

## Examples of work from the last 25 years The LATEST in Biodanza Research<sup>1</sup>

[www.bionet-research.com](http://www.bionet-research.com)

Status: 10.09.2023 (is constantly updated)

### Marcus piece<sup>2</sup>

- Download the latest research, articles and e-books about Biodanza
- Get a consultation for your projects of "Biodanza Research".
- Learn how to use the BIONET scales to self-evaluate Biodanza



Bionet - Art meets science

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<sup>1</sup> Transfer of the document **Examples of works in the last 20 years The NEWEST in Biodanza Research** (as of 2021) by Christine Rose and Claudia Schnetzer. This document corresponds to the appendix of the book **To dance for health?** Edition 2018 p. 567 ff.

The English titles of collective works or journals have not been translated. Graphic representations from the original document have not been adopted.

<sup>2</sup> This document reached Gerwig Schlager via Gabriele Freyhoff, who transmitted it to the members of the Austrian association of biodanza facilitators ([www.biodanza.austria.net](http://www.biodanza.austria.net)) on 3.12.2021.

<sup>3</sup> The table of contents was prepared by Christine Rose and Claudia Schnetzer based on the outline by Marcus Stück.

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- 7.3 Third milestone: Publication 2016: A review from seven Biodanza studies with discussion of the quality of the research.
- 7.4 Fourth milestone: research on hormones and "biohaviour" after a Biodanza program with children in the Journal of Body, Movement and Dance in Psychotherapy (Routledge)
- 7.5 Fifth Milestone: Lectures on Biodanza at the 31st World Congress for Psychology in Yokohama / Japan 2016
- 7.6 Sixth milestone: 2017 publication in: Oxford Handbook of Dance and Wellbeing; with articles from researchers around the world and an article about BIODANZA with children.

7.7 Seventh milestone: application of the health cube ["Health-Cube"] as a scientific tool for Biocentric Health Management (BGM) for use in disasters & emergencies in Iran.

7.8 Eighth milestone: work and research on relative biocentric health theory (RBGT) as the scientific basis for a biocentric practice path incorporating biodanza and other biocentric fields of action.

## 1. introduction to the research network BIONET

BIONET supports BIODANZA & Science worldwide.

The BIONET research network was founded at the first BIONET conference in 2012 at the University of Education in Riga - by Prof. Dr. Marcus Stück<sup>4</sup>, Dr. Alejandra Villegas, Prof. Dr. Guna Svence, Jorge Terren, Bettina Ber, Natasa Kern, Manju Pöllmann, Laura Terzoli, Vineta Greaves, Latvian Biodanza teachers and scientists from seven countries/universities. There are three issues of the BIONET Journal reporting on the activities (see [www.bionet-research.com](http://www.bionet-research.com)).

After the founding conference in 2012, there were other BIONET conferences (2012, 2014, 2016 (University of Riga), 2018 (Islamic University of Yogyakarta)). The idea is that Biodanza teachers meet scientists and scientists dance or experience. The conferences are organized by areas and accesses ("AREAS and GATES"):

- **5 GATES** (1: Experience/Vivencia, 2: Qualitative Research, 3: Quantitative research, 4: laboratory research, 5: application) and

- and **3 AREAS**: 1: medicine/biology, 2: psychology/education, 3: other (e.g., anthropology, sociology, architecture).

This structure of the conferences reveals one of BIONET's concerns. One goal of BIONET is to integrate experimental methods (e.g. BIODANZA, Art-Expression) into an academic level and to start a scientific dialogue between

**the scientists of the South (Science of the Penguins: e.g. "La Vivencia" and Biocentric Approach of R. Toro and many Biodanza teachers worldwide, Biology of Trust, H. Maturana. and others)** and **the scientists from the North (science of polar bears: e.g. scientists working on the foundations of empirical science with critical reflection, e.g. C. Popper, qualitative, quantitative research on life sciences)**. See School of Empathy (Stück, 2013).

The idea of BIONET expanded in projects all over the world: e.g. in Latvia, Portugal, Mexico, Indonesia, Iran, Sri Lanka and in Brazil. BIONET is not only a contribution to BIODANZA research. BIONET links all "life researchers" from universities and experiential disciplines (e.g. Biodanza and others) that recognize (self)experience (vivencia) as a research method (Fundamentals of Complete Science, Stueck, 2016).

Why BIONET? "It is no longer acceptable that academic science does not accept (vivencia) the (self) experience as a research method. This eventually leads to a separation of body and mind" (Stueck, 2016 "The Complete Science", p. 2). "Scientists study a horse without riding it" (equine parable by Stueck, 2023, echoing Mariella, in his relative biocentric theory of health, Stueck, 2023).

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<sup>4</sup> See also the spelling "Marcus Stueck".

Since 2023, BIONET has been restructured once again. Together with Sebastian Müller-Haugk, Marcus Stueck founded the International Biocentric Research Academy (IBRA) within BIONET. The above mentioned activities remained (conferences and research projects). Marcus Stueck, together with members of IBFed's Methods Commission ([Emilse Pola](#), [Maria Dolorez](#), [Juan Gullivan](#), IBFed coordinates biodance teachers and schools worldwide), built a database of biodanza research and scientific theses from biodance schools worldwide. The goal was to make Biodanza research and related research fields visible. Also a new website was created (from [www.bionet.name](http://www.bionet.name) to [www.bionet-research.com](http://www.bionet-research.com)) and the BIONET journal "Biocentric Sciences" was reorganized. Four main activities of BIONET can be summarized:

- Archiving of scientific publications on Biodanza and related disciplines
- Publication of scientifically based texts in the BIONET journal "Biocentric Sciences"
- Organization of scientific projects and conferences in the International Biocentric Research Academy (IBRA).
- Trainings and extensions on science and biodanza and other relevant teaching on biocentric health.

The IBF research network Bionet is coordinated by the International Biocentric Research Academy founded by Marcus Stueck and Sebastian-Müller-Haugk. **Coordinators of BIONET can be reached at the following address:**

[marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com)

## 2. current BIONET projects of Biodanza research:

Meanwhile, there are many activities around science & BIODANZA worldwide, e.g. various BIONET projects. There is a list that you can view at <http://www.bionet-research.com>, e.g.

- Indonesia: School of Empathy: Biodanza for Children (Research Group at Islam University Yogyakarta, Indonesia)
- Oxytocin and BIODANZA (Marcus, U. Sack, Uni Leipzig).

To add your research project to the list, please write to [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com)

## 3. academic work in Leipzig and Riga

Several scientific works have been carried out by the Leipzig research group since 1999 at the University of Leipzig, at the Saxony University of Applied Sciences (DPFA), at the Riga Pedagogical University and at the International Biocentric Research Academy (IBRA):

- (1) 2 dissertations (Ph. D.), University of Leipzig with external peer review system and a Habilitation successfully defended with two external reviewers.
- (2) Scientific articles in peer-reviewed journals (see item 6 Research Publications).
- (3) since 1998, about 25 master's/bachelor's theses on various topics of Biodanza have been developed in Leipzig in different projects (exclusively empirical studies, no literary works). 3 theses in Riga.

## 4. BIONET - training using fact-based r Biodanza programs.

BIONET develops and organizes fact-based Biodanza (evidence-based Biodanza) trainings. DANCEPRO has been synonymous with dance-oriented, evidence-based programs since 2010. It starts with a prevention project of the Federal Ministry of Health (2007-2011), where we trained 20 teachers in TANZRPO Biodanza for children. We evaluated the training and the impact of the educators' work in kindergartens and schools.

**4.1 Training of instructors in fact-based Biodanza programs in schools and kindergartens, 4 modules, every year:** [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com)

[www.bionet-research.com](http://www.bionet-research.com).

**The concept of the school of empathy** was created by M. Stueck (2013). It includes the Teaching two fact-based methods with teacher training (e.g., in Germany, Indonesia, Mexico, Sri Lanka, Iran, Latvia: e.g. Leipzig/Baltic Biodanza School.

#### **Dance-oriented, evidence-based biodanza program for children**

(TANZPRO-Biodanza, M. Stueck, A. Villegas, among others) based on the work of Rolando Toro, Cecilia Luzzi = Dance of Life. Ten units with - mental - journeys through various Countries for school and kindergarten children. Scientific evaluation by M. Stueck, A. Villegas et al.

**Evidence-based program "Respectful Communication"** (M. Müller, N. Pörschmann), based on Nonviolent Communication by M. Rosenberg = the language of life. Scientific evaluation by S. Schoppe, M. Stück.

#### **4.2 Training of instructors in evidence-based Biodanza trainings in Biodanza-Aquatica, two modules annually:** [www.bionet-research.com](http://www.bionet-research.com), [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com)

Since 2007 there are scientific studies about Biodanza Aquatica and its effects on health (see youtube: Biodanza Aquatica BIONET, see also TANZPRO Biodanza Aquatica). The teacher training TANZPRO Biodanza Aquatica (synonym for Evidence Based Biodanza Aquatica program) includes fifteen sessions (manual with exercises and music).

#### **4.3 Extension for Biodanza instructors "BIODANZA and Science) How to use studies and evidence-based programs for Biocentric Health Management, Biodanza work with adults, children, the elderly, and clinical work."** [www.bionet-research.com](http://www.bionet-research.com)

Other evidence-based programs include:

- DANCEPRO Biodanza with older people
- DANCERPRO-Biodanza in the clinical context

## **5. films and interviews**

Films about the scientific work

- Project "Biodanza & Stress" 1998 Argentina with Rolando Toro, Alejandra Villegas, Marcus Stück, Raul Terren, Veronica Toro
- Biodanza Aquatica and Science
- Webinar on BIODANZA and Science Marcus Stueck, Altair Almeida.

## **6. research publications BIODANZA & SCIENCE**

Below is a list of research publications in journals worldwide through 2017. Items 1-8 are the Leipzig Biodanza Research Plan mission as discussed with Rolando:  
BIODANZA publications worldwide available for download at [www.bionet.name](http://www.bionet.name).

### **6.1 Development and updating of the theoretical model of Biodanza.**

The advantage of science is critical reflection. In the habilitation thesis of Stueck (2007), the requirement was to write a critical reflection on the theory of BIODANZA.

(1) Critical reflection on the theoretical model of BIODANZA: Stueck, M. (2007). Development and empirical evaluation of a stress management concept using biodanza and yoga for teachers, Habilitation, Faculty of Life Sciences, University of Leipzig.

(2) Stück, M. (2008). Development and scientific update of the theoretical model. Marcus Stueck & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 103 - 104.

## **6.2 Experimental life science basic research on the effect of Biodanza.**

Under this item there are studies on Laboratory Research, Psychoneuroimmunological Research and BIODANZA, Physiology and BIODANZA from 1998.

### **6.2.1 Physiology and Biodanza:**

(1) Stueck, M., Balzer, H.-U. et al. (2008). Overview, conclusions of the physiological. Studies on BIODANZA. In: Marcus Stueck & Alejandra Villegas, *Dancing for Health?..*, Schibri: pp. 105 - 178.

(2) Stück, M., Balzer, H.-U. (2008). Biodanza and physiological measurement of the model curve, in: Marcus Stueck & Alejandra Villegas, *To dance for health?*, Schibri: pp. 105 - 112.

(3) Stück, M.; Villegas, A., Perche, F.; Balzer H.-U. (2007). New ways to reduce stress in the. Teaching profession: Biodanza and yoga as a body-oriented method for reducing psycho-vegetative states of tension. *Ergomed*, 03/2007, 68-75 (German).

(4) Stueck, M., Balzer, H.-U. et al. (2008). Psychophysiological protective mechanisms in Biodanza. (Overload inhibition, hypersensitivity), in Marcus Stueck & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 112 - 119.

(5) Balzer, H.-U., Stück, M. (2013). The psychological significance of hypersensitivity. *Biopsychological basics of life: Bionet / Biopsychological basics of Life* 2/2013, 23-35.

(6) Stueck, M., Sonntag, A., Balzer, H.-U., Glöckner, N., Rigotti, Th., Schönichen C. & Hecht, K. (2005). Hypersensitivity states of electrodermal activity and stress experience in the. Teaching profession. (Psychophysiological correlates of empathy) *Psychomed*, 17 (2), 109-114.

(7) Stueck, M., Balzer, H.-U. et al. (2008). Biodanza and Physiological Measurement at/in the. Day/night before, during and after Biodanza (48-hour monitoring of skin reaction and its psychological significance), Marcus Stueck & Alejandra Villegas, *Dancing to Health?*, Schibri: pp. 105 - 112.

### **6.2.2 Hormones, immune system (psychoneuroimmunology and biodanza):**

(1) Stueck, M., Sack, U. et al. (2008). Testing endocrinological and immunological. Effects of Biodanza. In: Marcus Stueck & Alejandra Villegas, *Dance for Health?*, Schibri: S. 119 - 134.

- (2) Stueck, M., Villegas, A., Schröder, H., Sack, U., Terren R., Toro V. & Toro R. (2004). Biodanza in the mirror of science: Research on the Psychological, Physiological and immunological effects of Biodanza. *Journal Moving on. Dance Therapy Association of Australia*, 3 (2).
- (3) Stück, M.; Villegas, A.; Schröder, H.; Sack, U.; Terren R.; Toro V.; Toro R. (2004). Biodanza in the mirror of science: Research on Psychological, Physiological and immunological effects of biodanza. *Arts in Psychotherapy*, 31 (3), 204 (abstract).
- (4) Stück, M.; Villegas, A.; Bauer, K.; Terren R.; Toro V.; Sack U. (2009). Assessment of the psycho-immunological process in Biodanza. In *Signum Temporis. Pedagogy & Psychology*, Issue 2/1/2009.
- (5) Stück, M., Villegas, A. (2013). Effect of an evidence-based dance program (DANCEPRO-Biodanza) for kindergarten children aged four to six years on immunoglobulin A, testosterone and pulse rate. *Problems of education in the 21st century*, 56/2013, 128 - 143.
- (6) Stück, M.; Villegas, A.; Lahn, F.; Bauer, K.; Tofts P.; Sack, U. (2016). Biodanza for Kindergarten children (DANCEPRO - Biodanza): Reporting changes in cortisol levels and emotion recognition. *Body, Movement and Dance in Psychotherapy*, vol. 20, no. 10, 1-14 Routledge, Francis & Taylor.
- (7) Stueck, M., Villegas, A. (2017) Potential impact of evidence-based BIODANZA. Programs for children (DANCEPRO-Biodanza) in schools and kindergartens on psychology, Physiology, hormones and the immune system. In: *The Oxford Handbook of Dance and Wellbeing*, Vicky Karkou, Sue Oliver, Sophia Lycouris, New York: Oxford University Press, pp. 77-98.

### **6.2.3. study of biodanza music:**

- (1) Gloeckner; N.; Stück, M. (2008). Pilot study on the effects of biodanza music. In: Marcus Stueck & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 134 - 137.

### **6.2.4 Effects of caressing and contact:**

- (1) Stueck, M., Balzer, H.-U. & Sack, U. et.al. (2015), Laboratory project on contact: Publication in progress.

## **6.3 Quasi-experimental Studies of Weekly Biodanza Classes**

**(1998-present):** Experimental Control Group Design

### **6.3.1. 1999-2008: BIODANZA and stress: Investigación sobre los efectos psicologicos y fisiologicos de la biodanza (engl.: Research on the effects of the psychological and physiological aspects of Biodanza).**

**(with R.Toro: first empirical research project worldwide).**

- (1) Villegas, A., Stueck, M., Terren, R., Toro, V., Schröder, H., Balzer, H.-U., Hecht, K. & Mazzarella, L. (1999). Psychological and physiological effects of biodanza. In *Conexión Abierta UAI B. Aires.* (2/1999), 15-18 (Spanish).
- (2) Villegas, A., Stueck, M., Terren, R., Toro, V., Schröder, H., Balzer, H.-U., Hecht, K. &

Mazzarella, L. (2000). Studies on psychological and physiological effects of Biodanza. In Biodanza/AEIB: Annual Journal. (1/2000), 37-42 (German/English/Italian/Spanish).

(3) Villegas, A. (2008) The danced way - processes and effects of Biodanza. Strasbourg: Schibri-Publisher.

### **6.3.2. doctoral theses since 2005 (PhD<sup>5</sup> , Habilitations)**

**(1) First qualitative doctoral thesis (PhD) worldwide: (1) Pereira, B. (2005).**

**(2) First quantitative doctoral thesis (PhD) worldwide: (2) Villegas A. (2006). Process evaluation of BIODANZA.** Dissertation. Faculty of Biosciences, University of Leipzig.

Note on the book **The Danced Way**: This book represents the first dissertation on Biodanza based on empirical research data. It was written and produced at the University of Leipzig and hereby made available to a broad public. The dance-oriented intervening method of Biodanza is based on the interaction of music, movement, interpersonal encounters and experiences. In the context of this study, Biodanza sessions were held regularly over a period of ten weeks. The effects of these sessions were then verified by applying variables of psychological health and ability to cope with stress. The theoretical part of the study explains the basic elements of Biodanza. This part also shows the need to include the body and dance in psychotherapy. The results of this work show that Biodanza promotes health and personality development.

**(3) World's first quantitative habilitation:** Stueck, M. (2007). Development and empirical evaluation of a stress management concept using biodanza and yoga for teachers (habilitation thesis). Faculty of Life Sciences, University of Leipzig (German).

**(4) Overview of dissertations on BIODANZA:** Stück, M. (2012) Ed. Biopsychological Foundations of Life/BIONet: Dissertations on Biodanza. Strasbourg: Schibri-Verlag.

**DOWNLOAD:** [www.bionet.name](http://www.bionet.name)

### **6.3.3. 2004-2008: Systemic stress reduction (SYSRED) in schools using BIODANZA (BIODANZA and health promotion)**

(1) Piece, M. (2004). Stress management in schools: an empirical investigation of a stress... Management Systems. Social Work Practitioner-Researcher, 16 (2), 216-230.

(2) Stück, M. (2011). The concept of systemic stress reduction (SYSRED) in pedagogical... Environment using Biodanza. Problems of education in the 21st century, 29/2011, 119 - 134.

(3) Stück, Marcus (2010). "Promoting communication and strengthening identity. System-related Stress reduction (SYSRED) in educational fields - a summary- , in: Contributions. on Educational and Rehabilitation Psychology. Learning, Adjustment and Stress

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<sup>5</sup> Doctor of Philosophy



Disorders, ed. by Evelin Witruk, Frankfurt am M.: Peter Lang, pp. 465-480.

(4) Stück, M., Villegas, A., Terren, R., Toro, V., Mazzarella, L. & Schröder, H. (2008). Dance the stress? Biodanza as a new body-oriented, psychological intervention method for stress management for teachers. *Ergomed*, 02/2008, 34-43 (German).

(5) Stueck, M. (2008) *New Directions: Yoga and Biodanza in Stress Reduction for Teachers*, Strasbourg: Schibri Publishers (11).

(6) Stueck, M., Villegas, A. (2012). Biodanza as a health promotion intervention for teachers, In *Biopsychological Basics of Life: BIONet*, 1/2012, 33-39.

#### **6.3.4. 2008 - BIODANZA, stress, well-being: Health effects of a one-year Biodance course.**

(1) Stueck, M. Villegas, A. (2005). Effects of a biodanza course of 1 year. In: Marcus Stueck & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 212 - 213.

(2) Giannelli M. T., Giannino P., Mingarelli A. (2015). Effects on health of a one-year biodance course: an empirical study. Published in *Psicologia della Salute (Psychology of Health)*. Franco Angeli Issue 1/2015, pp. 84-107.

(3) Piece, M.; Tofts, P.S. (2016). Effect of Biodanza on stress reduction and well-being - an. Overview of study quality and results. *De Gruyter: Signum Temporis*. 8 (1), 57-66.

(4) Lopez-Rodriguez, M., Baldrich-Rodriguez, I., Ruiz-Muelle, A., Cortes-Rodriguez, A.E., Lopezosa-Estepa, T., Roman P. (2017). Effects of biodanza on stress, depression, and sleep quality in university students. *Journal of Alternative and Complementary Medicine*. July 23 (7), 558-565.

#### **6.3.5 Summary of empirical BIODANZA research worldwide (2008).**

(1) Stueck, M. & Villegas, A. (2008). *Dancing toward health. Empirical research from BIODANZA* in: M. & A. Stueck Villegas (eds.), *Biodanza in the mirror of science*. 1st vol. Strasbourg: Schibri-Verlag (published in four languages: German, Italian, Spanish, English).

#### **6.3.6. BIODANZA WITH OLDER PEOPLE (2008)**

(1) Fidora; N.; Mader-Freyhoff, G. & Stueck, M. (2007). *Biodanza with older people*. Leipzig: Penguins & Polar Bear Edition (print on demand: marcus.stueck@bionet.-research.com).

#### **6.3.7 Biodanza and Fibromyalgia**

(1) Carbonell-Baeza, A., Jonatan R. Ruiz, Virginia A. Aparicio, Clelia M. Martins-Pereira, M., Claudia Gatto-Cardia, Jose M. Martinez, Francisco B. Ortega, Manuel Delgado-Fernandez (2014). Multidisciplinary and biodanza intervention for the treatment of fibromyalgia. *Acta Reumatol, Port*, 2012, 37, 240-250.

#### **6.3.8 BIODANZA with psychotherapy patients (2000 - 2003)**

(1) Villegas, A., Stueck, M., Schröder, H. (2008). The effect of biodanza on psychotherapy patients. In: Marcus Stueck & Alejandra Villegas, *Dancing for health?*, Schibri: pp. 182 - 192.

#### **6.4 Quasi-experimental research on extensions of Biodanza (since 2006)**

(1) Stueck, M. & Villegas A. (2008): The impact of biodanza extensions. In: Marcus Stück & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 238 - 243.

#### **6.5 Intercultural Studies of Biodanza (since 2005)**

(1) Stueck, M. & Villegas A. (2008): The intercultural effects of biodanza: study between. Argentina and Germany. In: Marcus Stueck & Alejandra Villegas, *Dancing for Health?..*, Schibri: pp. 214 - 238.

(2) Stück, M.; Villegas, A.; Svence G. (2011). *BIODEJAS metode-dzīves dejas zinātniskais*. Concepts. In Integral-publishing, Latvia.

(3) Stueck, M. (2018) The health cube<sup>6</sup> : Biocentric health management (BGM) in companies and institutions. Proceedings of the 8th International Conference in Shiraz/Iran.

#### **6.6. studies on the quality of Biodanza teacher training (since 2003), especially ethics.**

(1) Stueck, M. & Villegas A. et al. (2008): Investigating media awareness and biodanza. In: Marcus Stück & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 246 - 248.

(2) Stueck, M. & Villegas A. et al. (2008): Which personalities come to BIODANZA? In: Marcus Stueck & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 248 - 250.

#### **6.7 Biodanza with children (since 2008)**

2009/2010: BIODANZA and PTSD<sup>7</sup>, e.g. after natural disasters for children

(1) Witruk, E., Reschke, K. & Stueck M. (2009). Psychological stress of emergency forces - and psychological effects of emergency aid for victims of the tsunami disaster in Sri Lanka and Indonesia in *Trauma and Violence (using BIODANZA)*. In *Trauma and violence*. Klett-Cotta 03/2009, 196-208.

(2) Stück, Marcus; Schlegl, Sandra; Villegas, Alejandra; Riha, David; Törpsch, Alexander; Düben, Madlen (2010). The classification of body-oriented interventions in the treatment of post-traumatic disorders in childhood and adolescence, in: *Contributions to Education and Rehabilitation Psychology. Learning, Adjustment and Stress Disorders*, ed. Evelin Witruk, Frankfurt am M.: Peter Lang, pp. 427-454.

(3) Senerath, S. (2009). Integrated intervention program (using TANZPRO-Biodanza).

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<sup>6</sup> See also "Health Cube

<sup>7</sup> Post-traumatic stress disorder

after natural disasters to treat PTSD<sup>8</sup> in children. Dissertation. Faculty of Biosciences at the University of Leipzig.

2010/2013: BIODANZA and Empathy School (School of Empathy):

(4) Stueck, M., Villegas, A., Toro, R. (2010). Nonverbal aspects of respectful communication. - North meets south or how the polar bears came to meet the penguins. (School of empathy for educators) in: M. Stueck (ed.), Contributions to health education. Vol. 8 Strasbourg: Schibri Publisher.

(5) Stück, M., Schoppe, S., Lahn, F. & Toro, R. (2013). What is the use of being in someone's into it without acting? In ErgoMed / Praktische Arbeitsmedizin, 6/2013 (37) 38-46.

(6) Stück, M. (2013). School of empathy: Introduction and first results. In: Contributions to the Educational and Rehabilitation Psychology. Historical and intercultural aspects of Psychology, ed. by Evelin Witruk, Frankfurt am M.: Peter Lang.

(7) Stück, M. (2013). The foundations of a theory of self-organizing Empathic networks: Historical origins. In: Contributions to Pedagogical and Rehabilitation Psychology. Historical and Cross-Cultural Aspects of Psychology, ed. by Evelin Witruk, Frankfurt am M.: Peter Lang.

2010: BIODANZA and the Master Plan "Healthy Education".

(8) Stück, M. (2010). Children, researchers, educators - Early education put to the test! ( Masterplan "Healthy Education" using BIODANZA). In M. Stueck (Ed.), Contributions to Educational health. Strasbourg: Schibri Publishers.

(9) Stück, M. (2015). Biodanza - inclusion only works with eyes closed! Practice Manual Children under 3, issue 14.

2010: Water-based self-regulation with Biodanza for children

(10) Piece, Marcus (2010). Water-based self-regulation with Biodanza for children. preventive intervention to improve attachment behavior, in: Contributions to Education. and Rehabilitation Psychology. Learning, Adjustment and Stress Disorders, ed. Evelin Witruk, Frankfurt am M.: Peter Lang, pp. 359-366.

2013: The impact of an evidence-based biodanza program (DANCEPRO-BIODANZA) for Kindergarten children (4-6) on psychology, physiology, the immune system and the endocrine system.

(11) Stueck, M., Villegas, A. (2013). Effects of an evidencebased dance program (TANZPRO-Biodanza) for kindergarten children aged four to six on immunoglobuline a, testosterone and heart rate. [Effects of an evidencebased dance program (TANZPRO-Biodanza) for kindergarten children aged four to six on immunoglobulin A, testosterone and heart rate]. Problems of education in the 21st century, 56/2013, 128 - 143.

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<sup>8</sup> post-traumatic stress disorder

(12) Stück, M.; Villegas, A.; Lahn, F.; Bauer, K.; Tofts P.; Sack, U. (2016). Biodanza for Kindergarten children (DANCEPROBiodanza): Reporting on changes of cortisol levels and emotion recognition]. *Body, Movement and Dance in Psychotherapy*, Vol. 20, No. 10, 1-14, Routledge, Francis & Taylor.

(13) Stueck, M., Villegas, A. (2017) Potential Effects of Evidencebased BIODANZA Programs for children (TANZPRO-Biodanza) in Schools and Kindergartens on Psychology, Physiology, Hormones and the Immune System. [Possible effects of evidence-based BIODANZA programs for children (TANZPRO-Biodanza) in schools and kindergartens on psychology, physiology, hormones and the immune system]. In: *The Oxford Handbook of Dance and Well-Being*, Vicky Karkou, Sue Oliver, Sophia Lycouris, New York: Oxford University Press, S. 77-98.

(14) Greaves, V., Stueck, M., Svence G. (2015) CHANGES IN EMOTIONAL AND SOCIAL COMPETENCIES OF 1st CLASS CHILDREN IN THE DANCE PRO-BIODANZA INTERVENTION GROUP. SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference, Volume 1 (2016).

## **6.8 Publications in scientific journals, methodology of BIODANZA studies.**

This is an important point of the master plan. Focus on highly recognized publications.

(1) Piece, M. (2008). Methodology and statistical procedures for BIODANZA studies. In: Marcus Stück & Alejandra Villegas, *Dancing for Health?*, Schibri: pp. 256-261.

(2) Stück, M.; Tofts, P.S. (2016). Biodanza Effects on Stress Reduction and Well-Being - A Review of Study Quality and Outcome. [Effect of Biodanza on Stress Reduction and Well-Being - A. Review of study quality and outcomes]. *De Gruyter: Signum Temporis*. 8 (1), 57-66.

(3) Stueck, M., Seeling, F., Rigotti, Th., & Lander J.-H. (2006). Method of analysis of the Semantic differential. In E. Witruk, J.-H. Lander (Eds.), *Cognitive Psychology. Analyses of memory functions*. Herzogenrath: Shaker Verlag.

### **6.8.1. new publications written especially for Biodanza teachers**

Stueck, M. & Villegas, A. (2018) Introduction in BIODANZA & SCIENCE for Biodanzateachers: Introduction in the scientific Basics of BIODANZA (Part 1 and 2) Leipzig: Penguin Polar Bear Edition (print on demand) [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com) [Introduction to BIODANZA & SCIENCE for Biodance Teachers: Introduction to the Scientific Principles of BIODANZA (Part 1 and 2)].

Stueck, M. (2018) "The Final discussion. Interviews with Rolando Toro about the Science within Biodanza, Leipzig: Penguin Polar Bear Edition: [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com) [The Final Interview. Interviews with Rolando Toro about the science within Biodanza]

Stueck, M. (2018). *The Secret Dances of Abundant Love*. School of Life. Leipzig: Penguin Polar Bear Edition (print on demand): [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com) [The secret dances of love. School of life].

Stueck, M. (2018). The Complete Science. Leipzig: Penguin Polar Bear Edition (print on demand) [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com)  
[The Complete Science]

Stueck, M. (2018). The health cube: basics of biocentric health management. Leipzig: Penguin Polar Bear Edition (print on demand): [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com)  
[The health cube: foundations of biocentric health management].

## 6.8.2 Current works

### The main theme 2020-2023:

Studies on the consequences of COVID-19 on human development and sustainability].

- Biocentric approach to stress and coping mechanisms according to COVID (e.g. body-mind interventions, yoga, meditation, biodanza, music, art therapy, biocentric health management in work, care, social and educational settings);
- Biocentric aftercare strategies for disaster management;
- Perspectives on changing attitudes toward environmental issues after COVID;
- Biocentric development of sustainable ethical values through COVID-19;
  - Personal biocentric maturation according to COVID.

The studies were summarized in a publication in Frontiers of Psychology:

<https://www.frontiersin.org/research-topics/15886/biocentric-development-studies-on-the-consequences-of-covid-19-towards-human-growth-and-sustainability>

## Biocentric scientific theory on the pandemic

Stueck, M. (2021) The Pandemic Management Theory. COVID-19 and biocentric development. Health Psychology Report. <https://doi.org/10.5114/hpr.2021.103123>

## Relative Biocentric Health Theory (RBGT).

This theory has been developed since 2020. It describes scientifically what distinguishes the biocentric approach from the anthropocentric approach to seeing the world and acting in the world, but also what unites them. It is a scientific theory, but also a practical path. In some cases completely new terms and concepts are designed and scientifically justified. Information about publications about it at [www.bionet-research.com](http://www.bionet-research.com) or [marcus.stueck@bionet-research.com](mailto:marcus.stueck@bionet-research.com).

## 7. milestones of the last years

### 7.1 First milestone: Evidence-based BIODANZA in institutions to increase well-being and reduce stress in children.

Marcus Stück & Alejandra Villegas

The body is the largest thinking organ for children. This means that a child feels this world,

because the younger a child is, the less developed the cerebral cortex is. Therefore, the basis for children's well-being is primarily associated with the opportunity to play (Krenz, 2006), to express instincts as well as needs and feelings, and to feel connected with others (Stueck, 2010). This well-being in children primarily needs the support and stimulation of adults and teachers. (1) If adults are not present, then children cannot fully experience the environment with their bodies and they cannot develop self-awareness, describes biologist Humberto Maturana. (2) Second, a child needs a relaxed, healthy environment and (3) third, empathic connections with teachers and adults. Stueck defines these three steps Presence, Relaxation and Empathy in the Master Plan Healthy Education as the basis of human relationships. Empathy in this context is the basis of well-being as a biological, affective, cognitive and behavioral connection between child and teacher or parent. It requires trust, autonomy, interest in others, giving up ambitions of control. Stück and Villegas developed evidence-based biodanza programs for teachers to increase empathy and well-being with self and others, and especially with nature.

In addition, the systemic, stress-reducing intervention approach has been tested in German schools (Stück, 2007).

This theory shows that increasing children's well-being means first of all working with adults using a systemic approach and, above all, expressing one's identity in a non-verbal way. One of the methods to achieve this goal is BIODANZA.

Biodanza for children was adapted by Cecilia Luzzi in Chile from the Rolando Toro system in the 1980s. Dance experiences for children are based on dances along the lines of vitality, Affectivity, Creativity, and Transcendence. In 2010 Marcus Stück and Alejandra Villegas led (Stueck, Villegas, 2013) in a project of the Ministry of Health and Education in Germany conducted the world's first research on Biodanza with children. They have prepared this method for work in institutions by developing an evidence-based Biodanza program (TANZPRO-Biodanza® für Kinder / Der Tanz des Lebens / Weg vom Kopf zum Körper) as a nonverbal part of the school of empathy (SoE; Stueck, 2013). The verbal part of the school of empathy is the evidence-based program "Respectful Communication®" (Language of the Life / Way from Body to Head) based on the Nonviolent Communication of Marshall Rosenberg (Müller, Pörschmann, 2010; Schoppe, Stück, 2012). The verbal and nonverbal part of empathy development is well integrated using Biodanza and with this concept, Biodanza has been brought to many educational settings in Indonesia, Latvia and Germany. This evidence-based program TANZPRO-Biodanza® for children exists in a kindergarten version (ten sessions for children aged 4-6) and a school version (ten sessions for children aged 7-12) and has been studied at the University of Leipzig. Each session is accompanied by music and is supported by activating exercises with faster music to promote not only vitality but also creativity in children.

Then calmer exercises are used together with slower music to promote relaxation and encounters with appropriate (partner) exercises. These can improve the perception and acceptance of emotions, as well as emotional regulation and empathy with others. In this way, results were obtained in the studies as well as a number of biochemical, physiological and immunological parameters were investigated.

Especially the reduced testosterone level in the saliva of children shows positive effects of the method on the immune system towards the development of more sensitivity (Stueck, Villegas, 2012). Also, the reduction of cortisol and the specific effects of DANCEPRO-Biodanza on heart rate and blood pressure show the improvement of physical self-regulation processes. The results confirmed that cognitive performance in children (concentration and emotion recognition) can be developed through dancing, and the effects are greater on average when participants have lower levels of cortisol in their saliva after DANCEPRO-Biodanza sessions than when cortisol levels are higher. The

measured cortisol reduction suggests that TANZPRO-Biodanza® (with its stress-reducing, prosocial nature) has the capacity to promote the development of emotion recognition skills and thus increase social skills in young children (Stueck, Villegas, 2013). This research using evidence-based biodanza training TANZPRO-Biodanza will be repeated in Latvia, mainly with the aim of reducing chronic stress and hypersensitivity in young children as a basis of non-violent behavior in schools and kindergartens (Balzer, Stueck, 2013). Work with children should be embedded in a Healthy Education Master Plan or similar meta-plans where teachers and the circumstances are included (Stueck, 2009, 2013), this using seven steps: presence, relaxation, empathy, supervision, pedagogical skills, and framework. Extensive research with teachers using Biodanza has also been applied (Stueck, 2007, Stueck, Villegas, 2008).

**Conclusion:** Well-being in children comes primarily from support and stimulation from adults and teachers and the opportunity to move freely and express feelings and needs autonomously. The article provides an overview of some studies on hormonal and Immunological effects of evidence-based programs with Biodanza.

**Literature:** see bibliography  
[Photo]

All scientific publications are dedicated to the Brazilian Biodanza teacher and our friend Fernanda Perche, who died suddenly and unexpectedly during the first investigation in B. Aires in 1998, died suddenly and unexpectedly. An immeasurable loss and shock for all of us. She lives on in our hearts. Without her, this research would not have come into being.

## **7.2 Second milestone: Conclusion on studies on BIODANZA for adults - the biological basis of well-being.**

Marcus Stück & Alejandra Villegas

Well-being is first of all a biological process, embedded in social contexts and with psychological effects. For example, a certain synchrony between heartbeat and respiration is necessary for well-being (distribution 4:1). Other autonomic responses (skin resistance, skin potential, skin temperature), biochemical parameters (cortisol, testosterone, immunoglobulin A), and well-being also show these synchrony effects (Balzer, 2008). Stück and Balzer studied the parameter hypersensitivity of the skin and its effect on exhaustion and burnout.

Biological dysfunctions and their influence on well-being can be regulated by yoga, meditation and biodanza, as various studies by Stueck and Villegas have shown. In their studies they found that in ten sessions of yoga and biodanza self-regulating balancing processes are stimulated. This means that immunoglobulin A increases significantly after each session. Compared to yoga (relaxation method), when dancing and expressing emotions in Biodanza, the prevalence of immunoglobulin shifts to a higher level from the seventh session. Thus, a self-organization has taken place in the IgA regulatory system.

Self-organization is a process of instability and new stability and can be measured on different parameters (e.g. skin reaction) and on analysis models (biorhythmometric time series analysis, Hecht and Balzer, 2000). Stueck, Villegas, and Balzer were able to show that the instability of the autonomic-emotional system was significantly higher after a biodanza session, but at the same time participants felt significantly more alert, had a better mood, and higher vitality. Also, physiological

arousal was significantly higher the next day after a Biodanza session, accompanied by a higher sense of well-being and fewer protective mechanisms (e.g., overload inhibition) to cope with excitement. It can be concluded that the biological basis of well-being has to do with stability/instability in autonomic regulation, with expression of emotion, with self-regulation. An effective method for this is dance or Biodanza.

Biodanza exercises directly stimulate mainly the sympathetic nervous system and the limbic-hypothalamic system in a natural, positive and healthy way (Stueck, Villegas, 2008). The method of Biodanza was developed in the 60s by Rolando Toro. Rolando Toro's goal was for people to learn how to live well and happily together. Because when people are happy, they are also healthy, as various studies have shown (see positive psychology, Seligman, 2002). To do this, he created Biodanza, a system of dances in five lines of experience: Vitality, Affectivity, Sexuality, Transcendence and Creativity. The theory of Biodanza is based on the concept of human integration at the personal, interpersonal and transcendental levels. In the 1990s, Marcus Stück, Alejandra Villegas and colleagues began to study BIODANZA scientifically at the University of Leipzig, and they published their findings on the effects of BIODANZA on well-being, as shown by the examples at the beginning of this presentation. In different studies they have shown that Biodanza affects the physiological, psychological and immunological systems (Villegas, Stueck and others 1999, 2000, Villegas, 2006, Stueck, Villegas, 2004, 2007, 2008, 2009).

Through these changes, Biodanza is a method to improve psychological parameters, for example, the expression of identity, meaning the unity between thought, feeling and action. Thus induced harmony, unity, fluidity, eroticism, pleasure and fullness, can be seen in the change of different psychological variables (higher optimism, relaxation, self-confidence, efficacy, capacity to love and empathy, Villegas 2006/2008, Stueck, 2007/2008, 2012). This increased potential offsets excessive negative effects on the system due to stress, anxiety, depression, and the sublimation of instinct and self-expression to a "more culturally acceptable behavior". Studies have been conducted in particular in the study group in Leipzig with adults (teachers, psychotherapy patients, employees), teachers and children (see literature).

An overview of dissertation work worldwide is given in the Bionet Journal 2012 (cf. [www.bionet-research.com](http://www.bionet-research.com)).

#### **Literature:**

Seligman, M.E.P. (2002). *Authentic happiness*. New York: Free Press.

Svence, G.; Stück, M. (2011). *Rīgas Pedagoģijas un izglītības vadības akadēmija Pozitīvās emocijas un izzīņa pieaugušo mācīšanās procesa organizācijai. Pozitīvās emocijas un izzīņa pieaugušo mācīšanās procesa organizācijai*. Rīga. RAKA 167.-176. ISBN 978-9984-46-212-7

#### **Authors' research on Biodanza**

See bibliography

[Photo]

**"Exploring Biodanza is like exploring a treasure deep in the ocean  
Or to see an undefined universe full of incredible and beautiful wonders."**

Marcus piece

### **7.3 Third milestone: Publication 2016: An overview of seven Biodanza studies with discussion of study quality.**



**DE GRUYTER OPEN Signum Temporis 2016; 8(1):57-66.**

Research Article

Marcus Stück, Paul. S. Tofts

**Effect of Biodanza on stress reduction and well-being - an overview of the quality of the study and the results.**

**[Biodanza Effects on Stress Reduction and Well-Being-A Review of Study Quality and Outcome.]**

**DOI 10. 1515/sigtem-2016-0018**

Abstract: Biodanza is a new approach to health and well-being. It aims to work with dance and group experiences to strengthen intra- and inter-individual resources, reduce stress, and increase well-being. As of 2016, 13 studies and a systematic review of Biodanza studies have been published. The BIONET research network was created to connect researchers and build consensus around high-quality standards. In this review, the authors summarized seven biodanza studies on stress reduction and well-being. The authors describe and establish criteria for evaluating the quality of the research, which was inspired by international standards in clinical and social science intervention research. In several studies, Biodanza has effects on impatience, ability to recover, sense of activation, physiological sympathetic activity (e.g., heart rate, skin response), elevated mood, sense of well-being, immunological effect on IgA, and increased expression of emotion. One study also showed the effect on stress reduction. Also, there was a big difference between those who choose Biodanza (they have a significantly lower stress reduction status) and the other groups. In this study the dropout rate was high (42%); in the other studies it was less than 10%.

**Keywords:** biodanza, stress reduction, well-being, health, dance, yoga, review, methodology, body work, study design.

**7.4 Fourth milestone: research on hormones and biobehavior after a Biodanza program with children in the Journal of Body, Movement and Dance in Psychotherapy (Routledge)**

**Biodanza for kindergarten children (DANCEPRO-Biodanza): Reporting changes in cortisol levels and emotion recognition.**

**Marcus Stück, Alejandra Villegas, Franziska Lahn, Katrin Bauer, Paul Tofts & Ulrich Sack**

Pages 75-89 | received February 19, 2014, accepted November 23, 2015, published online March 08, 2016.

The evidence-based program "TANZPRO-Biodanza for Children" was established in 2009 developed by Marcus Stueck and Alejandra Villegas, based on the Biodanza concept of Rolando Toro and Cecilia Luzzi (children's biodanza). The program of ten sessions includes elements of dance, movement, encounter and non-verbal communication. There are two versions of the program, for younger children aged 4-6 years and older

Children aged 7-12 years. DANCEPRO-Biodanza is the non-verbal part of a concept of the School of Empathy, based on an integrative empathy model by Stueck (2013b, verbal Part: "Respectful, non-violent communication"). In the current study (ten children, age 4-6), significant reductions in cortisol and improvements in emotion recognition and concentration (in children with high or moderate precortisol levels) were found. This indicates the potential of DANCEPRO-Biodanza to promote stress reduction and increase social skills. Despite the methodological limitations, the current study is a valid pilot and provides a first insight into the effects of dance on neurohormone responses and modulation in 4-6-year-old children.

Keywords: Evidence-based Biodanza for children, TANZPRO-Biodanza, School of the Empathy, Biodanza and modulation of neurohormones, Biodanza and emotion recognition skills, healthy education in kindergarten/preschool.

## **7.5 Fifth Milestone: Lectures on Biodanza at the 31st World Congress for Psychology in Yokohama / Japan [2016]**

**No.4005274: The effects of warm-water-group-intervention (TANZPRO - BIODANZA Aquatica) on psychobiological harmony and parental attachment patterns.**

**[No.4005274: The effects of a warm water group intervention (TANZPRO - BIODANZA Aquatica) on psychobiological harmony and parental attachment patterns].**

Marcus Stueck<sup>1</sup> , Alejandra Villegas<sup>1</sup> , Dian S. Utami<sup>2</sup> , Katrin Bauer<sup>2</sup> , Ulrich Sack<sup>2</sup>  
 1 DPFA University of Applied Sciences Saxony, 2 University of Leipzig

TANZPRO-Biodanza Aquatica is an evidence-based program according to the BIODANZA model by Chilean psychologist and anthropologist Rolando Toro (2008) and BIODANZA Aquatica the work of Eliane Matuk (2006). It contains exercises in body-warm water (36.7 degrees Celsius) such as. Flow in pairs and in groups and trance of being uplifted. An affectively sensitive group creates a maternal uterus. The warm water state changes motor, cognitive and emotional activity (skin potential, skin resistance, "EMG"). It showed an increase in immune parameters (IgA), the decrease in cortisol and testosterone. Changes in the internal concept of time, perception of father and mother, own relationship attachment patterns, an increase in sensitivity, a change in physiological parameters and mechanisms of action of TANZPRO-Biodanza Aquatica were measured. The results show that this warm water group intervention (TANZRPO - BIODANZA Aquatica) could enrich the body orientation in psychotherapy to work on early attachment problems and profoundly improve the harmony of body and mind. Its use in orphanages, schools and kindergartens was recommended.

**No.3100948. Empirical study of psychological factors and intervention to increase psychological harmony after the earthquake in Nepal**

**[No.3100948. Empirical study of psychological factors and interventions to enhance psychological harmony after the Nepal earthquake].**

Marcus Stueck<sup>1</sup> , Dian S. Utami<sup>2</sup> , Maya Boehm<sup>3</sup> , Hans-Ullrich Balzer<sup>4</sup>

1 DPFA University of Applied Sciences Saxony, 2 University of Leipzig, 3 GIZ Society for International Cooperation Kathmandu, 4 Humboldt University Berlin

The 2015 earthquake disaster in Nepal caused psychological problems among those affected, which the

concerned psychological harmony. Therefore, we conducted multiplication training (i.e. painting, emotional expression and social interaction with Biodanza, relaxation with yoga) for 50 aid workers in the affected areas of Nepal. The questions of the research are how much the earthquake affects psychological harmony and what factors contribute to its increase.

In this study, post-traumatic stress, sense of coherence, hypersensitivity, resilience, and psychophysiological data were measured (e.g., heart rate, skin hypersensitivity). Results showed high-grade trends toward posttraumatic stress, hypersensitivity, and skin hypersensitivity (90% of subjects lost their homes). There were significant post-intervention differences in psychological factors according to gender, type of hazard, age, personal involvement, and involvement of relatives. In terms of burglary, avoidance, overexcitement, hypersensitivity, sense of coherence, a value of 52.2% of the resilience factor was predicted. We found a reduction in arousal in 95% of participants measured after a relaxation method using heart rate.

### **7.6. Sixth Milestone: Publication 2017 in Oxford Handbook of Dance and Wellbeing: With articles from researchers from the whole world and one article about BIODANZA with children:**

#### **[Sixth milestone: 2017 publication in the Oxford Handbook of Dance and Well-Being: with articles by researchers from around the world and an article about BIODANZA with children:]**

Stueck M., Villegas A. (2017) Evidence-based BIODANZA programs for children. (DANCEPRO-Biodanza) in schools and kindergartens: some implications for psychology, Physiology, hormones and the immune system. In: *The Oxford Handbook of Dance and Wellbeing*, Vicky Karkou, Sue Oliver, Sophia Lycouris, New York: Oxford University Press, S. 77-98.

The following is the image of the book cover **THE OXFORD HANDBOOK OF DANCE AND WELLBEING** by **Vicky Karkou, Sue Oliver, Sophia Lycouris**

Seven pages of the table of contents of this book follow, which are not reproduced here. Included therein under 4. the reference to the essay by Stueck M., Villegas A. (2017):

Evidence - Based BIODANZA Programs for Children (TANZPRO-Biodanza) in Schools and Kindergartens: Some Effects on Psychology, Physiology, Hormones and the Immune System.

For copyright reasons, we can only provide a brief glimpse of the article. Please see the list of articles on the BIONET site to download full articles about the research.

Excerpt from:

#### **Chapter 4**

## EVIDENCED-BASED BIODANZA PROGRAMS FOR CHILDREN(DANCEPRO-BIODANZA) IN SCHOOLS AND KINDERGARTEN

Some Effects on Psychology, Physiology, Hormones and the Immune System

.....  
MARCUS STUECK AND ALEJANDRA VILLEGAS

..... since 2010 Development of evidence-based Biodanza programs for institutions (in a project of the German Federal Ministry of Health).

<b>Table 4.2. an overview of sessions and related topics based on TANZPRO -Biodanza.</b>		
Order	Topic	Idea (life-oriented value)
1	Trip to Spain	Love and care
2	Trip to Egypt	Joy
3	Trip to Tanzania	Leisure and courage
4	Trip to Chile	Wishes and risk
5	Trip to Brazil	Feeling of security and embrace
6	Trip to México	Diversity and friendship
7	Trip to Ireland	Acceptance and integration
8	Trip to Russia	Humility and fairness
9	Trip to China	Creativity and solidarity
10	Trip to Germany	Respectful communication

Some results:

### **Change in cortisol levels in kindergarten children through DANCEPRO-Biodanza.**

This study showed the cortisol change of kindergarten children after ten sessions of TANZPRO-Biodanza. Children who initially had high cortisol levels appeared to "normalize," while those with low cortisol levels appeared to be already "normalized" (Stueck et al. 2015). In addition, findings from this study suggested that there is an autoregulatory effect of DANCEPRO Biodanza sessions in kindergarten-aged children.

### **Effects on emotional recognition and their relationship to cortisol reduction.**

The same study (ten children aged 4-5 years; ten sessions of DANCEPRO-Biodanza) confirmed that cognitive performance in children (e.g., emotion recognition measured by the Vienna Test System Emotion Recognition Test, where children had to recognize different emotions on photographs) could be developed through dancing.

Effects were greater, on average, when participants had higher initial salivary cortisol levels (prior to the TANZPRO biodanza sessions) than those with lower cortisol levels (Stueck et al. 2015).

### **Heart rate and the improvement of physiological autoregulation.**

In the same study, examining each child's heart rate before and after the TANZPRO Biodanza course, there was a significant decrease in the average value, which was statistically significant ( $p=0.04^*$ ,  $d^*=0.77$ ,  $1-\beta=0.68$ ). The low and high level groups showed a significant change in heart rate (average over ten sessions) between the pre- and post-session towards the value of the medium heart rate group (see Table 4.3).

## 7. Seventh milestone: application of the health cube ["Health-Cube"] as a scientific tool for Biocentric Health Management (BGM) for use in disasters and emergencies in Iran.

Prof. Dr. M. Stueck, International Research Academy (IBRA)

The "Health Cube" is a scientific reflection and intervention tool for children and adults. It was developed by Marcus Stueck at the University of Leipzig in 1999-2011 for Biocentric Health Management (BGM) in institutions and companies (pieces, 2007, 2011, 2018). It has been modified for other target groups (e.g., disaster management and hospital health management) to identify psychological risk patterns at work. Some aspects were investigated in the laboratory at the University of Applied Sciences Saxony (DPFA) in Leipzig.

In Iran, the use of the "health cube" can be used for people in extreme situations, e.g. for emergency drivers or disaster responders, are used. Most solutions and preparations in this area are conceptual and rational (so-called polar bear - solutions, e.g. cognitive preparation and training, language-based interventions, Stueck, 2012).

With the "health cube" we secure rational solution paths and achievement will in balance to affective, relationship-oriented solution paths and achievement will (so-called penguin - solutions, e.g. biology of trust and empathy for example with the increase of oxytocin, Stueck, 2010). The last evaluation regarding the application with the health cube was conducted by Knoche and Wittwer (2018) in a kindergarten in Leipzig.

The "health cube" has seven areas:

**(1) Biocentric approach and affective action:** This step is the most important. It should be applied in any intervention to prepare people for emergencies and disasters or to treat people after emergencies and disaster situations. Biocentric attitudes and affective actions are the beginning, the process and the end of all activities [...] and connect people with nature, others and themselves.

Biocentric principles were developed by Rolando Toro (1995). Biocentric means the Perception, the development and acting out of affective attitudes related to the life process and belonging to the foundations of being human (love, self-esteem, presence, honesty, solidarity, cohesion, importance of community and friendship, relaxation, empathy and trust, connection to myself, others and nature, see also Maturana, 2003, Toro, 2008, Stück, 2010).

We have developed or use four general, basic interventions:

(a) school of presence, (b) school of empathy, (c) school of trust, (c) school of life (Toro, 2008, Stueck, 2011, Stueck, Villegas, 2008).

The importance of confidence for mental preparedness for earthquakes has been highlighted as highly necessary in two Iranian studies (Ranjbar, 2017; Roudini, 2017). Important biocentric affective "penguin" skills for mental preparedness, in addition to the above, include: learning to express feelings and emotions together, sharpening instinct, developing trust, empathy, and sensitivity to self, others, and nature, and perceiving this in a feeling-based, experiential, and affective way of learning together.

Above all, learning to trust nature again before and after disasters and generally to strengthen our natural awareness of our environment (School of Life, School of Trust). According to

disasters, it is important to provide the greatest possible sensitivity and biocentric attitude, for example, by creating areas of expression for women and men where they can find companions to express their pain, empathetic, timeless care, and the possibility of hugs so that they can regain trust

in nature (School of Empathy, Trust, Life and Presence). In the case of rescue drivers, for example, it means training relaxation as the basis of affective action for themselves (School of Presence and School of Empathy).

**(2) Existential needs and desires:** "Everything people do, they do because of their Needs and Wants" (Rosenberg, 2008, Stueck, School of Empathy, 2018).

"The Health Cube" supports finding out existential needs and true feelings and expressing them to others. These skills are crucial and important before, during and after disasters and emergencies.

**(3) Assessment of health status:** Here we have (a) a psychological assessment e.g. concerning chronic stress, psychosomatic reactions, personality traits, biographical, social aspects and behavioral and experiential patterns associated with the work

(b) Mobile health laboratory, e.g. measurement of hypersensitivity as a chronic stress parameter, physiological stress diagnostics and 24-hour monitoring, measurement of emotional states of buried helpers after earthquakes, e.g. with SMART Watch, other technical solutions.

**(4) Review of environmental conditions,** e.g., emergency driver working conditions. of hospitals and the conditions for survivors.

**(5) Resource assessment:** e.g., community disaster resilience (CDR, Abbas Ostadtaghizadeh, Kankeh et al., 2016), psychological resources (e.g., sense of coherence, Self-efficacy, spiritual resources, social support (Stueck, 2016).

**(6) Specific coping and training:** The "health cube" contains a diagnosis-based coping training aspect (see step 2) and a resource strengthening aspect. Here, for example, the resources confidence, sense of coherence, resilience, are developed, e.g., with the concept of "training of stress reduction with relaxation elements" for operational drivers (also for nurses) in hospitals (Stück, 2007, 2010).

**(7) Evaluation and conclusion:** In this step, diagnosis-based conclusions are drawn and evaluations of the planned interventions, e.g., using the Penguin Polar Bear Test, are made to ensure the balance between rational and affective solutions.

For each of the steps in the "Health Cube" there are assessment tools and intervention strategies. All the interventions developed can also be used in schools, e.g. for preparation for children and adults. The "Health Cube" is a guide for people and institutions for solving complex problems.

There are three specific projects for the use of the health cube in Iran:

**1. organization of basic teaching at the University of Social Welfare and Rehabilitation.**

**Tehran/Iran** (a) Basic teaching about the fundamentals of the health cube (M. Stueck)

(b) Basic teaching in the School of Empathy for Children (M. Stueck) (c) Basic teaching in the School of Presence and the School of Life (M. Stueck).

**2. adaptation & evaluation of the School of Empathy and Trust in Iran [School of Empathy and Trust in Iran] (SETI project):**

Confidence has been defined by Maryam Ranjbar (PhD, 2017) and Juliet Roudini (PhD, 2017) as one of the most important factors, for (mental) preparation. Therefore, a training of the "School of Empathy and Trust in Iran" (SETI project), based on the work of Stueck with the concept of the School of Empathy (Stueck, 2010), is planned in Germany, Latvia, Mexico, Argentina and Austria for children and adults. This SETI project will be carried out by a group of German and Iranian experts (Ranjbar, Villegas, Balzer, Roudini, Sack, Kankeh, Pourvakhshoori-Khomani, Witruk and others).

**3. application of the health cube to emergency drivers (project "Health Cube" Iran):**

The health cube can also be used for stress diagnostics and stress training.

be used for ambulance drivers and hospitals, with a PhD project (Delshad, Kankeh, Stueck, Balzer, Sack and others) currently planned in relation to Biocentric Health Management.

Due to the biocentric approach, the health cube can be used in all cultures and religions; in Islamic contexts, for example, by praying in the school of presence. In the future, the health cube can also be used for caregivers and for drivers as a preventive tool for health.

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## **7. 8. Eighth milestone**

Completion of Relative Biocentric Health Theory (planned 2024), with its evaluations (including a PhD thesis by Sebastian Müller-Haugk, submission September 2023).

Information at [www.bionet-research.com](http://www.bionet-research.com)