

## Hubungan frekuensi dan keteraturan senam terhadap penurunan tekanan darah pada anggota klub Jantung Sehat Pondalisa, Jakarta tahun 2000-2005

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### Abstrak

Penelitian ini bertujuan untuk melakukan evaluasi program latihan Klub Jantung Sehat Pondalisa sekaligus mengetahui hubungan frekuensi dan keteraturan senam terhadap penurunan tekanan darah. Dengan demikian diharapkan akan didapatkan tekanan darah yang terkendali pada anggota KJS Pondalisa khususnya dan masyarakat usia dewasa tua umumnya.

Studi kohort retrospektif dilakukan dengan menggunakan data yang terdapat pada buku anggota KJS Pondalisa. Digunakan pendekatan analisis Cox Regression untuk melihat efek frekuensi dan keteraturan senam yang telah dilakukan oleh para anggota KJS Pondalisa selama 1 tahun pertama keanggotaan terhadap penurunan tekanan darah. HR (hazard ratio) digunakan sebagai estimasi RR (risiko relatif) efek frekuensi dan keteraturan senam terhadap penurunan tekanan darah. Analisis multivariat digunakan untuk mengendalikan variabel-variabel perancu.

Sebanyak 132 data anggota KJS Pondalisa dianalisis dalam penelitian ini. Dalam 1 tahun pertama keanggotaan terdapat 11,36% anggota yang melakukan senam 2x1minggu, 39,39 % anggota yang melakukan senam > 8 minggu (9-15 minggu) berturut-turut, dan 11,36% anggota yang melakukan senam 2x1minggu selama > 8 minggu (9-15 minggu) berturut-turut. Tidak ada anggota yang melakukan senam 3x1minggu sesuai program dan tidak ada anggota yang melakukan senam 2x1minggu selama < 8 minggu berturut-turut. Keteraturan senam anggota maksimum selama 15 minggu. Didapatkan penurunan tekanan darah pada 32,58 % anggota dengan rata-rata penurunan tekanan darah sistolik/diastolik sebesar 6 mmHg/4 mmHg yang dapat dipertahankan minimal selama 1 bulan. Besarnya penurunan TD ini diharapkan dapat bermanfaat dalam menurunkan angka kesakitan dan kematian akibat hipertensi; sedikitnya dapat memperlambat perjalanan penyakit hipertensi serta bermanfaat dalam pencegahan primer.

Efek frekuensi senam 2x1minggu terhadap penurunan tekanan darah meningkat sebesar 1 Va dibandingkan dengan frekuensi senam < 2x1minggu [RR 1,01;95% CI [0,43-2,38]. Efek senam teratur 9-15 minggu berturut-turut terhadap penurunan tekanan darah meningkat sebesar 36 % dibandingkan dengan senam teratur < 8 minggu berturut-turut [RR 1,36;95% CI [0,63-2,93]. Senam yang dilakukan 2x1minggu selama 9-15 minggu berturut-turut memberikan manfaat penurunan tekanan darah sebesar 34 % dibandingkan dengan senam < 2x1minggu selama 8 minggu berturut-turut [RR 1,34;95% CI [0,50-3,60]. Tidak ada perbedaan manfaat penurunan tekanan darah antara senam < 2x1minggu selama 9-15 minggu berturut-turut dengan senam < 2x1minggu selama < 8 minggu berturut-turut [RR 0,99;95% CI [0,42-2,32].

Dan hasil penelitian ini disimpulkan bahwa efek frekuensi senam 2x1minggu terhadap penurunan tekanan darah tidak berbeda dengan efek frekuensi senam < 2x1minggu. Efek keteraturan senam 9-15 minggu berturut-turut terhadap penurunan tekanan darah lebih besar dibandingkan efek frekuensi senam 2x1minggu. Hal ini menunjukkan pentingnya mempertahankan keteraturan senam untuk mendapatkan hasil penurunan tekanan darah yang lebih baik. Manfaat penurunan tekanan darah pada frekuensi senam 2x1minggu didapatkan bila dilakukan selama 9-15 minggu berturut-turut. Walaupun senam sudah dilakukan secara

teratur sampai dengan 15 minggu berturut-turut, bila dilakukan dengan frekuensi < 2x1 minggu tidak didapatkan manfaat penurunan tekanan darah.

Masih adanya faktor-faktor yang belum diperhitungkan seperti durasi dan intensitas latihan, peran obat anti hipertensi, dan adaltdidaknya penyakit lain, serta masih lebar dan tidak konsistennya rentang interval kepercayaan yang dihasilkan, menyebabkan basil penelitian ini belum sepenuhnya menunjukkan efek frekuensi dan keteraturan senam terhadap penurunan tekanan darah yang sebenarnya pada populasi. Oleh karena itu, masih diperlukan penelitian lanjutan menggunakan berbagai nilai frekuensi dan keteraturan senam, dengan memperhitungkan berbagai faktor di atas dan jumlah sampel yang lebih besar, untuk memperoleh manfaat penurunan tekanan darah yang sebenarnya dan presisi yang lebih akurat.

The aim of this research is to evaluate the performance of 'Klub Jantung Sehat Pondalisa' as well as the association of frequency and regularity of exercise with blood pressure reduction. The long-term benefit achieved will be adequate control of blood pressure among members of the club and adults as a whole. Retrospective cohort study was conducted, using data found on the member's logbook. Cox Regression analysis approach was used to find the benefit of blood pressure reduction through exercise's frequency and regularity which have been done by all member of KJS Pondalisa during the first year of membership. HR (hazard ratio) was used to estimate the RR (relative risk) of both exercise's frequency and regularity to reduce blood pressure. Confounders were adjusted by multivariate analysis.

There were 132 members analyzed in this research. In the first year of membership, there were 11.36% members doing exercise twice weekly, 39.39 % members doing exercise > 8 weeks (9-15 weeks) regularly, and 11.36% members doing exercise twice weekly in > 8 weeks (9-15 weeks) regularly. There were no member doing exercise thrice weekly as programmed. There were no member doing exercise twice weekly in < 8 weeks regularly. The maximum exercise's regularity was 15 weeks. There were 32.58 % blood pressure reduction among members. The mean systolic/diastolic reduction which can be maintained for at least I month were 6 mmHg/4 mmHg, This amount of BP reduction might reduce morbidity and mortality among hypertensives; at least might retard the natural history of hypertension and give benefit to primary prevention.

The effect of twice weekly's exercise on blood pressure reduction increase 1 % as compared to less than twice weekly's exercise [RR 1,01;95% CI [0,43-2,38]. Effect of doing 9-15 weeks regular exercise on blood pressure reduction increase 36 % as compared to members doing 8 weeks regular exercise [RR 1,36;95% CI [ 0,63-2,93]. Members doing exercise twice weekly in 9-15 weeks regularly get benefit on blood pressure reduction 34 % more as compared to members doing exercise less than twice weekly in < 8 weeks regularly [RR 1,34;95% CI [0,50-3,60]. There were no difference in blood pressure reduction between members doing exercise less than twice weekly in 9-15 weeks regularly and members doing exercise less than twice weekly in < 8 weeks [RR 0,99;95% CI [ 0,42-2,32].

From this research, we conclude that there was no different effect of blood pressure reduction between twice weekly's exercise and less than twice weekly's exercise. The effect of exercise in 9-15 weeks regularly toward blood pressure reduction is bigger compared with effect of twice weekly's exercise. This finding shows the importance of maintaining exercise's regularity to get benefit of reducing blood pressure. The benefit of twice weekly's exercise for blood pressure reduction will be achieved when it is conducted in 9-15 weeks regularly. Although exercise has been conducted regularly up to 15 weeks, if done less than twice weekly, it will not yield the benefit of blood pressure reduction.

There are still many factors which have not been considered such as the duration and intensity of exercise,

the role of anti hypertensive drugs, and the presence of other diseases. All of those factors together with the wide range and inconsistent of confidence interval, make the results of this study fail to show the maximal effect of exercise's frequency and regularity to reduce blood pressure in population. Therefore, further research is needed using several degrees of exercise's frequency and regularity, considering also the above mentioned related factors and bigger number of sample size, to obtain the true benefit of blood pressure reduction and more accurate precision.</i>