The Effect of Praying on Homeostasis

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Abstract

Theta brain wave performs parasympathetic system predominantly. Decreased metabolism results in decreasing acid production. This prospective experimental study revealed the association between praying and human urine pH changes including vital sings (blood pressure, respiratory rate, pulse rate and body temperature) changes after praying in people aged 40 to 60 years old who lived in Bangkok, Thailand. The 24 purposive sampling volunteers were collected and recorded urine pH in the morning including examined and recorded blood pressure, respiratory rate, pulse rate and body temperature at day 0, day 14 and day 28 from beginning process. The volunteers were divided into 2 groups; experimental group (praying group, n=12) and control group (non-praying group, n=12). The results showed that among praying group, urine pH at day 28 and at day 0 were different significantly (p=0.003) and urine pH between day 14 and at day 28 also had significant difference (p=0.008). However, no significant difference in urine pH at day 14 and at day 28 between both groups (p=0.567 and p=0.108, respectively). No significant difference in systolic blood pressure, respiratory rate, pulse rate and body temperature between praying group and control group at day 0, day 14 and day 28.

Keywords : praying/urine pH

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Introduction

Nowadays , the alternative medicine have more important role in society. We know more about principle of life and disease so the medications are not the only thing to cure the diseases anymore. Praying, former a religious activity, today have been interested as the name of vibrational therapy or may be known as one aspect of music therapy that emitted the vibrational extra low frequency wave induced the brain to response the whole body which related to human emotion1. The brain, when in theta wave mode will develop more parasympathetic activity[2] which leads to relaxing the muscle[3], decreasing in blood pressure, pulse, respiratory rate, stress and metabolism rate[4]. So, these will decrease the whole body acidity state[5] which we already know that prolong mild acidity state will cause variety of conditions such as diabetes, kidney disease, calculi, stress headache, even cancer[6], decrease the muscle coordination in eldery[7], epilepsy[8], metastasis rate of cancer[9]. In normal homeostasis, acid –base balance control by sophisticated systems. Kidney has important role in control of acidity in the blood system so the urine will change acidity state, urine pH, as the same with blood pH but the efficacy of this system will decrease by age[10-12]. So the urine pH will represent the blood acidity as well[13]. The normal urine pH is quite acid, pH 6, but we can find urine pH around 4.5-8.2.

Objectives

1. To study the change of urine pH after praying.
2. To study the change of blood pressure, respiratory rate, pulse rate and body temperature after praying.

Methods

Prospective experimental with purposive samplings have been performed. The number of sample was refer by article, Acid-alkaline balance: role in chronic disease and detoxification, which is 24 samples. The sample is 40 to 60 years old who can pray spells at least 10 minutes. The sample must have been in routine healthy life with no praying before.

The samples were divided by 2 groups. A ,experimental group,12 samples, prayed for 10 minute before bedtime every day for 28 days. B, control group,12 samples, do the same with routine life. The data were collected as demographic data and morning mid void urine pH at day 0, 14 and 28.

The data were analyzed with SPSS program (reliability 95, alpha=0.05).

Results

Table 1 Demographic data.

Table 1.1 Demographic data :age, height, weight, systolic blood pressure, respiratory rate and body temperature.

	Control group(n=12) Mean (SD)	**Experimental group(n=12) Mean (SD)**	**P value**
Age (yrs)	50.08 (5.04)	52.58 (5.68)	0.247
Height (cm)	164.00 (9.71)	165.75 (9.06)	0.525
Weight (kg)	72.83 (21.41)	71.58 (19.35)	0.664
Systolic blood pressure (mmHg)	120.92 (7.63)	121.58 (8.73)	0.685
Respiratory rate (/min)	23.00 (2.17)	22.83 (1.59)	0.927
Pulse rate (bpm)	76.92 (2.75)	76.42 (2.71)	0.642
Body temperature (C)	37.04 (0.12)	37.04 (0.12)	1.000

The data show mean age 51.33, mean height 164.88 cm, mean weight 72.21 kg, mean blood pressure systolic 121.25 mmHg, respiratory rate 22.92 bpm, pulse rate 76.67 bpm. The difference between control and experimental group is no statistically significant.

Table 1.2 Demographic data: gender, occupation, exercise, sleep habits, faith, frequency of pray, nutraceutical intake.

	Control group(n=12) n (%)	**Experimental group(n=12) n (%)**	**P value**
Sex	Female7, Male5	Female5, Male7	0.414
Career			0.320
No career	4 (16.67)	2 (8.33)	
Government officer	1 (4.17)	3 (12.50)	
Non government officer	7 (29.17)	7 (29.17)	
Exercise			0.333
< 3 per week	7 (29.17)	9 (37.50)	
3-5 per week	4 (16.67)	2 (8.33)	
≥ 5 per week	1 (4.17)	1 (4.17)	
Awake during night			0.705
None	10 (41.67)	10 (41.67)	
Sometime	2 (8.33)	1 (4.17)	
Often	0 (0.00)	1 (4.17)	
Faith of praying			0.102
Slightly	3 (12.50)	7 (29.17)	
Moderate	4 (16.67)	3 (12.50)	
Almost	5 (20.83)	2 (8.33)	
Frequency of praying			0.158
Everyday	1 (4.17)	0 (0.00)	
4-6 per week	0 (0.00)	2 (8.33)	
1-3 per week	0 (0.00)	2 (8.33)	
< 1 per week	11 (45.83)	8 (33.33)	
Supplement			0.500
Take	1 (4.17)	0 (0.00)	
No intake	11 (45.83)	12 (50.00)	

The data show no statistically significant difference between two groups.

Table 2 show the urine pH, systolic BP, respiratory rate, pulse rate, body temperature on day 0, 14 and 28 in experimental group.

Factor	**Median (IQR)**		**P value[a]**	**P value[b]**	**P value[c]**
	Day 0	**Day 14**			
		Day 28			
Urine pH	5.50(1.00)	6.00(1.00)	0.157	0.008	0.003
Systolic blood pressure(mmHg)	123.50(11.00)	6.00(1.00) 122.50(13.25)	1.000	0.455	0.555
Respiratory rate (/min)	22.00(2.00)	123.00(8.75) 22.00(2.00)	0.521 0.722	0.829 0.629	0.739 0.251
Pulse rate (bpm)	76.50(4.75)	22.00(2.00) 77.00(4.00)	1.000	0.257	0.429
Body temperature (C)	37.05(0.10)	77.00(4.00) 37.00(0.10) 37.00(0.08)			

a= compare at day 0 versus day 14
b= compare at day 14 versus day 28
c= compare at day 0 versus day 28

The difference of urine pH in experimental group between day 0 and day 28 is statistically significant (p = 0.003).And the same between day 14 and 28 (p = 0.008) but there is no statistically significant difference between day 0 and 14 (p = 0.157).

There is no statistically significant difference in the aspect of systolic blood pressure, respiratory rate, pulse rate and body temperature between day 0, 14 and 28.

Table 3 show the urine pH, systolic BP, respiratory rate, pulse rate, body temperature on day 0,14 and 28 in control group.

Factor	**Median (IQR)**			**P value[a]**	**P value[b]**	**P value[c]**
	Day 0	**Day 14**	**Day 28**			
Urine pH	6.00(1.00)	6.00(1.00)		0.655	1.000	0.564
Systolic blood pressure(mmHg)	123.00(16.25)	125.50(6.75)		0.154	0.070	0.582
Respiratory rate (/min)		122.00(7.50)		0.521	0.107	0.279
Pulse rate (bpm)	22.00(3.50)	24.00(2.00)		0.720	0.110	0.427
Body temperature (C)	76.50(5.25)	22.00(2.00)		0.856	1.000	0.672
	37.05(0.10)	77.00(3.00)				
		76.00(3.50)				
		37.00	(0.18)			
		37.05(0.10)				

a= compare at day 0 versus day 14
b= compare at day 14 versus day 28
c= compare at day 0 versus day 28

There is no statistically significant difference in all aspect; urine pH, systolic blood pressure, respiratory rate, pulse rate and body temperature.

Table 4 show median and interquatile range of systolic blood pressure, respiratory rate, pulse rate and body temperature of experimental and control group on day 0, 14, 28.

Factor	**Median (IQR)**		**P value**
	Experimental group(n=12)	**Control group (n=12)**	
Urine pH			
At day 0	5.50 (1.00)	6.00 (1.00)	0.441
At day 14	6.00 (1.00)	6.00 (1.00)	0.567
At day 28	6.00 (1.00)	6.00 (1.00)	0.108
Systolic blood pressure (mmHg)			
At day 0	123.50 (11)	123.00 (16.25)	0.685
At day 14	122.50 (13.25)	125.50 (6.75)	0.386
At day 28	123.00 (8.75)	122.00 (7.50)	0.772
Respiratory rate (/min)			
At day 0	22.00 (2.00)	22.00 (3.50)	0.927
At day 14	22.00 (2.00)	24.00 (2.00)	0.254

At day 28	22.00 (2.00)	22.00 (2.00)	0.701
Pulse rate (bpm)			
At day 0	76.50(4.75)	76.50(5.25)	0.642
At day 14	77.00(4.00)	77.00(3.00)	0.769
At day 28	77.00(4.00)	76.00(3.50)	0.376
Body temperature (C)			
At day 0	37.05 (0.10)	37.05 (0.10)	1.000
At day 14	37.00 (0.10)	37.00 (0.18)	0.755
At day 28	37.00 (0.08)	37.05 (0.10)	0.138

The data show no statistically significant difference in all aspect; urine pH, systolic blood pressure, respiratory rate, pulse rate and body temperature between experimental group and control group on day 0, 14, 28.

Conclusion

The data show there is no statistically significant difference in the factor of gender, age, systolic blood pressure, respiratory rate, pulse rate, body temperature, occupation, sleep habit, faith and frequency of pray and intake of nutraceutical in both group.

The difference of urine pH between day 0-28 and 14-28 is statistically significant only in experimental group.

Discussion

Although, after praying in experimental group, the urine pH increased with statistically significant (table 2) but if compare the urine pH in control and experimental group there is no statistically difference (table 4). This mean there may be some factors influence the urine pH in control group. In facts there are a lot factors that can change the urine pH, for example; food, medications, illness etc.

In this study there is no difference in the aspect of vital signs may be due to the few sample and short period of study, the system cannot show the difference data. The next point to concern is about diet. Some diet has effect the urine pH such as protein. The study cannot control the whole diet that sample ate during study period. The last point to concern is urine strip pH may be false negative due to technical error.

Suggestion

This is the pilot study of the effect of praying to urine pH. Samples were 24. The further study may be focus on more samples, more period of study. Recently, there is a technique that test the saliva pH to resemble the body acidity. So it can be an option for further study.

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