



The influence of sports on the development of self-esteem in disabled athletes who have achieved championships: a descriptive study

La influencia del deporte en el desarrollo de la autoestima de atletas discapacitados que han sido campeones: un estudio descriptivo

Authors

Prima Aulia¹
Dwi Puspasari²
Nurul Huda¹

¹ Universitas Negeri Padang
(Indonesia)

² Universitas Andalas (Indonesia)

Corresponding author:
Dwi Puspasari
dwipuspasari@med.unand.ac.id

How to cite in APA

Aulia, P., Puspasari, D., Huda, N., & Kamandasari, R. (2025). La Influencia Del Deporte En El Desarrollo De La Autoestima De Atletas Discapacitados Que Han Sido Campeones: Un Estudio Descriptivo. *Retos*, 68, 1206-1213. <https://doi.org/10.47197/retos.v68.115419>

Abstract

Introduction: Self-esteem is an essential psychological factor for athletes with disabilities, especially those who have achieved success in sports competitions.

Objective: This study aims to analyze the self-esteem levels of athletes with disabilities in West Sumatra and identify the influence of competitive experiences on their psychological development.

Methodology: This research employs a descriptive quantitative approach, involving 20 athletes with disabilities categorized as visually impaired, hearing impaired, and physically disabled. Self-esteem assessment was conducted using an instrument consisting of 34 items, including 22 favorable and 12 unfavorable items, with high reliability (Cronbach's Alpha = 0.910).

Results: The findings indicate that the empirical self-esteem mean score of the athletes (95.30) was higher than the hypothetical mean (85), suggesting that competitive experiences and achievements positively contributed to their self-esteem. Most athletes demonstrated moderate self-esteem levels (65%), while 35% exhibited high self-esteem, and none showed low self-esteem. The analysis of self-esteem aspects—power, significance, virtue, and competence—revealed varied distributions, reflecting different elements of psychological reinforcement.

Conclusion: Sports play a crucial role in enhancing the self-esteem of athletes with disabilities through social recognition, personal achievements, and positive interactions. However, there remains room for improvement through mental toughness training and mindfulness-based programs. This study recommends developing more inclusive adaptive sports programs to further improve the self-esteem of athletes with disabilities.

Keywords

Disabled athletes; self-esteem; descriptive quantitative.

Resumen

Introducción: La autoestima es un factor psicológico esencial para los atletas con discapacidades, especialmente aquellos que han logrado el éxito en competiciones deportivas. **Objetivo:** Este estudio tiene como propósito analizar los niveles de autoestima de los atletas con discapacidades en Sumatra Occidental e identificar la influencia de las experiencias competitivas en su desarrollo psicológico.

Metodología: Esta investigación emplea un enfoque cuantitativo descriptivo, involucrando a 20 atletas con discapacidades clasificados como con discapacidad visual, discapacidad auditiva y discapacidad física. La evaluación de la autoestima se realizó mediante un instrumento compuesto por 34 ítems, incluyendo 22 favorables y 12 desfavorables, con alta fiabilidad (Coeficiente de Alfa de Cronbach = 0.910).

Resultados: Los hallazgos indican que la puntuación media empírica de la autoestima de los atletas (95.30) fue superior a la media hipotética (85), lo que sugiere que las experiencias competitivas y los logros contribuyeron positivamente a su autoestima. La mayoría de los atletas demostraron niveles moderados de autoestima (65%), mientras que el 35% exhibió una autoestima alta y ninguno mostró una autoestima baja. El análisis de los aspectos de la autoestima—poder, significado, virtud y competencia—reveló distribuciones variadas, reflejando diferentes elementos de refuerzo psicológico.

Conclusión: El deporte desempeña un papel crucial en la mejora de la autoestima de los atletas con discapacidades a través del reconocimiento social, los logros personales y las interacciones positivas. Sin embargo, aún existe margen de mejora mediante entrenamientos de fortaleza mental y programas basados en mindfulness. Este estudio recomienda desarrollar programas deportivos adaptativos más inclusivos para mejorar aún más la autoestima de los atletas con discapacidades.

Palabras clave

Atletas con discapacidad; autoestima; cuantitativo descriptivo.

Introduction

Persons with disabilities are individuals with physical and mental limitations caused by accidents or other factors. These limitations may create obstacles and difficulties for them to fully and effectively participate alongside other citizens. According to the World Health Organization (WHO, 2023), disability is a broad term encompassing physical, mental, intellectual, or sensory impairments that, when interacting with various barriers, may hinder an individual's full and effective participation in society. Meanwhile, physical disability refers specifically to mobility impairments or functional limitations affecting an individual's ability to perform activities independently.

Based on the Intercensus Population Survey (Supas) by BPS, the number of persons with disabilities in Indonesia has increased yearly. In 2012, the total number of persons with disabilities in Indonesia was recorded at 6 million people. By 2014, this number had increased to 10 million people, and by 2015, the figure reached 21.5 million people, a number that continues to grow each year (Kustiani, 2019). Similarly, in West Sumatra, the number of persons with disabilities in 2011 was recorded at 25,099 and then decreased to 4,064 in 2013. However, the number increased again in 2015 to 17,824.

Being differently abled is not easy. According to Damayanti & Rustiana (2003), individuals with disabilities face various challenges, including social, emotional, and employment-related issues due to their disabilities. Disabled individuals are more prone to having low self-esteem because they struggle to accept their conditions and tend to view themselves less positively. Self-esteem, as defined by Cooper-smith (1967), refers to the personal evaluation of self-worth expressed in attitudes held by the individual. In other words, self-esteem, also referred to as self-worth, is how a person perceives themselves (Srisayekti & Setiady, 2015).

Physical disabilities impact aspects of self-esteem, including social competence, athletic ability, and physical appearance. Physically disabled individuals often feel inadequate in their physical abilities, appearance, and social life (Miyahara & Piek, 2006). According to Oxford Review (n.d.), society often perceives persons with disabilities as unable to perform activities typically carried out by non-disabled individuals and frequently mocks or stigmatizes them. One of the significant issues faced by persons with disabilities is low self-esteem. Increased self-esteem depends on how others perceive them. If others regard them as capable and worthy, their self-esteem improves. This is because others' judgments influence the positive or negative self-perception of individuals.

Sports can serve as an effective tool for enhancing self-esteem for both non-disabled individuals and those with disabilities. Through sports, they have the opportunity to demonstrate their strength and abilities, which they may not always experience in daily life. This enables them to view themselves more positively and develop greater self-confidence (Bogado & Villalba 2023). In the context of sports, self-esteem plays a vital role in an athlete's performance. Research by Aulia et al. (2024) indicates that high self-esteem can enhance motivation, mental resilience, and an athlete's ability to handle competitive pressure. However, research specifically examining self-esteem among disabled athletes remains very limited. Yet, disabled athletes often face more significant challenges than their non-disabled counterparts, making it essential to understand how self-esteem impacts their performance.

Disabled athletes who achieve success in sports present tangible examples of how self-esteem helps overcome obstacles. In West Sumatra, there are various success stories of disabled athletes who have won national and international championships. Their achievements not only bring pride but also serve as inspiration for others, whether disabled or non-disabled. This underscores the importance of further understanding how sports can contribute to enhancing self-esteem for disabled athletes. To explore this, researchers will conduct a quantitative descriptive study on the self-esteem of disabled athletes who have won championships.

This research aims to understand how self-esteem is formed and developed in disabled athletes who have achieved championships in West Sumatra. The study will examine their self-esteem and explore the aspects that support it. Using a quantitative descriptive approach, data will be collected from disabled athletes who have achieved accomplishments in West Sumatra to gain a more comprehensive understanding.

The use of a quantitative descriptive method in this study allows for more structured and systematic data collection. The data will be statistically analyzed to identify the factors influencing self-esteem



among disabled athletes. The findings of this study are expected to provide deeper insights into the self-esteem of disabled athletes and the role of sports in enhancing their self-esteem.

By understanding the dynamics of self-esteem in disabled athletes, the findings of this study are expected to help create a more supportive and inclusive environment. Targeted intervention programs can be developed to assist disabled athletes in improving their self-esteem, enabling them to continue achieving outstanding accomplishments and inspiring more people.

Method

This study employed a descriptive quantitative research method. According to Sugiono (2013), a descriptive study is conducted to provide an overview or description of the research object based on sample or population data as it exists, without the intention of drawing conclusions that apply universally. Therefore, the researcher utilized a quantitative approach with a single variable in this study.

Participants

The research subjects were 20 athletes with disabilities, classified as visually impaired (7 individuals), hearing impaired (8 individuals), and physically disabled (5 individuals), who had represented West Sumatra Province and achieved victories at both national and provincial levels in sports such as athletics, chess, badminton, wheelchair sports, springboard jumping, and futsal. The subjects ranged in age from 14 to 18 years. The gender distribution consisted of 18 male athletes with disabilities and 2 female athletes with disabilities.

Procedure

This study involved a sample of 20 disabled athletes, representing the population of disabled athletes in West Sumatra. The sample was selected using a purposive sampling method, which was designed to ensure that the research subjects met specific criteria relevant to the study's objectives. The inclusion criteria were active disabled athletes who had competed and achieved success at provincial and national levels. Sample selection was carried out by considering the diversity of disability types and sports disciplines followed to ensure the study reflected various relevant backgrounds.

The relatively small sample size in this study was due to the limited population of disabled athletes in West Sumatra and logistical challenges in reaching research subjects spread across different regions. Therefore, this study employed a cross-sectional design to collect data at a specific point in time, minimizing gaps caused by accessibility limitations.

The study was conducted in accordance with ethical research principles, based on the guidelines of the Helsinki Declaration (WMA, 2013) and applicable national regulations. Prior to the commencement of the study, ethical approval was obtained from the relevant University Research Ethics Committee. As part of the ethical procedures, participants were provided detailed information regarding the objectives, procedures, and potential risks and benefits of the study. Participants who agreed to participate were asked to sign an Informed Consent Form (ICF) guaranteeing their right to withdraw at any time without negative consequences.

Data collection was carried out through direct interviews and the completion of a questionnaire designed to measure self-esteem levels. Demographic data collected included age, gender, type of disability, sports discipline, and competitive experience. The interview process was conducted individually to ensure that participants could provide accurate responses without pressure from others. All data collected were kept confidential in accordance with personal data protection policies.

Participants' self-esteem levels were measured using a self-esteem scale developed based on Cooper-Smith's theory (1967). The scale consisted of 34 items, covering four main aspects: power, significance, virtue, and competence. Before use, the scale had been validated by experts to ensure its construct validity. Reliability testing using the Cronbach's Alpha method showed a value of 0.910, indicating an excellent level of internal consistency (Azwar, 2007).

Although the sample size was limited, the study adopted a descriptive statistical approach to provide a comprehensive overview of the self-esteem levels of disabled athletes. This approach aimed to describe

the characteristics of the participants without making generalizations to a broader population. The collected data were analyzed using statistical software SPSS to calculate averages, distributions, and standard deviations of the measured variables.

During the research process, the researcher faced challenges in ensuring the participation of disabled athletes from various regions in West Sumatra. To address these challenges, collaboration was carried out with local sports organizations and coaches who acted as intermediaries in contacting potential participants. This effort not only facilitated the recruitment process but also ensured that athletes felt supported in participating in the study.

Data analysis

This study employed descriptive statistical data analysis techniques, aiming to provide a description of the research subjects based on data from variables obtained from the group of subjects studied, without the intention of testing hypotheses (Azwar, 2003). The collected data were then classified into two groups: quantitative data presented in numerical form and qualitative data expressed in words or symbols. The data were summed or grouped according to the format of the instrument used (Arikunto, 2002). To ensure the data is interpretable and comprehensible, it was supplemented with descriptive explanations that provide a clear depiction of the influence of sports in shaping self-esteem among champion disabled athletes.

Results

Based on the results of the research conducted on disabled athletes regarding their self-esteem, data from 20 individuals was described as follows:

Table 1. Hypothetical and Empirical Scores

Variable	Hypothetical Scores				Empirical Scores			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Self esteem	34	136	85	17	68	118	95,30	15,10

From Table 1, it can be observed that the empirical mean score of self-esteem among disabled athletes reached 95.30, which is higher than the hypothetical mean score of 85. This indicates that disabled athletes have higher self-esteem compared to the general population. Theoretically, the score range on the self-esteem scale in this study moves from 1 to 4, consisting of 34 items, resulting in scores ranging from $34 \times 1 = 34$ to $34 \times 4 = 136$. The spread is therefore $136 - 34 = 102$, with each standard deviation unit being $102 / 6 = 17$, and the hypothetical mean is calculated as $(136 + 34) / 2 = 85$.

After obtaining the data regarding hypothetical and empirical scores, the next step was to categorize the self-esteem of the athletes into three categories: high, moderate, and low, using a hierarchical categorization technique. This technique aims to group individuals into separate levels along a continuum based on the attributes being measured. The following is the hierarchical categorization for disabled athletes' self-esteem:

Table 2. Hierarchical Categorization of Self-Esteem in Disabled Athletes

Score	Category	Disabled Athletes	
		Frequency	%
$102 \leq X$	High	7	35 %
$68 \leq X < 102$	Moderate	13	65 %
$X < 68$	Low	0	0 %

Based on the established categories, 7 disabled athletes (35%) were identified as having high self-esteem, 13 athletes (65%) as having moderate self-esteem, and none fell into the low self-esteem category. This indicates that the self-esteem of disabled athletes who have achieved championship success is predominantly in the moderate to high range.



To gain more detailed insights, the researcher also presented a hierarchical categorization of the self-esteem aspects among disabled athletes as follows:

Table 3. Hierarchical Categorization Based on Aspects of Self-Esteem in Disabled Athletes

Aspect	Score	Category	Disabled Athletes	
			Frequency	%
Power	$24 \leq X$	High	2	10 %
	$16 \leq X < 24$	Moderate	18	90 %
	$X < 16$	Low	0	0 %
	Total		20	100%
Significance	$21 \leq X$	High	14	70 %
	$14 \leq X < 21$	Moderate	6	30 %
	$X < 14$	Low	0	0 %
	Total		20	100%
Virtue	$27 \leq X$	High	7	35 %
	$18 \leq X < 27$	Moderate	12	60 %
	$X < 18$	Low	1	5 %
	Total		20	100%
Competence	$30 \leq X$	High	7	35 %
	$20 \leq X < 30$	Moderate	13	65 %
	$X < 20$	Low	0	0 %
	Total		20	100%

Based on Table 3, it can be concluded that the categorization of disabled athlete subjects based on self-esteem aspects is as follows: For the power aspect, 18 individuals (90%) fall into the moderate category, 2 individuals (10%) into the high category, and none fall into the low category. For the significance aspect, 14 individuals (70%) are categorized as high, 6 individuals (30%) as moderate, and none are in the low category. For the virtue aspect, 12 individuals (60%) fall under the moderate category, 7 individuals (35%) into the high category, and 1 individual (5%) falls into the low category. For the competence aspect, 13 individuals (65%) are in the moderate category, 7 individuals (35%) in the high category, and none fall into the low category. This analysis highlights that, overall, disabled athletes predominantly belong to moderate and high categories of self-esteem across these aspects, with very few or no individuals in the low category.

Discussion

This study demonstrates that the self-esteem of champion disabled athletes has an empirical mean score (95.30), which is higher than the hypothetical mean score (85). These findings confirm that competitive experiences and achievements can positively impact self-esteem, despite the significant physical challenges faced by athletes. The results support Rosenberg's (1965) self-esteem theory, which emphasizes the crucial role of individual achievements in shaping a positive self-image.

The positive role of sports in athletes' personal development is reinforced by Eime et al. (2013), who stated that sports provide psychological and social benefits, including increased self-esteem, reduced anxiety, and the development of social skills. This is further supported by Lubans et al. (2016), who discussed the relationship between physical activity and mental health in children and adolescents, highlighting its positive effects on brain function and emotional regulation.

The categorization analysis shows that the majority of disabled athletes (65%) fall within the moderate self-esteem category, while 35% are classified as having high self-esteem. Notably, no individuals in the sample reported low self-esteem, indicating that sports serve as a protective factor against the negative psychological effects often experienced by individuals with disabilities. These findings align with previous studies that have established how sports participation enhances both the social and psychological aspects of individuals with special needs.

In this study, the sample consists of disabled athletes who have won championships, representing a population with strong psychological and competitive characteristics. This selection must be considered carefully, as champion athletes may possess higher mental resilience, stronger social support, and better

access to training compared to those who competed but did not win. These factors could influence their self-esteem levels, shaping results that might differ from those observed in a broader population.

Nevertheless, the study's findings remain relevant, as they provide insight into the relationship between self-esteem and success in competitive environments. To address potential biases, the data indicate that 65% of athletes are categorized as having moderate self-esteem, while 35% fall into the high category. The absence of individuals with low self-esteem reinforces the idea that structured sports participation serves as a protective psychological mechanism for disabled individuals.

Further analysis of self-esteem components—including power, significance, virtue, and competence—offers additional insights into the elements that contribute to self-esteem development in disabled athletes. For instance, within the significance category, 70% of athletes fall into the high range, reflecting their recognition and contributions within the sports community. This social acknowledgment serves as a key factor in enhancing self-worth, as explained in Maslow's (1943) hierarchy of needs.

Regarding power, the majority of respondents (90%) are classified as moderate, while only 10% fall into the high category, suggesting that individuals' sense of control or influence over their circumstances may still need reinforcement—especially in decision-making or competitive confidence.

The virtue aspect reveals a varied distribution, with 35% of respondents categorized as high, 60% as moderate, and 5% as low. These findings highlight the need to strengthen ethical and moral dimensions in the development of self-esteem among athletes. Interventions such as value-based training or coaching could be strategic initiatives to enhance this aspect.

For competence, 35% of athletes are categorized as high, emphasizing how sports success significantly contributes to self-confidence. However, 65% of respondents fall into the moderate category, indicating that additional efforts are necessary to further enhance their confidence in their personal abilities during competition.

Overall, these findings reinforce the argument that sports are not merely a recreational activity but an effective tool for psychological empowerment, particularly for disabled individuals. Participation in structured physical activities allows individuals to experience achievement, build positive social relationships, and improve their overall self-perception. This aligns with perspectives from various experts who have explored how physical activity supports psychological development, including cognitive enhancement, stress reduction, and improved emotional well-being (Bailey et al., 2013; Trujillo Santana et al., 2022).

However, the moderate self-esteem distribution (65%) suggests room for further development. Psychological interventions, such as mental toughness training aimed at increasing resilience or mindfulness-based programs focused on emotional regulation, could help transition individuals from the moderate to high category.

The limitations of this study should be acknowledged for transparency. The relatively small sample size ($n = 20$) and the exclusive focus on champion athletes limit the generalizability of these findings. Future research is encouraged to include a broader population and examine additional variables, such as social support, perceptions of stigma, or the role of family in the development of self-esteem among disabled athletes. Furthermore, considering the broader competitive landscape, future studies could include athletes who participated in competitions but did not receive awards, to assess whether psychological factors such as resilience and social support continue to play a role in their self-esteem.

Additionally, this study relies solely on quantitative data without incorporating qualitative approaches. Conducting in-depth interviews with athletes could provide richer insights into the psychological dynamics underlying their self-esteem. Future research may also explore the long-term effects of sports participation on mental health and self-esteem.

Practical Implications The findings of this study offer recommendations for adaptive sports program organizers and coaches, advocating for the integration of psychological training elements into athletes' routines. Programs designed to boost self-efficacy and enhance social recognition could significantly accelerate improvements in self-esteem among disabled athletes.

Conclusions

In conclusion, this study demonstrates that sports play a significant role in shaping the self-esteem of disabled athletes, particularly those who have achieved championship status. However, further reinforcement is needed to ensure that all aspects of self-esteem can develop optimally. By creating a supportive environment and recognizing the achievements of athletes, sports can serve as a highly effective means of empowerment.

References

- Arikunto, S. (2002). *Prosedur penelitian: Suatu pendekatan praktik*. Jakarta: PT Rineka Cipta.
- Azwar, S. (2003). *Sikap manusia: Teori dan pengukurannya*. Yogyakarta: Pustaka Pelajar.
- Azwar, S. (2007). *Reliabilitas dan validitas*. Yogyakarta: Pustaka Pelajar.
- Aulia, P., Puspasari, D., Fajrika, T., & Salfina, Y. F. (2024). Efectividad del entrenamiento mental para aumentar la autoeficacia y reducir la ansiedad competitiva en deportistas (Effectiveness of mental training to increase self-efficacy and reduce competition anxiety in athletes). *Retos*, 58, 511–515. <https://doi.org/10.47197/retos.v58.107680>
- Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2013). Physical activity: An underestimated investment in human capital.
- Bogado, D., & Villalba, F. J. (2023). Perfil psicosocial y deportivo en deportistas argentinos de alto rendimiento con discapacidad motora e intención de continuar la práctica deportiva en el futuro (Psychosocial and sports profile in high-performance Argentine athletes with motor disabilities and intention to continue practicing sports in the future). *Retos*, 50, 1204–1213. <https://doi.org/10.47197/retos.v50.100328>
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: W. H. Freeman and Company.
- Damayanti, S., & Rostiana. (2003). Dinamika emosi penyandang tunadaksa pasca kecelakaan. *Jurnal Ilmiah Psikologi Arkhe*, 8(1), 15–28.
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents.
- Huda, N., & Aulia, P. (2020). Perbedaan self-esteem pada atlet disabilitas yang juara di Sumatera Barat. *Jurnal Pendidikan Tambusai*, 4(3), 3511–3518. Retrieved from <http://jptam.org/index.php/jptam/article/view/880>
- Karyanta, N. A. (2013). Hubungan antara kestabilan emosi dengan problem solving pada mahasiswa program studi psikologi Universitas Sebelas Maret Surakarta. *Jurnal Ilmiah Psikologi Candrajati*, 3(4), 19–33.
- Kustiani, K. P., Sugiharto, D. Y. P., & Anni, C. T. (2019). Minat studi lanjut ke perguruan tinggi siswa ditinjau dari self-efficacy dan aspirasi orangtua. *Psychocentrum Review*, 1(1), 17–26. <https://doi.org/10.30998/pcr.115>
- Lubans, D. R., Richards, J., Hillman, C. H., Faulkner, G., Beauchamp, M. R., Nilsson, M., & Biddle, S. J. H. (2016). Physical activity for cognitive and mental health in youth: A systematic review of mechanisms.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–396. <https://doi.org/10.1037/h0054346>
- Miyahara, M., & Piek, J. (2006). Self-esteem of children and adolescents with physical disabilities: Quantitative evidence from meta-analysis. *Journal of Developmental and Physical Disabilities*, 18(3), 219–234. <https://doi.org/10.1007/s10882-006-9014-8>
- Mujica-Johnson, F. N., Concha López, R., Peralta Ferroni, M., & Burgos Henríquez, S. (2024). Gender Perspective in Physical Education Teacher and School Training. Critical analysis in terms of the Chilean context (Gender perspective in Physical Education, teacher training and schooling. Critical analysis based on the Chilean context). *Retos*, 55, 339–345. <https://doi.org/10.47197/retos.v55.103535>
- Oxford Review. (n.d.). Disability stigma – Definition and explanation. Retrieved from <https://oxford-review.com/the-oxford-review-dei-diversity-equity-and-inclusion-dictionary/disability-stigma-definition-and-explanation>
- Sugiyono. (2013). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.



- Srisayekti, W., & Setiady, D. A. (2015). Harga-diri (self-esteem) terancam dan perilaku menghindar. *Jurnal Psikologi*, 42(2), 141–156. <https://doi.org/10.22146/jpsi.7169>
- Trujillo Santana, T., Maestre Baidez, M., Preciado Gutierrez, K. Y., Ortin Montero, F. J., López Fajardo, A. D., & López Morales, J. L. (2022). Bienestar Psicológico, Fortaleza Mental y Vitalidad Subjetiva en Deportistas con Discapacidad (Wellbeing, Mental Toughness and Subjective Vitality in Athletes with Disabilities). *Retos*, 45, 1165–1173. <https://doi.org/10.47197/retos.v45i0.90753>
- World Health Organization. (2023). Disability and health. Retrieved from <https://www.who.int/health-topics/disability>

Authors' and translators' details:

Prima Aulia	primaaulia@fip.unp.ac.id	Author
Dwi Puspasari	dwipuspasari@med.unand.ac.id	Author
Nurul Huda	nurulhuda1696@gmail.com	Author
Rahma Kamandasari	rahmakamandasari.rks@gmail.com	Translator