

Social Behavior Studies: The Influence of The PVT Method on Toddler's Social Behavior Development (Guidance and Counseling)

Bagus Satriya Budi

Program Inklusi Yayasan Pendidikan Pelita Bangsa, Indonesia

Satriya.gempar@gmail.com

ABSTRACT

The ideal natural normal birth event, balanced between the size of the fetus and the area of the mother's pelvis, causes optimal stimulation of the vestibular, viseroseptic, and tactile functions to have the perfect chance of developing the Proprioceptive System. Unique Proprioceptics will integrate primitive reflexes into stages; sensomotor, praxis, to representative, then develop cognitive skills into social behavior intelligence that is recorded in the memory of children aged 3-5 years, and have Type I Acrobatic Reaction at the age of 3 months. If not born normal naturally has an acrobatic reaction pattern; Type II, Type III, and Type IV are at risk of experiencing Failure Managing Senses (sensory process soldered's / SPD) and environmental disturbances (autism spectrum disorder's / ASD). PVT Habilitation Method from the age of 3 months to ensure the formation of the Proprioceptive System, so the results of research on 303 baby samples consist of 10 birth groups (normal, underweight babies, overweight babies, premature, twins, breech, induction, vacuum, forceps, and cesarean), around 151 infants with PVT habilitation do not suffer from SPD and ASD. While the remaining 152 babies, without PVT habilitation, based on acrobatic reactions the results are as follows; Type I only experienced SPD = 0.13%, Type II in addition to SPD = 0.11%, also experienced ASD = 0.09%, Type III in addition to SPD = 0.24%, also experienced ASD = 0, 16%, and Type IV besides SPD = 0.15%, also experienced ASD = 0.50%.

Keywords: *Vestibular, Viseroseptic, Tactile, Habilitation PVT, and Proprioceptive*

1. INTRODUCTION

Biomedics is the science that uses basic principles and knowledge; biology, chemistry and physics to explain life phenomena at the level of molecules, cells, organs and intact organisms, their relationship to disorders or diseases and to find and develop appropriate methods and materials to prevent, treat and restore obstacles or damage as the cause (Choi et al., 2014; Roosendaal, 2007, Elmeros and Madsen, 1999; Palomares et al., 2005).

Criteria for Mother and Fetus fulfill the ideal rules referred to are (Dizon-Townson et al., 2005; M.S. et al., 2010): For expectant mothers: Reproduction age 23 - 33 years; enough amount and variety of healthy foods with general BMI 25,4; general height 155,3 cm or more; the distance between pregnancies of 4 years or more; normal body condition and healthy function; pollution free; and For future fetus babies: Weight between 3,000 - 3,500 grams; body length of 50 cm or more; head circumference 33.5 cm; the APGAR test scores reached 10; The skeletal and muscle functions are normal both left and right.

2. LITERATURE REVIEW

The problem is not all lucky births can fulfill the ideal rules mentioned above, including birth with; Underweight, Premature, Twin, Breech position, Overweight, Hydrocephalus and Fetal Abnormalities (Abubakari et al., 2015; Gemzell and Roos, 1966; Meis et al., 1987; Vikse et al., 2008). Besides that there is birth through action, among others; Forcep, Sectio cesaria, Vacuum suction, or Induction of Sintosinon, so it does not get perfect stimulation by the birth of the mother (Deery and Hughes, 2004; Kraft et al., 2009, 2008, Brochet and Dousset, 1999; Farhad, 2019; Melamed et al., 2000). Bilirubin is the result of a rupture of red blood cells due to inadequate blood volume in the baby to cope with new temperature changes outside the uterus, due to cutting the umbilical cord too early (Feverly, 2008; Perlman and Volpe, 2017; Stocker et al., 1987, Ruscio et al., 2008).

3. METHOD

3.1 Preventive intervention

The principle of stimulation for alignment is based on the mechanism of development of the Neuro-psychobehavior, as follows:

- Begins by the Internal Sensory Sense Organ System from the Inner of body sense, digestion, cardio vascular, and breathing which are innervated by 2 autonomic nervous systems: Orthosympathetic nervous system (lateral horn of the spinal cord C8-L1) and parasympathetic

arrangement (N III, N VII, N IX, and myelotom lateral horns S2 - S4),

- Then the External Sensory Sense Organ System from the Surface of body sense; skin, pain, touch, heat, cold, rough, smooth, etc. whose supply starts from peripheral to the spinal cord, through the intervertebrae ganglion to the spinal cord toward the spinothalamicus tractus in the spinal cord,
- Ends the Joint Sensory Sense Organ System from the Joint of the body sense; muscles, tendons, and bones, to form a Sense of joints in the body called **PROPRIOSEPTIC** system

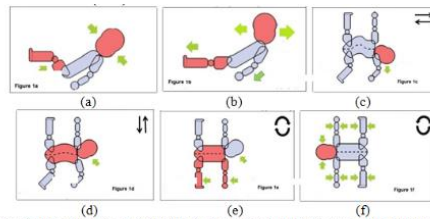


Figure 1. (a) Vestibular Stimulation (b) Brain Stem Stimulation (c) Visceroseptic Stimulation (d) Ganglia Basal Stimulation (e) Tactile Stimulation (f) Proprioceptive Stimulation

This method should be carried out by his mother which consists of six steps, namely: Step I. Vestibular Stimulation; Step II. Brain Stim Stimulation; Step III. Visceroseptic Stimulation; Step IV. Ganglia Basal Stimulation; Step V. Tactile Stimulation and Step VI. Proprioceptive Stimulation

3.2 Early detection

In addition there are also APGAR values that are important, but neglected so that they cannot predict the risk of disruption of social development

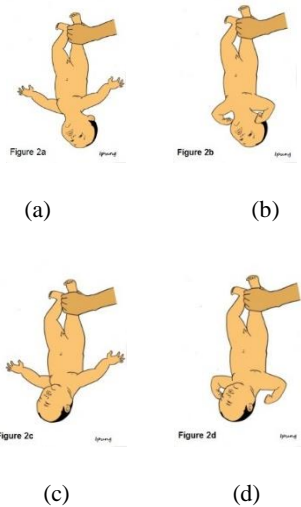


Figure 2. (a) Type I acrobatic reaction (b). Type II acrobatic reaction (c). Type III acrobatic reactions (d). Type IV acrobatic reaction.

4. RESULT

4.1 Construction and Samples

The entire cluster is 10 (ten), namely: spontaneous premature n = 32 babies, underweight with forcep n = 32 babies, excess body weight above 3.5 kg spontaneous n = 32 babies, excess body weight with vacuum n = 32 babies, Cesar section n = 32 babies, Spontaneous breechus n = 32 babies, Spontaneous Jaundice babies n = 32 babies and Spontaneous Normal as control n = 32 babies.

4.2 Form and Assessment

In the study, it was stated that the SPD if there were sensorotor obstacles had not continued to praxis, whereas ASD had stated if obstacles had occurred until praxis had continued to be representative.

4.3 Observation Result

But the same cluster babies who had Type I, Type II, Type III. Type IV acrobatic reactions without PVT, as table 1.

Table 1. Natural Baby Birth Non PVT

NBB	AR	PVT	Development disorders		
			Sm	Px	Rp
16N	Type I	Not	1	1	1
17N	Type I	Not	1	1	1
18N	Type I	Not	3	3	1
19N	Type I	Not	1	1	1
20N	Type I	Not	1	1	1
21N	Type I	Not	1	1	1
22N	Type I	Not	1	1	1
23N	Type I	Not	3	1	1
24N	Type I	Not	1	1	1
25N	Type I	Not	1	1	1
26N	Type I	Not	1	1	1
27N	Type I	Not	1	1	1
28N	Type I	Not	1	1	1
29N	Type I	Not	1	1	1
30N	Type I	Not	1	1	1

Note

NBB: Natural Baby Birth

AR: Acrobatic Reaction

PVT: Vestibulat – Tactile alignment

Sm Sensomotor

Px: Praxis

Rp: Representative

First, it turns out that these two babies were born two years apart and less than three years (Table 1).

Table 2. High Birth Weight Babies Non PVT

NBB	AR	PVT	Development disorders		
			Sm	Px	Rp
16T	Type II	Not	3	1	1
17T	Type II	Not	3	3	1
18T	Type II	Not	3	1	1
19T	Type II	Not	3	3	1
20T	Type II	Not	3	1	1
21T	Type II	Not	3	1	1
22T	Type II	Not	3	3	3
23T	Type II	Not	3	1	1
24T	Type II	Not	3	1	1
25T	Type II	Not	3	3	1
26T	Type II	Not	3	3	1
27T	Type II	Not	3	1	1
28T	Type II	Not	3	3	3
29T	Type II	Not	3	3	1
30T	Type II	Not	3	1	1

Note

HBWB: High Birth Weight BABies

AR: Acrobatic Reaction

PVT: Vestibulat – Tactile alignment

Sm: Sensomotor

Px: Praxis

Rp: Representative

Second, In the birth of High Birth Weight Babies cluster there were 15 infants with acrobatic type II reactions and two type III infants, but without PVT intervention, then were observed for 30 months against obstacles to sensomotor, praxis and representative development.

Table 3. Low Birth Weight Babies Non PVT

NBB	AR	PVT	Development disorders		
			Sm	Px	Rp
16R	Type III	Not	3	1	1
17R	Type III	Not	3	1	1
18R	Type III	Not	3	1	1
19R	Type III	Not	1	3	1
20R	Type III	Not	3	1	1
21R	Type III	Not	3	6	3
22R	Type III	Not	3	1	1
23R	Type III	Not	3	1	1
24R	Type III	Not	3	3	3
25R	Type III	Not	3	1	1
26R	Type III	Not	3	3	1
27R	Type III	Not	3	1	1
28R	Type III	Not	3	6	3
29R	Type III	Not	3	1	1
30R	Type III	Not	3	1	1

Note

LBWB: Low Birth Weight BABies

AR: Acrobatic Reaction

PVT: Vestibulat – Tactile alignment

Sm: Sensomotor

Px: Praxis

Rp: Representative

Third, in the birth of Low Birth Weight Babies cluster of 15 babies born with less weight ($\leq 3,000$ g), there were 14 babies who had type III acrobatic reactions and only one baby had type II acrobatic reactions and without PVT. Specifically, two babies among those who have type III acrobatic reactions are babies with birth spacing of less than two years.

Table 4. Sectio Cesaria Birth Babies Non PVT

NBB	AR	PVT	Development disorders		
			Sm	Px	Rp
16C	Type IV	Not	3	3	3
17C	Type IV	Not	3	1	1
18C	Type IV	Not	3	3	1
19C	Type IV	Not	3	1	1
20C	Type IV	Not	3	1	1
21C	Type IV	Not	3	3	6
22C	Type IV	Not	3	1	1
23C	Type IV	Not	3	3	3
24C	Type IV	Not	3	1	1

NBB	AR	PVT	Development disorders		
			Sm	Px	Rp
25C	Type IV	Not	3	3	6
26C	Type IV	Not	3	1	1
27C	Type IV	Not	3	3	3
28C	Type IV	Not	3	1	1
29C	Type IV	Not	3	3	1
30C	Type IV	Not	3	1	1
31C	Type IV	Not	3	3	1

Note

SCBB: Sectio Secaria Birth Babies

AR: Acrobatic Reaction

PVT: Vestibulat – Tactile alignment

Sm Sensomotor

Px: Praxis

Rp: Representative

Fourth, the birth of a Sectio Cesaria Birth Babies cluster there were 16 babies who all had a Type IV acrobatic reaction, without PVT intervention and were observed for 30 months against obstacles to sensomotor, praxis and representative development.

& ASD risk 20%, and in Sectio Cesaria Birth Babies at SPD risk 19% & ASD risk 31%.

Table 5. Recapitulation of Result Study of PVT in baby After 30 Month

Variable of birth	% age of number	Number of birth for 2 years (1987-1989)	AR Test	Acrobatic Reaction				PVT	Result after 30 month		Non PVT	Result After 30 Month	
				Type I	Type II	Type III	Type IV		% PSD	% ASD		% PSD	% ASD
NBB	0.59	992	30	30				15	0	0	15	0.13	0
HBWB	0.11	183	30		28	2		15	0	0	15	0.33	0.13
VSBB	0.02	35	30	2	26	2		15	0	0	15	0.13	0.27
BBJ	0.02	30	30		30			15	0	0	15	0.13	0
BBBP	0.03	59	30		19	11		15	0	0	15	0.07	0.13
PBB	0.02	36	30			22	8	15	0	0	15	0.13	0.27
LBWB	0.12	195	30		2	28		15	0	0	15	0.13	0.20
TBB	0.02	41	32			32		16	0	0	16	0.25	0.06
BBF	0.02	33	30			28	2	15	0	0	15	0.27	0.20
SCBB	0.05	85	31				31	15	0	0	16	0.19	0.31
Total	1.00	1689	303	32	105	125	41	151	0	0	152		
Average number of SPD or ASD									0	0		0.18	0.16

Note

NBB : Natural Baby Birth

HBWB : High Birth Weight Birth

VSBB : Vacuum Suction Birth Babies

BBJ : Babies Born Jaundice

BBBP : Baby Born Breech Position

PBB : Premature Birth Babies

LBWB : Low Birth Weight Babies

TBB : Twin Birth Babies

BBF : Baby Born with Forcep

SCBB : Sectio Cesaria Birth Babies

5. DISCUSSION

The results of the recapitulation of all clusters, showed that the group that received the habilitation PVT intervention experienced good development, on time at the sensomotor, praxis and representative stages.

Table 7. Analysis Base on Acrobatic Type

AR	PVT	SPD	ASD	Non PVT	SPD	ASD
Type I	16	0	0	16	0.13	0
Type II	53	0	0	53	0.15	0.06
Type III	62	0	0	63	0.15	0.50
Type IV	20	0	0	20	0.15	0.50
Total	151	0	0	152	0.66	0.72
Average		0	0		0.17	0.18

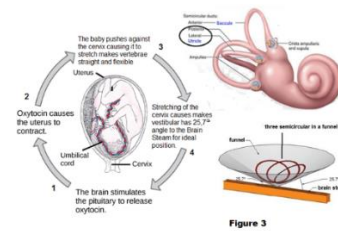


Figure 3. Uterine Contraction for Vestibular Stimulation

Types I and II are generally experienced by babies with normal natural birth, which is preceded by the effect of the hormone oxytocin up to a minimum of 8 hours of adequate uterine contractions from moderate to strong rhythmically (Figure 3).

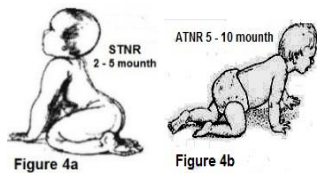


Figure 4. (a) STNR (b) ATNR

The SPD and ASD are conditions that are not optimal development of basic cognitive skills, so that children become delay in performance and are not eligible if they enter formal school.

6. CONCLUSION

Habilitation PVT interventions are proven as prevention of developmental disorders for babies who have type II, III, and IV acrobatic reactions so that the development of STNR and ATNR is timely, so that PROPRIOSEPTIC patterned as a UNIQUE of the individual joint sense in stimulating normative cognitive skills in the social field and education.

REFERENCES

- [1] Aizhen Yang¹ and Timothy E. Hullar, 2007; "Relationship of Semicircular Canal Size to Vestibular-Nerve Afferent Sensitivity in Mammals" Department of Otolaryngology-Head and Neck Surgery and 2 Department of Anatomy and Neurobiology; Washington University in St. Louis School of Medicine, St. Louis, Missouri
- [2] Asim K Dutta-Roy, Am J Clin Nutr 2000; "Transport mechanisms for long-chain poly-unsaturated fatty acids in the human placenta", American Society for Clinical Nutrition
- [3] Ayres, A.J. (1989). Sensory Integration and Praxis Tests. Los Angeles, Western Psychological Services.
- [4] Bernard J, Baars and Nicole M Gage, 2010; "Cognition, Brain and Consciousness, Introduction to Cognitive Neuroscience", Second Edition, British Library Cataloguing in Publication Data
- [5] Bao-Ping Zhu, M.D., Robert T. Rolfs, M.D., M.P.H., Barry E. Nangle, Ph.D., And John M. Horan, M.D., M.P.H. 1999; "Effect of The Interval Between Pregnancies on Perinatal Outcomes", the Massachusetts Medical Society
- [6] Callaghan, T. C. (2005). "Cognitive Development Beyond Infancy. In B. Hopkins (Ed.), The Cambridge Encyclopedia of Child Development" (pp. 204-209). Cambridge, UK: Cambridge University Press
- [7] Carissa J. Cascio, 2010; Somatosensory processing in neurodevelopmental disorders, Vanderbilt Kennedy Center for Research on Human Development, Vanderbilt University Department of Psychiatry, Nashville.
- [8] Carlson NR; Physiology of behavior 4 th Edition. Allyn and Bacon. Boston, London, Toronto, Sydney, Tokyo, Singapore.
- [9] Dorothea M. Moorea, Anila M. D'Melloa, Lauren M. Mc Grathb,c,d, Catherine J. Stoodley, 2016; "Developmental Cognitive Neuroscience, The developmental relationship between specific cognitive domains and grey matter in the cerebellum", Department of Psychology, University of Denver, Denver, Washington, DC, USA.
- [10] Dr. Silvia Helena Cardoso, PhD, 1997; "Connections of the Basal Ganglia", Center for Biomedical Informatics, State University of Campinas, Brazil.
- [11] Elaine Aron, Ph.D., Barbara Allen-Williams, and Jacquelyn Strickland, LPC (2016): FAQ: Is Sensory Processing (or Integration) Disorder (SPD) the same as Sensory Processing Sensitivity (SPS).
- [12] Elizabeth O. Johnson, PhD, 2010; "Proprioceptive", Center for International Rehabilitation Research

- Information and Exchange, University at Buffalo, The State University of New York
- [13] Erikson, E. H, 1993; "Childhood and society, WW Norton & Company.
- [14] Fisher, A., Murray, E., & Bundy, A. 1991; "Sensory Integration Theory and Practice". Philadelphia: F.A. Davis Company. Troy University
- [15] Hope Weiler, Shirley Fitzpatrick-Wong, Jeannine Schellenberg, Ursula McCloy, Rebecca Veitch, Heather Kovacs, June Kohut, Chui Kin Yuen, 2005 ; "Maternal and Cord Blood Long Chain-Polyunsaturated Fatty Acids are Predictive of Bone Mass at Birth in Healthy Term Born-Infant", Human Nutritional Sciences and † Pediatrics and Child Health, University of Manitoba, Winnipeg, Canada
- [16] Jen Danna, 2011 ; How to Estimate Epiphyseal Fusion , Forensics 101
- [17] Julie Davanzo, Lauren Hale , Abdur Razzaque & Mizanur Rahman (2008); The effects of pregnancy spacing on infant and child mortality in Matlab, Bangladesh: How they vary by the type of pregnancy outcome that began the interval, Population Studies
- [18] Kay C. Wood, Harlan Smith, and Daurice Grossniklaus. 2012; "Piaget's Stages of Cognitive Development". pp. 6 [5] Department of Educational Psychology and Instructional Technology, University of Georgia
- [19] Korhonen, Ulla.; "Maternal pelvis, fetopelvic index and labor dystocia". University of Eastern Finland, Faculty of Health Sciences, Publications of the University of Eastern Finland. Dissertations in Health Sciences Number 244, 2014, 52 p.
- [20] K Tan, G Yeo, 2008; "Influence of Maternal Height, Weight, and Body Mass Index on Birthweight in an Asia Population", The Internet Journal of Gynecology and Obstetric Frame of Reference. in Pediatric Occupational Therapy", Philadelphia
- [21] Kolb, B., & Whishaw, I. Q. (2009); "Fundamentals of human neuropsychology". 6th Edition, New York, NY: Worth Publishers
- [22] Larson, K.A. (1982). The Sensory History of developmentally Delayed Children With and Without Tactile Defensiveness. American Journal of Occupational therapy 36, pp 590-596.
- [23] Lincoln Gray, Ph.D., 2013; "Vestibular System: Structure and Function" Department of Communication Sciences and Disorders, James Madison University
- [24] Luria AR; The Working Brain, Simon and Schuster, New York
- [25] Mohsen Jamali, Soroush G. Sadeghi, and Kathleen E. Cullen, 2009; "Response of Vestibular Nerve Afferents Innervating Utricle and Saccule During Passive and Active Translations", the American Physiological Society
- [26] M.-Marsel Mesulam, 2000; "Principles of Behavioral and Cognitive Neurology", Second Edition, Oxford University Press, Inc.
- [27] May-Benson, T. A., & Cermak, S. A. (2007). Development of an assessment for ideational praxis. American Journal of Occupational Therapy, 61, 148–153
- [28] Martínez-Frías ML1, Rodríguez-Pinilla E, Bermejo E, Prieto L, 2002: Epidemiological evidence that maternal diabetes does not appear to increase the risk for Down Syndrome. Am J Med Genet
- [29] Natasha Campbell Mc Bridge, 2010; "Gut and Psychology Syndrome: Natural Treatment for Autism, Dyspraxia, A.D.D., Dyslexia, A.D.H.D, Depression, Schizophrenia" UK
- [30] Neil R. Carlson 2017, Allyn and Bacon ; "Physiology of Behavior". (11th Edition) Boston
- [31] Pinel PJ; Biopsychology, Allan and Bacon, Boston, London, Sydney, Toronto.
- [32] Paula de Prado Bert, Elisabet Mae Henderson Mercader, Jesus Pujol, Jordi Sunyer, and Marion Mortamais; "The Effects of Air Pollution on the Brain: a Review of Studies Interfacing Environmental Epidemiology and Neuroimaging" Curr Environ Health Rep. 2018; 5(3): 351–364. Published online 2018 Jul 14. Barcelona, Spain
- [33] Quick Tips, 2013 ; How To Estimate The Chronological Age Of A Human Skeleton – Epiphyseal Closure Method For juicy tidbits of information and insights into the world that involves archaeological, anthropological and forensic sciences
- [34] Restak RM; The Brain, The Last Frontier, Warmwer Books. New York
- [35] Royeen, C.B (1985). Domain Specifications of the Construct Tactile Defensiveness. In: Fisher, E. Murray & Bundy, A (Eds). Sensory Integration: Theory and Practice. Philadelphia: F A Davis.
- [36] Raymond A. Sturmer, Mark Horton, Sandra C. Funk, Joanne Barton, Thomas E. Frothingham, Joseph N. Cress, 1982; "Adaptations of the Denver Developmental Screening Test: A Study of Preschool Screening". the American Academy of Pediatrics, From the Department of Pediatrics, Duke University Medical Center, Durham, North Carolina.