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## RESEARCH ARTICLE

# BLOOD PRESSURE MEASUREMENT RATE IN KASR AL AINY HOSPITAL

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**ABSTRACT**

**Background:** Regular blood pressure measurement is considered as a window that shows how effective the managment could be .Despite the fact that studies had shown that populations gained a little bit more knowledge in the recent years, how this knowledge is implied still remains a question.
**Aim:** Our aim was to evaluate whether Hypertensive patients regularly measured their blood pressure or not. In addition to that, we wanted to find out the reasons why they didn't measure their blood pressure regularly as told, so we become able to shed some light on these reasons hoping for this problem to be solved.
**Methods:** An observational cross-sectional descriptive study was carried out at Kasr Alainy teaching hospitals. Participants were adults aged above 18 years old, not in pain and able to co-operate where they were alert and fully conscious. The questionnaire was administered verbally and blood pressure was measured for each Participant. This study is considered the first Egyptian study held to assess people's awareness about the importance of regular Blood pressure measurement and also finds out to what extent they are applying it in their regular life.
**Results:** We had a sample of 440 with CI 99% and a hospitalization period range of (1-210) days. Even though 66% of the sample confirmed that BP should be measured regularly, 76% of the sample didn't do that. This paradox was further more clarified with their reason which was lack of awareness regarding the importance of regular blood pressure measurement. That was further more confirmed with the fact that the majority of the sample didn't know the element of Hypertension diagnosis.
**Conclusion:** The results show a hugely unaccepted low level of awareness about hypertension and the importance of regular blood pressure measurement. We strongly recommend a public action to raise the awareness level.



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## INTRODUCTION

Hypertension is a highly prevalent non-communicable disease. It affects over one billion of the world population (Caulfield, 2014). 26.3% of Egyptians adults are Hypertensive patients (Hasan *et al*., 2014) which is equivalent to having one Hypertensive patient in every group of four Egyptian adults. This indicates how serious of a problem the hypertension is in Egypt. Most of the time, the complications are severe ranging from blindness to cerebral stroke. The economic burden it puts on a developing country is brutal (Seedat, 2000)." Early diagnosis is the first step to control hypertension which could be successful done only if the population regularly measured their blood pressure in order to put them one step ahead of the disease.

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It is astonishing how we found patients recently diagnosed as hypertensive while they were hospitalized for another health problem. Despite the fact that studies had shown that populations gained a little bit more knowledge and awareness of the disease in the recent years (Sabouhi *et al*., 2011), they still don't show whether the patients are implying this knowledge in controlling their blood pressure or not. Regular measuring of blood pressure is an effective key for controlling HTN and its regularity is the window to view how effective the life-style modification and the medications could be to the hypertensive patients (Lindsay and Patrice, 2013). Over 70% hypertensive patients were found to self-monitor their blood pressure by international surveys (Baral-Grant *et al*., 2012). Home blood pressure monitoring (HBPM) could provide better evidence on patient true blood pressure and the cardiovascular possible outcomes than at-office measuring (Logan *et al*., 2008).

For example, it helps in avoiding white coat hypertension. Also HBPM could assist patient to achieve their target BP (Viera *et al*., 2008). Our aim was to evaluate whether Hypertensive patients regularly measured their blood pressure or not. In addition to that, we wanted to find out the reasons why they didn't measure their blood pressure regularly as told, so we become able to shed some light on these reasons hoping for this problem to be solved.

## MATERIALS AND METHODS

### Study design and subjects

The study is an observational cross-sectional descriptive study carried out at kasr al ainy teaching hospitals, the largest health care providing facility in Egypt. The study was conducted between December 2014 and January 2015, the sample include 440 participant (n=440) with CI 99%.

### Sample technique and sample size

- A convenient purposive equal sample of patients was taken from each Department in the hospital.
- A verbal consent was taken when inclusion criteria were met.

### Criteria determining Participants were

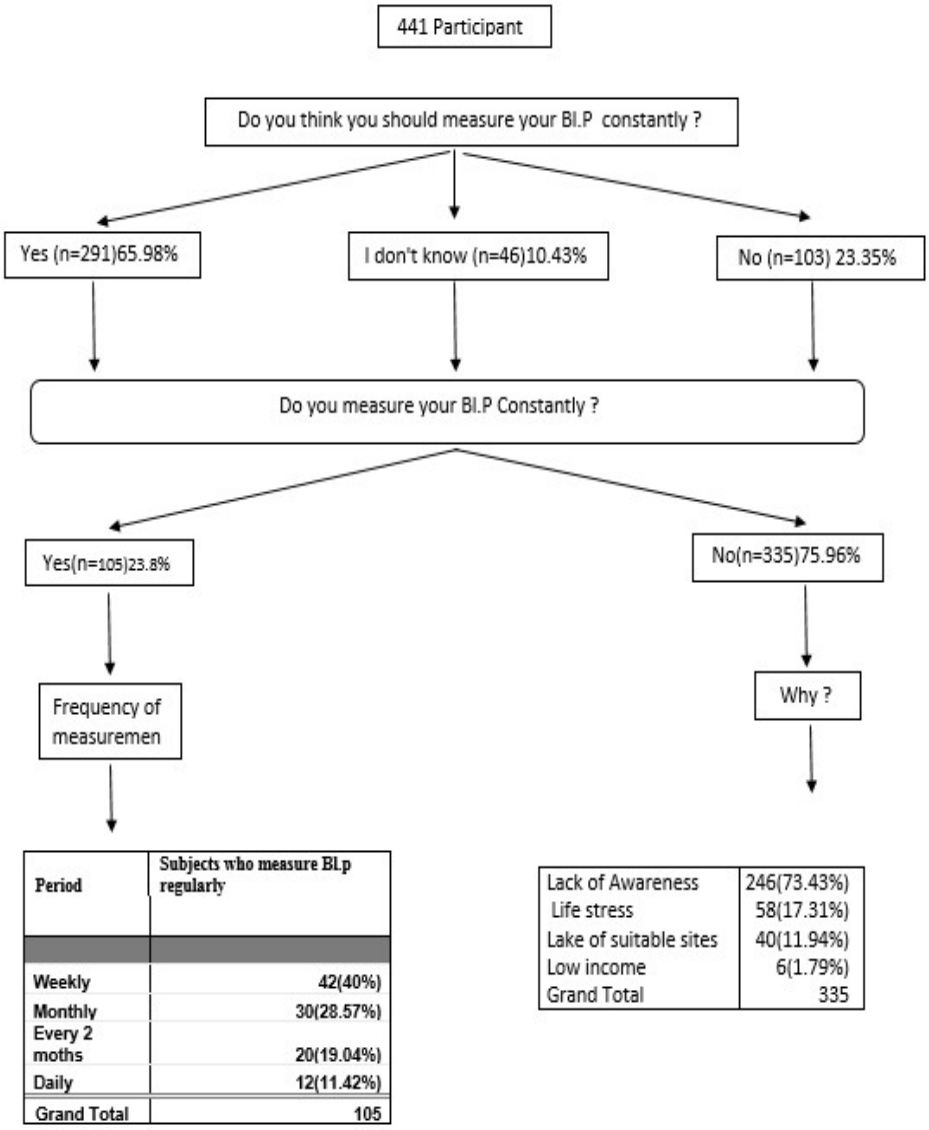
- Adult aged above18 years old.
- Not in pain and able to cooperate.
- Alert, fully conscious and cooperative.

- Patients in intensive care units were excluded.

### Study tools &ethical considerations

The questionnaire was set to evaluate patients' knowledge and practice technique of regular Blood pressure measurement. In addition, it asked about criteria of HTN diagnosis and regularity of blood pressure measurement."Fig 1".

- It was verbally administered to all participants to ensure proper understanding.
- Phone numbers for the subjects were attained for validation, unless participant refused to provide one.
- The questionnaire was validated and translated into Arabic to meet the participant's first language. Demographic characteristics were included as age, sex, residence, education and employment




| Period | Subjects who measure Bl.p regularly |
|---|---|
| Weekly | 42(40%) |
| Monthly | 30(28.57%) |
| Every 2 moths | 20(19.04%) |
| Daily | 12(11.42%) |
| Grand Total | 105 |

| | |
|---|---|
| Lack of Awareness | 246(73.43%) |
| Life stress | 58(17.31%) |
| Lake of suitable sites | 40(11.94%) |
| Low income | 6(1.79%) |
| Grand Total | 335 |

**Figure 1. Study scheme/flow of patients' measurements**

**Blood pressure measurement**

Blood pressure was measured for each participant by 3 calibrated aneroid sphygmomanometers according to the recommendations of the European Society of Hypertension (Mancia and Giuseppe, 2014).

**Statistical analysis:**

- Statistical analysis was performed using statistical software SPSS (v.21.0).
- P value is " <0.05 " which considers significant.
- Means were compared with t-tests.
- Numerical variables were divided by 1 SDs for standardization.

Statistical sample was 440 with CI 99% ; the participants were admitted to the hospital for a duration ranged between (1-210) days; mean 14.22551day, age (18-90) years; mean46.95455 year, the Systolic blood pressure measurement mean was 120.3±20.51033. Table 1 shows that 3/4 of participants don't know the element of high blood pressure and 38.4% of them think that they should measure their blood pressure just in case of having a headache .

They were divided further more into 2 groups according to whether they measured their blood pressure regularly or not, this showed that only 23.8 % do measure their blood pressure regularly. The group who measured regulary was asked about frequency of measurement where 40% of them measured it daily. On the other hand, the other group who didn't measure it regularly was asked about reasons of their carelessness.

## DISCUSSION

Study results reveal that the majority of the targeted sample is aware of the importance of the regular measurement of arterial blood pressure, however the reflection of their awareness on the real act of measurement itself is poor (Figure 1). This paradox was further more clarified when asked about the reasons of such poor checking of blood pressure, turning out to be a matching consequence. The chief reason was the lack of awareness regarding the importance of regular blood pressure measurement (Figure 1) matching a previous study that awareness about hypertension was "near the ground level" (Hasan and Doaa, 2014). Studies have revealed the positive effects of different forms of delivering hypertension awareness on its prevention, treatment and control rates (Lin *et al*., 1997; Alam and Dewan Shamsul, 2014; Petrella *et al*., 2015).

**Table 1. Demographic Characteristics of the admitted patients in the Hospital**

| | Percentage%(n) | Confidence Interval |
|---|---|---|
| Gender | | |
| Male | 34% | 99% |
| Female | 57% | |
| Residency | | |
| Urban | 65.45% | 97% |
| Rural | 34.55% | |
| Hypertension state | | |
| Hypertensive | 24.55% | 99% |
| Normohypertensive | 74.09% | |
| Do not Know | 1.36% | |
| Hypertension family history | | 99% |
| Positive | 31.14% | |
| Negative | 62.05% | |
| Do not Know | 6.82% | |
| Knowledge of the element of hypertension diagnosis (systolic pressure > or = 140 mm Hg, and/or diastolic pressure > or = 90 mm Hg) [7]. | | 99% |
| I dont know | | |
| Yes | | |
| "it is more than 120-80" | 77.3% | |
| Education | 16.1% | |
| No | 6.6 % | |
| Elementary | | |
| Preparatory | | |
| High school | | |
| Middle degree | | |
| University degree | | |
| | 53.4%(235) | |
| | 11.81%(52) | 97% |
| | 11.13%(49) | |
| | 1.36%(6) | |
| | 14.77%(65) | |
| | 7.5%(33) | |

**The daigram "Figure 1" shows that**

The Participants were divided into 3 groups according to what they think about regular blood pressure measurement, where 66 % of participants thought that blood pressure should be measured constantly.

Another possible reason for not practicing regular BP measure may be illiteracy supported by the fact that 28% of Egyptian adults are illiterate (Banegas and José, 2002). The vast majority of the sample are either non-educated or with low level of education.

Many studies have emphasized the inverse relation between literacy (Literate, 2014), education and their effect on the level of health awareness (Banegas and José, 2002; Pandit and Anjali, 2009; Ibrahim *et al*., 2012). Another striking result, which reflects the extremely low awareness about hypertension, is that the majority of the sample (77.3%) doesn't know the element of Hypertension diagnosis (systolic pressure > or = 140 mm Hg, and/or diastolic pressure > or = 90 mm Hg) (Ibrahim, 1995). Up to our knowledge, this study is the first Egyptian study to assess people's awareness about the importance of regular Blood pressure measurement and also finds to what extent they apply it in their regular life. Its importance is critical in our country with the high prevalence rate of Hypertension among adults(Ibrahim, 1995). It has included a large sample of patients from kasr al Ainy teaching hospitals, the largest health care providing facility in Egypt and a destination of patients from all Egyptian governorates (Rizk and Yunan Labib, 2002), whether rural or urban. The sample included a wide range of age (18-90) and the questions were simple and well explained to patients. In conclusion, the results show a hugely unacceptedlow level of awareness about hypertension and the importance of regular blood pressure measurement. Such striking fact is, according to our study, due to terribly null efforts of awareness in the community and illiteracy. It's considered an adverse interfering factor which maimed the goal of reaching an acceptable level of awareness, therefore it should be reconsidered.

It is time real action took place, that's why we strongly recommend a public action to generally raise the awareness level, such efforts may include:

- The usage of the mass media to educate the general population guided by researches.
- Implementation of several forms of community services, i.e.
- Organize an awareness Project targeting villages and large institutions.
- Distribute Brochures or Inserts carrying the health messages would be useful.
- Medical personnel have an extremely important role in spreading the awareness through their knowledge and information when patients reach them for medical care.
- Follow up of studies can be done to assess whether there is improvement or decline in awareness level of individuals.

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**Conflict interest**

None declared.

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