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Pentingnya Pendidikan Kesehatan pada Anak di Pusat Pendidikan Tahfidz Sains dan Teknologi Pulau Penang: Protokol Pengabdian Masyarakat

The Importance of Health Education in Children at Pusat Pendidikan Tahfidz Sains dan Teknologi Pulau Penang: A Community Development Protocol

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ABSTRAK

***Latar Belakang**: Pendidikan kesehatan memainkan peran penting dalam membentuk kesejahteraan fisik, mental, dan sosial anak-anak dengan memberikan pengetahuan dan keterampilan penting untuk membuat keputusan kesehatan yang tepat.*
***Tujuan**: Makalah ini mengeksplorasi pentingnya pendidikan kesehatan pada anak-anak, menekankan dampaknya terhadap perkembangan dan strategi implementasi yang efektif melalui aktivitas langsung.*
***Metode**: Bina masyarakat yang dilaksanakan di Pusat Pendidikan Tahfidz dan Teknologi Pulau Penang dengan tajuk Program Saintis Muda dan Doctor to Be. Program ini merupakan inisiatif kerjasama Fakultas Kesehatan Masyarakat Universitas Airlangga dan Fakultas Ilmu Kesehatan Universiti Teknologi Mara Malaysia. Program ini terdiri dari 8 stasiun dan dibagi menjadi 16 kelas. Program ini melibatkan 432 siswa dari tingkat SD dan SMA.*
***Hasil**: Pendidikan kesehatan mengembangkan keterampilan emosional dan sosial penting yang diperlukan untuk mengelola hubungan dan emosi secara efektif. Penelitian menggarisbawahi bahwa anak-anak yang sehat unggul secara akademis dan berkontribusi terhadap kesetaraan kesehatan masyarakat. Metode pembelajaran langsung dalam pendidikan kesehatan melibatkan anak-anak secara aktif melalui kegiatan interaktif dan simulasi, meningkatkan keterampilan praktis, pemikiran kritis, dan relevansi pribadi. Metode-metode ini menjembatani pengetahuan teoretis dengan penerapan di dunia nyata, sehingga memberdayakan anak-anak untuk mengelola kesehatan mereka secara efektif.*
***Kesimpulan**: Berinvestasi dalam program pendidikan kesehatan yang komprehensif menjamin generasi masa depan yang lebih sehat dan tangguh.*

***Kata Kunci**: Pendidikan Kesehatan, Hands-On Activity, Community Development, Studi Kolaboratif*

ABSTRACT

Background: Health education plays a vital role in shaping the physical, mental, and social well-being of children by imparting essential knowledge and skills for informed health decisions.
Objectives: This paper explores the significance of health education in children, emphasizing its impact on development and effective implementation strategies using hands-on activity.
Methods: The community development held at Pusat Pendidikan Tahfidz dan Teknologi Pulau Penang with the title Program Saintis Muda dan Doctor to Be. The program is collaboration initiative of Faculty of Public Health Universitas Airlangga

and Faculty of Health Science Universiti Teknologi Mara Malaysia. The program consisted of 8 stations and divided to 16 classes. The program involved 432 students from primary school and high school level.
Results: Health education develops essential emotional and social skills needed for managing relationships and emotions effectively. Research underscores that healthy children excel academically and contribute to societal health equity. Hands-on learning methods in health education engage children actively through interactive activities and simulations, enhancing practical skills, critical thinking, and personal relevance. These methods bridge theoretical knowledge with real-world application, empowering children to manage their health effectively.
Conclusion: Investing in comprehensive health education programs ensures a healthier and resilient future generation.

Keywords: Health Education, Hands-On Activity, Community Development, Collaborative Study

INTRODUCTION

Health education plays a crucial role in shaping the physical, mental, and social well-being of children. It provides them with essential knowledge and skills to make informed decisions about their health, paving the way for a healthier future(Agussalim *et al.*, 2020). This essay explores the significance of health education in children, its impact on their development, and effective strategies for implementation(Sadiyah *et al.*, 2024). Health education in children is not merely about imparting knowledge; it is about empowering young minds to understand and prioritize their health. According to the World Health Organization (WHO), promoting health literacy among children is fundamental to achieving sustainable health outcomes globally (WHO and UNICEF, 2017). By instilling healthy habits early on, we can mitigate health risks, promote resilience, and foster a generation equipped to lead healthier lives. Health education empowers children to recognize and prevent health issues before they escalate (Smith, Hames and Joiner, 2013; Dedrick *et al.*, 2020). For instance, teaching them about the importance of dental hygiene from a young age can prevent common oral health problems later in life (Gianistika and Sukma Firmansyah, 2023).

Childhood is a critical period for habit formation. Educating children about nutrition, physical activity, and mental health promotes behaviours that contribute to lifelong well-being (Fisher, Dunn and Thompson, 2002; Cooper *et al.*, 2004; Laurson *et al.*, 2014; García *et al.*, 2021). These habits include regular exercise, balanced nutrition, adequate sleep, and stress management. When children understand how their bodies work and the factors that influence health, they become active participants in their own well-being. They learn to make healthier choices and advocate for their health needs (De Buhr and Tannen, 2020; Mahmood *et al.*, 2021).

Health education also encompasses emotional and social aspects, teaching children's skills such as empathy, communication, and conflict resolution(Inan and Inan, 2015; Hosker, Elkins and Potter, 2019). These skills are essential for building positive relationships and managing emotions effectively. Research shows that healthy children perform better academically (Aukrust, 2011; Schunk, 2012; Taufiq and Dartanto, 2020). The authors further explain that proper nutrition and physical activity contribute to cognitive development and concentration, enhancing learning outcomes. Besides that, health education promotes equity by addressing health disparities early in life(Aukrust, 2011; Fischer Walker *et al.*, 2012). Children from all backgrounds gain access to essential health information and resources, narrowing the gap in health outcomes. Investing in children's health education yields long-term benefits for society. Healthier children grow into healthier adults, reducing healthcare costs and improving overall community well-being(García *et al.*, 2021).

Hands-on Learning is a health education method which use interactive activities, games, and simulations to engage children in learning about health topics(Holstermann, Grube and Bögeholz, 2010; Schwichow *et al.*, 2016). Practical experiences make lessons memorable and encourage behavior change. Hands-on activities are crucial in health education for several important reasons namely active engagement, skill development, application of theory, critical thinking and problem solving, personal relevance, teamwork and communication, motivation and interest, and empowerment and confidence (Pfaff and Weinberg, 2009; John Kyere, 2016).

Hands-on activities engage students actively in the learning process. Instead of passively receiving information, students participate actively, which enhances their understanding and retention of health concepts(Denna Hintze, Kathleen Burke and Steven Beyerlein, 2013). Numerous health education topics require practical skills, such as first aid, nutrition planning, or fitness assessment. Hands-on activities allow students to practice and develop

these skills in a controlled environment, preparing them for real-world applications (Korwin and Jones, 1990; Stohr-Hunt, 1996; Darmon and Drewnowski, 2008). Hands-on activities bridge the gap between theoretical knowledge and practical application. Students can see how concepts learned in class translate into real-life situations, reinforcing their understanding and appreciation of the subject matter(Inan and Inan, 2015; Pirttimaa, Husu and Metsärinne, 2017).

Hands-on activities often involve problem-solving scenarios or decision-making exercises. This challenges students to think critically, analyze information, and make informed decisions, skills that are essential in health-related professions. Engaging in hands-on activities makes health education personally relevant to students(Holstermann, Grube and Bögeholz, 2010; Schwichow *et al.*, 2016). They can apply what they learn to their own lives, making healthier choices and understanding the importance of health promotion and disease prevention. Many hands-on activities require collaboration with peers, promoting teamwork and communication skills. Students learn to work effectively in groups, share responsibilities, and communicate ideas clearly, which are vital skills in healthcare settings (Godínez Castellanos *et al.*, 2021; Priya and a, 2021).

Hands-on activities make learning enjoyable and memorable, increasing student motivation and interest in the subject. This can lead to deeper learning and a lifelong interest in health and wellness (Pfaff and Weinberg, 2009; John Kyere, 2016). Successfully completing hands-on activities builds students' confidence in their abilities and empowers them to take an active role in managing their own health and well-being. This sense of empowerment is essential for promoting health literacy and self-efficacy. Overall, hands-on activities in health education not only enhance academic learning but also equip students with practical skills, critical thinking abilities, and a deeper understanding of health-related issues (Pulimeno *et al.*, 2020). They play a crucial role in preparing students to become knowledgeable, competent, and proactive members of the healthcare community and society at large.

As the effort to enhance health capacity and knowledge of students, it is important to create a Health Education program. Thus, the aims of this community development is to improve knowledge, attitudes, and behavior toward the good habits of health in family by increasing the capacity of students in basic health and medicine through hands-on activity.

METHODS

Study Design

This study is a qualitative study as results of community services with the title "GANBATTE PLUS: Gerakan Bersama Menanam Pohon, Membersihkan Area Pantai Penang, serta Penyuluhan Hidup Sehat" an international community development collaboration of Faculty of Public Health Universitas Airlangga with Faculty of Health Science Universiti Teknologi Mara. One of the events that held in this community development is Health Education at Pusat Pendidikan Tahfidz Sains dan Teknologi Pulau Penang, with the title Program Saintis Muda dan Doctor to Be. This health education is a hands-on learning, which involve students to directly involved in the profession of a scientist and medical doctor.

Study Site and Timeline

The community development held at Pusat Pendidikan Tahfidz Sains dan Teknologi, Pulau Pinang, Malaysia during 6th-10th May 2024. The community development conducted offline based.

Participant Enrolment

All students of Pusat Pendidikan Tahfidz Sains dan Teknologi included in the community development. The inclusion criteria are between 6-15 years old, willing to follow all stations during the community development process. The total subjects involved in the community development is 432 students. The participants informed about the purpose of the community development and procedures to be involved as subjects.

Procedure of the Community Developments

The activity divided into 8 stations which are distributed into 16 classes. The stations namely education of ABO blood group (hematology class), microscope usage (microbiology class), CPR method (basic life support), histology class (basic cellular science), anatomy class (organ and tissue), personal hygiene and sanitation, parasitology and entomology class, pH balance (biochemistry class). Each class are assisted by 3-5 facilitator who are postgraduate students from the Faculty of Health Sciences, Universiti Teknologi Mara, Malaysia. Each station conducted for 30 minutes, and continue to next station when the time is up.

Instruments

There are 8 stations held during the community development programs, which each have specific instruments used. For ABO blood group or hematology class, instruments used are alcohol swab, lancet, reagent anti-A, reagent anti B, reagent anti AB, reagent anti rhesus, preparate glass, and blood test paper. For microscope usage or microbiology class, the instruments used are microscope with 10-100x lenses, object glass, preparate glass, immersion oil, and tissue sample from rats organ. For CPR method (basic life support) class, instrument used is CPR training mannequin. For histology (basic cellular science) class,

instrument used is printed game card with 50 pictures of different human tissue from specific organs. For anatomy (organ and tissue) class, the instrument used is anatomy teaching aids for skeletal muscle, organs, and bone structure. For personal hygiene and sanitation class, the instruments used are water, soap, alcohol gel 70%, and ink. For parasitology and entomology class, the instruments used is preparate of different kinds of worms, mites, and mosquitos. For pH balance (biochemistry) class, instruments used are pH stick meter, different kinds of vegetables and fruits, aquadest, pestle and mortar.

CONCLUSION

Health education in children is a cornerstone of promoting holistic development and well-being. By equipping young individuals with knowledge, skills, and positive attitudes towards health, we lay a strong foundation for a healthier future generation. It is imperative for educators, policymakers, and communities to prioritize and invest in comprehensive health education programs that empower children to lead healthy, fulfilling lives. As we continue to navigate global health challenges and evolving societal needs, prioritizing health education in children remains a crucial investment in building resilient, informed, and healthier communities worldwide.

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Conflict of Interest and Funding Disclosure

This community development is funded by the Dana Abadi Perguruan Tinggi Universitas Airlangga. The authors declare no conflict of interest during the implementation of the community development.

Author Contributions

TM: conceptualization, managing the program, supervision; DRA: managing the program, writing original draft; RDPA: coordinating the implementation of the program, managing fund; DAP, SAM, ECF: managing the permission, managing fund, managing the implementation of the program; WII, MAbMN, MHbMS, MNFbR: coordinating the implementation of the program, coordinating the respondents and facilitators, managing resources.

REFERENCES

Agussalim *et al.* (2020) 'The Effect of Health Education on the Knowledge of Children Aged School', *American Journal of Clinical Anatomy and Physiology*, 2(1), pp. 18–25.

Aukrust, V.G. (2011) *Learning and Cognition In Education*. UK: Elsevier.

De Buhr, E. and Tannen, A. (2020) 'Parental health literacy and health knowledge, behaviours and outcomes in children: A cross-sectional survey', *BMC Public Health*. BioMed Central. Available at: https://doi.org/10.1186/s12889-020-08881-5.

Cooper, P.J. *et al.* (2004) 'Association between childhood feeding problems and maternal eating disorder: Role of the family environment', *British Journal of Psychiatry*, 184(MAR.), pp. 210–215. Available at: https://doi.org/10.1192/bjp.184.3.210.

Darmon, N. and Drewnowski, A. (2008) 'Does social class predict diet quality?', *American Journal of Clinical Nutrition*, 87(5), pp. 1107–1117. Available at: https://doi.org/10.1093/ajcn/87.5.1107.

Dedrick, A. *et al.* (2020) 'A Content Analysis of Pinterest Belly Fat Loss Exercises: Unrealistic Expectations and Misinformation', *American Journal of Health Education*, 51(5), pp. 328–337. Available at: https://doi.org/10.1080/19325037.2020.1795754.

Denna Hintze, Kathleen Burke and Steven Beyerlein (2013) 'Putting_It_to_Practice_Hands_On_Learning', *International Journal of Process Education*, 5(1), pp. 15–48.

Fischer Walker, C.L. *et al.* (2012) 'Does Childhood Diarrhea Influence Cognition Beyond the Diarrhea-Stunting Pathway?', *PLoS ONE*, 7(10), pp. 1–6. Available at: https://doi.org/10.1371/journal.pone.0047908.

Fisher, E., Dunn, M. and Thompson, J.K. (2002) 'Social comparison and body image: An investigation of body comparison processes using multidimensional scaling', *Journal of Social and Clinical Psychology*, 21(5), pp. 566–579. Available at: https://doi.org/10.1521/jscp.21.5.566.22618.

García, J.L. *et al.* (2021) 'The Dynastic Benefits of Early Childhood Education', *Nber Working Paper Series* [Preprint]. Available at: http://www.nber.org/papers/w29004.

Gianistika, C. and Sukma Firmansyah, V. (2023) 'Improving student learning outcomes by using the discovery learning model in the learning process language indonesia',

Edukasi, 17(2), pp. 176–187. Available at: https://doi.org/10.15294/edukasi.v17i2.47981.

Godínez Castellanos, J.L. *et al.* (2021) 'Chemistry in Our Community: Strategies and Logistics Implemented to Provide Hands-On Activities to K-12 Students, Teachers, and Families', *Journal of Chemical Education*, 98(4), pp. 1266–1274. Available at: https://doi.org/10.1021/acs.jchemed.0c01120.

Holstermann, N., Grube, D. and Bögeholz, S. (2010) 'Hands-on Activities and Their Influence on Students' Interest', *Research in Science Education*, 40(5), pp. 743–757. Available at: https://doi.org/10.1007/s11165-009-9142-0.

Hosker, D.K., Elkins, R.M. and Potter, M.P. (2019) 'Promoting Mental Health and Wellness in Youth Through Physical Activity, Nutrition, and Sleep', *Child and Adolescent Psychiatric Clinics of North America*. W.B. Saunders, pp. 171–193. Available at: https://doi.org/10.1016/j.chc.2018.11.010.

Inan, H.Z. and Inan, T. (2015) '3Hs Education: Examining hands-on, heads-on and hearts-on early childhood science education', *International Journal of Science Education*, 37(12), pp. 1974–1991. Available at: https://doi.org/10.1080/09500693.2015.1060369.

John Kyere (2016) *The Effectiveness of Hands-On Pedagogy in STEM Education*.

Korwin, A.R. and Jones, R.E. (1990) 'Do Hands-On, Technology-Based Activities Enhance Learning by Reinforcing Cognitive Knowledge and Retention?', *Journal of Technology Education*, 1(2).

Laurson, K.R. *et al.* (2014) 'Concurrent Associations between Physical Activity, Screen Time, and Sleep Duration with Childhood Obesity', *ISRN Obesity*, 2014, pp. 1–6. Available at: https://doi.org/10.1155/2014/204540.

Mahmood, L. *et al.* (2021) 'The influence of parental dietary behaviors and practices on children's eating habits', *Nutrients*. MDPI AG. Available at: https://doi.org/10.3390/nu13041138.

Pfaff, T.J. and Weinberg, A. (2009) 'Do hands-on activities increase student understanding?: A case study', *Journal of Statistics Education*, 17(3). Available at: https://doi.org/10.1080/10691898.2009.11889536.

Pirttimaa, M., Husu, J. and Metsärinne, M. (2017) 'Uncovering procedural knowledge in craft, design, and technology education: a case of hands-on activities in electronics', *International Journal of Technology and Design Education*, 27(2), pp. 215–231. Available at: https://doi.org/10.1007/s10798-015-9345-9.

Priya, R. and a, R. (2021) 'HANDS ON ACTIVITIES: ROLE OF METHODS OF TEACHING AS MEANS OF INTERDISCIPLINARY EDUCATION', *International Journal of Advanced Research*, 9(08), pp. 454–460. Available at: https://doi.org/10.21474/IJAR01/13288.

Pulimeno, M. *et al.* (2020) 'School as ideal setting to promote health and wellbeing among young people', *Health Promotion Perspectives*. Tabriz University of Medical Sciences, pp. 316–334. Available at: https://doi.org/10.34172/hpp.2020.50.

Sadiyah, H. *et al.* (2024) 'The Effect of Problem Based Learning Model on Critical Thinking Skills in Elementary School: A Meta Analysis Study', *Jurnal Iqra' : Kajian Ilmu Pendidikan*, 9(1), pp. 135–160. Available at: http://journal.iaimnumetrolampung.ac.id/index.php/ji/.

Schunk (2012) *Learning Theories An Education Perspectivee*. Yogyakarta: Pustaka Pelajar.

Schwichow, M. *et al.* (2016) 'What students learn from hands-on activities', *Journal of Research in Science Teaching*, 53(7), pp. 980–1002. Available at: https://doi.org/10.1002/tea.21320.

Smith, A.R., Hames, J.L. and Joiner, T.E. (2013) 'Status Update: Maladaptive Facebook usage predicts increases in body dissatisfaction and bulimic symptoms', *Journal of Affective Disorders*, 149(1–3), pp. 235–240. Available at: https://doi.org/10.1016/j.jad.2013.01.032.

Stohr-Hunt, P.M. (1996) 'An Analysis of Frequency of Hands-On Experience and Science Achievement', *Journal of Research in Science Teaching*, 33(1), pp. 101–109. Available at: https://doi.org/10.1002/(SICI)1098-2736(199601)33:1<101::AID-TEA6>3.0.CO;2-Z.

Taufiq, N. and Dartanto, T. (2020) 'Education, informal turnover and poverty dynamics in Indonesia', *International Journal of Economics and Management*, 14(1), pp. 157–172.

WHO and UNICEF (2017) *Global Nutrition monitoring framework. Operational guidance for tracking progress in meeting targets for 2025*, *World Health Organization*. Available at: http://apps.who.int/iris/bitstream/handle/10665/259904/9789241513609-eng.pdf;jsessionid=82B08433379C3E3E69B3F8D4F2690C34?sequence=1%0Awww.who.int/nutrition.