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Development of a Teacher's Guidebook for Teaching Menstrual Readiness to Autistic Students

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ABSTRACT

The research aims to: (1) identify the needs of teachers in developing a menstrual readiness learning guide for students with autism, (2) produce a design/draft of the menstrual readiness learning guide for teachers, (3) determine the validity of the teacher's guide in teaching menstrual readiness to students with autism based on expert assessments of content and media. This study adopts a development research approach using the ADDIE model. The stages involved are: 1) needs analysis through teacher interviews, 2) product design, 3) development of the product in the form of a guidebook assessed by media and material experts, 4) limited product trials were conducted by 3 teachers who teach students with autism, 5) evaluation. The research findings include: (1) the guidebook required by teachers includes informative content and an attractive design, (2) the guidebook development design includes the arrangement of content such as menstrual information and learning methods, and the structure of the product with initial, material, and final components, (3) The guidebook is deemed suitable for use by teachers in teaching menstrual readiness to students with autism, supported by a final assessment score of 4.00 (suitable) by content experts and 4.16 (suitable) by media experts. Based on these findings, it can be concluded that the menstrual readiness learning guidebook for autistic students is suitable for use by teachers.

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1. INTRODUCTION

Women experience puberty, a phase that causes physical, biological, and cognitive changes in the body (Isroani et al., 2023). These biological changes indicate the onset of menstruation in women (Rahmawati, 2021). The characteristic feature of menstruation is the periodic flow of blood through the reproductive organ (vagina), lasting between 2-7 days, with an average duration of 4 days (Thiyagarajan & Jeanmonod, 2022; Miraturrofi'ah, 2020). A woman will experience menstruation approximately 500 times during her lifetime, with menstrual cycles ranging 18-40 days and an average cycle length of 28 days, while a normal cycle typically occurs every 21-35 days (Wardani et al., 2021; Rizqita et al., 2024). Given this, it means that every woman will face a long menstrual cycle throughout her life.

The long process of menstruation has a significant impact on women's lives, affecting about 85% of them (Munro et al., 2023). However, this prolonged experience of menstruation contrasts sharply with the level of education women receive about it, around 64% of women in Indonesia do not receive education about menstruation, either within the family or at school (Mutiah, 2022). This is because menstrual information is rarely discussed openly, as it is considered taboo and inappropriate to talk about (Mohammed & Larsen, 2020; Santoso, 2022). Menstruation is often perceived as abnormal, disgusting, and the blood produced is considered dirty. As a result, women feel insecure during menstruation, for example, when changing sanitary pads in public spaces (Dian, 2020). 5 out of 10 women know about and regularly practice changing sanitary pads according to the recommended time standards (Pranita, 2021).

The challenges in dealing with menstruation are deeply rooted in social dynamics, significantly affecting patterns and perceptions among women, which highlights the need for menstrual education. This is essential as a foundation for preparing and navigating the developmental phases women experience, enabling them to understand, recognize, and manage changes in their bodies (Gustina & Djannah, 2015; Mohammed & Larsen, 2020). Additionally, women can develop a more positive perspective on menstruation, as it offers several benefits for the body, such as synchronizing bodily functions, contributing to positive health effects, cleansing the body, promoting longevity, enhancing well-being, and improving comfort and appearance (Laila, 2011).

Children with special needs, including those with autism, have the right to receive education on menstruation. If menstrual education continues to be neglected, they will face ongoing informational delays and lack of readiness in menstrual management skills. For instance, improper management of menstrual products can lead to bacterial growth, which may cause redness, itching, irritation, abscesses, and even the risk of reproductive tract infections (Ramadani, et al., 2023). This issue arises from the inability of individuals with autism to respond to menstrual changes effectively, leading to difficulties in understanding physical changes, emotional sensitivity personal care, and menstrual hygiene management skills. The use of menstrual products involves complex activities that require both motor and cognitive abilities (Kaydirak et al., 2023). As a result, these challenges can affect school activities, such as absenteeism and disrupted learning participation (Montgomery et al., 2012; Phillips-Howard et al., 2016).

The above issues were also found in a special school for autistic children in Yogyakarta; 1) students had difficulty understanding the steps involved in using sanitary pads, from removing the adhesive to properly positioning them in underwear, 2) they struggled with the correct steps for disposing of sanitary pads, including washing hands and wrapping the pads before discarding them in a trash bin, 3) time management for changing pads was not in line with the recommended replacement schedule, 4) all menstrual activities were still fully assisted by teachers while at school. These challenges faced by autistic students require immediate and early intervention through proper education.

Menstrual readiness education for autistic students requires an intermediary in the teaching process with teachers playing a key role. Teachers are professional educators within educational institutions. A professional teacher must possess competencies that reflect their integrity within the educational system. These competencies cover four areas; 1) pedagogical competence, 2) personal competence, 3) professional competence, 4) social competence (Law of the Republic of Indonesia No. 14 of 2005). Teachers operate within educational institutions ranging from elementary to high school and are responsible for educating, teaching, guiding, directing, training, assessing, and evaluating students (Widiningtyas, 2012). However, not all teachers have the knowledge and skills to specifically teach autistic students about menstruation, which underscores the need for special education teachers.

Special education teachers play a critical role as the primary figures in educating and teaching students with special needs (Fitriyani, 2023). In line with this, special education teachers are professional educators who meet the academic qualifications, competencies, and certification requirements to teach students with disabilities (Minister of National Education regulation of the Republic of Indonesia No.32 of 2008). These teachers serve as the cornerstone in designing and implementing school programs to enhance and optimize students' abilities according to their potential, characteristics, and needs, such as preparing autistic students to learn about menstruation through early discussions and conversations (Sukinah et al., 2010).

The challenges faced by special education teachers in teaching menstruation to autistic students stem from the lack of a systematic teaching procedure, primarily due to insufficient teacher knowledge on menstrual topics, resulting in limited information (Cordova, 2020). According to research by Syarifah et al (2018), teaching on this subject is still incidental, as evidenced by the fact that teachers do not have documented lesson plans, including menstrual education, which should be an important aspect of instruction for autistic students. These limitations among teachers lead to menstruation education not being a primary focus in the school curriculum.

Additionally, the sources of information or program designs regarding menstruation have not specifically targeted special education teachers working with autistic students. For instance, a Elly Risman, Hilman Al Madani, & Yuhyina Maisura (2016) consists of a book intended for general teachers, parents, trainers, and counselors for regular children or adolescent. This book addresses issues related to puberty and adolescent sexuality, particularly in chapter 4, which presents a question-answer discussing menstruation as experienced by typical girls.

Furthermore, a program developed by [Atien Nur Chamidah, Elisabeth Siti Herini, Sri Hartini, Mumpuniarti \(2021\)](#) includes a module designed for teachers titled EKSIS (Edukasi Kesehatan Seksual Disabilitas). This teacher's guide serves as a resource for providing sexual health education, including discussions about menstruation, but it is specifically focused on adolescents with intellectual disabilities.

These statements reflect the issues faced at a special school for autistic students in Yogyakarta. Based on interviews conducted by the researcher at one such institution, the following findings were noted: 1) Teachers have not taught the topic of menstruation to autistic students due to limited information on understanding the subject, especially regarding menstrual preparedness education for these students, 2) The teachers' lack of understanding about menstruation has resulted in autistic students not having access to menstrual preparedness education; 3) One out of three teachers has attempted to teach menstrual skills using sanitary pads to autistic students, but the approach has been limited to a single teaching method and is incidental in nature; 4) There is no specific training available regarding menstrual preparedness for autistic students; 5) There are no guidebooks or manuals for teachers on the topic of menstruation for autistic students; 6) There are no facilities available to support menstrual preparedness education in the school.

Based on these issues, it is crucial for teachers to promptly understand the topic of menstruation to effectively teach menstrual readiness to autistic students. Therefore, this research aims to develop a teacher's guidebook for menstrual readiness education for autistic students.

2. METHODS

This research employs a Research and Development (RnD) approach, specifically utilizing the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The study was conducted at a special school for autistic students in Yogyakarta, spanning from January to June 2024. The primary subjects involved in the product trials were special education teachers who met specific criteria, namely, having experience teaching autistic students who have reached puberty or experienced menstruation.

The development procedure began with the Analysis stage, where information regarding material and design needs was gathered through interviews with teachers. This was followed by the Design stage, which involved preparing the material and designing the guidebook. In the Development stage, an A4-sized printed guidebook was created and subsequently validated by both content and media experts. The Implementation stage consisted of product trials and the analysis of trial results, while the Evaluation stage focused on refining the guidebook based on feedback and recommendations from the experts.

To collect data, the research utilized two main techniques: semi-structured interviews to explore the needs related to the guidebook's content and design, and questionnaires to obtain assessments from content and media experts. The questionnaires were structured as validation sheets using a Likert scale. For data analysis, both qualitative and quantitative methods were applied.

Qualitative assessments were converted into quantitative data using a scoring scale ranging from 1 (Very Bad) to 5 (Very Good). The average score for each aspect, as well as the overall average, was calculated to determine the suitability of the guidebook. These scores were then interpreted criteria with average scores above 3.41 indicating that the product is considered suitable. The results obtained from the questionnaires were presented both narratively and graphically, and final conclusions were drawn based on the comprehensive data analysis.

3. RESULTS AND DISCUSSION

The results of the research developing the teacher's guidebook for menstrual preparedness education for autistic students aim to serve as a reference or alternative for teachers to understand information and effectively conduct menstrual preparedness education for these students. The outcomes from the ADDIE stages are as follows.

3.1. Analysis

This guidebook is designed to serve as a reference or alternative resource for special education teachers in delivering menstrual preparedness education to autistic students. To ensure its effectiveness and relevance, the development of this guidebook follows the systematic ADDIE model, encompassing Analysis, Design, Development, Implementation, and Evaluation stages. Through interviews conducted during the analysis phase, it was identified that teachers require clear, informative material on menstrual preparedness that can be easily and accurately understood. In addition to content needs, teachers also expressed specific preferences regarding the guidebook's visual presentation. They emphasized the importance of a printed format featuring images, colorful pages, an attractive cover, varied font styles, and large text size. These design elements are intended to enhance readability and comprehension, making it easier for teachers to access and apply the information. By addressing both the material and display needs identified by special education teachers, the guidebook is structured to be not only informative but also visually engaging, thereby supporting teachers in effectively educating autistic students about menstrual preparedness.

3.2. Design

The design of the product in the form of a guidebook for menstrual preparedness education for autistic students was developed through the stages of material design and product design, resulting in the following:

3.2.1. Preparation of Material Design

The preparation of the material design is based on the needs of teachers for information on menstruation and teaching methods that can be utilized when educating autistic students about menstrual preparedness. The material design is further divided into two parts:

The information on menstruation compiled in this material design is based on expert opinions in the field of menstruation. The presentation of menstruation material begins by exploring the topic, especially addressing the definition of menstruation, the menstrual process, the age at which menstruation begins, the color of menstrual blood, and menstrual products. It also discusses the visualization of products and how they are used.

Furtermore, it addresses menstruation in autistic individuals, covering whether autistic females experience menstruation, have menstrual cycles, face challenges during menstruation, and the consequences of not having menstrual information. Finally, it emphasizes the importance of learning about this topic for autistic individuals.

The preparation of the material design specifically focuses on teaching methods based on teachers' feedback indicating that they currently use only one method: simulation. This limitation arises from teachers' lack of knowledge regarding the appropriate procedures for implementation. Consequently, the material design of this guidebook includes variations of two teaching methods: task analysis and modeling. The preparation of this material design discusses the definitions and procedures for implementing these methods, accompanied by examples of teaching modules for practical application.

3.2.2. Preparation of Product Design

The preparation of the product design utilizes the Artbook application, which is employed to illustrate the product design in this guidebook. Figure 1. Explain the initial components of the guide include the cover, preface, editorial page, table of contents, and a list of tables.



Figure 1. Components of the guide

Figure 2. explain about material components of the guide consist of four chapters: Chapter 1 covers the information about the guidebook, Chapter 2 introduces autistic students, Chapter 3 discusses menstruation in autistic students, and Chapter 4 addresses menstrual education. A sample of the material components is presented below.

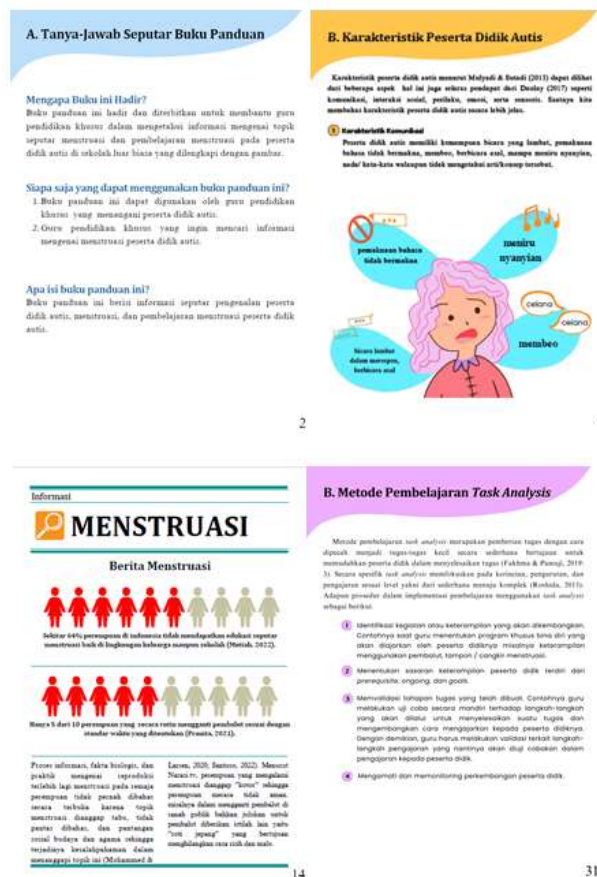


Figure 2. Material Components of the Guide.

Figure 3 explain about the final components of the guide include a list of references and profiles of the contributors to the publication. A sample of the final components is presented below.



Figure 3. Final Components of the Guide.

3.3. Development

The feasibility of the guidebook was assessed using validation tests conducted by content and media experts to evaluate the quality of the developed teacher's guidebook based on specific aspects. Figure 4 and 5 illustrate the validation results from the content and media experts.



Figure 4. Diagram of Analysis Results from Material Experts.

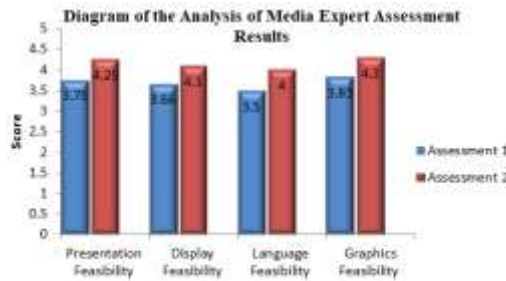


Figure 5. Diagram of Analysis Results from Media Experts.

Based on the results presented in the analysis diagrams from the content and media experts above, the overall outcome indicates that the guidebook meets the criteria for being suitable for use by teachers. This positive evaluation will lead to the next stage of product testing.

3.4. Implementation

The product testing was conducted with special education teachers at a school for autistic students in Yogyakarta. The testing took place in May 2024, involving three special education teachers who work with female autistic students who have reached puberty. During the trial, the guidebook was provided to the teachers for review, and they were asked to evaluate the physical product (which had already been printed) based on specific assessment aspects, including product appearance and ease of use. Figure 6 explain about the results obtained from the product testing are illustrated in the diagram below.

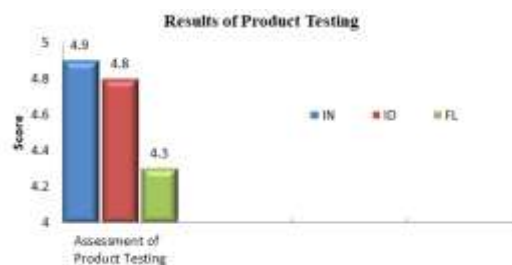


Figure 6. Results of Product Testing

In conclusion, the product testing with the three special education teachers indicated that the guidebook received an average score that meets the criteria for being "very suitable" for use by special education teachers in teaching menstrual preparedness to autistic students

3.5. Evaluation

The developed product was subsequently improved based on the comments and suggestions from the experts in content and media, focusing on aspects such as grammar, punctuation, spelling, inclusion of images, and additional content. These aspects are crucial for ensuring that prospective readers can better understand the material. Table 1 explain about revisions made by the researcher on the content and media aspects.

Table 1. Product Revision







No	Initial product	Product revision	Information
1			Cover of the guidebook: The media expert suggested that the title of the guidebook, which initially leaned to the left, should be centered, and the institutional identity, including both text and logo, should be moved up. This adjustment aims to ensure that the printing is not too close to the paper margin.
2			Table of contents; based on the feedback from the content expert, attention should be paid to the standardization of terms, changing "referensi" to "Referensi," and capitalizing the initial letter of "pembelajaran" to "Pembelajaran," while also synchronizing the numbering.
3			Chapter 1: The selection of structure and effectiveness of the sentence "guru pendidikan khusus dan atau pembaca umum yang ingin mencari informasi mengenai menstruasi dan atau peserta didik autis" was revised to "guru pendidikan khusus yang ingin mencari informasi mengenai menstruasi peserta didik autis".

Table 1 (Continous). Product Revision








No	Initial product	Product revision	Information
4			Chapter 2: Revisions in the section discussing the characteristics of autistic students included suggestions to add images relevant to the discussion of these characteristics.
5			Chapter 3: Revisions were made to the section discussing menstruation information, particularly in the news column. The expert suggested changing the original citation from "Liputan 6, 2022" to "Muthia, 2022," and for the second news item, using the author's name as a citation. The structure and effectiveness of the sentence were revised from "5 dari 10 perempuan yang mengganti pembalut sesuai dengan standar waktu yang telah ditentukan" to "hanya 5 dari 10 perempuan yang secara rutin mengganti pembalut sesuai dengan standar waktu yang ditentukan".
6			Chapter 4: Improvements based on suggestions from the content expert included changing "pembelajaran task analysis" to "metode pembelajaran task analysis" and "pembelajaran modeling" to "metode pembelajaran modeling".

Table 1 (Continuous). Product Revision

No	Initial product	Product revision	Information
7			Additional material: Additional content was included according to the title of the book regarding the preparedness for menstruation among autistic students. This necessitated the inclusion of example teaching modules for special education teachers as a reference.

This guidebook can serve as a reference to assist teachers in more easily understanding and teaching about menstruation to autistic students. The developed guidebook prioritizes the characteristics needed for a good reference material, ensuring it meets the quality criteria for a well-produced book. The quality criteria for the guidebook include; 1) the usefulness of the guidebook, 2) its support for teachers in instruction, 3) the inclusion of elements (text, images, and illustrations), and 4) an engaging presentation of the material (Wulandari, 2017).

This was positively received by special education teachers, who rated the guidebook's ease of use and product appearance with an average score of 4.60, indicating it is very suitable for use. This means that the guidebook for teachers in preparing autistic students for menstruation can effectively help them understand and teach the topic.

Thus, autistic students can better prepare their skills or abilities in facing menstruation. As stated, early and prompt preparation significantly impacts preventing informational deficits and inadequate menstruation skills (Steward et al., 2018).

4. CONCLUSION

Based on the findings from the development of the teacher’s guidebook for preparing autistic students for menstruation, several important conclusions can be drawn. First, teachers require a guidebook that addresses both content and design needs. In terms of content, the guidebook should provide comprehensive information about autistic students, menstruation, and effective teaching methods tailored to this context. Regarding design, teachers expressed the need for a visually engaging presentation that incorporates illustrations, color combinations, and a variety of fonts to enhance readability and appeal. The development process of the guidebook involved careful preparation of both content and product design. The content design encompasses detailed information on menstruation as well as a range of teaching methods, while the product design is structured into three main components: the initial section, the core material, and the final section. Ultimately, the guidebook developed through this research has been evaluated and found to be appropriate for use. This is evidenced by the final assessments from subject matter experts, who gave it a score of 4.00, and media experts, who awarded an average score of 4.16—both falling within the “suitable” category. Therefore, the teacher’s guidebook for menstrual readiness is considered suitable and recommended for use in supporting special education teachers.

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6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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