

Storage, Utilization and Cost of Drug Products in Palestinian Households

**Waleed M. Sweileh¹, Ansam F. Sawalha^{1,2}, Sa'ed H. Zyoud², Samah W. Al-Jabi¹,
Fadi F. Bani Shamseh² & Hiba Sh. Khalaf².**

Corresponding Author:

Waleed M. Sweileh, PhD

Associate Professor, Clinical Pharmacology

College of Pharmacy,

An-Najah National University,

Nablus,

Palestine.

Tel. +972 599 225 906, +9728585294 0475,

e-mail: waleedsweileh@najah.edu

1

College of Pharmacy,

An-Najah National University

Nablus,

Palestine.

2

Poison Control and Drug Information Center (PCDIC)

An-Najah National University

Nablus,

Palestine.

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Background and Objective: Appropriate storage and use of medications in households may decrease drug wastage and unnecessary hazard. The objective of this study was to investigate storage, utilization habits, and cost of medications in households in Palestine.

Methodology: This is a cross sectional, anonymous, questionnaire-based study of 465 households in northern Palestine. The Drug product inventory in the surveyed households was investigated and family members were interviewed.

Results: A total of 465 households were assessed, 50 were excluded. The total number of drug products in the 415 households was 5505; the mean \pm SD was 13.3 ± 7.8 . Level of father's education, presence of chronic disease and insurance coverage were the variables that showed a significant relationship with the amount of drug products found in the households. Most of the drug products (43.4%) were stored in relatively unsafe places around the house within the reach of children. Approximately one third (32.5%) of the drug products were not in their original container. The percentages of unused drug products, expired, or those with no clear expiry date were 32.7%, 17.7% and 11% respectively. Estimated drug wastage in the 415 households and nation wide would be 16,100 and 19 million USD respectively. The most common drug categories encountered in households were alimentary, musculoskeletal and anti-infective agents. The most common individual drugs encountered were: paracetamol (8.5%), ibuprofen (4.9%) and diclofenac (3.7%).

Conclusion: Medications were stored in large quantities in Palestinian households, and a large percentage was being wasted. Drug-use assessments and a comprehensive evaluation of the current national drug policies are warranted to curtail this problem.

Key words: Storage, Utilization, Cost, Medications, Household, Palestine

1. Introduction

In Palestine, 3.77 million populations, there are four main providers for health care: Palestinian Ministry of Health (MOH), Palestinian non-governmental organizations, the UN Relief and Works Agency, and the private sector [PCBS 2008, Giacaman 2003]. Health services are financed through a mixture of taxes, health insurance premiums and co-payments, out-of-pocket payments, local community financial and in-kind donations, and loans and grants from the international community. Reviews of the health sector estimated that total health expenditure in 2002 was 8.6% of gross domestic product (GDP) and per-person expenditure was \$135 in 2005 [DFID 2006]. Due to these reasons, the Palestinian MOH is trying to reduce unnecessary expenditures including those pertaining to consumption of medications. However, in the past three decades, individual consumption of medications has increased worldwide due to increased interest of the public in health and due to an increase in the availability of over-the-counter (OTC) medications. This increased consumption and dispensing of medications might be associated with increased potential for inappropriate self medication. The inappropriate use of drugs may also result in wastage of resources, increased resistance of pathogens, serious health hazards, adverse reactions and prolonged suffering [Kiyingi and Lauwo 1993]. Thus, the objectives of this study were to investigate (1) types and quantities of medication stored in households, (2) utilization frequency of stored medications, (3) storage conditions and their potential harm to household members, (4) knowledge of household members of potential therapeutic uses of the stored medications, (5) extent of expired and unused stored medications, (6) compare the extent of medication storage

obtained in this study with those reported from other countries and finally (7) total cost of the stored medications and the cost of potential medication wastage.

2. Methodology

2.1. Study population

This is a descriptive cross-sectional study of the characteristics of in-home drug storage in northern part of West- Bank, Palestine. This is the first study of its type in Palestine. The study took place during January and February 2009 as part of the assigned pharmacy research course for the final-year students of the Faculty of Pharmacy at An-Najah University in Nablus, Palestine. Approval of research ethics committee was obtained before the initiation of the study

2.2. Study tool: the questionnaire

A 3-page questionnaire was developed for this study (see appendix 1). The questionnaire was administered by the students who were thoroughly introduced to the project and clearly instructed about where, how and when to collect data effectively. The questionnaire was administered through personal interview settings. Before the start of the project and collection of the data, the questionnaire was pilot-tested during October and November 2008 in more than 50 house-holds. Based on the preliminary results generated through the pilot study, the questionnaire was modified and finalized. Each student was asked to inspect the drug supplies in their own family house-holds and in four of their closest neighbors, if found, and to conduct an interview with the house-hold member present at the time of interview. On the basis of the inspection and interview, the student was supposed to make an inventory of the found drugs and complete a

questionnaire with 22 questions of varied format: checklist, open and closed-ended questions. The first section of the questionnaire included questions about: 1) age of the interviewee, 2) education of the father and mother, 3) total family members and their ages, 4) presence of any type of medical insurance, 5) presence of any healthcare provider in the house-hold, 6) place of residence and income, 7) presence of any family member with a chronic disease, and 9) total number of stored drugs. Regarding level of education, mothers or fathers who attended school for less than the third grade were considered illiterate. Those people can hardly read and write the native Arabic language. The second section included: 1) correct knowledge of drug use, 2) source of the drug, 3) utilization pattern of the stored drugs, 4) which family member is/ was using the drug, and 5) whether the drug was obtained by a prescription or not. The third section of the questionnaire was filled by the student and the researchers and included: 1) therapeutic class and dosage form of stored drugs, 2) quantity of each stored drug, 3) retail cost, 4) expiration date 5) number of drugs stored in original packaging, and finally 6) characteristics of drug keeping. The students requested the interviewee to guide them to different storage places of the drug products in the house to fill the questionnaire correctly and completely. In this study, each drug was considered as a separate product. For example, amoxicillin 250 mg suspension and amoxicillin 250 mg capsules were considered different products and were counted as 2 drug products. In this study, real medication wastage was defined as any product that had expired or had no clear expiration date or not being used at all.

2.3. Data Analysis

Responses to each question were coded individually, and data were analyzed using the Statistical Package for Social Sciences (SPSS) version 16 for windows (SPSS Inc., Chicago, Illinois). Parametric and non parametric statistical tests were used when appropriate. The analysis included frequencies of discrete variables and descriptive statistics (mean \pm SD) for continuous variables. Association between categorical variables was carried out using Chi-square (X^2) test. Independent sample's t test and one way ANOVA were used to compare means for groups. Spearman Rho test was used to assess correlation whenever appropriate. A p value less than 0.05 was considered significant throughout the analysis. For each house-hold, stored drug products were classified according to the Anatomical Therapeutic Chemical (ATC) code.

3. Results

3.1. Demographic characteristics of the participants.

A total of 465 household units (families) were surveyed and interviewed. Fifty house-holds were excluded from the study because of lack of cooperation with the researchers. The final sample was 415 house-holds, giving a response rate of 89%. The mean \pm SD age of the interviewees was 41 \pm 14.1 years. The interviewees were mostly mothers of the families (248, 59.8%), followed by fathers (81, 19.5%) and others above 18 years old (86, 20.7%). Approximately 51.8% of fathers and 37.8% of mothers had a university education. Fathers and mothers were illiterate in 23.9% (99/415) and 33.7% (140/415) of the cases. The mean \pm SD family size was 6.05 \pm 2.48 members. Approximately 42.8% of the families had at least one child less than 6 years of age while 17.6% of the families had at least one adult \geq 65 years. Less than half (45.8%) of the

families were city residents. The percentages of upper, middle and lower-income families were 12.8%, 76.9% and 10.4% respectively. Approximately one third (34.7%) of the families had no medical insurance of any type, 215 (51.8%) had governmental insurance, while the remaining (13.5%) had private insurance. At least one member in 41.1% of the families had a chronic disease. Hypertension was the most common prevalent (20%) chronic disease among the surveyed families followed by diabetes mellitus (17%). Approximately 6% of the families had hypertension and diabetes mellitus among the family members (Table 1). Health-care providers were present in 16.4% of the families. The demographic and socioeconomic characteristics of house-holds enrolled in the investigation are summarized in table 1.

3.2. General aspects of stored drug products.

The total number of drug products present in the 415 house-holds was 5505 with an average of 13.3 ± 7.8 per house-hold. The number of drug products stored was significantly and positively correlated with family size ($r = 0.17$, $p = 0.001$) and level of father education ($r = 0.127$, $p = 0.01$). However, the number of stored drug products was not correlated with the level of mother's education ($r = 0.061$, $p = 0.215$) or level of income ($r = 0.127$, $p = 0.076$). The number was also significantly associated with the presence of chronic diseases (14.4 ± 8.4 versus 12.5 ± 7.2 , $p = 0.019$) but not the presence of children less than 6 years of age (13.8 ± 7.5 versus 12.9 ± 8 , $p = 0.22$) or adults ≥ 65 years (13.4 ± 6.7 vs. 13.2 ± 8 , $P = 0.9$) or place of living (13.3 ± 8 versus 13.2 ± 7.6 , $p = 0.9$). One way ANOVA analysis indicated that there was a statistically significant difference in the number of in-home stored drug products based on the type of

insurance ($F = 4.6$, $p = 0.01$), with those having private insurance were having the highest number of stored drug products followed by those with governmental and the least were for those with no medical insurance (15 ± 10.5 ; 13.8 ± 7.3 ; 11.8 ± 7.1 respectively).

3.3. Storage conditions, utilization pattern and cost of in-home drug products.

Of the 5505 drug products, 2235 (40.6%) were stored in pharmacy cabinets, 879 (16%) in the refrigerator and 2391 (43.4%) in other places around the house (kitchen and bedrooms) (Table 2). When the interviewees were asked about the frequency of use for each drug product, the answers were: 1970 (35.8%) were used regularly (i.e. on daily basis) as a continuation of a treatment, 1674 (30.4%) were used often (when needed), 1799 (32.7%) were never used and 62 (1.1%) were of unknown frequency of use. When the interviewees were asked about the therapeutic uses of each drug product with permission to consult with other family members and the leaflet, 4791 (87.1%) of the answers were correct while 714 (12.9%) were incorrect. The most common dosage forms available were tablets (53.8%) followed by oral liquid dosage forms (13.6%), and capsules (7.8%). Regarding the source of the drug products, 4000 (72.7%) was obtained from private pharmacies while 27.3% were obtained from governmental or non-governmental pharmacies. Approximately 25% of the stored products were initiated by self therapy. After inspection, 977 (17.7%) of the stored products were expired while 606 (11%) had no clear expiry date, and 3922 (71.25%) were not expired. Approximately half (48.8%) of the expired products were those that were never used. Most (68.1%) of the expired products were in their original container and 54.1% of the expired products were stored at pharmacy cabinet. The total cost of the 5505 drug products was 34,000 USD,

distributed as follows 24,816 for un-expired and 9,184 for expired and no clear expiry products. Drug wastage defined as the sum of expired, no clear expiry date and never used products mount to 50.5% with a total cost of 16,000 USD. Details are shown in table 3.

3.4. Categories of stored drugs

The encountered products were classified according to the ATC classification and were listed in Table 4 and 5. Alimentary tract drug category (18.52%) was the most commonly encountered followed by musculoskeletal (14.2%) and respiratory categories (13.6%). The most commonly encountered individual drugs were Paracetamol (8.5%), followed by ibuprofen (4.9%), diclofenac (3.7%) and amoxicillin (3.4%) (Table 5). Approximately half of the expired products belong to alimentary, musculoskeletal, and anti-microbial categories.

4. Discussion

Our study was an attempt to investigate and clarify in-home storage and utilization habits of drug products in a sample of 415 Palestinian house-holds in north Palestine. In the house-holds studied, a total of 5505 drug products were found, with a mean of 13.3 ± 7.8 per family. The average number of stored medication in this study was different from that reported from other countries (Table 6). The mean number of stored medication reported from Iran [Zargarzadeh et al 2005] was 22.9 ± 20.1 while that from Belgium [De Bolle 2008] was 31 ± 17 . However, the mean number of stored medication reported from Saudi Arabia [Abou-Auda 2003] was 8 ± 4.3 , from other gulf countries [Abou-Auda 2003] was 7.1 ± 3.03 , and from Sudan [Yousif 2002] was 4.4.

The differences in the results obtained from different countries reflect different health seeking habits among different nations. It might also reflect differences in compliance with medications or differences in prevalence of chronic diseases like diabetes mellitus and cardiovascular disease. It is known that some patients do not comply with the exact duration of prescriptions, perhaps because of inadequate communication to patients by health workers. This frequently leads to incomplete consumption of prescribed and non-prescribed medicines with piling up of these medications at home.

In our study, the number of in-home medication storage was significantly associated with family size, level of father education, presence of chronic diseases in the family and the type of medical insurance. Our results showed a positive correlation between the number of stored medications and level of father's education suggesting that educated people have greater tendency to store medications at home for future self therapy. In our study, the lack of association between level of mother's education and number of stored medication is a reflection of the fact that in Palestine in general and in the Middle East in particular, men are usually in charge of health-related issues. Our findings regarding level of father education and number of stored medications were similar to that reported from Iran [Zargarzadeh et al 2005] but opposite to the findings in the Sudanese study where education of the father was negatively correlated with the number of stored medication [Yousif 2002]. It is possible that illiterate people tend to have lower rate of drug compliance leading to lesser consumption of medications and higher number of medications at home. On the other hand, it is possible that educated people have higher tendency to self medicate and thus store more medications at home.

Therefore, compliance and self-medications are two factors that need to be considered when planning to decrease medication wastage and storage at home. The association between presence of chronic diseases and number of stored medications was also expected given that patients with multiple co-morbid conditions tend to consume larger number of medications and tend to change their medications often. In our study, the number of stored medications was positively correlated with family size. This finding was not in agreement with other studies. In the Iranian study [Zargarzadeh et al 2005], the family size was not significantly correlated with the number of stored medications. However, in the Sudanese study [Yousif 2002], the family size was inversely correlated with the number of stored medications. These different finding in our study versus those from Iran and Sudan could be due to cultural or financial differences. Larger families usually consume more medications. At the same time, larger families usually have lower income and thus less capable of purchasing medications.

The impact of insurance in this study and the one reported from Iran [Zargarzadeh et al 2005] was similar. Households without insurance had the least number of stored medications compared to those with either private or governmental insurance. Insurance seemed to be a positive motive for household members to seek health advice and dispense medications more often than households without medical insurance. Furthermore, it seemed that presence or absence of medical insurance is a stronger factor than family income as a determinant of the number of medications stored at home. Actually, most families with higher income usually have private insurance. The presence of particular age groups, for example children < 6 years of age or elderly > 65 years of

age was also not a determinant factor regarding the number of stored medications. It seems that family size is more important than age categories in the household/

In our study, 43.4% medications were stored outside the pharmacy cabinet and refrigerator in accessible places to children and demented people. These storage conditions could be considered unsafe; however, whether these conditions actually posed a safety issue in the given circumstances was not further investigated. In the Iranian study [Zargarzadeh et al 2005] approximately 44% of the medications were stored in bed rooms, kitchen and dining room. In the Belgian study [De Bolle 2008], it was reported that one third of the medications were not stored safely. In the Sudanese study [Yousif 2002], the authors assessed the suitability of the storage conditions of medications and found out that rate of unsuitable storage condition was 26%. In our study, approximately 70% of the reconstituted suspensions were stored outside the refrigerator. Approximately 65% of syrups were stored in open shelves in the kitchen and bed rooms. The syrup formulations are more susceptible to contamination because of the nature of the added adjuncts such as sweetening agents and favoring agents. Therefore, this dosage form usually need better storage conditions in terms of temperature.

In our study, the drugs in the households belong mostly to the following categories: alimentary, musculoskeletal, anti-infective agents and closely followed by nervous system drug products. Comparison of the results obtained in this study with those reported in other countries is shown in table 5. As typical of developing countries, anti-infective agents and analgesics constituted a high proportion of drugs dispensed in community pharmacies, whilst preparations for cardiovascular disease and drugs for

mental health problems were less frequently dispensed [Chareonkul et al 2002, Hazra et al 2000, Karande et al 2005, Ootom 2002, Moghadamnia et al 2002]. Potential reason for over-prescribing of antibiotics is, as reported in other countries, the high prevalence of infection [Nsimba 2004, McCaig 2002]. Our findings are consistent with the results of Sawalha et al who reported that anti-infective agents, musculoskeletal and analgesic agents were the most commonly dispensed medications in community pharmacies in Palestine [Sawalha et al, 2009]. These findings suggest that most of the dispensed courses of anti-infective agents are not completed by the patients and that the risk of self medication with anti-infective agents for non-bacterial infections might be common. The large amounts of stored musculoskeletal agents, particularly NSAIDs, and central opioid and non-opioid analgesics is alarming. These medications are considered safe when used for short periods of time and at lower doses. However, if these medications are used at high rates and were considered for self-medications, then they might be harmful. Analgesic induced nephrotoxicity and NSAID-induced ulceration are well documented. Furthermore, reports of self harm with analgesics, particularly paracetamol, are not uncommon. Our results showed that paracetamol was the most common individual medication stored was followed by ibuprofen and diclofenac. This was expected given that there are more than 15 different brand names of acetaminophen marketed in Palestine as an OTC medication with very affordable price. Furthermore, acetaminophen has less harmful effects on gastrointestinal tract compared to NSAIDs when given at therapeutic doses. However, accidental and suicidal poisoning cases with acetaminophen are not uncommon and can be fatal due to severe hepatic failure.

In our study, approximately one in 5 medications (17.7%) had passed the expiration date while 11% had no clear expiration date. Aside from reduced activity, reports about expired drugs causing harmful effects are rare except for tetracycline [Rice et al 1964]. Similar findings were obtained by the Iranian group [Zargarzadeh et al 2005] where 21.7% of the medications inspected were expired and 17.1% of the medications were without a clear expiration date. In the Sudanese study [Yousif 2002], 15.2% of the medications were expired and 3% had no clear expiration date. In the Belgium study [De Bolle 2008], 21% of the medications were expired. When asked about the therapeutic uses of the stored drug products, most interviewees gave roughly correct answers for 87% of the drug products after consulting with other family members and / or reading the leaflet. Also, approximately 25% of drug products were self initiated while 75% were dispensed according to the physician or pharmacist advice. We expect that this piece of result might be skewed because interviewees might have given us scientifically and socially desirable responses regarding self therapy. It is hoped that in real life, family members would initiate self therapy with drug products stored at home after consulting with other family members and/ or the package leaflet.

The results obtained here can be used to estimate the national the drug wastage from households. In our study, 33.8% of the drug products were unused and 28.7% were expired or having no clear expiry date. Therefore approximately 50% of the stored drug products were considered wastage (either expired, unclear expiration date, or unused). In this study the total cost of drug wastage was 34,000 USD in the 415 house-holds. Assuming that there are approximately 500,000 house-holds in West-Bank of Palestine, the total drug wastage would be approximately 19 million USD. In the Iranian study the

drug wastage was 38.8%, in Saudi Arabia 25.8% and in other Gulf countries 41.3%. In Iran, the drug wastage from households was estimated to be 30 million USD.

Our study has strengths and limitations. The relatively large sample and home visits with personal interviewee are considered points of strength to this study. One of the limitations of our study is that we counted different strengths of the same medication as different drug products, which can lead to over-estimation. Since the interviewees were fully aware of the purpose of the project, they may have skewed the results by cleaning their houses from a lot of unused or expired products. However, the findings of high percentage of expired products argue against this assumption. Furthermore, the selection of the households for investigation might ne be representative of the Palestinian population despite that many demographic results of the sample investigated was matching that of the national level, particularly education and insurance coverage. Another national study need to be carried out to better estimate house-hold drug wastage and pattern of inappropriate drug storage and self use. Finally, continuing education, professional training and educationally advertising are necessary concerning drugs and drug utilization.

5. References

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Table 1. Demographic and socioeconomic characteristics of the surveyed families

Variable	Value
Age of the interviewee (years)	41 ± 14.1
Interviewee	
Mother	248 (59.8%)
Father	81 (19.5)
Others (>18 years)	86 (20.7)
Education of the father	
University	215 (51.8%)
High school	101 (24.3%)
Illiterate	99 (23.9%)
Education of the mother	
University	157 (37.8%)
High school	118 (28.4%)
Illiterate	140 (33.7%)
Family size	6.05 ± 2.48
Place of residence	
City	190 (45.8%)
Village/ suburbs	225 (54.2%)
Income	
Low	43 (10.4%)
Moderate	319 (76.9%)
High	53 (12.8%)
Presence of children less than 6 years of age	
0	240 (57.8%)
1	101 (24.3%)
2	54 (13%)
≥3	20 (4.8%)

Presence of elderly older than 65 years of age	
0	342 (82.4%)
≥ 1	82 (17.6%)
Insurance	
Governmental	215 (51.8%)
Private	56 (13.5%)
None	144 (4.7%)
Presence of chronic disease	
Yes	172 (41.4%)
No	243 (58.6%)
Presence of health-care provider	
Yes	68 (16.4%)
No	347 (83.6%)

Table 2. Places where drug products were stored in Palestinian households.

Place of the storage	Percentage
Drug products in pharmacy cabinet	40.6%
Drug products in the refrigerator	16%
Drug products in several places around the house (kitchen and bed rooms)	43.4%
Drug products in original container	67.5%
Drug products not in original container	32.5%

Table 3. Cost of drug products found in Palestinian households.

Variable	Number or %	~ Cost (USD)
Drug products found in 415 house-holds	5505	34,000
Drug products per house-hold	13.3 ± 7.8	82
Drug products in use	66.2%	23,470
Drug products not in use	32.7%	10,541
Drug products not expired	71.3%	24,816
Drug products expired	17.7%	5,661
Drug products with no clear expiry date	11%	3,523
Drug wastage	50.5%	16,100
Drug products initiated by self therapy	25.3%	6,930

Table 4. Types of drug products found in Palestinian households classified according to the ATC system.

	Drug Classification (ATC system)	Total N=5505	%*	Examples of most common drug sub-classes. N (%[#])
A	Alimentary tract and metabolism	1020	18.53	A02: Drugs used for acid related disorders (252; 24.7%)
M	Musculoskeletal system	783	14.2	M01: Anti-inflammatory and anti-rheumatic products (580; 74.1%).
R	Respiratory system	749	13.6	R01: Nasal preparations (135; 18.02%).
J	Antiinfectives for systemic use	641	11.6	J01: Antibacterial for systemic use (621; 96.9%)
N	Nervous system	632	11.5	N02: Analgesics (525; 83.1%).
D	Dermatologicals	477	8.7	D01: Antifungal (135; 28.3%)
C	Cardiovascular system	410	7.4	C09: Agents acting on rennin-angiotensin-system (80; 19.5%)
B	Blood and blood forming organs	267	4.9	B01: antithrombotic agents (160; 59.9%)
S	Sensory organs	265	4.8	S01: Ophthalmologicals (49; 18.49%).
G	Genito urinary system and sex hormones	96	1.7	G01: Gynecological anti-infectives and antiseptics (36; 37.5%).
P	Antiparasitic products, insecticides and repellents	77	1.4	P01: Anti-protozoals (63; 81.8%)
H	Systemic hormonal preparations, excl. sex hormones and insulins	56	1	H02: Corticosteroids for systemic use (46, 82.14%).
L	Antineoplastic and immunomodulating agents	11	0.2	L02: Endocrine therapy (6; 54.54%).

V, U	Various & Unknown	21	0.3	-
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* Percentage from all

Percentage within the same class

Table 5. Most commonly encountered individual drugs.

Code	Drug name	Frequency	(%)
N02BE01	Paracetamol	466	8.5
M01AE01	Ibuprofen	268	4.9
M01AB05	Diclofenac	201	3.7
J01CA04	Amoxicillin	188	3.4
B01AC06	Acetylsalicylic acid	135	2.5
R05X	Other cold combination preparation	112	2.0
A02BA03	Famotidine	69	1.3
A02BA02	Ranitidine	68	1.2
A11AA	Multivitamins with Minerals	65	1.2
M03BC51	Orphenadrine combinations	64	1.2
A03D	Antispasmodic in combination	61	1.1
P01AB01	Metronidazole	60	1.1
R05F	Cough suppressants and expectorants	60	1.1

Table 6. Comparison of results obtained in this study with those reported in other countries.

Variable	Iran⁽⁵⁾	Saudi Arabia⁽⁶⁾	Other Gulf countries⁽⁶⁾	Sudan⁽⁷⁾	Belgium⁽⁸⁾	Palestine#
Mean number of stored medications	22.9 ± 20.1	8 ± 4.3	7.1 ± 3.03	4.4	31 ± 17	13.3 ± 7.8
Most common drug categories encountered	CNS, anti-infective, and GIT agents.	Respiratory, CNS, and GIT agents	Antibiotics, Respiratory, and CNS agent.	Antibiotics, Analgesic, and Anti-malarial agents	Analgesic, NSAIDs, and Nasal preparations	Alimentary, musculoskeletal and respiratory categories

Appendix 1: The questionnaire used in the investigation of stored medications.

1. Name of the interviewee
2. Age of the interviewee
3. Education of the father 1) College 2) third grade - High school 3) Illiterate
4. Education of the mother 1) College 2) third grade – High school 3) illiterate
5. Place of living 1) city 2) Village/suburbs
6. Income 1) high 2) middle 3) low
7. Number of family members
8. Number of family members < 6 years of age
9. Number of family members > 65 years of age
10. Any member in the family with chronic disease?
11. If yes, what is the chronic disease
12. Any member in the family who works as a health care provider.
13. Is there a medical insurance for the family??
14. If yes, what type of insurance
15. Fill in the following table for each medication stored at home

Brand name of the medication	
Pharmaceutical dosage form	
Quantity of the medication present	
Who is using the medication now	
Do you know the therapeutic use of the medication	
Frequency of use of the medication	
Expiration date of the medication	
Is the medication in its original package?	
Where the medication is stored	
What is the source of the medication	
Price of the medication	