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Impact of altered states of consciousness induced by holotropic breathwork on self transcendence

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Abstract

This study addresses the altered states of consciousness brought about by holotropic breathwork. This technique can induce a state of deep trance, thus giving access to different layers of identity construction, particularly on the emotional, somatic and psychological level. This considerable introspective work falls within the domain of transpersonal psychology whose major contribution is the integration of transcendent and spiritual dimension with the framework of scientific psychology. The objective of the research is to estimate the impact of this psychotherapeutic method on transcendent experiences. The sample consists of 115 male and female participants who have tried this technique at least once. Data were collected through the Adult Transcendence Inventory (Levenson, 2005), in order to assess the level of decentration. Our statistically significant results indicate a predominantly positive impact of this psychotherapy, demonstrating that the holotropic method has an effect on transcendent experiences.

Keywords

Consciousness, Holotropic, Therapy, Transcendence, Transpersonal

1. Introduction

1.1 States of consciousness and holotropic breathing.

Altered states of consciousness have long been studied through different disciplinary fields spanning neuroscience, physics, philosophy, anthropology and psychology. The human sciences, including psychology, conceive these alterations of consciousness as working tools offering the opportunity to access psychic content that has become more or less available over the years. However, although these variations of states of consciousness offer access to certain memory traces, the notion of consciousness as such remains elusive. Thus, its study in recent years from an epistemological point of view has been dominated by the pregnant question of conscious experience. Indeed, this underlies the dichotomy between a process resulting from neuronal activity, and the phenomenological approach such that the concept of consciousness would be irreducible to physical properties. This dichotomy is illustrated by what Chalmers (1996) calls "the difficult problem of consciousness".

Indeed, from a cultural point of view, Baud (2017) exposes through the phenomenon of trance that these states of consciousness can be induced by certain factors such as isolation, fasting, psychotropic ingestion, etc. He then specifies that there is an underlying group of many similar criteria attesting to a common core of all these experiences corresponding to a transformation in the relationship to oneself and to the world. According to Winkelman (2010), the neurochemistry of the brain thus modulated coincides with an "integrative mode of consciousness", a notion similar to Baud's approach (2017), for whom these states of consciousness allow a reorganization and integration of certain traumatic experiences. Thus, an integrative approach seems to be fundamental for the definition of this concept. Nevertheless, these manifestations tend to dissolve the notion of the ego, which can be defined as the result of all external representations with which the individual identifies in order to determine himself as an individual being (Millière, 2017).

Hence, being able to detach oneself from external definitions would dissolve the rigid boundaries of the individual with their environment, inducing an increase in their interpersonal relations, thus offering access to the transcendent dimension of being (Loy, 1997). In this way, the notion of healing is presented according to Dupuis (2017), as being associated with a direct experience of transcendence induced by certain altered states of consciousness.

Transpersonal psychology has strongly influenced this perspective. In particular, Maslow (2014) and Grof (2009) appear as the main founders of this current based on the use of "altered states of consciousness" in psychotherapeutic practices. Indeed, "letting go" represents the property mainly sought in the expression of the unconscious, manifested by a cognitive and reflexive disengagement. As a consequence of this impact, in the early 1970s, guided by Jung's

contributions encompassing spirituality in contemporary psychology, the transpersonal dynamic took shape. This approach embraces any experiences that seem to go beyond the physical limits of the subject. During certain states of consciousness, the body envelope seems exceeded, traversed, transcended (Blin and Chavas, 2011).

Through his observations and research on LSD (N,N-diethyllysergamide) therapy, Grof (2009) further explored psychosomatic and perinatal dimensions. Thus, his work contributed to reproducing the therapeutic effects of the sessions under psychedelics by abandoning the psychoactive substances.

Hence he conceived a hyperventilation technique performed in groups accompanied by evocative music, which he named "holotropic breathwork". This innovative model is based on the expanded cartography of the psyche (Grof, 2009). It is defined by three dimensions: biographical (relating to social and cultural experience); perinatal (connected with the trauma of birth); transpersonal (introducing a spiritual perspective which implies transcendence of perceptual, habitual and concrete limits of reality). Grof takes credit for pointing out to several key stages at work during the perinatal period and for showing what repercussions those stages have on the organization of psyche. This aspect of his work relates to the moment of delivery, birth, the exit from the matrix, but also to the intra-uterine life. The strength of his theory is that he has developed what he called "perinatal matrix" which he describes in his work in great detail.

We should note, without dwelling on the details, that these four matrices may be connected with specific psychological experiences in life and with the individual functioning (affective, behavioral, somatic). When the material they contain is made conscious in the altered state of consciousness, it often produces new understanding of unconscious dynamics at work in a person, but what is also peculiar is that it can lead to a deep understanding about important notions such as birth, death, sexuality and life. Through these connections, biographical and transpersonal dimensions become interlinked with each other and enable a more complete integration of self as much on the identity and social level as on the level of existential and ontological register.

Thus, the hyperventilation caused during a holotropic breathwork session leads to different altered states of consciousness guiding the subject to cross these three dimensions. As a result, it is possible to notice a decrease in levels of alertness, a relaxation of analytical thinking and psychic defenses, as well as emotional lability, imagery that can even lead to hallucination and an increase in suggestibility (Lemaire, 1993).

Furthermore, the trance caused by hyperventilation implies a personal transformation during which the individual will sometimes redefine his value system towards a philosophical or spiritual search. His life then evolves towards a realization turned towards "being" and attention to others rather than towards "having" and competition (Miller and Nielsen, 2015). Moreover, these non-ordinary states of consciousness specific to transpersonal psychology show an evolutionary and developmental value in self-awareness (Blin and Chavas, 2011).

A few studies conducted on the subject tend to present the effects of holotropic breathwork as reducing anxiety (Puenta, 2014b), reducing negative affects (Hanratty, 2002), fear of death (Holmes and al., 1996), certain pathological (Puenta, 2014a; 2014b) and psychological (Pressman, 1993) symptoms and consequently favoring the increase of positive affects (Hanratty, 2002), self-esteem (Holmes and al., 1996), meaning and acceptance of life (Binarova, 2003). In their research, Miller and Nielsen (2015) argue that this practice could develop a more organized nature, characterized by an evolution and progression in self-awareness. Finally, people living transpersonal experiences would find it easier to recognize manifestations of self-transcendence (Walsh and Vaughan, 1984; Hamel, 1997).

The notion of self-transcendence was originally introduced by the American psychologist Maslow (2014), author of works that led to a developmental psychology according to which human needs are organized according to a particular hierarchy ranked in order of importance. The model that Maslow elaborated in the form of a pyramid is concretized by a need of going beyond the self-centered aspects of the individual, which he thus designates under the term of "transcendence". This concept can thus be linked to "the ultimate realization of the meaning of every person's life and, consequently, to true happiness" (Hamel and al., 1999, p. 30) including a spiritual dimension thus joining transpersonal psychology.

Although the theory of Maslow (1972) presents this aspect of "transcendence" as a logical follow-up and a progressive tendency towards which an individual strives, one can observe that this state of consciousness can be voluntarily induced through the state of trance. These direct experiences of Self, which are independent from the intellect and which infuse their meaning throughout perceptive experience, inevitably expand resiliency capabilities of an individual (Rossi, 2005). Therefore, the result is a non-negligible therapeutic effect affecting a broad spectrum of the personality (emotional, identity, cognitive, sensory).

2. Methodology

The study presented here aims to evaluate the specific criteria related to the phenomenon of self-transcendence brought about by holotropic breathwork. In this analysis we seek to evaluate openness to others, to ourselves and to the environment. According to the model of Dambrun and Ricard (2011), authentic and lasting happiness would be promoted by an off-centered self-functioning translated into a harmonious adjustment and an important connection of self with others. The main aspects of self-transcendence presented here can be evaluated according to different criteria such as spirituality, relationship to others and to one's environment, etc.

The concept of transcendence is important to the subject of study we are conducting since it is directly related to the original purpose of psychology. This goal aims to restore balance and inner harmony for the individual who undertakes

a dynamic of personal development. We suggest in this research that the modification of consciousness induced by holotropic breathing promotes the establishment of a spontaneous link with the unconscious leading to subsequent open-mindedness and self-decentration.

As part of this exploratory process, the criteria that participants had to meet were relatively general. Indeed, it was essentially a question of them having practiced this breathwork method at least once. The sample consists of 115 people (49 men and 66 women). The average age of participants is 46. The average number of breathing sessions per person is 16. This lack of homogeneity represents more than half of the participants (75%), who carried out between one and fifteen breathing sessions.

3. Material

To follow up on the problem mentioned above, we use the Adult Transcendental Inventory (ITSA) in this approach. (Levenson and al., 2005). Composed of 10 items such as "My peace of mind is less easily disturbed than it was", "I feel much more compassion, even towards my enemies", etc., this scale has a satisfactory reliability. ($\alpha=0.75$) As we have been able to discuss, the concept of self-transcendence was initially defined by Maslow (1972), for whom transcendence would be related to the most encompassing levels of human consciousness. Thus, we deal here not only with the way of considering oneself, but also one's close relations, human beings in general, other species and nature as an end and not as a means. Since transcendence of self is linked to the ability to decentralize oneself (Cloninger and al., 1993), this style of functioning is associated with characteristics such as altruism, respect, empathy and compassion (Neff, 2003b). Each participant had to decide on each of the items, according to a choice of 5 possible answers. These were spread over a range from "Strongly Agree" to "Strongly Disagree". The intermediate proposals were: "Disagree", "Neither agree nor disagree", "Agree". To answer the different items, the instruction was to compare the way of representing life at the precise moment when the answers were reported on the questionnaire by comparison with the moment before the breathing session.

4. Procedure

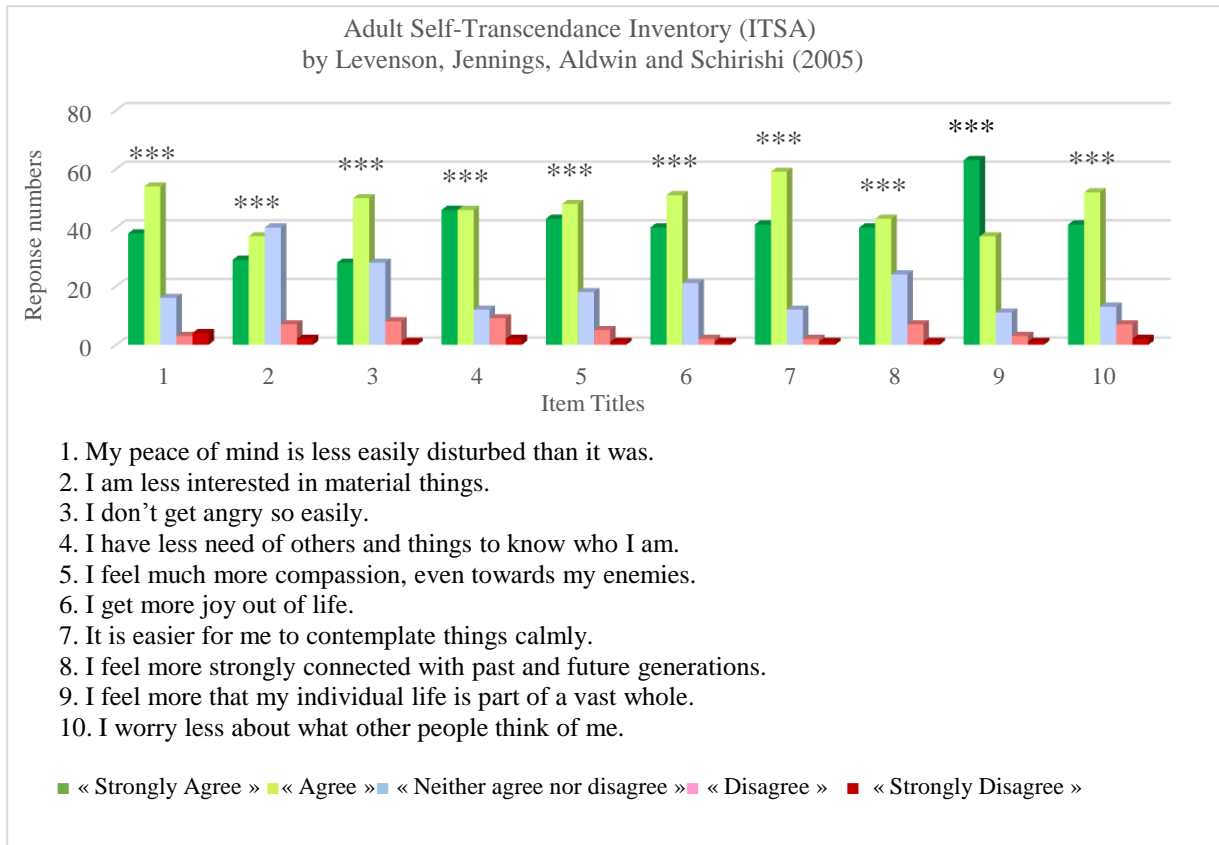
The questionnaire was transcribed on the software "Google Forms" in order to facilitate transmission via Internet. Participants were then asked to click on a link to locate the questionnaire and answer the questions. We started the survey with demographic questions to estimate gender, age, the number of breathwork sessions carried out to date, how they have experienced holotropic breathwork and whether they are being followed in therapy at the same time. The questionnaires used are essentially closed-ended questions. These were posted on different Facebook groups, on Web pages addressing therapists, participants and interested parties. We first contacted the administrators of each group in order to explain our study and to confirm, or otherwise, their agreement to put this research on-line through their page. All responded favorably to this request. The quantitative information gathered is the result of participants' self-assessment. Subsequently, the number of responses collected was sufficient to undertake statistical analysis. In order to test the hypothesis, the results were subjected to various tests using the Statistica software. We then used: the law of normality, which in this case was respected; a Student test; a Wilcoxon test with matched sample; as well as a nonparametric approach to the sign test, having the advantage of presenting the validation of hypotheses without assuming distribution model. The data presented here are based on the latest analysis discussed. This test is one-sided, thus making it possible to attribute a positive or null effect to the method proposed by Grof (2009).

Insofar as the latter would tend to infer a positive impact on the sample, the introspection technique presented here would confirm a transcendental effect in this case. The data we present represent the average of the results of each item on the transcendence scale. This calculation was done in the following way to make the responses available for statistical analysis by rating from -2 to +2, -2 being relative to "strongly disagree" and +2 to "strongly agree".

5. Results

The following diagram represents the transcendent effect perceived by participants following a holotropic breathwork session.

Tableau 1. Evaluation of the transcendent effect after a holotropic breathwork.



All items are compared with the "standard" frame of reference which represents the state of mind which participants felt before the breathing session. From an overall perspective, the majority of responses indicate a positive impact. Indeed, the items "Strongly agree" (n = 409) and "Agree" (n = 477) were primarily checked, suggesting a transcendental effect of holotropic breathing on how participants perceive themselves. In contrast, the items "Disagree" (n = 53) and "Strongly Disagree" (n = 16) appear little in the 1150 responses given.

It should be noted that all the obtained results are significant, which is possible to observe within the table 2 (the significant value of responses is also represented by three asterisks listed in the table 1)

Table 2. Statistical analysis

Variable pairs	SignTest			
	Significant tests scored at p<.05000			
	Nb. Not ex-aequo	%age v < V	Z	Value p
1. My peace of mind is less easily disturbed than it was.	99	7,07071	8,442318	0,000000
2. I am less interested in material things.	75	12	6,466323	0,000000
3. I don't get angry so easily.	87	10,34483	7,290365	0,000000
4. I have less need of others and things to know who I am.	103	10,67961	7,882634	0,000000
5. I feel much more compassion, even towards my enemies.	97	6,18557	8,528908	0,000000
6. I get more joy out of life.	94	3,19149	8,973365	0,000000
7. It is easier for me to contemplate things calmly.	103	2,91262	9,459161	0,000000
8. I feel more strongly connected with past and future generations.	91	8,79121	7,757308	0,000000
9. I feel more that my individual life is part of a vast whole.	104	3,84615	9,315516	0,000000
10. I worry less about what other people think of me.	102	8,82353	8,218225	0,000000

This indicates that the observed data is not a random process but a result of holotropic breathwork. We can therefore consider that the hypothesis, that the state of consciousness induced by this technique has an influence on the transcendental potential of individuals, is confirmed. First of all, it appears that the item "Material things are of less interest to me" has the highest neutral response rate (n =40). A total of 66 positive responses including the choices "Strongly agree" (n = 29) and "Agree" (n = 37) make this item statistically significant (p<0.001). Furthermore, we can also observe that the answer "Agree" is more present in the items "It is easier for me to contemplate things calmly" (n=59) and "My peace of mind is less easily disturbed than it was" (n=54). Finally, "I feel more that my individual life

is part of a vast whole" collects the maximum rate of responses "Strongly agree" with more than half of the reactions (n=63) making this item very meaningful ($p < 0.001$).

5.1 Interest in material things

The item "Material things are of less interest to me" shows a lack of contrast between the so-called negative and the so-called positive answers. It is important to specify that the number of answers concerning an important interest for material things remains weakly represented (n = 9) which suggests a certain disinterest for this dimension induced by holotropic breathing.

5.2 The soothing nature of this practice

Regarding the items "It is easier for me to contemplate things calmly" and "My peace of mind is less easily disturbed than it was", only eleven responses "Strongly Disagree" and "Disagree" combined were recorded on all of these items. It is to be noted, however, that what is conveyed through these items is relatively similar. In other words, the feeling of calm seems to prevail slightly for the whole sample tested following the breathing experiment. This distance from the environment may reflect less investment and emotional attachment in external personal relationships, allowing participants to become more individualized. We also observe an easing of internal tensions following this experiment, correlated with a decrease in the need for control, making it possible to envisage that this practice reduces the use of defense mechanisms.

5.3 Openness to others and the environment

"I feel increasingly that my individual life is part of a vast whole" draws together, as we have observed, a significant number of positive responses. This is consistent with the unifying dimension of transpersonal psychology. The choice "Strongly Disagree" was checked only once. We also note that the answer "Disagree" was essentially chosen by women who had practiced holotropic breathwork fewer than ten times and were not followed up in therapy. When it comes to this category, we note an increase in interest in the environment translated into a decrease in the use of defense mechanisms. Thus, our study agrees with that of Poenaru, Lüthi-Faivre, Moiroud, and Robert-Tissot (2011) according to whom, the non-stability of defense mechanisms would demonstrate the plasticity of the defensive system. The appeasement we mentioned earlier would also allow us to be more open to the context and environment in which the individual evolves. Interestingly, the feeling experienced during the trance session beyond the limits of the body seems to persist thereafter as Puente (2014b) demonstrated in a previous study.

6. Discussion

From the data collected, we can envisage that this method favors a growth of transcendent experiences of the participants. However, the subject of this study being exclusively oriented towards holotropic breathing, potential confounding variables can't be excluded. Indeed, the renewed interest in the many personal development techniques currently used in the West implies that the data collected do not depend solely on the hyperventilation technique discussed here. In addition, the majority of participants have taken personal development initiatives in recent years.

We argue, however, that statistical data leave no doubt about the link between holotropic breathwork and the state of transcendence. Thus, if it's true that the participants had the opportunity to do introspective work in the past, the introspective dimension of the holotropic trance seems to induce a considerable therapeutic effect. The three dimensions previously mentioned (biographic, perinatal and transpersonal) experienced in the state of trance, seem to influence positively the participants' developmental dynamic in physical, emotional and psychological terms. This way of living or reliving experiences on the phenomenological level, that is to say "from within" shows, through the findings of this study, the intuitive nature of the organism's propensity to regulate itself. The concept of trance associated with a reassuring therapeutic setting is to be taken seriously in consideration as something that favors the emergence of resiliency factors. Indeed, in his book, Grof took a lot of interest in primary affective deprivations. He insists on the fact that the efficiency of this work depends on the regressive state of a person. This state, if it's sufficiently deep, may allow reaching of the developmental level at which the trauma occurred and so allow the individual to modify the original negative schema.

In this regard, the author of this technique suggests that this is not an exact repetition of an experience, but is rather close to the first experience of complete physical and emotional integration. In this respect, he draws on the work of McGee (1984) and his team in affirming that traumas as they occur, are registered by the organism, but they are neither processed nor integrated in a fully conscious manner. So there is a unifying effect brought about by the mobilization of several identity layers in the state of expanded consciousness, especially when this state is accompanied with an emotional release and a deep physical relaxation.

The results presented in this study are in line with the occurrence of deep feelings of well-being and ecstatic experiences which correlate with the notion of transcendence. The latter, which is naturally the bearer of openness and creativity (Maslow, 1972), comes into play to positively support the work of identity building by allowing a person to take another look at their experience. Also, we observe, via the transcendence questionnaire that the integration of the experience leads to improved well-being among the participants.

In this research, the used questionnaire, whose reliability is satisfactory allows us to address the effect of the holotropic method from the point of view of transcendence. This reliability, correlated with the number of responses and their homogeneity, gives certain relevancy to this study.

Thus, although there are several limitations, notably the lack of experimental control, the statistical data obtained point out that the results are significant. In other words, the possibility that holotropic breathwork isn't related to the notion of transcendence is virtually zero. This equally implies that this technique has the effect of allowing the emergence of a subjective dimension, evolving and intrinsically linked to the human nature in terms of identity development and maturity.

This study remains exploratory with the main aim of allowing a general trend to be expressed. However, it would then be interesting to target a more precise population and thus provide more detailed demographic criteria, particularly with regard to the nature of therapies followed in parallel. We will end with one remaining limitation that may exist in this study, that of self-assessment questionnaires. Indeed, in our case, the answers depend entirely on the subjectivity of the participants, the setting and the environment in which they chose to respond to this research. It should be noted, however, that all our results are consistent with previous studies, thus demonstrating the positive contribution of this technique.

In this research, the used Inventory of Transcendence allows us to approach the impact of the holotropic method from the perspective of transcendence. It appears from reading the results that this notion is mainly related to the items "I feel much more compassion, even towards my enemies", "I find more joy in life" and "I feel more that my individual life is part of a vast whole". Therefore, we agree with Neff (2003a) and Maslow (1972) that the phenomenon of transcendence is linked to characteristics such as altruism, respect, empathy and compassion. We also observe a propensity to open our minds and ourselves to the outside world (Reed, 1991).

Kasser (quoted in Ricard, 2013) is known to have conducted numerous studies on materialism and happiness. Thus, he concludes his work by demonstrating that valuing external values compared to internal values would contribute to maintaining individuals' dissatisfaction, meaning a relatively constant feeling of insecurity (Kasser and Sheldon, 2000). Thus, via this trance technique and the importance of body in the introspective process which accompanies it, one should understand that the notion of well-being emerges here from a person themselves. Expressed in another way, the therapeutic effect never takes place in any projective form or movement, but on the contrary finds its source in an intimate experience *self to self*. Hence, by aligning the corporal, emotional and psychological spheres via breath, we observe that an individual is better able to adapt to their environment and thus less in the expectation. We also suggest that, given all the results, there are fewer dependencies and more feelings of anchorage and emotional stability.

Note that knowledge of one's own values, and therefore of oneself, is one of the four characteristics of wisdom identified by Curnow (1999). Detachment, integration and transcendence are the three other main components presented later in his work on the traditions of European and Asian philosophical wisdom. Integration represents the dissolution of the self-reflected in the ego defense mechanisms against threats to self-esteem. Indeed, according to Cuvelier (1997), altered states of consciousness, notably by disrupting notions of time and space, open the consciousness to other sources of information. It seems, therefore, that during these moments, the individual "ego" fades.

To follow up on the relatively homogeneous results we obtained, we will evoke the propensity to a certain harmony, which is characteristic of off-centered behavior (Leary and al., 2008). It should be noted that this principle guides all psychological activities such as motivation, attention, emotion, etc. It would seem that harmony¹ is linked to caring affects such as empathy, compassion or respect. To support these comments, several studies reveal that pro-social behaviors are guided by benevolent affects (Dovidio & Penner, 2001), beneficial for others, but also for the person who initiates them. Indeed, they are a source of increased well-being (Weinstein and Ryan, 2010), positive emotions (Fredrickson et al., 2008) and a decrease in psychological distress (Carson and al., 2005).

This extension of self towards others is manifested in particular by the ability to perceive the needs of a greater number of beings, especially those previously considered as strangers or enemies. This translates into the item "I feel much more compassion, even towards my enemies". Thus, the participants particularly aspired to give more value to a much larger set of sentient beings, going beyond the circle of relatives, the social, ethnic, religious, national group of their own, tending even to spread beyond the human species (Jollien, 2011).

This ability is introduced in the questionnaire used in this study through the item "I feel more that my individual life is part of a vast whole". If we correlate these results with the research by Dambrun and Ricard (2011) showing that benevolent affects are not very sensitive to variations in the environment, this type of affect would contribute to establish an emotional balance that is a source of stable and lasting happiness (Dambrun and Ricard, 2012). Moreover, some analyses reveal a link between emotional stability and well-being (Hills and Argyle, 2001). Thus, our overall results allow us to confirm that the responses obtained indicate a transcendent effect of holotropic breathwork on the participants.

According to these data and their analysis, the impact seems more significant than what we could have envisaged at the beginning. The openness to the world and a positive interest in the environment and human relations is strongly marked.

1 The term "harmony" is here to be understood as an adequacy between thoughts and behaviors, from which authentic happiness would result (Ricard, 2013).

Our results suggest that a process of self-decentration carries values oriented towards the outside, marked by empathy and altruism. Interestingly, this confirms the term "holotropic" that Grof (2009) attributed to this practice, from the Greek "holos", the whole, and "trepein", to go towards. In addition, a sense of calm seems to emerge from these sessions.

Thus, trance may be perceived as a psychotherapeutic strategy which represents an interesting alternative to diverse techniques of psychological schools that emphasize verbal exchange between a patient and a therapist. Holotropic breathwork also differs from empirical therapies developed by humanistic psychologists, which encourage direct emotional expression including the body, but which are conducted in ordinary state of consciousness.

7. Conclusion

The technique of hyperventilation presented in this study, by allowing access to more or less sensitive domains of the unconscious seems to develop, accentuate or promote pro-social qualities which result in a decentralization of oneself and a material detachment. This altered consciousness could lead to biographical life situations that could reach the perinatal sphere, which seems difficult to access by simple recollection. However, it can also carry messages of a transpersonal nature, linked to the collective unconscious evoked by Jung (2016).

What was sought above all is the meaning and representation that participants attribute to their holotropic experience. Indeed, intrinsically linked to a better way of being in the world and of understanding its environment, the transcendent dimension introduced by Maslow (1972) follows a particular process, inscribing itself in a dynamic of uniqueness and interconnections borne, in this case, by transpersonal psychology and induced by breathing. The significance of the results confirms the hypothesis that the impact of altered states of consciousness in holotropic breathwork is a transcendence factor which drives the participants' development. Thus, these experiences deepen the knowledge of oneself, of one's history and could give meaning to the sufferings of the patient while promoting a certain emotional stability and offer a guarantee of a balanced and harmonious life.

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Variable pairs	SignTest Significant tests scored at p<.05000			
	Nb. Not ex-aequo	%age v < V	Z	Value p
1. My peace of mind is less easily disturbed than it was.	99	7,07071	8,442318	0,000000
2. I am less interested in material things.	75	12	6,466323	0,000000
3. I don't get angry so easily.	87	10,34483	7,290365	0,000000
4. I have less need of others and things to know who I am.	103	10,67961	7,882634	0,000000
5. I feel much more compassion, even towards my enemies.	97	6,18557	8,528908	0,000000
6. I get more joy out of life.	94	3,19149	8,973365	0,000000
7. It is easier for me to contemplate things calmly.	103	2,91262	9,459161	0,000000
8. I feel more strongly connected with past and future generations.	91	8,79121	7,757308	0,000000
9. I feel more that my individual life is part of a vast whole.	104	3,84615	9,315516	0,000000
10. I worry less about what other people think of me.	102	8,82353	8,218225	0,000000

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