Are Blood Pressure Devices Available in Qatar Community Pharmacies Validated for Accuracy?

Undergraduate students, Health and Biomedical Sciences

Marah Abou-Sido, Marwa Hamed, Suad Huseen, Monica Zolezzi and Sowndramalingam Sankaralingam
College of Pharmacy, Qatar university

Background

- Hypertension is a leading cause of cardiovascular morbidity and mortality globally and in Qatar
- Yet it remains under-detected and poorly controlled
- Home BP monitoring (HBPM) devices help to monitor BP and response to therapy
- Community pharmacist-managed HBPM services have been shown to provide better control of hypertension
- BP devices need to be accurate to provide a reliable estimate of BP
- Devices not validated for accuracy are highly likely to be inaccurate
- The abnormally high or low BP readings provided by non-validated devices could lead to poor BP control and health risks

Study Objectives

- Community pharmacists play active roles in health promotion interventions that include proper counseling on BP control, BP monitoring devices and techniques
- The objectives of our study were to a) identify the proportion of BP devices that are not validated and
- b) to determine the relationship between the validation status of devices available in Qatar, and cuff location as well as price

Methods

- Our study was approved by the QU-IRB #1516-EA/21
- Data were collected from at least 2 of the chain pharmacies (multiple locations) and at least 17 independent pharmacies in Qatar
- Data related to BP device brand/model, cuff location (arm or wrist), validation status, and price were collected

Results

- 28 different pharmacies were visited
- Data on a total of 178 devices were screened
- 87 distinct models from 19 different brands are available in Qatar community pharmacies
- Beurer®, Omron® and Rossmax® are the most commonly available brands
- Most models sold are upper arm devices (75%) while the rest are wrist devices (25%)

Results cont'd

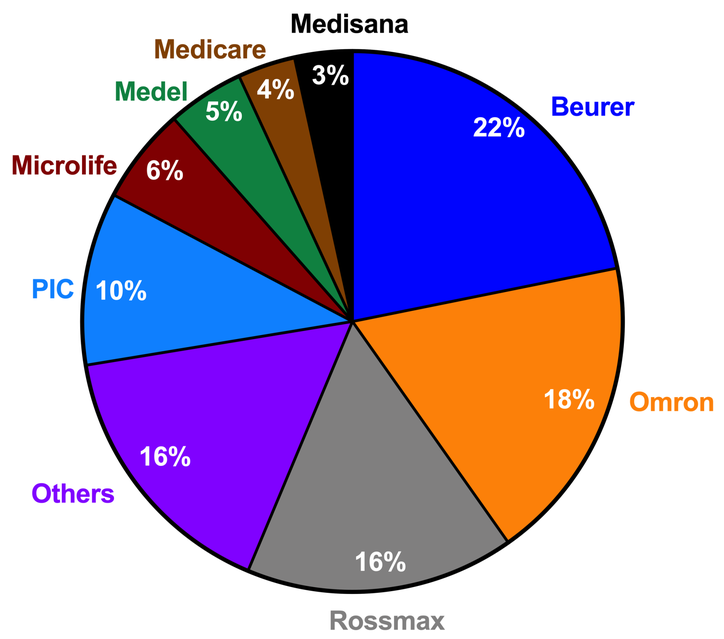

Figure 1. Distribution of BP monitor brands available in community pharmacies in Qatar

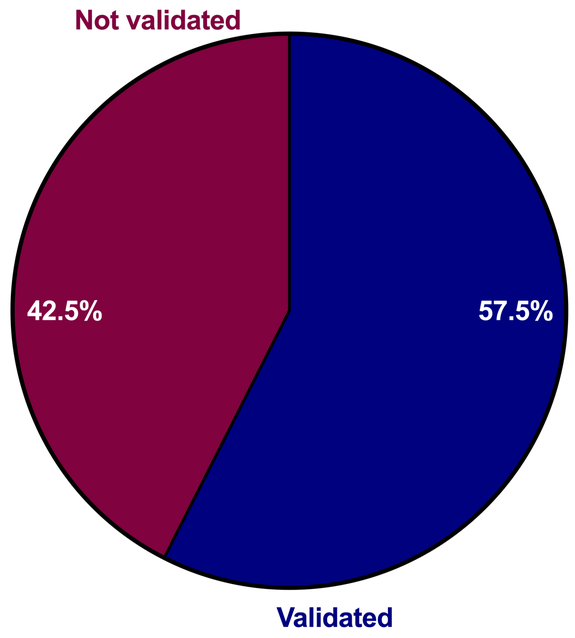

Figure 2. Percentage of devices available in community pharmacies in Qatar that are validated for accuracy

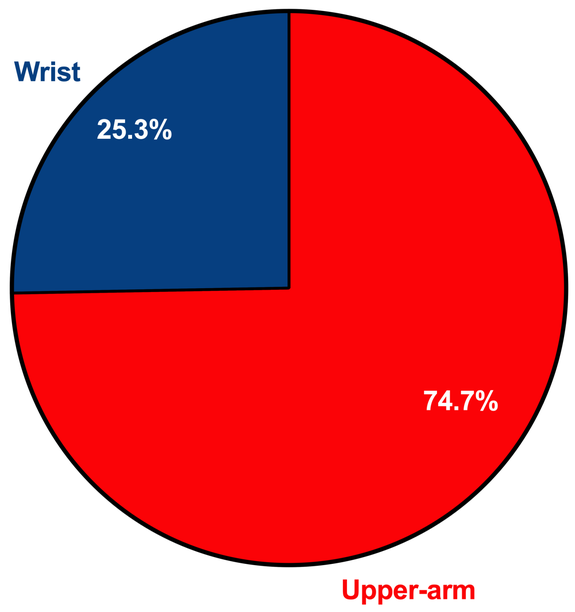

Figure 3. Availability of BP devices in community pharmacies in Qatar based on cuff location

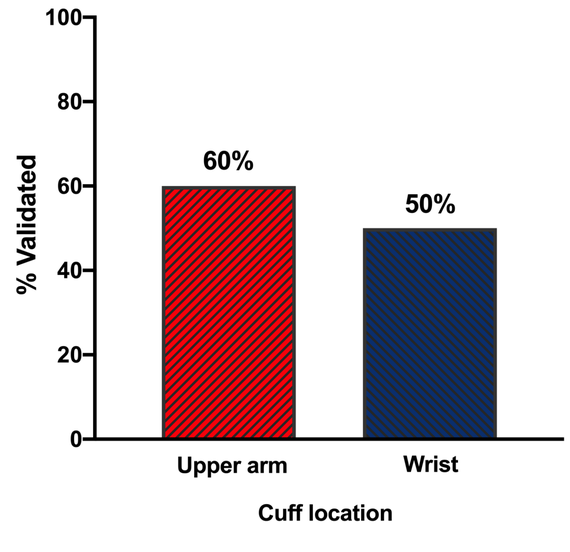

Figure 4. Percentage of BP devices validated based on cuff location

Results cont'd

Price range (QAR)	Validated	Not validated	% Not-validated
≤ 250	7	10	58.8
251 - 500	31	22	41.5
501 - 750	5	1	16.67
≥ 751	0	2	100

Table 1. Relationship between validation status and price of BP device. Data not available for 9 devices.

- Only 57.5% of devices are validated
- 60% of upper-arm devices and 50% of wrist devices are validated.
- 47.3%, 43.8%, 71.4% of Beurer®, Omron® and Rossmax® models are validated respectively
- Most devices available in Qatar are validated by the European Society of Hypertension (ESH), followed by British Society of Hypertension (BSH), or both
- In general, a higher proportion of higher priced devices are shown to be validated compared to less expensive devices (except highest price range)
- On the other hand, generally, cheaper devices tend to be not validated

Conclusions

- Almost half of the BP devices sold in community pharmacies in Qatar are not validated
- This is a significant barrier to precise and accurate home BP monitoring, and cardiovascular risk management
- Sale of BP devices should be regulated and validated by MOPH in Qatar to ensure patient safety

Limitations / future directions

- Study in progress
- Upcoming tasks are:
- Evaluate the knowledge, perception and attitude of community pharmacists in terms of accuracy of information and in directing customers to a validated home BP device
- Evaluate the accuracy of BP devices sold in community pharmacies

Acknowledgement

This study was made possible by the Undergraduate Research Experience Program (UREP) grant UREP27-007-3-001 of the Qatar National Research Foundation