social strata, so emphasis on all forms of education and training is particularly understandable.

Although this is a small non-representative sample of concerned people from respectively urban and rural municipalities of KwaZulu-Natal, awareness of pollution was high. This is not surprising as pollution is a planetary problem. In fact, at the time of writing all swimming at Umhlanga beaches has been banned for some six months now and reports are that this situation will continue for at least another six month. The initial banning was due to heavy rain causing a chemical spill containing arsenic, which was illegally stored in a factory being washed into the

local river. The situation has worsened with heavy rains, overpopulation and chronic sewage spilling. In this context Participant O's response says it all. She calls for greater awareness of better alternatives to activities that create pollution and the effects of pollution on human, animal and plant life.

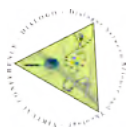
Creating greater awareness of pollution prevention and control amongst members of the public and industry implies ongoing behavioural and social change, as indicated in words such as "change", "recycling", "less waste", etc., particularly involving improved lifestyles and greater mindfulness. Participants L and N laid special emphasis on attitudes, removing toxicity, decluttering and becoming passionately involved in change. Other participants provided further detail with regard to changes needed. In addition to increased awareness campaigns and clubbing to work (C), habit change recommended included diet, carbon-based fuel, plastic products, children and learning to live in a much more sustainable manner (F, H).

Participants' insight into human destructiveness as well as great respect, love, and faith in Nature to heal itself if allowed to do so, with less human interference or at least human action in employing technology and recycling to facilitate this natural regenerative process. As respectively expressed by Participants C and F this meant "allowing nature/areas in nature to recover" and "re-connecting people with "Nature" that we have always been an integral part of." Whilst many educational programs do exist and, more recently, feature documentaries that educate people on the symbiotic relationship between humans and nature, several participants felt that more can be done at school and tertiary educational level. Documentaries were recommended that highlight "feel good stories", like the

impact "My Octopus Teacher" (Participant C) (Dutton, 2021) had on the world audience.

Global planetary health includes global mental health. According to Clayton (2020), environmental changes can weaken social networks by dispersing communities, reducing interaction and increase conflict. Extreme weather conditions, natural disasters such a floods, earthquakes and tsunamis contribute to mental health issues. The impact of healthy environments is increasingly recognized. Several studies recently reflect on the effect of planetary pollution and climate change on the psyche of humanity. Bakolis et al., (2019) found direct links between air pollution caused by traffic and dementia. Weintrobe (2020) found that a culture of uncare leads to conflict between self-serving behaviour and socially responsible values, whereas Chen and Nakagawa (2018) stated that the inevitable 'dysbiotic drift' "at planetary scale is reflected at the personal scale" (p.1). Taking a step back from single exposures, the dysbiotic drift theory reveals that the risk factors for dysbiosis are the very same ones related to the total lived experience in socioeconomic disadvantage. Jean-Pierre Dupuy (cited in Briggie, 2021) stated that psychic energies are central to the climate crisis and psychologically related to the solution. Humans feel obliged to do something, "it starts with me" (Participant N) but adds that knowing what is right will not necessarily lead to doing what is right.

Governments are globally developing protocols and goals for sustainable development, gas emissions, exponential increase in populations to shape consumption behavior (Zucconi, 2021), but recognizes many obstacles in sustainable governance. Zucconi (2021) claims that it takes the Earth eighteen months to regenerate what is used in twelve months by humans. Governments,



policies, and regulations are central to how people live, and resources are being consumed. Relationships with the self and Self, others and nature determine well-being. Graph 2 strongly illustrates the relationship between the main themes of awareness, consciousness, mindfulness, and education that leads to behavioral change that ultimately affects nature. These are concepts that the individual can control. The broader theme of regulation involves discussions and interventions at government, social and individual level.

One of the main contemporary concerns is air pollution. All beings need breathe to live and since ancient African times, various religions, philosophies, beliefs and practices, have built foundations on the vital link between breath and life. and is related to the survival, meaning, preservation and promotion of life in this world and the afterlife. In its original, essential, and literal sense, psychology deals with the spirit of breathing, energy, consciousness, soul, or life that drives a person to death and survives in another way. The term "spirit" comes from the Latin word "spiritus", which means breathing and healing, meaning the process of perfection. Spiritual healing, in particular literally, is associated with the overall changes associated with breathing that originally focused on the rhythmic heart (Edwards, et al., 2022). A classic case is of Jesus's breathing Holy Spirit on his disciples.

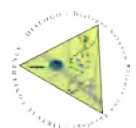
Ancient spiritual healing traditions view the soul as a form of life force that leaves the body at death and continues in some other form. Jung recognized the decisive importance of such traditions and their archetypes as precursors and modifications to the types of scientific psychology that developed in Europe, England and the United States in the early 20th century. This meant the psychology of correctly recognizing the soul as an individual

expression of spirit -"a psychology with the psyche -that is, a theory of the psyche ultimately based on the postulate of an autonomous spiritual principle" (Edwards & Edwards, 2006).

Beliefs regarding climate change is not just based on individual cognition but also involves cultural cognition. Greco, (2021) claims that systemic information comes from "trusting the testimony of others" and is therefore integral to who is to be trusted when it comes to concerns of global change. People trust individuals who share the same worldview as them. If the worldview includes rational (Bayesian conditionalization) and irrational (confirmation bias) through culture, information acquired is made on second-order judgements through cultural objects and subjects.

From an Ubuntu perspective, we become people through others and Nature is our original ancestor or Creator (Mvelinganqi). From Taoist, Buddhist and Deep Ecological Perspective this Humanness simply means the most recent stage of existence. As Loy 2007, p.6 puts it, you become in touch with yourself as mammal, as vertebrate, as a species only recently emerged from the rain forest". You love your neighbor who is yourself. If there is temporal need, from Teilhard de Chardin's Christian perspective, this process is mediated by God as Alpha, Holy Spirit and Jesus as both human ancestor as well as teleological Cosmic Christ drawing us all to an Omega point, some will call Kingdom of Heaven (Kreeft, 1989; Haught, 2021). Others will simply note that this is what it means to live a fully embodied spiritual life (Ferrer, 2008).

Delaney's (2005) developed a Spirituality Scale in which spirituality was viewed from personal, interpersonal and transpersonal context with four interrelated domains: (a) belief in a higher power or universal intelligence (b) the process of self-



exploration and discovery leading to growth, healing and transformation; (c) relationships based on a deep respect and reverence for life and (d) “eco-awareness – an integral connection to nature based on a deep respect and reverence for the environment and a belief that the earth is sacred” (Delaney, 2005, p. 152). She notes that eco-awareness itself is rooted in deep ecology and the Gaia hypothesis (Lovelock, 2000), which understands the Earth as a living organism and humans as the Earth consciously evolved to experience itself. Edwards (2012) standardized the scale and noted the high levels of spirituality in a South African sample, a finding supported by various related studies (Thwala, et al, 2021).

Broadly speaking, panentheism recognizes the divine nature of the world. Phenomenologically it implies experience of the sacred in the ordinary. Philosophically, it could be described as an integral, transpersonal, position that may include and transcend what Wilber (2000) has described as those states and stages of consciousness typical of nature, divine and formless mysticism. It recognizes and honors the interdependent origination and continual co-creation that occurs among all inhabitants of any planet or cosmos. Although ultimately ineffable, and indescribable in logic and language, poetry provides at least a glimpse of the panentheistic experience, which has been described in William Wordsworth’s famous poem Tintern Abbey, especially the following lines.

“And I have felt

A presence that disturbs me with the joy

Of elevated thoughts; a sense sublime

Of something far more deeply interfused,

*Whose dwelling is the light of setting
suns,*

And the round ocean, and the living air,

*And the blue sky, and in the mind of
man,*

A motion and a spirit, that impels

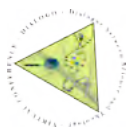
*All thinking things, all objects of all
thought,*

And rolls through all things.”

The original World Health Organization (WHO) constitutional definition of health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, is still in use. Moreover, contemporary integrative, holistic approaches emphasize an ongoing process of navigating a dynamic and harmonious balance among various health components, physical, social, emotional, mental, occupational, environmental, and spiritual. Contemporary integrative medicine resonates with Yogic, African Ubuntu as well as Eastern Yogic, Buddhist and Taoist wisdom traditions. In addition to meditation and the Ancient Greek emphasis of “know yourself” and “heal yourself”, Wilber (2000) has summed up the essence of the contemporary integral approach as exercising body, mind, and spirit, in self, culture and nature. Although the spiritual component may be neglected in economically affluent countries, it remains foundational in many Asian and African countries, not least because of the local role of traditional and faith healers in community health, development, and education (Thwala, et.al, 2021).

CONCLUSION

Global, planetary pollution is a huge problem for all planetary inhabitants. Planetary health is viewed as a coherent, dynamic integrity of various interacting



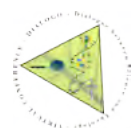
dimensions and contexts. The study highlighted participants' concern for stronger interventions and actions at all spheres of life. Although the sample is small, themes appear consistently in similar global studies. Further studies should include formal scales. As this is a local South African study, it seems appropriate to conclude with Participant C's "I am aware not all is possible, but I feel strongly that conservation and healing of the planet, starts with me. I would ideally like to see positive things, like the Octopus story recently. I love the idea that someone got so close to something natural and to have their friendship develop. As mentioned above, this "octopus story refers to an award winning documentary of a free diver who attempts to reconnect with nature during the COVID-19 lockdown, befriends an octopus in a kelp forest and journeys with the animal until it dies. Many more such relationships, as well as planetary wide initiatives are needed.

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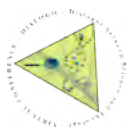
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