

Nurturing Natural Beauty: Empowering MAN 1 Model Bengkulu's Female Students with Red Dragon Fruit (*Hylocereus polyrhizus*) Cosmetics Crafting Workshop



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ABSTRACT

Introduction: Using lipstick, blush-on, and various colored cosmetic products is highly popular among teenage girls. However, the adverse effects of hazardous colorants in cosmetics include respiratory irritations, skin irritations, eye injuries, gastrointestinal toxicity, and carcinogenic properties. Red dragon fruit contains many red anthocyanin antioxidants, making it a viable natural colorant for food, cosmetics, and textiles. This community engagement project aimed to enhance the understanding of teenage girls, especially MAN 1 Model City of Bengkulu students, regarding illegal cosmetics containing harmful and prohibited ingredients. It also aimed to improve the girls' skills in crafting natural Lip Tint and Blush-On preparations from Red Dragon Fruit (*Hylocereus polyrhizus*), promoting a return to nature in cosmetic choices. This initiative was expected to inspire creative ideas among teenagers to design alternative economic activities centered on producing natural and halal cosmetics made from herbal ingredients.

Methods: The project involved educational and awareness-raising activities about the dangers of forbidden cosmetic ingredients, followed by workshops on making Lip Tint and Blush-On formulations. These workshops were led by faculty members from the School of Medicine and the School of Pharmacy, with assistance from students of the Faculty of Mathematics and Natural Sciences at the University of Bengkulu.

Results: Evaluation results showed that workshop participants experienced a 63.2% increase in knowledge and gained the ability to independently create Lip Tint and Blush-On products from red dragon fruit.

Conclusion: The workshop successfully produced natural Lip Tint and Blush On, and the project also heightened the students' interest in the Pharmacy Program

Keywords: Blush on; lip tint; MAN 1 Model City of Bengkulu; natural and halal cosmetics; red dragon fruit (*Hylocereus polyrhizus*); workshop.

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INTRODUCTION

In 2018, the Indonesian National Agency of Drug and Food Control (BPOM) uncovered a staggering 112 billion rupiahs' worth of illegal cosmetics containing prohibited or harmful substances. The issue escalated in 2020 when BPOM issued a public warning for 79 products posing health risks due to harmful ingredients.^{1,2} These illegal cosmetics are often counterfeit or intentionally formulated with forbidden substances. Safety is paramount in cosmetics, as not all

products are created with safe ingredients. Unscrupulous cosmetics manufacturers frequently incorporate hazardous substances, including harmful dyes like Red K3 and Red K10.³

Among these products, lipsticks, blush-ons, and various colored cosmetics are particularly beloved by teenage girls. Commonly used hazardous colorants in cosmetics include Red K3 and Red K10. Rhodamine B (Red K3) is a synthetic dye with no specific odor and dissolves easily in bright red solutions. Typically, this dye is applied in industries like paint, paper,

and textiles.⁵ The short-term adverse effects of such hazardous colorants in cosmetics include respiratory irritations, leading to coughing, sore throat, breathing difficulties, and chest pain. They can also cause skin irritation, leading to a burning sensation, stinging, and redness. In the long term, these substances are toxic to the gastrointestinal tract and may even contribute to the development of cancer.^{5,6}

On a positive note, red dragon fruit is a rich source of antioxidants, including flavonoids, vitamins A, C, and E, and

polyphenols. Studies have also revealed that the red dragon fruit's skin extract contains vitamin C, flavonoids, tannins, alkaloids, steroids, and anthocyanins. Anthocyanins are natural colorants that impart a red hue, making them an excellent alternative to synthetic dyes in cosmetics.^{7,8}

Madrasah Aliyah Negeri (MAN) 1 Model City of Bengkulu, located on Cimanuk Street, Kilometer 6.5, Bengkulu, caters to female students aged 15-18, falling within the category of teenage girls. Adolescence marks a transitional phase in one's life, during which teenagers enjoy exploring various aspects, including enhancing their appearance through cosmetics. It is also critical for forming consumer behavior, with loyalty to certain products often beginning during adolescence.⁹

Mistakes in selecting and using illegal and harmful cosmetics can be prevented through awareness campaigns. In addition to increasing knowledge, young women, particularly students, must be introduced, educated, and trained in harnessing natural ingredients to create cosmetics, such as natural lip and cheek stains using red dragon fruit. This workshop aims to boost the spirit of MAN 1's female students to embrace nature and enhance their creativity in crafting cosmetic preparations.

METHOD

This community empowerment involved lecturers and students from the University of Bengkulu, collaborating with partners from MAN 1 Model City of Bengkulu, including female students, teachers, and staff. Before the project's commencement, the participating students underwent a one-day training session in preparing lip tint and cream blush using red dragon fruit at the Pharmaceutical Laboratory of the D3 Pharmacy Program, University of Bengkulu, Padang Harapan. This training aimed to prepare female student participants assisting in the lip tint and cream blush workshop.

At the beginning of the community engagement, the female student participants comprised 35 randomly selected female students. They were given a pretest questionnaire to assess

their knowledge of the dangers of illegal cosmetics containing harmful ingredients, as shown in Figure 1. The media used in the pretest and post-test were paper questionnaires consisting of 10 multiple-choice questions provided by the committee.

After completing the questionnaire, the faculty team and a doctor provided education about the risks associated with illegal cosmetics containing harmful ingredients and the benefits of red dragon fruit in producing red pigments suitable for the cosmetics industry (Figure 2a).

The workshop activities commenced with explaining the benefits of red dragon fruit,



Figure 1. Participants were answering pretest questions.



Figure 2. Demonstration of Crafting Cosmetics. (a) Education about illegal cosmetics by a doctor. (b) Explanation of the benefits of red dragon fruit. (c) Demonstrate how to create lip tint and blush on dragon fruit. (d) Pharmacists showcased the packaging process in the respective containers.



Figure 3. Supervised the creation of natural dragon fruit-based cosmetics, namely lip tint and blush on, provided to the female students of MAN 1 Model Bengkulu by the Community Service Team from the University of Bengkulu.

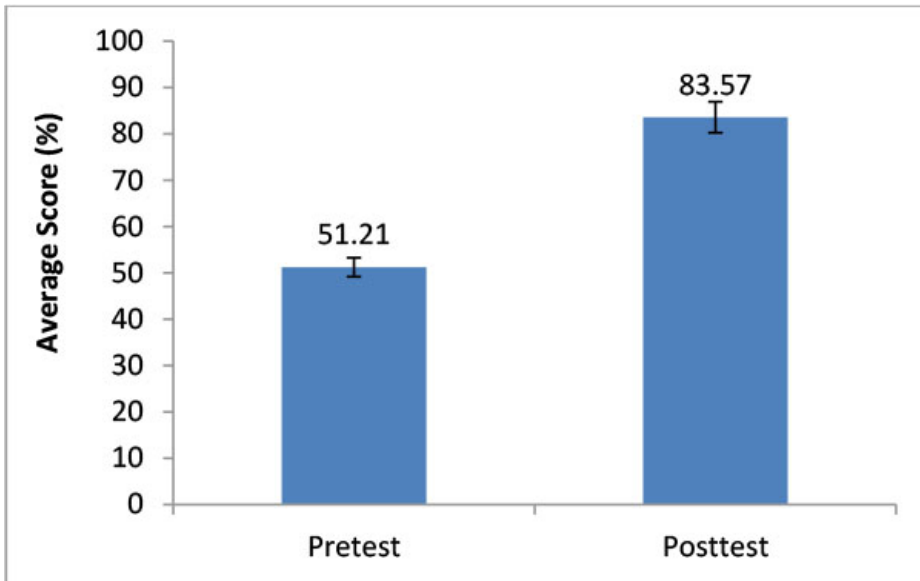


Figure 4. Chart of Participants' Knowledge Scores About Cosmetics.



Figure 5. The participants were interested in making natural dragon fruit cosmetics and products from their own handmade.

which contains anthocyanin compounds known for their antioxidant properties (Figure 2b). The various materials and tools used were demonstrated visually, with the instructor showing the form and function of each item (Figure 2c). The female students were encouraged to observe while the faculty members demonstrated the lip tint and cream blush preparation techniques. At the end of the preparation demonstration, the instructors showcased the packaging process in the respective containers (Figure 2d).

To ensure the female students were well-trained in crafting natural lip tints and blush-ons from red dragon fruit, they were divided into several groups, each consisting of four individuals. These groups received direct training from the faculty in creating the preparations and packaging them using the provided materials and tools. Every group received guidance and support from the university's faculty members and D3 Pharmacy Program students, as depicted in Figure 3.

Upon concluding the workshop, the

female student participants were requested to fill out post test questionnaires to evaluate their understanding after the educational sessions and participation in the Workshop on Crafting Natural and Halal Lip Tint and Blush On from Red Dragon Fruit (*Hylocereus Polyrhizus*), organized by the University of Bengkulu faculty members.

RESULTS

The outcomes obtained from this community service activity are as follows:

Knowledge Enhancement

The level of knowledge among the participants before and after the activity can be observed in Figure 4, based on the results of the pretest and post-test.

Increased Enthusiasm and Curiosity Among Participants Regarding Product Production

The creation of lip tint and blush in preparations increased enthusiasm among the participants for natural cosmetics made from dragon fruit (Figure 5).

Cosmetic Products Produced

Natural cosmetic preparations derived from Red Dragon Fruit (*Hylocereus Polyrhizus*) were obtained from the community service activity conducted. This includes 35 bottles of lip tint and 70 pots of blush-on cream, all handcrafted by the female students and teachers who participated in the workshop (Figure 6).

DISCUSSION

The community engagement project in MAN 1 Kota Bengkulu students Bengkulu demonstrates the positive impact of educational workshops on the participants' knowledge about natural cosmetics and the potential dangers associated with illegal cosmetics. Additionally, it serves as a reminder of the power of such initiatives in fostering interest in various fields of study, such as pharmacy, among the younger generation.

This project not only created valuable natural cosmetic products but also empowered students with knowledge that will help them make informed choices about the beauty products they use. It



Figure 6. Lip tint and blush products made by the workshop participants from dragon fruit.

highlights the importance of community engagement and its role in shaping the youth's aspirations and awareness.

Promotion of Natural Cosmetics Production

Producing lip tint and blush-on using red dragon fruit showcases the potential for creating cosmetics from natural ingredients. This activity promotes sustainable and environmentally friendly practices and offers an alternative to conventional cosmetics laden with synthetic chemicals.¹⁰ As consumers increasingly seek natural and organic alternatives, this project aligns with the growing demand for eco-friendly beauty products.¹¹

Knowledge Enhancement and Consumer Awareness

The substantial increase in knowledge (63.2%) among MAN 1 Kota Bengkulu students regarding illegal cosmetics and harmful ingredients is a significant achievement. It underscores the effectiveness of educational workshops in enhancing consumer awareness.¹² With this newfound knowledge, participants are better equipped to make informed choices about their beauty products. This program may lead to safer and more conscious consumption in the long run, potentially reducing the health risks associated with cosmetics.

Impact on Career Aspirations

The project has had a tangible impact on the students' career aspirations. By exposing them to the practical aspects of pharmacy studies, particularly in cosmetics production, the project has ignited an interest in pharmacy as a

potential career path.¹³ This outcome illustrates the transformative power of community engagement initiatives in shaping the educational and professional aspirations of the younger generation.

Community Engagement for Youth Empowerment

This project exemplifies the importance of community engagement in empowering youth. The project goes beyond theoretical knowledge by actively involving students in creating natural cosmetics providing practical skills and insights.¹⁴ It serves as a reminder of the positive role that community initiatives can play in nurturing the potential of young individuals, broadening their horizons, and enhancing their understanding of real-world issues.¹⁵

The limitation of this activity was the inability to cover all female students, which amounted to around 200 students.

CONCLUSION

In conclusion, the community engagement project in MAN 1 Kota Bengkulu students Bengkulu not only results in the creation of natural cosmetics but also enriches the knowledge and aspirations of the participants. It contributes to the promotion of sustainable beauty practices, consumer awareness, and the potential for future professionals in the field of pharmacy. This project serves as a model for other communities to empower their youth and promote eco-conscious practices and awareness.

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CONFLICT OF INTERESTS

The community server has received institutional grant support through the Research and Community Service Institution (LPPM) of the University of Bengkulu. Another author reports no potential conflicts.

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