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Jurnal Suara Abdimas-17 publishes the only paper that strictly follows ABDIMAS 17 guidelines and templates for manuscript preparation. All submitted manuscripts will go through a double-blind peer review process. The paper is read by members of the editor (according to the area of specialization) and will be filtered by the Managing Editor to meet the criteria needed for publication ABDIMAS 17. Manuscripts will be sent to two reviewers based on their historical experience in reviewing manuscripts or based on their areas of specialization. ABDIMAS 17 has reviewed forms to keep the same item reviewed by two reviewers. Then the editorial board makes a decision on the comments or suggestions of the reviewers.

Reviewers provide an assessment of originality, clarity of presentation, contribution to the field/science. This journal publishes articles in the Journal of Community Service. Incoming articles will be reviewed by a team of reviewers who come from internally and externally at the University of 17 August 1945 (UNTAG) Semarang. ABDIMAS 17 is published twice a year in April and October

The Editorial Board will try to continue to improve the quality of the journal so that it can become an important reference in the development of engineering sciences. The greatest appreciation and gratitude to Mitra Bestari along with members of the Editorial Board and all parties involved in the publication of this journal.

The Editorial Board also expects scientific articles from readers to be published in Volume 1 No. March 1, 2022 after going through a review process by the Editorial Board and/or Bestari Partners. Starting Volume 1 No. March 1, 2022, the journal ABDIMAS 17 appears with a new style and new article format for the better. Complete writing guidelines for 2022 are featured on this journal's portal.

Regards,

Chief Editor

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Community Service Activities – Counseling and Waist Circumference Screening in the Context of Early Detection of Obesity in Adolescent Boys

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Keywords:

Waist circumference; teenager; man; obesity; screening; education

Abstract: *Counseling activities and waist circumference screening in the context of early detection of obesity in male students aim to increase awareness of the importance of maintaining health and preventing obesity among male students. This activity was carried out using a combination approach between counseling and waist circumference screening. The counseling was conducted to provide a better understanding of the risk of obesity and the importance of measuring waist circumference as an indicator of health. Boys were given information about the negative impact of obesity on physical and psychological health, as well as the importance of a healthy lifestyle and a balanced diet. In addition to counseling, this activity also involves screening waist circumference as a method for early detection of the risk of obesity. Boys' waist circumference was measured using a measuring tape, and the measurement results were compared with a predetermined reference standard. This helps identify students who are in the waist circumference range who are at risk and require further follow-up in obesity prevention and management. The results of this activity show that male students need to understand the importance of maintaining health and managing their*



weight well. Waist circumference screening provides useful information in evaluating the risk of obesity in male students. In efforts to prevent and control obesity, collaboration between families, educators and medical personnel is very important to provide the necessary support, understanding and guidance

INTRODUCTION

In an increasing number of nations, adolescent obesity is a growing health concern. Obesity in adolescents occurs when individuals are substantially overweight, which can be detrimental to their physical and mental health. Unhealthy dietary habits, lack of physical activity, inactive lifestyles, genetic factors, and an environment that does not support a healthy lifestyle all contribute to adolescent obesity. The risk of developing chronic diseases, such as type 2 diabetes, hypertension, and heart disease, is one of the negative effects of adolescent obesity. In addition, obesity can result in psychological issues such as low self-esteem, social stigmatization, and sleep disturbances. To combat adolescent obesity, a comprehensive strategy is required that includes lifestyle modifications, such as a healthy diet and regular physical activity, as well as family support and a supportive environment.^{1,2}

The medical condition of obesity is characterized by excess body fat. In addition to body mass index (BMI), measuring waist circumference can be used to assess the risk of obesity and related health concerns. The waist circumference is a straightforward method for determining abdominal fat accumulation. Visceral fat, which accumulates in the abdominal region, can be more detrimental than fat distributed throughout the body. Visceral fat accumulation, which is associated with an increased risk of heart disease, type 2 diabetes, and other health conditions, can be indicated by an excessive waist circumference.^{3,4}

Adolescent waist circumference can be measured with a flexible measuring tape applied around the waist region. The measurement is taken while the adolescent is standing and taking a deep breath at the narrowest location between the hipbone and lower ribs. The measurement results are then compared with age- and gender-specific reference tables to determine whether the waist circumference falls within the normal range or indicates an increased risk of obesity and associated health issues.^{5,6}

Measuring the waist circumference can provide additional information for assessing the risk of obesity in adolescents, particularly for identifying abdominal fat accumulation. It is essential to remember, however, that measuring the waist circumference is only one indicator and cannot stand alone. The diagnosis of obesity and evaluation of health hazards should be based on a comprehensive assessment that includes BMI and waist circumference measurements, as well as

other factors such as the adolescent's medical history and lifestyle.

The community service team is interested in educating male students at Kalam Kudus II Senior High School Jakarta about the significance of maintaining a healthy lifestyle and screening waist circumference.

METHOD

The following are the methods, activity steps, and the PDCA (Plan-Do-Check-Act) cycle for waist circumference counseling and screening activities for male students in senior high schools:

Method:

The method used in this activity is a combination of counseling and waist circumference screening. Counseling is carried out to provide understanding to male students about the importance of maintaining health and the risk of obesity. Waist circumference screening was then carried out to measure and evaluate the status of the student's waist circumference.

Activity Steps:

1. Planning (Plan):
 - a. Identification of activity objectives, for example increasing student awareness about the importance of maintaining health and preventing obesity.
 - b. Plan the time, place and resources needed.
 - c. Form an implementation team consisting of trained health experts, educators and medical personnel.
2. Implementation (Do):
 - a. Conduct counseling sessions on the importance of maintaining health and the risk of obesity for male students.
 - b. After counseling, screen students for waist circumference using an appropriate tape measure.
 - c. Record and document the results of measuring waist circumference for each student.
3. Examination (Check):
 - a. Analysis and evaluation of student waist circumference screening results.
 - b. Identify students in the waist circumference who are at risk or require further follow-up.



4. Action (Act):

- a. Based on the results of the analysis, identify students who need further follow-up such as nutrition counseling or further medical advice.
 - b. Plan follow-up activities to support students in achieving a healthy lifestyle and managing their weight well.
 - c. Evaluate and monitor actions taken to ensure their effectiveness.
2. PDCA (Plan-Do-Check-Act): The PDCA cycle is used to manage and improve the quality of counseling activities and waist circumference screening in male students. In this cycle, after the action has been taken, checks and adjustments will be made to ensure the success of the activity and make improvements if necessary.
- a. Plan: Set goals, plan activities, and determine the steps to be taken.
 - b. Do (Implementation): Carry out activities according to a predetermined plan.
 - c. Check: Evaluate the results and see if the activity objectives have been achieved and whether there are improvements that can be made.
 - d. Act: Carry out corrective and adjustment actions based on evaluation results to increase activity effectiveness

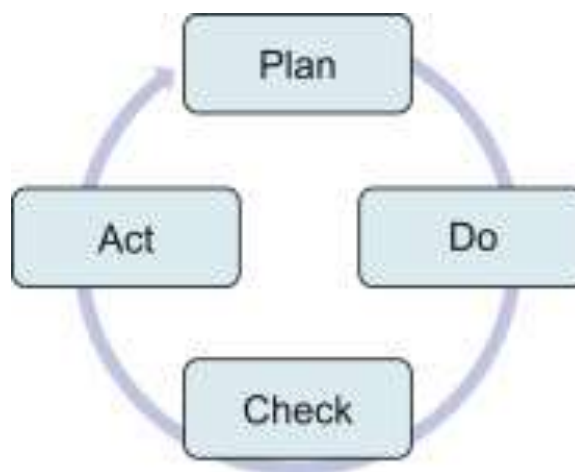


Figure 1. Plan, Do, Check, Act (PDCA) Cycle⁷

RESULTS

All 92 respondents who participated in this community service activity were males in grades 10 through 12 of senior high school. Basic respondent information is presented in Table 1, and

photographic evidence of activities is shown in Figures 2 and 3.

Table 1. Basic Data of Respondents

Parameter	N (%)	Mean (SD)	Med (Min- - Max)
Ages (years)		16,02 (0,83)	16 (15 – 18)
Gender			
• Male	92 (100%)		
Waist circumference (cm)		90,27 (13,04)	89 (67 – 125)



Figure 2. Counseling Process for Students of Kalam Kudus II Senior High School Jakarta



Figure 3. Process of Examination of Waist Circumference in Adolescents

DISCUSSION

Obesity and waist circumference in male students is an important concern in maintaining their health. Obesity in male students is when they are significantly overweight, which can have a negative impact on their physical and psychological health. Excess fat accumulation in the body, especially around the abdominal area, can increase the risk of heart disease, type 2 diabetes, and other health problems.^{8,9}

Measurement of waist circumference is important in evaluating the risk of obesity in male students. Excessive waist circumference can indicate the accumulation of visceral fat around the abdomen, which is more dangerous than fat distributed in other parts of the body. This accumulation of visceral fat increases the risk of metabolic disorders and chronic health conditions. By regularly measuring their waist circumference, boys can monitor changes in their body fat distribution and understand the associated health risks.^{5,6,8}

Measures to prevent and control obesity in male students involve a holistic approach that includes lifestyle changes, including healthy eating patterns and regular physical activity. In addition, it is important to increase their awareness of the importance of maintaining a healthy weight and reducing exposure to risk factors such as an unhealthy diet and a sedentary lifestyle. Through education, counseling, and support from the school and family environment, male students can adopt healthy living habits, including a balanced diet, regular physical activity, and effective stress management.^{3,4,6,8}

In tackling obesity and related health problems in male students, it is important to involve families, educators, and trained medical personnel. Collaboration between various parties can provide the support, understanding, and guidance needed to encourage behavior change and create an environment that supports a healthy lifestyle. With this approach, male students can gain a good understanding of the importance of maintaining good health and managing their weight, thus improving their quality of life and overall well-being.

CONCLUSION

The objective of Community Service activities concerning waist circumference and obesity in male students is to raise awareness of the significance of sustaining health and preventing obesity among male students. This activity provides a greater comprehension of the risk of obesity and the significance of measuring waist circumference as an indicator of health through outreach and waist circumference screening.

In this activity, it was determined that male student obesity is a significant concern because it can negatively affect their physical and mental health. Waist circumference measurement is an essential instrument for assessing the risk of obesity and visceral fat accumulation around the abdomen. Male students can monitor changes in their body fat distribution and comprehend the associated health risks through waist circumference screening.

This activity also emphasizes the significance of a holistic approach to the prevention and management of obesity, including healthy lifestyle modifications such as a balanced diet and regular physical activity. In addition, collaboration between families, educators, and medical professionals is essential for providing the necessary support, comprehension, and guidance to motivate behavior change.



REFERENCE

1. Hendra C, Manampiring AE, Budiarmo F. Faktor-faktor risiko terhadap obesitas pada remaja di Kota Bitung. *eBiomedik*. 2016;4(1).
2. Kurdanti W, Suryani I, Syamsiatun NH, Siwi LP, Adityanti MM, Mustikaningsih D, et al. Faktor-faktor yang mempengaruhi kejadian obesitas pada remaja. *J Gizi Klin Indones*. 2015;11(4):179–90.
3. Wahyuni N, Murbawani EA. Hubungan lingkaran pinggang dan rasio lingkaran pinggang panggul dengan kadar serum high sensitivity c-reactive protein (hsCRP) pada remaja obesitas. *J Nutr Coll*. 2016;5(4):388–92.
4. Widjaja NA, Prihaningtyas RA, Hanindita MH, Irawan R. Lingkaran Pinggang dan Adiponektin pada Remaja Obesitas. *Media Gizi Indones*. 2020;15(2):88–93.
5. Rokhmah FD, Handayani D, Al-Rasyid H. Korelasi lingkaran pinggang dan rasio lingkaran pinggang-panggul terhadap kadar glukosa plasma menggunakan tes toleransi glukosa oral. *J Gizi Klin Indones*. 2015;12(1):28–35.
6. Oviyanti PN. Hubungan antara lingkaran pinggang dan rasio lingkaran pinggang panggul dengan tekanan darah pada subjek usia dewasa. 2010;
7. Kozai T. Plant production process, floor plan, and layout of PFAL. In: *Plant Factory* [Internet]. Elsevier; 2020. p. 261–71. Available from: <https://linkinghub.elsevier.com/retrieve/pii/B9780128166918000194>
8. Ness-Abramof R, Apovian CM. Waist circumference measurement in clinical practice. *Nutr Clin Pract*. 2008;23(4):397–404.
9. Janssen I, Katzmarzyk PT, Ross R. Waist circumference and not body mass index explains obesity-related health risk. *Am J Clin Nutr*. 2004;79(3):379–84.