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# COMMUNITY EMPOWERMENT IN THE USE OF CELERY PLANT (*Apium graveolens* L) AS AN ANTIHYPERTENSION IN PATIHAN VILLAGE, SIDOHARJO DISTRICT, SRAGEN.

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## *ABSTRACT*

*In the world, hypertension is ranked third as a risk factor for death. In 2025, the increase in cases of hypertension, especially in developing countries, is estimated to be around 80% of the 639 million cases in 2000 or around 1.15 billion cases. In botany, celery leaves are said to contain Apigenin which can prevent constriction of blood vessels and Phthalides which can relax artery muscles or relax blood vessels. These substances regulate blood flow, allowing blood vessels to dilate and reduce blood pressure. Based on this, it is necessary to empower the community in the use of celery plants to overcome hypertension problems, which is carried out in the Community Service program in the PKM scheme with partners being PC IAI Sragen and Patihan Village inhabitant, Sidoharjo District, Sragen. This PKM activity took place in six activities, namely: Checking participants' blood pressure before being treated with celery plants, conducting pre-tests on participants before counseling was carried out, weighingcelery plants to be distributed to each participant so they could be self-medicating at home, conducting lectures and discussions about hypertension, antihypertensive chemical drugs, and the use of antihypertensive celery plants, demonstrations of making herbal celery drinks which are efficacious as antihypertensives and distributing drinks to participants, carrying out post tests,. The solution offered is an increase in the knowledge,attitudes, and skills of the PKM partners as indicated by an increase in the post-test scores when compared to the pre-test scores. In addition, there was also an increase in the degree of public health with a decrease in blood pressure, especially in participants who suffered from hypertension after being treated with celery leaves.*

***Key words:*** *antihypertension, celery, herbal drink*

## ABSTRAK

Hipertensi merupakan salah satu penyakit kardiovaskular yang paling sering dan banyak diderita masyarakat, Hipertensi sekarang sudah menjadi masalah utama kita semua, tidak hanya di Indonesia tapi juga di dunia, karena hipertensi ini merupakan salah satu pintu masuk atau terjadinya faktor risiko penyakit seperti jantung, diabetes, gagal ginjal dan stroke, kondisi saat ini telah menempati peringkat ketiga sebagai faktor resiko penyebab kematian. Pada tahun 2025, kenaikan kasus hipertensi utamanya pada negara berkembang diperkirakan sejumlah 80% dari 639 juta kasus pada tahun 2000 atau berkisar sejumlah 1,15 milyar kasus [1]). Dalam ilmu farmakognosi dan fitoterapi, daun seledri diketahui mempunyai kandungan Apigenin yang dapat mencegah adanya penyempitan pembuluh darah dan juga dapat mengendurkan otot-otot arteri ataupun merelaksasi pembuluh darah. Zat tersebut yang mampu mengatur aliran darah

sehingga memungkinkan pembuluh darah melonggar atau membesar dan mengurangi pada tekanan darah. Berdasarkan hal itu, maka perlu dilakukan program kegiatan Pemberdayaan masyarakat dalam pemanfaatan tanaman seledri untuk membantu mengatasi masalah hipertensi, yang dilaksanakan dalam program Pengabdian kepada Masyarakat pada skema PKM dengan mitranya adalah PC IAI Sragen dan warga Desa Patihan Kecamatan Sidoharjo, Sragen. Kegiatan PKM ini berlangsung dengan enam kegiatan,yaitu: Melakukan pengecekan tekanan darah peserta sebelum diterapi dan juga pemanfaatan tanaman seledri, awalnya dilakukan Pre-test terhadap peserta sebelum dilakukan penyuluhan, menimbang dan memberikan tanaman seledri untuk dibagikan kepada masing-masing peserta agar bisaterapi mandiri di rumah, melakukan ceramah dan diskusi tentang pemanfaatan tanaman tradisional untuk hipertensi, obat-obat kimia antihipertensi, dan pemanfaatan tanaman seledri untuk antihipertensi, demonstrasi pembuatan minuman herbal tanaman seledri yang berkhasiat sebagai antihipertensi dan pembagian minuman kepada peserta, melaksanakan post test. Solusi yang ditawarkan adalah adanya peningkatan pengetahuan, sikap, dan keterampilan mitra PKM yang ditunjukkan dengan peningkatan nilai *post-test setelah* dibandingkan dengan nilai *pre-test* nya. Selain itu juga terjadinya peningkatan derajat kesehatan masyarakat dengan terjadinya penurunan tekanan darah terutama pada peserta yang menderita hipertensi setelah diterapi dengan daun seledri.

**Kata kunci**: antihipertensi, seledri, minuman herbal

## INTRODUCTION

High blood pressure, also known as hypertension, is a global health problem in the world, due to its high frequency of occurrence and high risk of complications including cardiovascular disease and kidney disease. In the world, hypertension is ranked third as a risk factor for death. In 2025, there will be an increase in hypertension cases, especially in developing countries, estimated at around 80% of the 639 million cases in 2000 or around 1.15 billion cases [1]. Hypertension is also the third leading cause of death after stroke and tuberculosis, namely 6.7% of deaths of all ages in Indonesia [3]

Along with the increase in hypertension sufferers in Indonesia with various causes and customary obstacles to the use of synthetic drugs, for example undesirable side effects, the government is committed to developing traditional medicines widely, especially the use of natural medicines, both herbal medicines and standardized herbal medicines. and phytopharmaceuticals [4]. As is known, empirically based on experience, celery (Apium graveolens) can be used to lower blood pressure and objectively shows that this plant contains many compounds that can provide therapeutic effects on the cardiovascular system. In pharmacognosy and phytotherapy, celery leaves are said to contain apigenin which can prevent narrowing of blood vessels and can also relax arterial muscles or be able to relax blood vessels. This substance functions to regulate blood flow, allowing blood vessels to loosen or enlarge and can reduce blood pressure. Celery contains flavonoids, tannins 1%, saponins, essential oils 0.033%, flavo-glucoside (apiin), phytosterols, apigenin, choline, asparagine, lipase, pthalides, bitter substances, vitamins (A, B and C), volatile oils, alkaloids and apigenin. Apigenin in celery leaves can function as a beta blocker which can slow the heart rate and can reduce the strength of heart contractions so that less blood flow is pumped which ultimately reduces blood pressure.[5]

A study by Muzakkar (2012) [5] can show that blood pressure can be lowered by using boiled celery water in just 3 days. The study used 40 g of fresh celery leaves with 400 cc of boiled water to obtain 200 cc. Boiled water is consumed 2 times a day, 100 cc each. Raw celery contains 338.5 mg/kg apigenin.

From these data, a community service program was carried out with the Community Partnership Program (PKM) scheme by the UNIDA Gontor Pharmacy Study Program with residents of Patihan Village with the title community empowerment in the use of celery plants as antihypertensives in Patihan Village, Sidoharjo District, Sidoharjo Regency. The aim of this community service activity with the PKM scheme is to increase understanding, knowledge, attitudes and skills regarding the use of celery as an antihypertensive, as well as an increase in health status, especially in patients suffering from hypertension with reduced blood pressure after self-therapy at home with make a herbal drink from celery leaves as an antihypertensive.

## METHOD

Community Service Activities with the PKM scheme carried out by a team of lecturers from the Pharmacy Study Program, FIK UNIDA Gontor, in collaboration with PC IAI Sragen, involving two lecturers and three students. The first student is responsible for preparing tools and materials, the second student is responsible for administering the pre-test, post-test and participant attendance, while the third student is responsible for helping check the participants' blood pressure before being treated with celery plants. This Community Service activity with the PKM scheme is in partnership with PC IAI Sragen and residents of Patihan Village, which is a combination of several local RTs in Patihan sub-district, Sidoharjo sub-district, Sragen. This community service activity consists of several activities, including:

1. Check participants' blood pressure before being treated with celery plants
2. Conduct a pre-test on participants before counseling is carried out.
3. Conduct lectures and discussions related to

hypertension, chemical antihypertensive drugs, and how to use celery plants for antihypertension

4. Weigh out celery plants to distribute to each participant so they can do independent therapy at home according to the instructor's recommendations
5. Demonstration of making a herbal drink from celery plants which has antihypertensive properties and also distributing drinks to participants.
6. Carry out a post test

## RESULT AND DISCUSSION

Increasing the participants' knowledge, attitudes and skills regarding the use of celery leaves as an antihypertensive was carried out using lecture and discussion methods which were then evaluated from pre and post tests. The increase in people's knowledge, attitudes and skills regarding the use of celery leaves to treat hypertension is shown by the increase in post test scores compared to the pre test. A recap of the pre test and post test results can be seen in the following table

Table 1. Results of pre-test and post-test scores

| No. peserta | Nilai Pre-test | Nilai Post-test |
|---|---|---|
| 1 | 50 | 60 |
| 2 | 70 | 80 |
| 3 | 50 | 70 |
| 4 | 40 | 50 |
| 5 | 60 | 80 |
| 6 | 50 | 70 |
| 7 | 60 | 80 |
| 8 | 60 | 80 |
| 9 | 50 | 70 |
| 10 | 60 | 80 |

Figure 1. Photo of Community Service Activities

Questions asked of participants related to the knowledge listed in the questionnaire included knowledge about hypertension, synthetic drugs for hypertension and their side effects, and knowledge about the benefits of celery leaves as an antihypertensive. Meanwhile, questions related to attitude are questions of agreeing or disagreeing regarding hypertension and celery leaves as a natural ingredient for antihypertension. Skills are described by making a herbal drink from celery leaves in accordance with the correct dosage which has antihypertensive properties.

According to Newcomb [8] attitude is readiness or willingness to act and not for the implementation of certain motives. By changing someone's attitude, they can also change their behavior [9]. From experience and research it has been proven that behavior that is realized by knowledge will be more continuous (long lasting) than behavior that is not realized by knowledge [10]

There is also an increase in the level of health of the participants, this is expected to result in a reduction in blood pressure in the participants because the effectiveness of using celery leaves has been proven empirically based on experience.

## CONCLUSION

In this community service activity using the PKM scheme, activities were carried out with 10 participants in Patihan Village, Sidoharjo Sragen and resulted in an increase in the knowledge, attitudes and skills of the participants. Apart from that, participants were also provided with celery plants to be able to self-therapy at home by making herbal drinks from celery plants which have antihypertensive properties.

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