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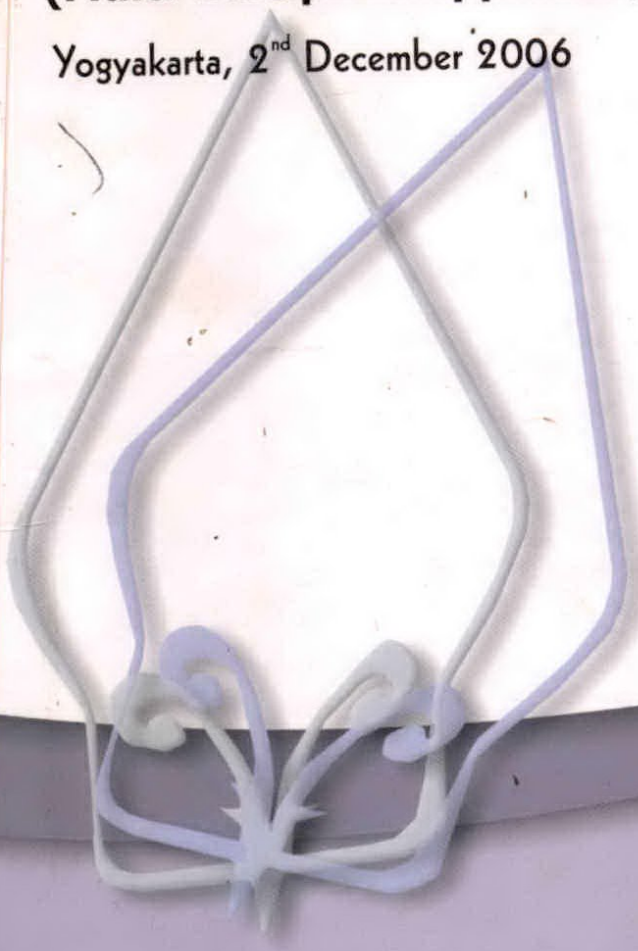
Proceeding

International Joint Seminar

Muslim Countries and Development :
Achievements, Constraints and Alternative Solutions
(Multi-Discipline Approach)

Yogyakarta, 2nd December 2006



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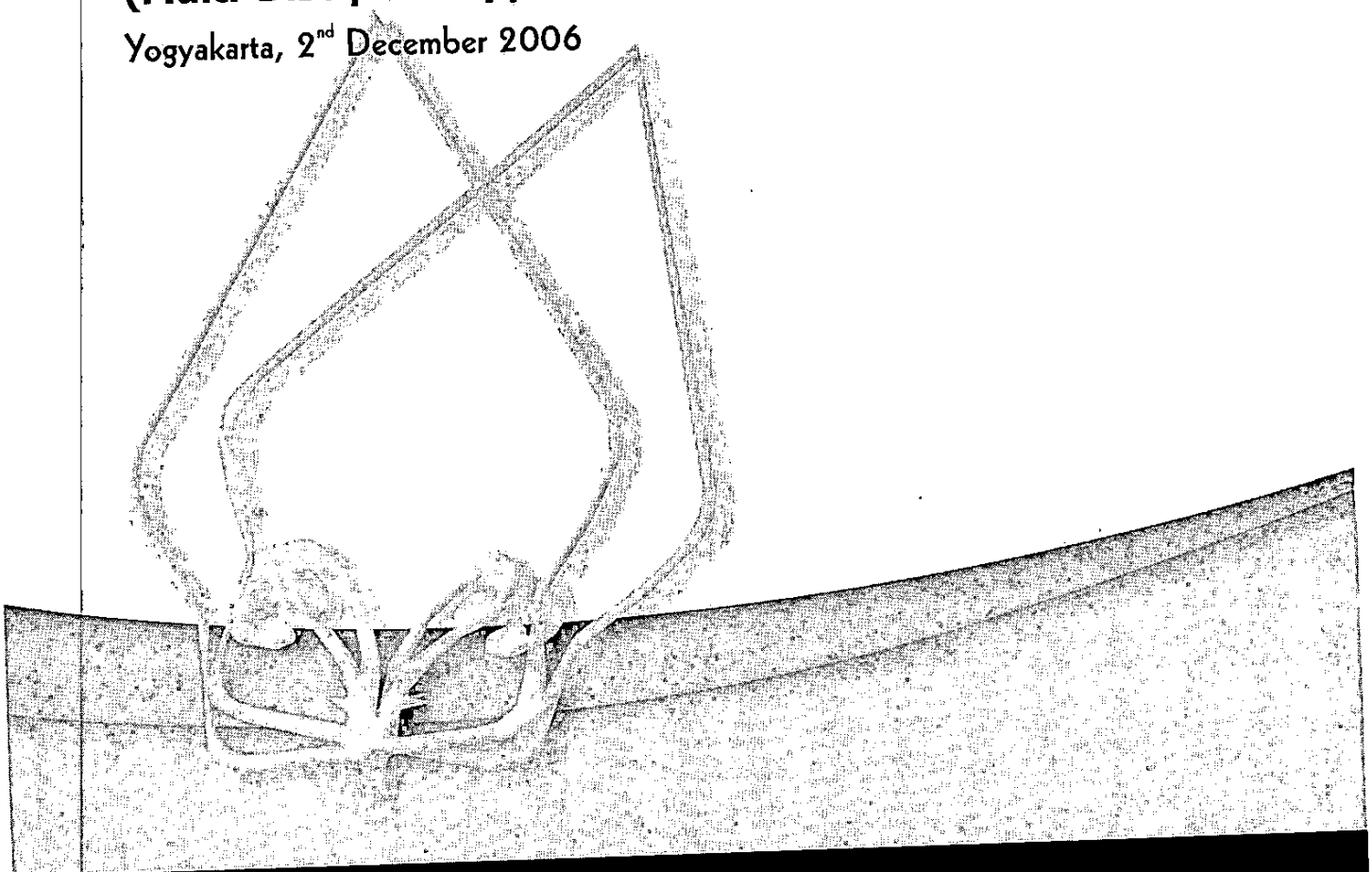

Organized by:

UMY
Universitas Muhammadiyah Yogyakarta

IIUM
International Islamic University Malaysia

Education and Cultural Attache Embassy of The Republic Indonesia in Malaysia

MESSAGE FROM THE RECTOR OF UNIVERSITAS MUHAMMADIYAH YOGYAKARTA (UMY)

Assalamu'alaikum warahmatullahi wabarakatuh

All praise be to Allah SWT, Lord of the world. Peace and blessings on Muhammad SAW, His Servants and Messenger.

First of all, as the rector of Universitas Muhammadivah Yogyakarta (UMY), I would like to welcome to the honourable guests, Rector, Dean of Postgraduate Studies (CPS), Dean of ISTAC, Dean of IRKHS, Deputy Deans and Head Departments from various Kulliyah, lecturers, postgraduate students of International Islamic University Malaysia (IIUM), and all participants in this joint seminar.

Academic cooperation between UMY and IIUM started several years ago. The cooperation between us is based on a solid foundation; both us are Islamic universities having same missions to develop Islamic society, to prepare future generations of Islamic intellectuals, and to cultivate Islamic civilization. In fact, improving academic quality and strengthening our position as the producers of knowledge and wisdom will offer a meaningful contribution to the development of Islamic civilization. This responsibility is particularly significant especially with the emergence of the information and knowledge society where value adding is mainly generated by the production and the dissemination of knowledge.

Today's joint seminar signifies our attempts to shoulder this responsibility. I am confident to say that this joint program will be a giant step for both of us to open other pathways of cooperation. I am also convinced that through strengthening our collaboration we can learn from each other and continue learning, as far as I am concerned, is a valuable ingredient to develop our universities.

I sincerely wish you good luck and success in joining this program

Wassalamu'alaikum Wr, Wb.

Dr. Khoiruddin Bashori
Rector, UMY

MESSAGE FROM THE RECTOR OF INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM)

Assalamu'alaikum warahmatullahi wabarakatuh

In the name of Allah, the most Gracious and the most Merciful. Peace and blessings be upon our Prophet Muhammad (S.A.W).

First and foremost, I felt honoured, on behalf of the university to be warmly welcomed and to be given the opportunity to work hand in hand, organizing a respectable conference. Indeed, this is a great achievement towards a warmers bilateral tie between the International Islamic University Malaysia (IIUM) and Universitas Muhammadiyah Yogyakarta (UMY) after the MoU Phase.

I would also like to express my heartfelt thanks to Centre for Postgraduate Studies (CPS), Postgraduate Students Society (PGSS), contributors, paper presenters, participants and our Indonesian counterpart for making this program a prestigious event of the year.
This educational and cultural visit is not only an avenue to foster good relationship between organizations and individuals and to learn as much from one another but a step forward in promoting quality graduates who practices their ability outdoor and master his or her studies through first hand experience. The Islamic platform inculcated throughout the educational system namely the Islamization of knowledge, both theoretical and practical, will add value to our graduates. This comprehensive excellent we strived for must always be encouraged through conferences, seminars and intellectual-based activities in line with our lullaby: The journey of a thousand miles begin by a single step, the vision of centuries ahead must start from now.

My utmost support is with you always. Looking forward to a fruitful meeting.

Ma'assalamah
Wassalamu'alaikum Wr, Wb.

Prof. Dato' Dr. Syed Arabi Idid
Rector, IIUM

MESSAGE FROM EDUCATION AND CULTURAL ATTACHE
EMBASSY OF THE REPUBLIC OF INDONESIA
KUALA LUMPUR

Assalamu'alaikum warahmatullahi wabarakatuh

All praise be to Allah SWT. This is the moment where implementation of MoU between Universitas Muhammadiyah Yogyakarta (UMY) and International Islamic University Malaysia (IIUM) comes in the form of action by organizing this Joint Seminar. The efforts of both sides to implement the MoU are highly appreciated, especially, in the context of which both universities effort to enhance the quality of education.

Substantially, I believe that this Joint Seminar will bring many benefits. In term of the development of knowledge, it is a means for developing academic quality, for exchanging of information on academic development, as well as for constructing intellectual atmosphere at both universities. In term of international relations, both universities have taken part in increasing close relationship between Malaysia and Indonesia. RUM and UNIY as well are using 'soft power' to increase bilateral relations among citizens which brings a lot of benefits for both nations.

Therefore, I hope that both RUM and UMY can make use of this program as a 'kick-off' for other programs in the future, especially in using UMY's vast networks with other Muhammadivah Universities in various cities in Indonesia as well as IIUM's network. The support of IIUM for UMY also means a progress for IIUM and UMY. I hope such joint program will continue in future for betterment of both Indonesia and Malaysia. Embassy of the Republic of Indonesia in Kuala Lumpur will always support these efforts.
To our honorable guests, Rector, Dean of Postgraduate Studies (CPS), Dean of ISTAC, Dean of IRKHS, Deputy Deans and Head Departments from various Kulliyah, lecturers and students of IIUM, I warmly welcome you to Yogyakarta. I hope you enjoy your stay in the cultural city of Yogyakarta.
Finally, as the Attache of Education and Cultural, Embassy of the Republic of Indonesia, Kuala Lumpur, I sincerely wish you good luck *and a* successful program with unforgettable memories.

Wabillahit Taufiq Wal Hidayah
Wassalamu'alaikum warahmatullahi wabarakatuh.

M.Imran Hanafi

Education and Cultural Attache Embassy of the Republic of Indonesia

MESSAGE FROM DEAN CENTRE FOR POSTGRADUATE STUDIES

Assalamu'alaikum warahmatullahi wabarakatuh

Praise be to Allah. May the peace and blessings of Allah be on the last prophet and messenger, our master Muhammad and on his household and companions. It is a great privilege for me to foreword this message to this wonderful event that is jointly organized by the Universitas Muhammadiyah Yogyakarta (UMY) and International Islamic University (IIUM).

First and foremost I would like to record my special gratitude to management of Universitas Muhammadiyah Yogyakarta for their co-operation.

In order to obtain comprehensive excellence, the Centre for Postgraduate studies has always facilitates postgraduate students of the university to achieve the highest quality in their academic work. This seminar is one of the many programs that Centre for postgraduate studies has to ensure quality graduates.

I would therefore like to thank all the participants and programme coordinators who have worked hard to realize this event.

May Allah SWT shower His blessing upon us.

Wassalamu'alaikum Wr, Wb.

Prof. Dato' Dr.Wan Rafaei Abdul Rahman
Dean, Centre For Postgraduate Studies

MESSAGE FROM THE ACTI
PRESIDENT OF POSTGRADUATE STUDE

Assalamu'alaikum warahmatullahi wabarakatuh

On behalf of Postgraduate Students' Society (PGSS), my gratitude and appreciation to our beloved Dean of Studies, the Embassy of Indonesia in Kuala Muhammadiyah Yogyakarta and the organizing com IIUM and the Universitas Muhammadiyah Yogyakarta huge success. Postgraduate Students' Society (PGSS) u supervision of the Center for Postgraduate Studies (CP this event.

As I strongly believe that the initial stages of unity a and building the new generation, who will represent t more, such programs, not only achieve the missio universities but to achieve the global mission and Therefore, I believe today, we have to have understa and then only we can appreciate our diverse cult acknowledge the different strengths posses in us an weaknesses through knowledge in this age of informa sure this joint seminar will initiate unity among the fut along with integrating them.

Thank you,

Mohd Nabi Habibi

Acting President Postgraduate Students' Society (PGSS

MESSAGE FROM PROGRAM DIRECTOR

Assalamu'alaikum warahmatullahi wabarakatuh.

Praise be to Allah. May the peace and blessings of Allah be on the last Prophet and Messenger, our master Muhammad and on his household and companions.

Honestly speaking, we are pleased to be trusted by Postgraduate Students' Society (PGSS) and Centre for Postgraduate Studies (CPS) to organize the programme named Educational and Cultural Visit to Yogyakarta, Indonesia. For this, We express our gratitude to the management of both PGSS and CPS. This programme is of immense value. It has the potentials to promote intellectual endeavor, develop leadership capabilities and enrich cross-cultural understandings. We sincerely believe and hope that program of this kind will be organized in a regular fashion in future.

It is a great privilege for us to play twofold role in organizing this event: *as a host* and as *guest*. In fact, this is a fascinating experience to manage this event. Since our inception here, we have found meaningful interaction of students in an interweaving of cultures into complicated, yet beautiful, embroidery of social fabric. We are proud to say that this dearly loved university has produced graduates of high quality, who are distinct from those of the local universities.

Finally, we wish to express our special thanks to Bapak M.Imran Hanafi, Education and Cultural Attache of Indonesian Embassy, Bapak Herdaus, S.H., Assistant of Immigration Attache of Indonesian Embassy, Bapak Tharian Taharuddin for their immensely valuable assistance and co-operation in making this program a success. I sincerely appreciate all local committees at Yogyakarta, the colleagues and program coordinators and committee members who worked diligently to materialize this event. We wish to pass on good wishes to the PGSS for their valuable efforts it expended for this event.

May Allah s.w.t shower His blessing upon us.

Wassalam,

Nasrullah
Programme Director

Todi Kurniawan
Co-Programme Director

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Cardiovascular Reactivity in Normotensive Young Adults with Family History of Hyoertension

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Department of Basic Medical Sciences, Kulliyyah of Pharmacy,
International Islamic University Malaysia

Abstract

Cardiovascular reactivity has been identified as potentially playing a role in the development of cardiovascular disease. It can be used as a non-invasive method to identify the preclinical state of the cardiovascular disease. However, many studies on cardiovascular reactivity in normotensive young adults with family history of hypertension showed inconsistent and controversial results. The objective of the study is to find out if normotensive young adults with family history of hypertension have increased cardiovascular reactivity to mental arithmetic test and cold pressor test as compared to normotensive young adults without family history of hypertension. Normotensive undergraduate students, aged 20-30 years of hypertensive parents (n = 40) and of normotensive parents (n = 40) performed mental arithmetic test and cold pressor test. Cardovascular parameters were recorded before, during and after the test with automated oscillometric device. Delta change score rather than absolute score were analyzed. There were no significant differences in age, body mass index, fasting blood sugar and plasma creatinine level between the two groups.. Normotensive young adults with family history of hypertension demonstrated gretaer diastolic blood pressure (p = 0.05), mean arterial blood pressure and rate pressure product reactivity (p < 0.05) to mental arithmetic test as compared to normotensive young adults with no family history of hypertension. In cold pressor test, both groups did not show significant differences in cardiovascular reactivity and recovery. These results indicate that mental arithmetic test and cold pressor test have different mechanism in eliciting cardiovascular response.

Keywords: cardiovascular reactivity; cardiovascular recovery; family history of hypertension; normotensive adult.

Introduction

The World Health Organization (WHO) has reported that an estimated 17 million people die from cardiovascular disease each year (WHO Fact Sheet, 2001). Necropsy studies have established that the pathogenesis of CVD has its origins in childhood (Berenson, 1986). Clinical manifestations of CVD are not usually obvious until late middle age. However, recent advance in non-invasive medical technology allow us to evaluate preclinical manifestations of CVD before the development of frank disease. Apart from the known classic risk factors such as family history, obesity, smoking, diabetes mellitus and hypercholesteremia, much effort has been devoted to identify other potential risk factors.

Cardiovascular reactivity defined as a set of changes in blood pressure, heart rate, and other hemodynamic parameters in response to a stimulus (Falkner, 1996), has been identified as potentially playing a role in the development of CVD. It can be used as a non-invasive method to identify the preclinical state of the cardiovascular disease (Treiber,Kamarck,Schneiderman, Sheffield, Kapuku and Taylor,2003). Preclinical state of a cardiovascular disease is the pathogenic changes in cardiovascular structure and function that if continued will later manifest/develop as cardiovascular disease such as hypertension, myocardial infarction and stroke. Excessive BP responses to psychological stressors (serial subtraction test) may be a risk marker for future development of essential hypertension (Kasagi, 1995; Treiber et al., 2003). Many studies on cardiovascular reactivity in young normotensive adults with family history of hypertension showed inconsistent and controversial results (Anderson, 1987; Cavalcante, 1997). The objective of the study is to find out if young normotensive adult with family history of hypertension have increased cardiovascular reactivity to laboratory stimulus such as mental arithmetic test and cold pressure test as compared to young normotensive adult without family history of hypertension.

Materials and Methods

A total of 80 undergraduate's students of IIUM Kuantan campus with and without family history of hypertension participated in the study. The subjects were between the ages of 20 and 30 years, and they were normotensive (resting blood pressure< 140/90 mmHg). Clinic BP measurement was performed by the same investigator using the mercury sphygmomanometer. Systolic BP was defined by the first appearance of the sound (phase I Korotkoff sound) and diastolic BP was defined by disappearance of the sound (phase V). Subjects with higher resting blood pressure were excluded. Family history of hypertension was defined as having either parent or both been diagnosed as hypertensive and whether either parent had been prescribed medication for hypertension. Subjects who reported they did not know if their parents are normotensive or hypertensive were excluded from the study. The subjects were matched with controls in terms of age, sex, weight, and blood glucose and serum creatinine. The study had been approved by the Ethical Committee of the International Islamic University of Malaysia.

Study Protocol

The subjects were briefed on the study and informed consent were obtained. Participants were asked to refrain from ingesting caffeine, exercising, eating at least one hour prior to measurement and had at least 30 minutes of rest before the session. The subjects were subjected to measurements of cardiovascular reactivity and recovery to two stimuli, the first session involved mental arithmetic test and the second session involved cold pressure test with 15 minutes inter-task rest. For each experimental task, the baseline cardiovascular parameters were measured.

Laboratory sessions.

In the first session, the subject performed mental arithmetic test.The subject was asked to performed serial-subtraction test in a sitting position. This 180 seconds task required subject to subtract backwards continuously from the number 99 by 7's for 30 seconds, from 300 in the next 60 sec and from the number 2816 in the next 90 sec. During the task the subject was harassed by the experimenter to speed up and state accurately. In the event of an error, the subject was stopped by the experimenter and told to repeat his previous calculation. Cardiovascular parameters were measured at 80^{th} seconds of the 180 seconds. Blood pressure and heart rate were measured by using a non-invasive automatic vital sign monitor device TM-2551 P (A and D Co. Ltd., Tokyo,Japan). After completing the task, the subject took a rest for another 90 seconds after which cardiovascular parameters were measured (cardiovascular recovery). From the cardiovascular parameters, we calculate pulse pressure,mean arterial blood pressure and rate pressure product.The task has a pronounced effect on both blood pressure and heart rate (Gerin and Pickering, 1995).

In the second session, the subjects were asked to immerse their left hand, to just above the wrist, in ice-cold water (4 to 5^0 C) for 90 seconds. The cardiovascular parameters was recorded by using a non-invasive automatic vital sign monitor device TM-2551 P(A and D Co. Ltd., Tokyo,Japan) at values at 50^{th} seconds during hand immersion (Llabre, Spitzer, Saab and Schneiderman, 2001). After completing the measurement, the hand was dried with a dry towel. When the task ended, the subject rest for 90 seconds after which cardiovascular parameters were again measured for at least three times.

Statistical Analysis

Delta change score rather than absolute value were calculated. The cardiovascular reactivity is the change score of the hemodynamic parameters during the task from the base line, and the cardiovascular recovery is the change score of the hemodynamic parameters after the task is stopped from the baseline (Gerin and Pickering, 1995).The results were summarized as mean ± Standard error of the mean (SEM) for data that are normally distributed and mediam with inter-quartile range for data that are not normally distributed. p value of less than 0.05 was taken as the level of significance for all tests.

Results

There were eighty subjects included in the study. Forty young normotensive subjects were evaluated and they were matched with forty matched control subjects. The clinical characteristic of the subjects were as presented in Table 1.

There were no significant differences in age, body mass index, fasting blood sugar and plasma creatinine between normotensive young adults with and without family history of hypertension (Table 1).

Table 1, Characteristics of subjects stratified by family history of hypertension

Characteristics	Without FHoH[a]	With FHoH[a]
Age (years)	22 (21.5 – 23)[b]	22 (21 – 22)[b]
BMI (kg/m^2)	21.19 ± 0.4	21.59 ± 0.4
FBS (mmol/L)	4.43 ± 0.05	4.46 ± 0.06
Plasma creatinine (mmol/L)	80.55 ± 2.7	84.65 ± 2.7
SBP (mmHg)	103 ± 1.6	108.33 ± 1.6*
DBP (mmHg)	60 (56.5 – 70)[b]	67.5 (60 – 70)[b]

Note. FHoH = family history of hypertension; BMI = body mass index; FBS = fasting blood sugar. Data are summarized as mean ± standard error of the mean (SEM), except for the data that are not normally distributed.
[a] N = 40 subjects. [b] Median (lower quartile – upper quartile) for data that are not normally distributed.

Cardiovascular reactivity to mental arithmetic test.

Normotensive young adults with family history of hypertension had higher diastolic blood pressure, mean arterial blood pressure and rate pressure product reactivity to mental arithmetic test than normotensive young adults with family history of hypertension. However, there was no significant difference in systolic blood pressure, pulse rate and pulse pressure reactivity to between the two groups (Table 2, Figure 1)

Table 2, Delta change score of cardiovascular reactivity to mental arithmetic test Stratified by family history of hypertension

Cardiovascular reactivity	Without FHoH[a]	With FHoH[a]
SBP (mmHg)	17.46 ± 1.4	20.7 ± 1.6
DBP (mmHg)	13.5	16.75
	(9.13 – 19.25)[b]	(11.63 – 24.38)[b]
PR (beats/min)	8.75	9.25
	(5.5 – 13)[b]	(4.5 – 14.88)[b]
PP (mmHg)	2.94 ± 1.4	2.36 ± 1.3
MABP (mmHg)	15.5 ± 1.0	19.13 ± 1.4*
RPP (mmHg . beats/min)	22.92 ± 1.4	29.84 ± 2.8*

Note. FHoH = family history of hypertension; SBP = systolic blood pressure; DBP = diastolic blood pressure; PR = pulse rate; PP = pulse pressure; MABP = mean arterial blood pressure; RPP = rate pressure product. Data are summarized as mean ± standard error of the mean (SEM), except for the data that are not normally distributed.
[a] N = 40 subjects. [b] Median (lower quartile – upper quartile) for data that are not normally distributed.
* $p < 0.05$ vs. control group.

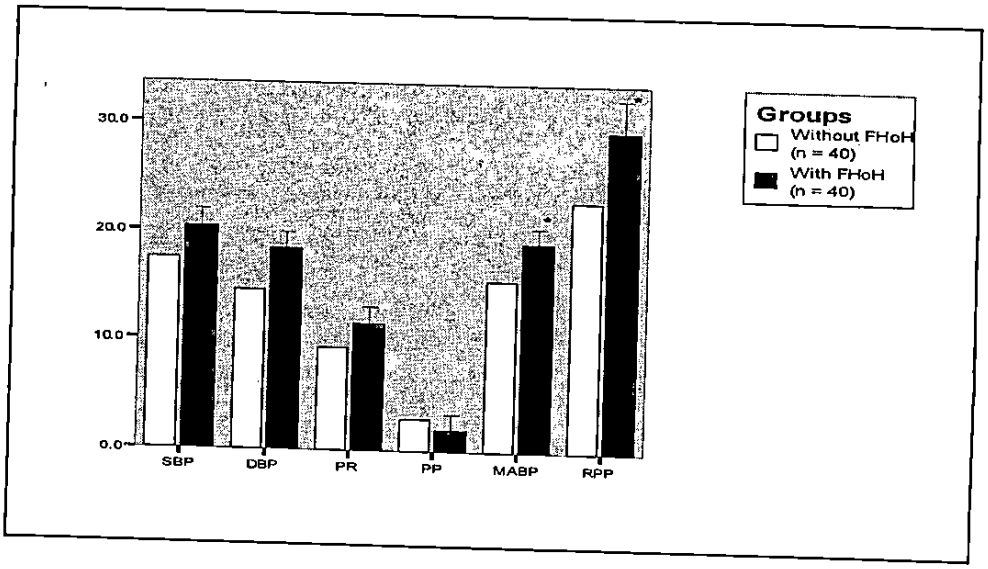

Figure 1, Delta change score of cardiovascular reactivity to mental arithmetic test stratified by family history of hypertension. SBP = systolic blood pressure (mmHg); DBP = diastolic blood pressure (mmHg); PR = pulse rate (beats/min); PP = pulse pressure (mmHg); MABP = mean arterial blood pressure (mmHg); RPP = rate pressure product (mmHg.beats/min); FHoH = family history of hypertension. Bars show mean; error bars show standard error of the mean (SEM). * $p < 0.05$ vs. the control group.

Cardiovascular Recovery from mental arithmetic test.

There was no difference in systolic blood pressure, diastolic blood pressure, pulse pressure, mean arterial blood pressure and rate pressure product recovery from mental arithmetic test between the two groups (Table 3 and Figure 2).

Table 3, Delta change score of cardiovascular recovery from mental arithmetic test stratified by family history of hypertension

Cardiovascular recovery	Without FHoH[a]	With FHoH[a]
SBP (mmHg)	1 (-0.5 – 3.25)[b]	2 (-1.5 – 2)[b]
DBP (mmHg)	1.94 ± 0.7	2.81 ± 0.6
PR (beats/min)	0.5 (-1.5 – 2)[b]	0.5 (-2.4 – 3)[b]
PP (mmHg)	- 0.59 ± 0.6	- 1.21 ± 0.7
MABP (mmHg)	1.74 ± 0.6	2.4 ± 0.6
RPP (mmHg . beats/min)	1.23 ± 0.6	0.89 ± 1.0

Note. FHoH = FHoH; SBP = systolic blood pressure; DBP = diastolic blood pressure; PR = pulse rate; PP = pulse pressure; MABP = mean arterial blood pressure; RPP = rate pressure product. Data are summarized as mean ± standard error of the mean (SEM), except for the data that are not normally distributed.
[a] N = 40 subjects. [b] Median (lower quartile – upper quartile) for data that are not normally distributed.

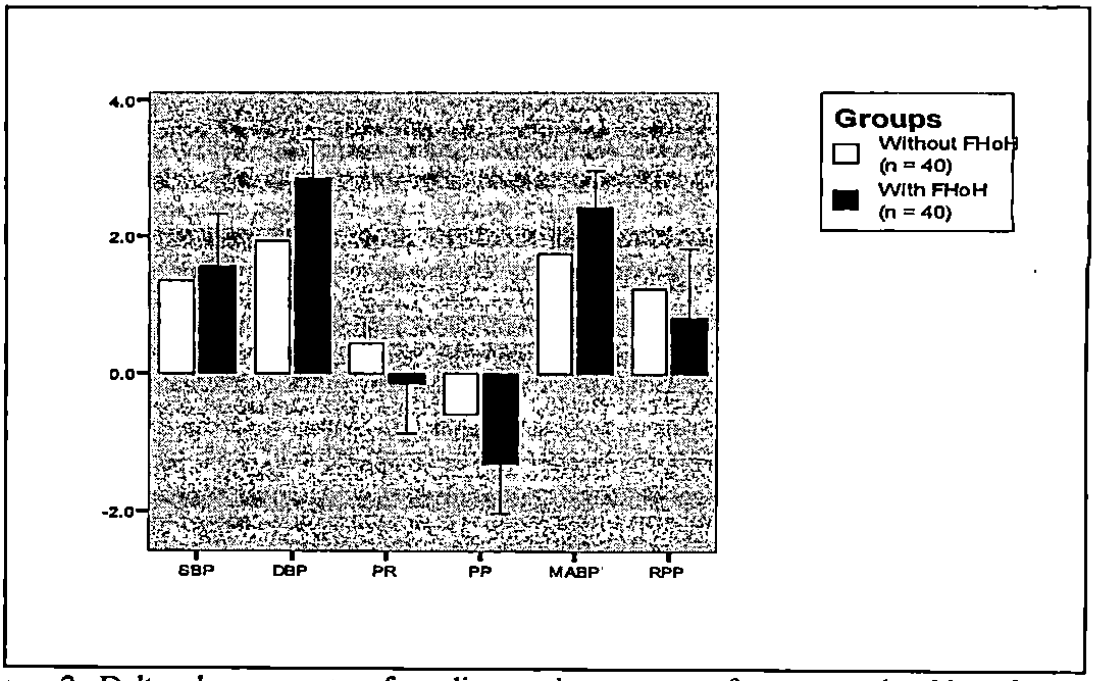

Figure 2, Delta change score of cardiovascular recovery from mental arithmetic test stratified by family history of hypertension. SBP = systolic blood pressure (mmHg); DBP = diastolic blood pressure (mmHg); PR = pulse rate (beats/min); PP = pulse pressure (mmHg); MABP = mean arterial blood pressure (mmHg); RPP = rate pressure product (mmHg.beats/min); FHoH = family history of hypertension. Bars show mean; error bars show standard error of the mean (SEM).

Cardiovascular reactivity to cold pressure test.

There were no significant differences in systolic blood pressure, diastolic blood pressure, and pulse pressure mean arterial blood pressure rate pressure product reactivity from cold pressure test in normotensive young adults with and without family history of hypertension (Table 4 and Figure 3). Similarly, there were no significant differences in systolic blood pressure, diastolic blood pressure, and pulse pressure mean arterial blood

Table 4, Delta change score of cardiovascular reactivity to cold pressor test Stratified by family history of hypertension

Cardiovascular reactivity	Without FHoH[a]	With FHoH[a]
SBP (mmHg)	23.84 ± 1.9	26.68 ± 1.8
DBP (mmHg)	20.69 ± 1.8	23.05 ± 1.8
PR (beats/min)	1.25 (-4.75 – 6.25)[b]	3.25 (-0.38 – 8.63)[b]
PP (mmHg)	2.5 (-1.25 – 5.88)[b]	3.25 (-1.88 – 9.75)[b]
MABP (mmHg)	21.74 ± 1.8	24.26 ± 1.7
RPP (mmHg . beats/min)	18.73 ± 2.4	24.80 ± 1.8

Note. FHoH = family history of hypertension; SBP = systolic blood pressure; DBP = diastolic blood pressure; PR = pulse rate; PP = pulse pressure; MABP = mean arterial blood pressure; RPP = rate pressure product. Data are summarized as mean ± standard error of the mean (SEM), except for the data that are not normally distributed.
[a] N = 40 subjects. [b] Median (lower quartile – upper quartile) for data that are not normally distributed.

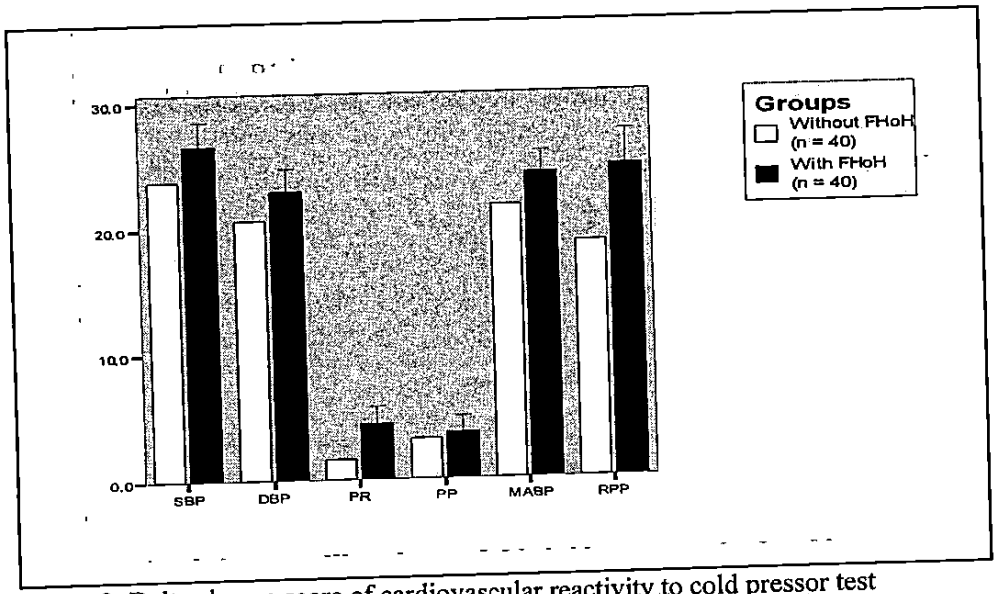

Figure 3, Delta change score of cardiovascular reactivity to cold pressor test stratified by family history of hypertension. SBP=systolic blood pressure (mmHg); DBP=diastolic blood pressure (mmHg); PR=pulse rate (beats/min); PP=pulse pressure (mmHg); MABP=mean arterial blood pressure (mmHg); RPP=rate pressure product (mmHg.beats/min); FHoH =family history of hypertension. Bars show mean; error bars standard error show standard error of the mean (SEM).

Table 5, Delta change score of cardiovascular recovery from cold pressure test stratified by family history of hypertension.

Cardiovascular reactivity	Without FHoH[a]	With FHoH[a]
SBP (mmHg)	(3.1±0.8)	(3±0.8)
DBP (mmHg)	(1.6±0.8)	(2.5±0.8)
PR (beats/min)	- 1.5	-0.75
	(-3.88 – 1.38)[b]	(-2.38– 1.5)[b]
PP (mmHg)	(1.5±0.6)	(0.5±0.7)
MABP (mmHg)	(2.1±0.7)	(2.7±0.7)
RPP (mmHg.beats/min)	(0.1±1.1)	(0.6±1.1)

Note. FHoH = family history of hypertension; SBP = systolic blood pressure; DBP = distoloc blood pressure;. PP = pulse pressure; MABP = mean arterial blood pressure; RPP = rate pressure product. Data are summarized as mean ± standard error of the mean (SEM), except for the data that are not normally distributed.
[a] N = 40 subjectslower quartile – upper quartile) for data that are not normally distributed.

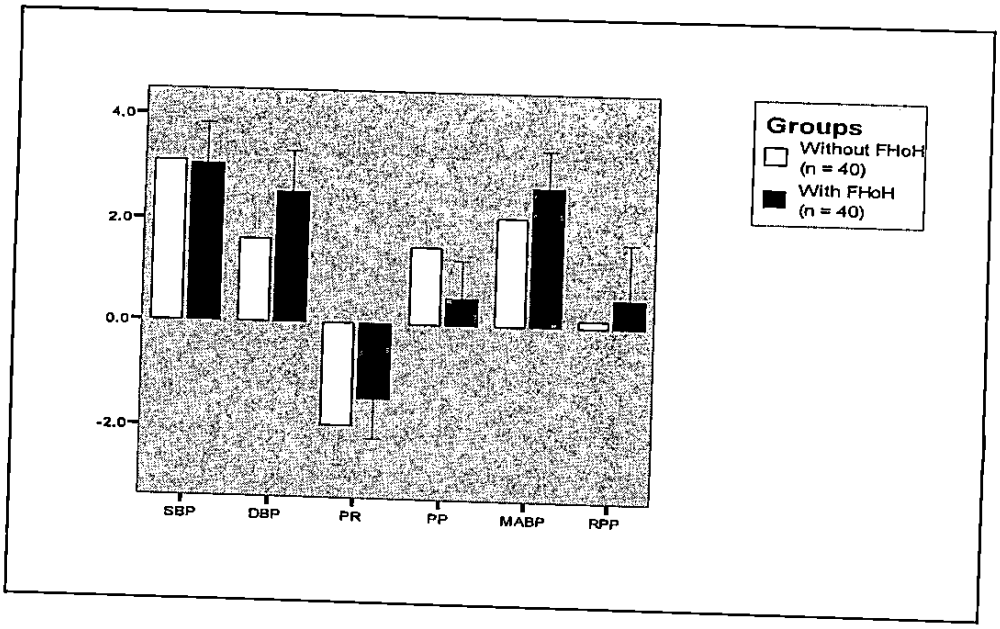

Figure 4, Delta change score of cardiovascular recovery from cold pressor test stratified by family history of hypertension. SBP = systolic blood pressure (mmHg); DBP = diastolic blood pressure (mmHg); PR = pulse rate (beats/min); PP = pulse pressure (mmHg); MABP = mean arterial blood pressure (mmHg); RPP = rate pressure product (mmHg.beats/min); FHoH = family history of hypertension. Bars show mean; error bars show standard error of the mean (SEM).

Discussion

The primary question investigated in the present study concerned the influence of parental history of hypertension on the reactivity and recovery.

In the present study, we found young normotensive **subjects** with family history of hypertension had greater diastolic blood pressure, mean arterial blood pressure and rate pressure product reactivity to mental stress as compared to those without family history. This finding is in accordance with Shapiro, Goldstein and Jamner, 1995), Lamensdorf and Linden (1992) who reported that young normotensive adults with family history of hypertension showed significant increased in diastolic blood pressure reactivity than those without parental history of hypertension. However, no difference was obtained in terms of cardiovascular reactivity and recovery to physical stress (cold pressor test) as compared to the control group. These laboratory tests have different mechanisms in eliciting cardiovascular response; the mental arithmetic test is a cardiac stimulator, while the cold pressure test is a vascular stimulator. In response to mental stress, heart rate and stroke volume increased resulting in increased cardiac output. However, total peripheral resistance decrease (Hjemdahl, 2000).The observation that the rate pressure product reactivity, (the product of systolic blood pressure and heart rate, which is known as a surrogate marker of oxygen demand of cardiac muscle (Adam 1998), to mental test was significantly higher in normotensive subjects with hypertensive parents as compared to their counterparts is inaccordance to the observation that mental stress is a cardiac stimulator. During mental stress, Sarabi and Lind (2001), showed that the main catecolamine increased was adrenaline. Adrenaline increased forearm blood flow and decreased forearm vascular resistance, as high dose of adrenaline activate beta 2 adrenergic receptor resulting in vasodilation(Sarabi and Lind,2001). In the present study, no difference was obtained in terms of cardiovascular recovery. Gerin and Pickering, 1995, reported that individual with two hypertensive parent showed slower recovery from mental arithmetic test than those without hypertensive parent. The delayed return of blood pressure to basal level may indicate impairment of depressor mechanism (Gerin and Pickering, 1995) .The hemodynamic response to cold pressure test in individuals with family history of hypertension were related with pain sensitivity and pain perception (Al' lAasi, Buchanan and Lovalo, 1996) and the main catecolamine released from nerves terminal ending during painful stress is noradrenaline (Busjahn, Faulhaber, Viken, and Luft, 1996).The cold pressure test is largely an alpha adrenergic response causing marked vasoconstriction(Johnson, Nazzaro and Gilbert, 1991, Somova, 1992). Hence, cold pressure test increases blood pressure by increasing total peripheral resistance(Sarabi and Lind 2001).There are limitation concerning the present study that should be addressed. The question of having family history of hypertension or having normotensive parent should be verified as there may be potential for misclassification which would obscure relationships.

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Prevention of HIV/AIDS in Malaysia in The Light of *Qur'énic* Solutions: The Role of Irk Students of International Islamic University Malaysia

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Abstract

The entire world is now suffering from so many fatal problems. One of the most such serious problems is HIV/AIDS. It is not only a very serious medical phenomenon but it is also a grievous problem from ethical perspective. According to Professor Dr. Adeeba Kamarulzaman, the Malaysian AIDS Council (MAC) president, between 1986 and June 2005, a total of 62,597 men were infected with HIV and 9,106 men were diagnosed as AIDS patients in Malaysia. Most of the HIV-positive men are young adults aged between 20 to 29 years. Women, on the other hand, 4,841 were HIV-positive and 938 were living with AIDS. For the worldwide occurrence, it was estimated that there were 1,600 new HIV infections per day, which corresponds to 10 infections per minute. Prof. Dr. Mohd. Kamal Hassan, in one of his speeches said, "Religious authorities and community leaders must be the catalyst to transform the response to HIV/AIDS. We can no longer deny the fact that HIV/AIDS is a growing problem in Muslim communities. Religious leaders, therefore, have the moral duty to be proactive and not remain as spectators." This paper will suggest and explain Qur'Énic alternative solutions to be implemented, i.e. the importance of instilling faith and performing prayer, abstinence from shameful deeds, cleanliness of both physical and spiritual dimensions, and use of ÏayyibÉt. These measures may curb the spread of HIV/AIDS. The paper will highlight that the measures that are being adopted by Malaysian or world AIDS organizations may not be sufficient to control the problem.

Keywords: HIV/AIDS; *Qur'anic* Solutions; Islamic Perspective; Student's Role; Prevention; Religious Leaders.

Introduction

The *Qur'Én* contains the messages of Allah to mankind. It is the message from God to man and therefore of utmost importance to us. In one of its messages it says: *'O mankind! There hath come to you a direction from your Lord and a healing for the (diseases) in your hearts, and for those who believe, a guidance and mercy'.*[1] Thus, the *Qur'Én* serves as a source of solutions for his problems whatsoever. The *Qur'Én* likewise can help man contain the devastating global ailment in this age, i.e. HIV/AIDS. Primary prevention in HIV/AIDS means proactive steps to reduce or eliminate the undesirable condition in unaffected populations. In this paper, the researcher proposes to mobilize the role of IRK students in HIV/AIDS prevention programme through implementing their theoretical knowledge in Islamic studies into practical actions based on *Qur'Énic* instructions.

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