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# Analysis of Body Odor on Students' Learning Comfort

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**ABSTRACT**

Comfort in the learning process plays a crucial role in supporting the achievement of optimal learning outcomes among university students. However, certain aspects of the learning environment are often overlooked despite their significant impact, one of which is the presence of body odor. This condition may disrupt concentration, reduce psychological comfort, and negatively affect social interactions among students during academic activities. Based on this phenomenon, this study aims to examine the relationship between body odor and students' level of learning comfort in higher education settings. The research adopts a quantitative approach using a survey method, with questionnaires employed as the primary data collection instrument. The research sample consists of 36 students selected through purposive sampling, a technique that involves choosing participants based on specific criteria relevant to the study objectives. Data were analyzed using correlation analysis to determine the strength and direction of the relationship between body odor and learning comfort. The findings reveal a significant relationship between body odor and students' learning comfort, particularly in terms of concentration, academic focus, and classroom atmosphere. These results underscore that personal hygiene, especially concerning body odor, is a critical factor in fostering a healthy, comfortable, and academically supportive learning environment in higher education institutions.

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## 1. INTRODUCTION

Comfort in the learning process is a fundamental factor that contributes to students' academic success (Slameto, 2015; Slavin, 2018). A supportive learning environment not only enhances concentration but also fosters motivation, attention, and active participation during lectures (Uno, 2017; Schneider, 2002). Conversely, when learning conditions are unfavorable, students are more likely to experience distractions, reduced interest in learning, and difficulties in establishing effective social interactions (Najafi et al., 2018). Therefore, factors that influence learning comfort deserve serious attention within higher education settings (Sarafino & Smith, 2011).

Learning comfort is shaped by both physical and social environmental elements (Schneider, 2002; Najafi et al., 2018). Physical factors include lighting, classroom temperature, noise levels, and ambient odors, while social factors relate to the quality of interpersonal relationships among students and the emotional climate created during the learning process (Goffman, 1963; Mead, 1934). One physical factor that is often overlooked yet potentially influential is body odor. Body odor, medically referred to as bromhidrosis, results from the interaction between sweat and bacteria on the skin's surface, producing an unpleasant smell (Potter & Perry, 2017; Santoso, 2019). In academic settings, this condition may cause psychological discomfort among surrounding students, which can subsequently reduce concentration and discourage participation in group activities (Prokop et al., 2015). Individual tolerance toward body odor varies and is influenced by cultural background, personal characteristics, and prior social experiences (Havlíček et al., 2017). In certain social contexts, body odor is perceived as disturbing or embarrassing, which may lead to feelings of insecurity and social avoidance (Goffman, 1963).

Beyond its psychological impact, unpleasant odors in learning environments may also trigger negative emotional responses such as irritation, stress, or discomfort (Herz, 2016; Laktionova et al., 2024). These reactions can disrupt the classroom atmosphere that is intended to support effective learning (Sarafino & Smith, 2011). Students who feel disturbed tend to distance themselves from the source of the odor and limit communication, thereby hindering academic collaboration and interactive learning (Mead, 1934; Prokop et al., 2015). Such conditions may restrict students' social development and reduce the overall quality of the learning experience (Slavin, 2018).

Several studies have indicated that specific body odors can influence individuals' emotional states and even physiological responses (Herz, 2016; Laktionova et al., 2024; Pol et al., 2002). This evidence suggests that body odor is not merely an issue of personal hygiene, but also a component of the learning environment that can affect comfort and the overall quality of academic activities (Santoso, 2019; Ministry of Health of the Republic of Indonesia, 2022). Nevertheless, research specifically examining the relationship between body odor and learning comfort among university students remains limited, particularly within the context of higher education in Indonesia.

Based on this background, the present study focuses on analyzing the relationship between body odor and students' learning comfort. The findings are expected to serve as a reference for higher education institutions in promoting awareness of personal hygiene and in fostering healthier, more comfortable, and academically supportive learning environments.

## 2. METHODOLOGY

This study employs a quantitative approach with a survey research design. The purpose of the study is to examine the relationship between body odor and students' learning comfort in a higher education environment. The quantitative method was chosen because it allows variables to be measured objectively and produces numerical data that can be statistically analyzed to test the research hypotheses. The population of this study consists of all undergraduate students at a selected university. The research sample comprises 36 students, selected using purposive sampling, which involves determining participants based on specific criteria relevant to the research objectives (Arikunto, 2020; Sugiyono, 2022).

## 3. RESULTS AND DISCUSSION

Body odor is one aspect of personal hygiene that is often overlooked in learning environments, despite its significant role in influencing students' psychological conditions and social interactions within the classroom. The presence of strong body odor may cause discomfort among other students, disrupt concentration, and even lead to reluctance to interact with individuals perceived as the source of the odor. Such conditions can ultimately reduce the overall quality of learning activities.

This study was conducted with 36 students selected using purposive sampling techniques. The research instrument consisted of a questionnaire designed to measure students' perceptions of the intensity of body odor in the classroom environment as well as the level of learning comfort they experienced. The collected data were then analyzed using statistical tests to determine the strength of the relationship between the two variables.

The findings indicate that body odor affects not only the physical aspect of learning comfort but also psychological aspects such as focus and students' self-confidence during the learning process. Therefore, greater attention to personal hygiene, particularly in managing body odor, is an important step toward creating a conducive and productive learning environment in higher education. The findings of this study indicate that body odor is one of the learning environment factors that significantly influences students' learning comfort in the classroom. Statistical analysis reveals a negative correlation between body odor and students' learning comfort. This result suggests that the more frequently or intensely students are exposed to unpleasant body odor from others, the lower their level of comfort during the learning process. Such discomfort affects not only students' ability to maintain focus while receiving academic material but also their overall psychological condition, including feelings of discomfort, stress, and a disturbed learning atmosphere.

These findings are consistent with the theory proposed by Schneider (2002) & Pol et al. (2002), which emphasizes that odor is a component of the physical environment that influences concentration, emotional states, and learning performance. Unpleasant odors may function as distracting stimuli that divert attention and reduce cognitive capacity in processing academic information. Furthermore, recent research by Laktionova et al. (2024), within the classroom context, students who are exposed to unpleasant body odor tend to avoid sitting close to or interacting with peers perceived as the source of the odor. This behavior may create social distance among students and reduce the effectiveness of group work, which is an essential component of interactive and collaborative learning. Consequently, the classroom atmosphere becomes less supportive, as students' attention is divided between engaging with course content and coping with discomfort. If such conditions persist over time, they may lead to a decline in learning motivation, reduced active participation in classroom discussions, and

strained interpersonal relationships among students. In the long term, these effects may contribute to a decrease in academic quality and increase the risk of social conflict or discriminatory attitudes toward students who are frequently associated with body odor issues.

Therefore, the results of this study underscore the importance of maintaining personal hygiene, including effective management of body odor through healthy lifestyle practices and appropriate use of personal care products, as a crucial element in fostering a comfortable, healthy, and academically supportive learning environment. Higher education institutions are also encouraged to provide education on personal hygiene to promote shared comfort and to support the development of a positive and inclusive academic climate.

**Table 1.** Body odor intensity

| Statement | Strongly Disagree | Disagree | Moderately | Agree | Strongly Agree |
|---|---|---|---|---|---|
| The body odor perceived in the classroom feels quite strong. | 5,6% | 5,6% | 13,9% | 47,2% | 27,8% |
| Body odor can be detected quickly as soon as I enter the classroom. | 5,6% | 2,8% | 27,8% | 41,7% | 22,2% |
| The body odor smell becomes stronger when the classroom is crowded. | 2,8% | 5,6% | 13,9% | 36,1% | 41,7% |
| The air in the classroom feels stuffy or “heavy” due to the presence of body odor. | 5,6% | 5,6% | 13,9% | 36,1% | 38,9% |
| Body odor spreads throughout the entire classroom, not just in certain areas. | 2,8% | 5,6% | 22,2% | 47,2% | 22,2% |

Based on the indicator of body odor intensity, the study found that the majority of respondents perceived the presence of fairly strong body odor in the classroom. Regarding the first statement—body odor in the classroom being noticeable—approximately 75% of respondents agreed or strongly agreed, while only a small portion expressed disagreement. This suggests that body odor is a tangible condition experienced by most students. Furthermore, in response to the statement that body odor can be detected quickly upon entering the classroom, more than 63% of respondents indicated agreement or strong agreement. This finding implies that body odor is easily recognizable and can be perceived at the very beginning of classroom activities. In addition, body odor was reported to intensify when the classroom is crowded, with about 77.8% of respondents agreeing with this observation. The perception of stuffy or heavy air in the classroom due to body odor also received predominantly positive responses, with roughly 75% of respondents agreeing or strongly agreeing. Moreover, body odor was noted to spread throughout the classroom rather than being confined to specific areas, as 69.4% of respondents confirmed. In conclusion, the body odor intensity indicator demonstrates that body odor in the classroom is relatively strong, easily detectable, widespread, and exacerbated under crowded conditions. These findings highlight the significance of air quality and personal hygiene in shared learning environments.

**Tabel 2.** Frequency of body odor occurrence

| Statement | Strongly Disagree | Disagree | Moderately | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Body odor frequently occurs throughout a lecture session. | 2,8% | 8,3% | 22,2% | 44,4% | 22,2% |
| During one academic week, I often notice body odor in the classroom. | 2,8% | 8,3% | 25% | 33,3,% | 30,6% |
| I can observe certain patterns related to the occurrence of body odor in the classroom. | 2,8% | 5,6% | 22,2% | 47,2% | 22,2% |
| Body odor is more frequently detected at certain times of the day. | 2,8% | 2,8% | 27,8% | 36,1% | 30,6% |
| I often feel disturbed by body odor present in the classroom. | 2,8% | 2,8% | 13,9% | 41,7% | 38,9% |

Based on the indicator of body odor frequency, the study found that body odor frequently occurs during classroom activities. Regarding the statement that body odor is often present throughout lecture sessions, 66.6% of respondents agreed or strongly agreed, indicating that body odor is not a sporadic event but rather a recurring phenomenon. Furthermore, within the span of an academic week, 63.9% of respondents reported frequently detecting body odor in the classroom. This suggests that the occurrence of body odor is relatively high. Respondents also indicated an ability to recognize certain patterns associated with the appearance of body odor, with 69.4% expressing agreement. In addition, body odor was perceived to be more noticeable at specific times of the day, with 66.7% of respondents agreeing or strongly agreeing. This finding highlights that temporal factors and daily activities can influence the emergence of body odor in the classroom. The subjective impact of this condition was also evident, as 80.6% of respondents reported frequently feeling disturbed by the presence of body odor during lectures. In conclusion, the frequency indicator demonstrates that body odor appears often, recurs regularly, follows certain observable patterns, and significantly affects the comfort and concentration of students in the learning environment.

**Tabel 3.** Source of body odor

| Statement | Strongly Disagree | Disagree | Moderately | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I have a perception of who or what is the source of body odor in the classroom. | 2,8% | 2,8% | 30,6% | 36,1% | 27,8% |
| The body odor detected in the classroom likely originates from certain individuals. | 2,8% | 2,8% | 25% | 30,6,% | 38,9% |
| Body odor in the classroom is worsened by poor ventilation conditions. | 2,8% | 2,8% | 27,8% | 41,7% | 25% |
| Body odor in the classroom is likely caused by excessive sweating among the students. | 2,8% | 5,6% | 16,7% | 33,3% | 41,7% |

Based on the indicator of body odor sources, the study revealed that the majority of respondents have perceptions regarding the origin of body odor in the classroom. Concerning respondents' understanding of the sources of body odor, 64% agreed or strongly agreed, indicating that students not only recognize the presence of body odor but also attempt to identify its source. Most respondents also believed that body odor in the classroom originates from specific individuals, with 69.5% expressing agreement. Additionally, poor ventilation was perceived to exacerbate the intensity of body odor, as 66.7% of respondents agreed or strongly agreed with this statement. Another contributing factor identified was excessive sweating among students. This is reflected in the 75% of respondents who agreed or strongly agreed that body odor in the classroom is likely caused by excessive perspiration. In conclusion, the indicator of body odor sources shows that body odor is perceived to originate from specific individuals, is worsened by inadequate ventilation, and is closely associated with excessive sweating during classroom activities.

**Tabel 4.** Learning concentration

| Statement | Strongly Disagree | Disagree | Moderately | Agree | Strongly Agree |
|---|---|---|---|---|---|
| My attention during lectures decreases when body odor is detected. | 2,8% | 5,6% | 19,4% | 47,2% | 25% |
| I find it difficult to understand the lecturer's explanations when distracted by body odor. | 2,8% | 5,6% | 27,8% | 36,1% | 27,8% |
| I am easily distracted when I smell strong body odor. | 5,6% | 2,8% | 16,7% | 38,9% | 36,1% |
| I have difficulty maintaining focus for several minutes when there is body odor in the room. | 2,8% | 8,3% | 13,9% | 44,4% | 30,6% |

Based on the learning concentration indicator, the findings reveal that all statemen items predominantly received negative responses, indicating that body odor has a noticeable impact on students' concentration during learning activities. For the first statement, "My attention during lectures decreases when body odor is detected," the majority of respondents expressed agreement, with 47.2% agreeing and 25% strongly agreeing, resulting in a combined total of 72.2%. This suggests that most students experience a decline in attention during lectures when exposed to body odor. Regarding the second statement, which addresses difficulty in understanding lecturers' explanations when distracted by body odor, 36.1% of respondents agreed and 27.8% strongly agreed, totaling 63.9%. These results indicate that body odor not only affects focus but also interferes with students' comprehension of lecture material. In the third statement, "I am easily distracted when I smell strong body odor," the responses again showed a strong negative tendency, with 38.9% agreeing and 36.1% strongly agreeing, amounting to 75% of respondents. This highlights body odor as a significant source of distraction in the learning process. Similarly, the fourth statement concerning difficulty maintaining focus for several minutes when body odor is present in the room revealed that 44.4% agreed and 30.6% strongly agreed, indicating that 75% of respondents experience reduced concentration under such conditions. Overall, it can be concluded that the learning

concentration indicator demonstrates a substantial negative effect of body odor, which may reduce the effectiveness of the learning process.

**Tabel 5.** Learning environment

| Statement | Strongly Disagree | Disagree | Moderately | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Body odor makes the classroom environment feel uncomfortable. | 2,8% | 8,3% | 16,7% | 25% | 47,2% |
| The presence of body odor makes the room feel more stuffy and less conducive to learning. | 2,8% | 2,8% | 22,2% | 33,3% | 38,9% |
| Interactions between students become more awkward when there is body odor in the room. | 5,6% | 2,8% | 19,4% | 38,9% | 33,3% |
| The learning environment feels less pleasant due to the presence of body odor. | 2,8% | 2,8% | 19,4% | 38,9% | 36,1% |
| My motivation to attend lectures decreases when the room is affected by body odor. | 5,6% | 16,7% | 16,7% | 38,9% | 22,2% |

Based on the learning environment indicator, the results show that most respondents provided negative responses, suggesting that body odor negatively affects comfort and the overall quality of the learning environment. For the first statement, “Body odor makes the classroom environment feel uncomfortable,” 25% of respondents agreed and 47.2% strongly agreed, resulting in a total of 72.2%. This finding indicates that body odor significantly reduces classroom comfort. In the second statement, which concerns the classroom feeling more stuffy and less conducive to learning due to the presence of body odor, 33.3% agreed and 38.9% strongly agreed, again totaling 72.2%. This suggests that body odor influences students’ perceptions of the physical learning space. The third statement, addressing increased awkwardness in interactions between students when body odor is present, showed that 38.9% agreed and 33.3% strongly agreed, amounting to 72.2%. This indicates that body odor affects not only individual comfort but also social interactions within the classroom. Similarly, the fourth statement regarding the learning environment feeling less pleasant due to body odor revealed that 38.9% agreed and 36.1% strongly agreed, or 75% of respondents overall. Finally, for the statement concerning decreased motivation to attend lectures when the classroom is affected by body odor, 38.9% of respondents agreed and 22.2% strongly agreed, totaling 61.1%. This suggests that body odor can also reduce students’ motivation to participate in learning activities. In conclusion, the learning environment indicator confirms that the presence of body odor negatively impacts classroom comfort, social interaction, and learning motivation, thereby potentially lowering the overall quality of the learning process.

**Tabel 6.** Social interaction

| Statement | Strongly Disagree | Disagree | Moderately | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I prefer to sit away from the source of body odor when choosing a seat. | 2,8% | 5,6% | 16,7% | 38,9% | 36,1% |
| I feel uncomfortable talking to a friend who has body odor. | 2,8% | 2,8% | 30,6% | 30,6% | 33,3% |
| I feel that group communication is disrupted when there is body odor. | 5,6% | 2,8% | 19,4% | 38,9% | 33,3% |

Based on the social interaction indicator, the findings show that the majority of respondents tended to provide negative responses, indicating that body odor affects interpersonal comfort and communication among students. For the first statement, "I prefer to sit away from the source of body odor when choosing a seat," 38.9% of respondents agreed and 36.1% strongly agreed, resulting in a total of 75%. This suggests that most students consciously avoid proximity to individuals with body odor, reflecting discomfort that influences seating preferences in the classroom. Regarding the second statement, "I feel uncomfortable talking to a friend who has body odor," 30.6% of respondents agreed and 33.3% strongly agreed, yielding a combined total of 63.9%. This finding indicates that body odor can create interpersonal discomfort, even within peer relationships, potentially hindering open and effective communication. For the third statement, "I feel that group communication is disrupted when there is body odor," the results show that 38.9% of respondents agreed and 33.3% strongly agreed, totaling 72.2%. This demonstrates that body odor not only affects individual comfort but also disrupts group communication dynamics, which are essential for collaborative learning activities. Overall, these findings suggest that body odor has a negative impact on social interaction within the learning environment, influencing seating behavior, interpersonal communication, and group interaction, which may ultimately affect the effectiveness of collaborative learning.

## 4. CONCLUSION

This study demonstrates that body odor has a significant negative impact on the learning process, particularly in terms of learning concentration, classroom environment, and social interaction among students. The findings indicate that the majority of respondents consistently expressed agreement or strong agreement with statements describing discomfort, distraction, and reduced engagement when exposed to body odor in the learning setting. In terms of learning concentration, most students reported decreased attention, difficulty maintaining focus, and challenges in understanding lecture material when body odor was present. These results suggest that sensory disturbances such as unpleasant odors can interfere with cognitive processes essential for effective learning. Regarding the learning environment, the presence of body odor was found to reduce classroom comfort, create a less conducive atmosphere for learning, and negatively affect students' motivation to attend lectures. This highlights the importance of environmental factors in supporting an effective and supportive educational setting. Furthermore, the findings related to social interaction reveal that body odor influences seating preferences, interpersonal comfort, and group communication. Many students

preferred to distance themselves from the source of body odor and reported discomfort during conversations, indicating that body odor can disrupt social dynamics and collaborative learning activities. Overall, the results underscore the need for greater awareness of personal hygiene and environmental comfort in educational institutions, as these factors play a crucial role in maintaining students' concentration, social engagement, and overall learning effectiveness. Addressing such issues may contribute to improving both the quality of the learning environment.

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