



The Influence of Gender on Students' Academic Achievement in a Nursing Diploma Program

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ABSTRACT

Different from education in general, nursing education is dominated by the female gender both in Indonesia and in the world. There is still debate about whether gender has an influence on student achievement, including in nursing education. Research objective is to find out the influence of gender on the achievement of nursing diploma level students who are dominated by female gender. This research is a quantitative research, namely retrospective descriptive. The population in this study were students of the Nursing Diploma Three Study Program with a sample size of 93 students. The sampling technique used in the research was total sampling. The instrument used in this research is secondary data, namely by looking at the documentation of student gender biodata, and learning achievement is the Cumulative Achievement Index (GPA) from the student's Study Result Card after graduation. The statistical test used in analyzing this research is the independent t test; with a significance level of 0.05. Based on bivariate analysis, it is known that there is a relationship between gender and learning achievement with a significance value of $0.03 < 0.05$. The results indicate that there is a difference in the achievement of female students compared to male students. Female students have an average Grade Point Average of 3.51 with honors, while male students have an average Grade Point Average of 3.44 with a satisfactory grade. From the research it is concluded that there is an influence of gender on the achievement of nursing diploma program students.

Keywords: Gender, student learning achievement, nursing



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1. INTRODUCTION

1.1 *Background*

The implementation of education in the past often disadvantaged those of the female gender. Women are often overlooked for opportunities to learn compared to those of the male gender. This difference in treatment is known as gender bias. Gender bias is the unfair distribution of positions and roles between men and women (Kusnia, 2017). Women with feminine characteristics are seen as having a role in the domestic sector, whereas masculine men have a role in the public sector. A perspective like this is not only detrimental to women themselves, but will also have an impact on low quality in the field of education (Dangol, 2019).

Several factors that influence gender inequality in education include value, access, participation, control and benefits. Values that develop in a society that divides the roles of men and women. Women tend to have fewer educational opportunities than men (Fitrianti, 2012). The higher the level of education, the wider the gap. Views regarding differences in educational treatment for men and women show that discrimination or gender inequality still exists.

Gender is the equivalent word for sex, but actually has a broader meaning than that (Utami & Yonanda, 2020). Meanwhile, gender discrimination is any distinction, exclusion or restriction made on the basis of socially constructed gender roles and norms that prevents a person from enjoying full human rights (Cottingham, et al., 2001; Kuota & Kaite, 2011). Education in gender equality is a combination of education and gender itself (Kusnia, 2017).

The situation of discrimination and gender bias, not only in eastern countries such as Indonesia, educational inequality still occurs in western countries. Men in Western countries tend to have higher levels of educational attainment than women. In the adult population, namely those aged 25 to 64 years, the male gender was found to have a large number more years in terms of education level and are more likely to achieve upper secondary education or higher than women in two out of three developed countries, even Utami and Yonanda (2020) indicate that the higher the level of education, the wider the educational gap.

For students or students in educational units, both male and female, in the learning process they should have the same rights and opportunities. They have the same opportunities and are open to being active in the learning process. These students both have access to books

and literature owned by the educational unit (Khairunnisa, 2016). Based on these conditions, there should be no obstacles for each gender to excel in their education.

In contrast to education in general, the reality in the field of nursing education is that it is dominated not by the male gender but by the female gender. Women dominate the number of students who are actively studying. Anthony (2004) acknowledged that there is still gender bias and role stereotypes in nursing education programs because nursing faculty often consist mostly of women. Regarding this, Bastable (2019) stated that gender issues in nursing education learning and teaching strategies need to be explored further. Bastable added that gender is part of a student's physical readiness in determining overall learning readiness, which ultimately can determine a student's learning achievement.

Learning achievement is interpreted as the result of measuring students which includes cognitive, affective and psychomotor factors, after following the learning process which is measured using test instruments or relevant instruments (Rosyid, Mustajab & Abdullah, 2019). The results of learning achievements in higher education from students or students are generally shown in the form of grades. These student achievement reports usually use symbols, such as the letters A to E, pass or fail (Oermann, & Gaberson, 2021), operationalized in the form of indicators in the form of achievement index (IP) and cumulative achievement index (GPA). This also applies to nursing students.

Learning achievement is the result of a process in which there are a number of factors that influence each other on the high and low learning achievements of students or students. One of the factors that influences achieving learning achievement is sex or gender (Esteves, 2018). Although this is still much debated, some evidence shows that educational statistics and mass media news around the world have reported a clear gender gap in academic achievement between boys and girls with boys lagging behind girls and some researchers even argue that Male underachievement is a very important topic both around the world.

On the other hand, Utami and Yonanda (2020) argue that gender has no influence in determining whether male or female students have better learning achievements. This opinion is supported by research results from Yuniarti (2014) and Setiawati and Arsana (2018) which concluded that there is no significant influence between gender on learning achievement. Similar research results were conducted by Sari (2020) who concluded that there was no relationship between gender and learning outcomes in research methodology courses for students.

Meanwhile Wardani (2018) from the results of his research found evidence that there is a direct influence of gender on student learning achievement, the reason is because the brain structure of men and women is different, but this opinion is still doubtful, even though neuroscience is revealing more and more evidence about the function of different parts of the brain. male and female brains for a person's learning process, Bastable (2019) based on findings from interdisciplinary research on the influence of gender on learning remains inconclusive.

There is still a lot of debate and inconsistent research results regarding gender and student learning achievement, research is still needed. Moreover, if applied in nursing education which is dominated by the female gender. The aim of this research is to determine whether there is an influence of gender on the achievement of nursing diploma program students.

1.2 Research questions

Based on the literature and empirical studies in the background above, this research question is: Is there a significant influence between gender and the learning achievement of nursing diploma program students? The specific questions are as follows:

1. What is the average achievement index for female students?
2. What is the average achievement index for male students?
3. Is there a difference in the Achievement Index of female and male students?

1.3 Significance of the study

This research is important in an effort to reduce the debate about whether there is an influence of gender on learning achievement. Nursing education itself is an education dominated by women. The results of this research will provide a clear picture of the attitude of nursing lecturers in providing lectures to nursing students whose ultimate goal is to have adequate competence in terms of knowledge, attitude and psychomotor skills, considering that the nurses produced must provide services to sick people.

2. METHODS

2.1. *Research Design*

This research is quantitative research, namely retrospective descriptive research. The main goal is to create an objective picture or description of a situation by looking at previously existing data.

2.2. *Sample and population*

The population in this study were students from the Nursing Diploma Three Study Program, Faculty of Health and Pharmacy, Muhammadiyah University, East Kalimantan, class of 2017 who had been declared to have passed through the judiciary and already had transcripts. The total population in this study was 93 students. The sampling technique used in the research was total sampling.

2.3. *Instrument*

The research instrument used in this research is secondary data, namely by looking at student biodata documentation, while the instrument for learning achievement is GPA (documentation used using student Study Results Cards).

2.4. *Data analysis*

The statistical test used in analyzing this research is the independent t test; with a significance level of 0.05.

3. RESULTS AND DISCUSSION

3.1 *Research Results*

3.1.1 *Gender*

Table 1. Distribution of Respondents by gender

Gender	Total	Percentage
Male	30	32,3
Female	63	67,7
Amount	93	100

Table 1 shows that the 2017 class of students who graduated from the Diploma III Nursing Study Program, Faculty of Health and Pharmacy, UMKT, were dominated by female graduates, 63 out of a total of 93 people (67.7%), while only one third of the male graduates.

3.1.2. Learning achievement

Table 2. Distribution of Average Cumulative Achievement Index (GPA)

Variable	Mean, Median	Min- Max	SD
Grade point Average	3,49	3,09- 3,86	0,15

Table 2 shows that the learning achievements of students who have graduated with an average Cumulative Achievement Index of. 3.49, median 3.49, lowest GPA value 3.09, highest GPA value 3.86 with SD 0.15. This Achievement Index shows a very satisfactory classification.

Table 3. Average Cumulative Achievement Index by gender

Gender	Mean	SD
Male	3,44	0,14
Female	3,51	0,15

Table 3 shows that the average Cumulative Achievement Index for male respondents is 3.44 with an SD of 0.14, in the very satisfactory category, while female respondents are 3.51 with an SD of 0.15 in the category with praise.

3.1.3 The influence of gender on learning achievement

Table 4. Gender with GPA

Variable	Gender	Mean	df	SD	T	Sig
Gender	Male	3,44	91	0,03	-2,18	0,032
	Female	3,51				

From table 4, we can obtain a relationship in this study from the results of the independent t statistical test which gives a significant value of 0.032 (<0.05) which shows that the gender variable has a significant relationship with learning achievement.

3.2 DISCUSSION

Learning achievement is the result that has been achieved from learning that has been carried out, so that to know whether a job is successful or not, an indicator measurement of

learning achievement is needed, covering three aspects, namely cognitive, affective and psychomotor. These three aspects must be changes experienced by male and female students through the teaching and learning process in higher education. Apart from influencing physical differences, gender also influences students' thinking abilities, especially critical thinking abilities (Prasetyo, 2020). The success of the learning process is influenced by several factors, namely self (internal) factors and external factors (external). Measuring success in learning (instruments) used in higher education generally uses the Cumulative Achievement Index (Husna & Jumino, 2022).

Based on the results conducted by researchers, looking at the number of students based on gender, it shows that the majority are women (67.7%), while men are only 32.3%. The results of this research are different from the research reports of Alavi (2010) and Prosen (2022). The percentage of students majoring in nursing is higher than in Europe, as reported by Alavi. In the UK 10% of nursing students are male and in Iran it is around 23%. Prosen (2022) reports that the number of male nurses in Slovenia is growing steadily at 11.34%. This data shows that the male gender is still low in entering the nursing profession. This is because most people still perceive that caring is a job that is synonymous with the female gender. Although in reality the male gender can also care and even in certain situations or places of care a male nurse is needed.

In the future, the need for male nurses will increase, even in the United States, the United States Bureau of Labor estimates that the job growth rate for nurses will be much faster than average, estimated to grow 16 percent in 2024 (Statistics Bureau of Labor, 2014; Gunawan, 2017). This means that more nurses are needed to fill this need, including male nurses.

The high interest in male nurses in Indonesia compared to western countries is thought to be because Indonesia has a very wide service area, its geographical conditions require male nurses, especially in remote or remote rural areas. This technical reason is why the need for male nurses in Indonesia is increasing and This has had an impact on the increasing interest in prospective male students to study in nursing education programs.

In hospital service areas, male nurses have the physical strength needed for tasks such as moving patients and heavy medical equipment (Gunawan, 2017). In certain service areas, many men are needed because of the physical burden required to provide services to emergency patients, intensive care patients and operating rooms. Male nurses are needed for nursing

actions that require energy, such as moving patients, performing cardiopulmonary resuscitation which requires more endurance, which are mostly carried out by male nurses rather than female nurses.

It is recorded that the male gender still has low interest in becoming nurses. Apart from the perception that nursing is a feminine profession, there are still many people who believe that caring by giving love and care to patients can only be done by women (Zhu, et al., 2021), so it is suspected that discrimination and gender bias still occur. Kouta & Kaite (2011), and Gunawan (2017) admit that there is still gender bias and role stereotypes in nursing education programs. The reason is because nursing faculties or nursing schools, as well as nursing services, mostly consist of women. Folami's (2017) research results also showed that 68% of 500 respondents reported gender bias from nursing lecturers and staff towards nursing students, while 32% of respondents did not experience gender bias during nursing school. One form of this is that male nursing students feel differences in the way they are treated when practicing in clinical settings (Yip, Yip, & Tsui, 2021).

Gender bias or discrimination that occurs in nursing education is very different from what occurs in general, where the female gender is usually the victim of discrimination, while in nursing education gender bias actually occurs against the male gender. This shouldn't have happened. However, the presence of male nurses is very necessary, both in hospitals and outside hospitals, especially to care for male patients, because male nurses better understand the basic needs of male patients. In other words, male nurses provide unique perspectives and skills that are important to the nursing profession (Gunawan, 2017).

Currently, along with the increasingly massive development of education and the information era, there has also been a change in thinking patterns in society. In addition, the increasingly intensive promotion of gender equality in education and work has opened up opportunities for men and women to play their roles according to their respective interests and abilities (Alavi, 2010). Although there has been progress towards greater gender diversity, the male gender in nursing is still underrepresented (Frosen, 2022). Even though men also have the same capacity to care for patients as female nurses (Gunawan, 2017). In this case, a lecturer must understand his role, not only as a facilitator, the lecturer must also guide and provide correct direction so that gender discrimination does not occur on nursing campuses.

Nursing professionals need to place greater emphasis on growing understanding that men have an important role in care services. There must be a strategy to recruit more male

nurses to work in the field, because currently the demand for male nurses is increasing (Gunawan, 2017). It is hoped that this change will trigger more men to study at the Faculty of Nursing.

The results of this research found that the average student achievement in terms of GPA for the male gender was 3.44, while for the female gender the average GPA was 3.51. The results of this study found that there were significant differences between genders in learning achievement. These results also show that those of the female gender performed better in the category with praise than those of the male gender in the satisfactory category. This condition is in line with previous research results which show that female students are generally more receptive and take slightly more risks to learn health care knowledge and practices (Bastable, 2019).

Based on the data above, this research shows that female students have 125.5% potential to graduate faster than university students. This result is in line with the research results of Anwar, et al., (2019) who conducted research outside the field of nursing and also concluded that female students have 127% potential to graduate more quickly in the fields of Social Sciences, Economics and Humanities (Soshum), and 123.9% in the field of Science and Technology (Sciencetech). Analysis on campus. Based on this fact, it can be concluded that there are gender differences between men and women in terms of learning achievement, and women's learning achievement tends to be better than men.

The results of these studies need to be confirmed in the anatomy and physiology of the human brain. Judging from their structure, the brains of men and women have differences in anatomical or physical aspects (size), so this will influence the way they think and learn (Amin, 2018). There are also differences in patterns in function or how it works, especially the connections or brain road map which is often known as the connectome. This difference in connection systems will have an impact on the characteristics and thinking patterns of men and women, even though both genders are facing similar situations. Sometimes men are superior in certain things, sometimes women have more advantages in other things (Sari & Utari, 2022).

Sari and Utari (2022), further explained that the brain structure of women has a greater network of connections, both to the left and right and across both hemispheres. Fibers in the corpus callosum provide abundant bidirectional neural connections between most of the cortical areas of the two cerebral hemispheres. This fiber pathway in the corpus callosum is used for communication between the two hemispheres (Guyton & Hall, 2021).

A structure like the one above provides advantages in terms of collecting information from various sources both inside and outside the body and will make it easier to draw conclusions. The left part of the brain handles logical thinking and the right part of the brain deals with intuition. The female brain is also known to have more structures that play a role in memory and communication abilities. Not only that, the researchers also found that women's brains have more neural connections (wiring) in areas related to memory and social cognition. It is not surprising that women tend to be better at understanding people's feelings and knowing how to respond appropriately in social situations. In addition, women's brains have a larger hippocampus than men's brains. The hippocampus is the part of the brain that regulates learning and memorization, so it has an influence on learning and memorizing lessons received at school or on campus.

The differences in brain function between men and women influence differences in thought patterns, so many studies state that female gender achievement has a more positive relationship with learning achievement when compared to male gender. Students tend to be more active in learning but their activeness is used to carry out non-academic tasks while female students tend to be more motivated to carry out academic and social tasks.

The brain is actually divided into three, namely the right brain, middle brain and left brain (Sousa, 2017, Suryadi, 2018). However, many popular books that are widely used by motivators simplify that the brain only consists of the left brain and the right brain, the opinions in these popular knowledge books cannot be scientifically justified (Suryadi, 2018).

According to Sousa (2017), lateralization is the separation of the brain's tasks in storing and processing information from two parts of the brain, namely the left brain and the right brain. The left brain monitors the speech area, understands the literal interpretation of words, and recognizes words, letters, and numbers written as words, evaluates factual material in a rational way, perceives details in visual processing, and detects time and sequence, performs simple arithmetic calculations, gives attention to dealing with external stimuli and processing positive emotions such as joy

The right brain gathers more information from images than from words, looks for visual patterns, interprets language through the context of body language, emotional content, and tone of voice rather than through literal meaning, specializes in spatial perception; recognize places, faces, and objects; and focuses on relational and mathematical operations, such as geometry

and trigonometry and processing negative emotions such as sadness and depression (Sousa, 2017).

The brain structures of men and women are different, resulting in different learning methods and styles. It is easier for men to learn something in a way that emphasizes hands-on activities such as practical work, design, assembling tools, etc., and minimal communication (verbal and non-verbal). Meanwhile, women prefer to learn in ways and styles related to communication such as lectures, speaking, writing, casual discussions, or presentations (Amin, 2018).

Amin (2018) also explained that men's brains have more connections from front to back, so men have a stronger perception of things, and they recognize their surroundings better so they can take action quickly and precisely. Besides that, men's brains have stronger connections between areas of the brain so that men have better mastery of motor and spatial skills. Men are better at performing tasks that require hand-eye coordination.

However, the differences in how men's and women's brains work above do not necessarily apply to everyone. Differences in men's and women's brains can also be influenced by the environment in which a person grows and is raised, culture and life experiences. Basically, the brain is able to adapt. If the brain receives the same signals over and over again, the network will strengthen and get used to the information it processes. This is what makes each person's brain work differently, regardless of gender (Amin, 2018).

Recent studies suggest that gender may have a major influence on human cognitive functions, including emotions, memory, perception, etc. Men and women appear to have different ways of encoding memories, feeling emotions, recognizing faces, solving certain problems, and making decisions. These gender-related brain structural differences may be related to gender differences in cognition and emotional control (Xin, et al., 2019). In the human brain, neurophysiologically the corpus callosum and Broca's and Wernicke's areas in the female brain are thicker and wider than the male brain. This condition makes the female gender more empathetic and communicative than the male gender (Suryadi, 2018).

Apart from individual factors, which are viewed from aspects of the anatomy and physiology of the brain, stimulation and interaction with educators such as lecturers and clinical supervisors in practice settings is also very determining. Students who receive special attention will have greater motivation to excel, if this continues without the lecturers realizing it will create high differences between men and women. The target in the learning process is students

who can improve their abilities both in terms of cognitive, affective and psychomotor (Prosen, 2022).

Educators should not rely too much on the ability of the human brain to learn, but also on the ability of education to teach competencies that nurses must master. Current scientific evidence about the human brain also shows that the function of the left brain is critical, logical, systematic and linear thinking; while the right brain thinks holistically, integratively, aesthetically and divergently, which is not always correct (Suryadi, 2018). This is supported by neuro-plasticity theory showing that the left brain can also think holistically and vice versa, the right brain can also think critically (Hebb, 2012). Therefore, educational factors and learning environment factors, both on campus and in practice, still determine the achievement of nursing students, both male and female.

4. CONCLUSION

4.1 *Conclusions*

The results of this study show that gender has a significant influence on learning achievement. Female nursing students are better at achieving academic achievement as seen from the Cumulative Achievement Index compared to male students.

4.2 *Suggestions*

Suggestions for nursing lecturers to better facilitate learning to achieve competency in the cognitive, affective and psychomotor domains are prioritized for male students because they need to internalize the knowledge and practice of nursing actions aimed at sick humans. This result is because the female gender is generally more receptive to health care knowledge and practices than male.

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