

# The Dominant Personality Type In Vertigo Patiens

*by* Abdurachman -

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**SIPS** SURABAYA  
INTERNATIONAL  
**2017** PHYSIOLOGY  
SEMINAR

# PROCEEDINGS OF THE SURABAYA INTERNATIONAL PHYSIOLOGY SEMINAR

Surabaya, October 12-14, 2017

**Editors:**

Soetjipto  
Muhammad Miftahussurur  
Ferry Efendi  
Purwo Sri Rejeki  
Bambang Purwanto



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# SIPS 2017

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Surabaya International Physiology Seminar

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## INVITED SPEAKERS

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**Cheng Hwee Ming**  
University of Malaya  
Malaysia

**Daniel John Green**  
University of Western Australia  
Australia

**Fadzil Hamzah**  
Sport Center of Changi General Hospital  
Singapore

**Deanne Helena Skelly**  
Griffith University  
Australia

## ORGANIZING COMMITTEES

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Daniel John Green, University of Western Australia, Australia

Fadzil Hamzah, Changi Sports Medicine Centre, Changi General Hospital, Singapore

Deanne Helena Skelly, University of Western Australia, Australia

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Misbakhul Munir, Universitas Airlangga, Indonesia

## FOREWORD

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### Dean of Faculty of Medicine, Universitas Airlangga

Assalamu'alaikum Wr. Wb.

Distinguished Guests, all the Participants, Ladies and Gentlemen

On behalf of Faculty of Medicine, Universitas Airlangga, it is my great pleasure to welcome all the speakers, moderators, and participants on **Surabaya International Physiology Seminar 2017 (SIPS 2017)**, which will be held from today, October 12th until October 14th, 2017. I would like to express my hearty welcome to all the international speakers, **Prof. Cheng Hwee Ming**, from University of Malaya, Malaysia; **Prof. Daniel John Green**, from University of Western Australia; **Dr. Fadzil Hamzah**, from Sport Center of Changi General Hospital, Singapore and **Dr. Deanne Helena Skelly**, from Griffith University, Australia.

The aim of SIPS 2017 is to provide a platform for academicians, educators, researchers, practitioners, undergraduate and postgraduate students to share and discuss the knowledge of the recent issues, opinions, researchers about the development and innovation of physiology in medical science, dentistry, veterinary, plants and agriculture, sports and sciences.

I believe this event is a great purpose in order to develop knowledge, experiences and best practices that can be applied for the good, especially in the field of healthcare as a whole.

Finally, I would like to express my sincere acknowledgements to those who take part and especially for Department of Medical Physiology, Faculty of Medicine, Universitas Airlangga for their effort in holding this event and wishing all to have success.

Wassalamu'alaikum Wr. Wb.

**Prof. Dr. Soetojo, MD.**

Faculty of Medicine, Universitas Airlangga



**Chair of Committee / Head of Physiology Department, Faculty of Medicine, Universitas Airlangga**

Assalamu 'alaikum Wr. Wb

Greetings,

On behalf of SIPS committee and Physiology Department, Universitas Airlangga, we are welcoming to Surabaya, City of Heroes.

This year, the annual meeting of Indonesian Physiology Society (IAIFI) is hosted at Surabaya, entitled "**Surabaya International Physiology Seminar Workshop (SIPS)**". We present some update workshop and lectures in order to bring physiology research from basic to clinical application on humanities, animal welfare and good environment. All participants have opportunities to publish their research in presentation, poster and ISBN proceeding. Selected papers will be submitted to SCOPUS indexed proceeding/ journal and awarded as Best Poster and Best Oral Presentation.

We hope that all participants will get some interesting experiences for next 3 days, 12-14 October 2017. Enjoy our lectures and workshops, taste the culinary and take your time to sightseeing around Surabaya.

Wassalamu 'alaikum wr. wb.

**Dr. Bambang Purwanto**

Chairman of Committee / Head of Physiology Department  
Faculty of Medicine, Universitas Airlangga

## **Welcome Address - Surabaya International Physiology Seminar Workshop (SIPS)**

Dear fellow Physiologists and Participants,

On Behalf of the Indonesian Physiological Society (IAIFI) and the Physiology Department Faculty of Medicine Universitas Airlangga, I would like to welcome you all to Surabaya International Physiology Seminar (SIPS), held on 12-14 of October 2017.

Finally after long-awaited Surabaya gets a turn again to host and organize the International Physiology Seminar. Hence the Steering- and Organizing Committee consisting of young energetic physiologists are determined to make the Seminar a successful one. The theme of the seminar is:

### ***"The Role of Physiology in Translation Research: From Basic to Application"***

This annual meeting covers a wide range of topics of Physiology on Medicine, Dentistry, Veterinary, Plants and Agriculture, Sports and Sciences. We sincerely hope that SIPS 2017 enable to provide a platform for academicians, educators, researchers, practitioners and postgraduate students to present and discuss researches, development and innovations in wide range of topics as mentioned above. It will provide all participants to share knowledge, exchange new ideas and their experiences in many research topics, for then it will enhance future collaborations.

With great interest and enthusiasm I look towards the success of this Seminar, and wish all of you every success and a pleasant stay in Surabaya.

May Allah Swt. bestow upon us His Blessings.

On Behalf of the Steering and Organizing Committee Senior Physiologist,  
**Prof. R. Soedarso Djojonegoro**

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## **PAPERS**

# **FULL PAPERS**

## The Dominant Personality Type in Vertigo Patients

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**Keywords:** Conscientiousness, NEO-PI Questionnaire, The Dominant Personality Type, The Big-Five Personality, Vertigo.

**Abstract:** Vertigo is an abnormality that originates from vestibular dysfunction or other organic damage and that causes psychological conditions such as panic attacks and depression. There is scarce research to adapt into a questionnaire in order to find a correlation between personality and vertigo. To determine the dominant personality type in vertigo patients, an observational descriptive cross-sectional design was used. Samples were taken from vertigo-diagnosed ambulatory patients (January–March 2017) of the ENT and Neurology Department, Soetomo Hospital, Surabaya, Indonesia. Patients who passed the inclusion criteria were given an informed consent form, then interviewed using an NEO personality inventory (NEO-PI) questionnaire to determine their personality type based on the Big Five Personality Theory. Data were collected, and groupings were based on sex, age, and demographic characteristics. There were 38 patients: female = 31 (81.82%). Ratio of vertigo: female and male 4.43:1. The dominant group age was 51–60 years (42.1%), with a mean age of 47.3 years (SD 13.24). The dominant personality types are Neuroticism and Conscientiousness. Furthermore, the total mean score for conscientiousness was higher compared to neuroticism. The most dominant personality type in vertigo patients is Conscientiousness.

### 1 INTRODUCTION

Vertigo is a common health problem in society. Ropper and Brown (2005) mention that vertigo is a condition that makes a person feel like the objects around him/her spin or move in a certain direction or rhythm. Vertigo is also a sensation, namely dizziness of the head and/or body.

Deispenza (2014) finds that vertigo is one of many complaints encountered in the medical arena. The percentage is approximately 20–30% of the population. Bisdorff et al. (2013) also find that vertigo and dizziness are the most frequent reasons for someone to visit a specialist. An episode of vertigo lasts about two minutes. The majority of vertigo patients are women, of ages ranging from 18 to 86 years old.

According to Allport (1961), personality is the dynamic organization in an individual associated with the psychological system. Personality is able to explain the characteristics of one's behavior and

thinking. One of the most commonly used personality theories is the Big Five Personality Traits. The Big Five Personality Traits consists of five personality dimensions: Openness, Conscientiousness, Extrovert, Agreeableness, and Neuroticism. Each personality is closely related to the particular condition of one's health status (Schultz, 2015).

Many studies mention the relationship between vertigo and psychological status. Gilain and Englebert (2008) divide vertigo into three types based on psychological aspects. Staab (2010) explains that psychological factors are capable of causing blood flow to the balance center of the brain to clog. Furman et al. (2010) describe the association of vestibular disorders with psychiatric disorders. Areas of study, in terms of adapting the Big Five Personality questionnaire to the collection of data regarding the relationship between personality trait and vertigo, remain unexplored (Gilain and Englebert, 2008). Vertigo, hypothetically, has a close connection with certain personality traits.

Further, it is known that the need to take psychological dimensions into account in otoneurology has been increasing; therefore, a study to investigate the dominant personality trait in vertigo patients is imperative.

## 2 METHODS

### 2.1 Participants

This study is descriptive observational using a cross-sectional design. Samples were taken from patients diagnosed with vertigo by the specialists in the department of ENT and Neurology, outpatient unit, at Dr. Soetomo General Hospital, from January to March 2017. The patient was, then, selected according the inclusion criteria. The inclusion criteria were: (1) patients were diagnosed with vertigo by the department of ENT and Neurology at Dr. Soetomo General Hospital, Surabaya; (2) willing to participate in the study; (3) able to read and speak Bahasa Indonesia fluently; (4) minimum age of 20 years old; and (5) residing in Surabaya. The exclusion criteria were: (1) the patients could not be interviewed (stroke which interferes with speaking ability, mental retardation, etc.); (2) severe physical diseases and mental disorders were found, making communication almost impossible; (3) the patient refused. Patients who met the inclusion criteria were required to fill in the informed consent form. The patients were, subsequently, interviewed using the NEO Personality Inventory (Appendix 1) questionnaire to identify the personality trait, based on the Big Five Personality Theory. Furthermore, data collection, grouping, and descriptions were based on demographics, sex, and age group.

### 2.2 Instrument

Questionnaires were completed by conducting structured interviews. The interviews were conducted by the researcher himself. The questionnaire used was NEO Personality Inventory Questionnaire. Each questionnaire consists of 40 questions (Appendix 1).

### 2.3 Procedure

The score is the total value obtained (Appendix 1). The highest score indicates the most dominant personality in the patient.

Table 1: Blueprint as a measurement trait.

Trait	Item		Total
	Favorable	Unfavorable	
Conscientiousness	1, 15, 23, 36	10, 16, 28, 35	8
Neuroticism	2, 14, 22, 37	9, 17, 29, 34	8
Agreeableness	3, 13, 21, 38	8, 18, 30, 33	8
Openness	4, 12, 26, 39	7, 19, 24, 32	8
Extroversion	5, 11, 27, 40	6, 20, 25, 31	8
Total			40

## 3 RESULTS

### 3.1 Patient Demography

There were 72 patients in the department of ENT and Neurology at Dr. Soetomo General Hospital, Surabaya. These patients are over 20 years old. They were diagnosed with vertigo during January to March 2017. The total number of patients participating in this study was 38. Of 38 patients, 7 were from the ENT department and the other 31 patients were from the Neurology department.

From the collected data, 81.58% of the patients are female. The ratio of female and male is 4.43:1. The distribution of patients based on age shows that 42.1% of the patients are 51–60 years old (mean 47.3, SD 13.24).

Table 2: Distribution of ENT and Neurology patients based on sex.

Sex	N	(%)
Female	31	81.58
Male	7	18.42
Total	38	100

Table 3: Distribution of ENT and neurology patients based on age group.

Age Group	N	(%)
21-30	2	5.26
31-40	6	15.8
41-50	7	18.42
51-60	16	42.1
61-70	4	10.53
71-80	2	5.26
81-90	1	2.63
Total	38	100

### 3.1.1 Dominant Personality Trait of Patients in The Department of ENT and Neurology at Dr. Soetomo General Hospital, Surabaya

Based on the frequency (Table 3), the dominant personality of patients with vertigo is Neuroticism and Conscientiousness (13 patients) (34.21%).

Table 4: Frequency and percentage of personality trait of patients with vertigo.

Personality Trait	N	(%)
Openness	3	7.9
Conscientiousness	13	34.21
Extroversion	2	5.26
Agreeableness	0	0
Neuroticism	13	34.21
Multiple result of personality trait	7	18.42
Total	38	100

Table 5: Comparison of mean total score of personality trait of Conscientiousness and Neuroticism.

Vertigo Patient No.	Total Score	
	Conscientiousness	Neuroticism
1	34	36
2	31	34
3	38	35
4	33	35
5	34	34
6	32	32
7	40	33
8	34	38
9	38	40
10	36	36
11	39	32
12	32	36
13	35	26
Total	456	447
Mean	35.0769	34.3846
%	50.5	49.5

## 4 DISCUSSION

Many have asserted there is a relationship between psychological factors and vertigo. Garcia et al. (2003) mention in their study that there are complaints from 38 vertigo patients (63.4%) which are associated with psychological disorders. The psychological disorders mentioned are: moderate depression, panic, anxiety, somatization, and obsessive-compulsive disorder. According to SCL-90, it is found that obsessive-compulsive disorder, anxiety, and depression are the highest-scoring

conditions. The result of this study supports the evidence of the relationship between psychological factors and vertigo. Another similar study is by Gilain (2008), according to whom someone with vertigo indirectly becomes limited in terms of socializing, doing work, and mobilization. This condition causes confidence to decrease and also leads to depression. Vertigo can develop and appear out of the blue, which causes anxiety and panic whenever the attack emerges. The sudden emergence of vertigo causes one to avoid certain situations and/or activities. Furthermore, it can also lead to stress (Schneiderman, 2008). Yardley et al. (1992) assert that vertigo patients tend to force themselves to limit activity due to the fact that when the attack emerges they become helpless. The attack also occurs repeatedly, which can lead the patients to frustration. It supports the somatopsychic mechanism (vestibular disorder causing psychiatric abnormality) as stated by Furman et al. (2010).

Groen (1983) and Savastano et al. (1996) in Orji (2014) discuss the psychological characteristics of vertigo patients. Groen (1983) finds that vertigo patients display a certain personality structure, denoted by high intelligence, great diligence, and a strong sense of responsibility. Meanwhile, Savastano et al. (1996) and Horner & Cazals (2003) consider that vertigo patients are obsessive compulsive, perfectionists, and vulnerable to stress. Similarly, Brandt et al. (2005) state that patients with vertigo, especially phobic postural vertigo, are usually obsessive compulsive and perfectionists. Takahashi et al. (2001) in Staab (2010) conclude that vertigo patients have a meticulous personality, always try to finish their work, are competitive, and acquire stressors from work and/or family.

The two preceding paragraphs describe the properties of the conscientiousness dimension. Conscientiousness is a relatively stable individual personality trait; it obeys the social norms, is compulsive, well-planned, visionary, and fearful of being disobedient. Similarly, it is mentioned by Costa & McCrae (1998) in Abdurrahman (2014) that those with the Conscientiousness personality type are perfectionists, compulsive, understand the risk in making a decision, are hard workers, workaholics and reliable. It can, thus, be concluded that conscientiousness individuals are those who strive to be successful, efficient in terms of work, and competent.

A study by Bogg and Robert (2004) mention that individuals with the personality trait of conscientiousness are more likely to suffer from stress. The results of this study are also supported by



De Valck CF et al. (2007) who reveal that of 108 vertigo patients, the majority had the personality type of Conscientiousness. In this study of the NEO Personality Inventory, the result indicates that the conscientiousness score is significantly high in vertigo patients.

Nagarkar et al. (2000) propose a slightly different result. They point out that of 75 vertigo patients, the patients perceive themselves as lonely, depressed, and anxious, with a significant outcome in the three categories of Benign Paroxysmal Positional Vertigo (BPPV, psychogenic vertigo, and control) ( $p < 0.1$ ). It is also mentioned that the emergence of an emotional aspect is a result of patients' inability to control the vertigo. Yardley et al. (1992) also state that anxiety and depression are found in chronic vertigo.

Related to the high value of neuroticism, it is more associated with a negative state of emotions: panic, sadness, irritability, stress, depression, and being temperamental (Costa & McCrae, 1992). Chiarella G. et al. (2016) state that a high result in terms of neuroticism tends to be found in patients with persistent dizziness, hypersensitivity to a certain movement, and exposure to complex visual stimulation. Such complaints are commonly called Chronic Subjective Dizziness (CSD). CSD can be stimulated by acute vestibular disease and depression as well as anxiety, which are the predisposing factors of CSD. The result of anxiety on neuroticism is occasionally found in peripheral vestibular disorder and in control patients, yet the highest score is more often found in CSD patients rather than in peripheral vestibular disorder patients. Indovina et al. (2015) also assert that CSD patients ( $n=11$ ) have the highest mean score on the personality trait of Neuroticism (55 SD +9) Tsehan et al. (2011) in Dieterich et al. (2016) conclude that patients with personality traits of Conscientiousness and Agreeableness are less likely to suffer from CSD after acute vestibular syndrome.

## 5 CONCLUSIONS

In this study, it is found that women in middle age, ranging between 51 and 60 years old are most likely to be diagnosed with vertigo. Vertigo patients have dominant personality traits of Conscientiousness and Neuroticism. The total mean score of conscientiousness is higher than of neuroticism.

Further research employing more samples is needed.

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Conflict of interest

"All authors declare there is no conflict of interest regarding publication of this manuscript".

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