The Community Pharmacist As a Prescriber in Riyadh!

Comparison Between Community Pharmacists and General Practitioners Regarding the Symptomatic Management of Diarrhea and Dehydration in Children

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I. Introduction

II. Methodology

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I-a. Significance of the Study

- Consulting the community pharmacist (CP) is a common practice for Saudi people.
- Lack of studies that evaluate the prescribing behavior of CPs in KSA.
- Many prescription drugs are being sold without prescriptions.
- Is the CP helpful or a threat to the society?

I-a. Significance of the Study (*cont'd*)

- Diarrhea and dehydration is a very common problem of childhood worldwide.
  - Five million children die every year.
  - Worldwide, every child < 5 yr has 3.3 episodes per year compared with 3.8 episodes in KSA.
  - Viral infection is the most common cause.

I-b. Purpose of the Study

- Evaluation of the ability of CPs in Riyadh to manage simple cases of childhood diarrhea compared with general practitioners (GPs).

I-b. Purpose of the Study (*cont'd*)

- Knowledge about different types and causes.
- Ability to obtain appropriate history.
- Identification of referral cases.
- Issues related to oral rehydration therapy (ORT) and symptomatic management.
- Issues related to appropriate counseling.

I-c. Review of Related Literature

- The USC pilot project (1978–82)
  - Clinical training program and exam.
  - Prescribing was supervised by physicians.
  - Pharmacists prescribing was restricted to a certain formulary.
  - *No significant difference between pharmacists' and physicians' prescribing for psychiatric and ambulatory hypertensive patients.*

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II. Methodology

- The questionnaire (MCQ-based)
- Study site (random sample)
  - Community pharmacies for CPs.
  - Primary health care centers (PHCC) and tertiary hospitals for GPs.

II. Methodology (*continued*)

- Inclusion criteria
  - CPs and GPs with B.S. degree.
- Exclusion criteria
  - Incomplete questionnaires (manual check of reliability)

II. Methodology (*continued*)

- Statistical analyses
  - Comparisons between variables
    - t-test
    - Wilcoxon rank sum test (Mann-Whitney U test)
  - Effect of demography on score
    - one-way ANOVA
    - simple factorial ANOVA
  - Relationships
    - Linear Regression.
    - Correlation (Pearson or Spearman)

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III. Results: Response rate

- Each group received 80 questionnaires.
  - CPs' response was 78%.
  - GPs' response was 63%.

III. Results: Demographic data

Demographic Data	CPs	GPs
Number *(n)*	62	50
Place of work *n(%)*		
Hospital	…..	13 (26)
PHCC	…..	37 (74)
Nationality *n(%)*		
Arab	60 (96.8)	34 (68)
Non-Arab	2 (3.2)	16 (32)
Sex *n(%)*		
Male	62 (100)	31 (62)
Female	0 (0)	19 (38)

III. Results: Demographic data (*cont'd*)

Demographic Data	CPs	GPs
Age *year (Mean ± SD)*	32.9 ± 4.7	41 ± 9
Experience *year (Mean ± SD)*		
Total	8.3 ± 4.5	15 ± 9
In KSA	4.3 ± 3.7	10 ± 7.6
CE last 3 years *n (Mean ± SD)*	2.2 ± 4.7	3.2 ± 5.7
Customers/patients seen daily *n (Mean ± SD)*	111 ± 71	57.1 ± 23.3

III. Results: Demographic data (*cont'd*)

Demographic Data	CPs	GPs
Diarrhea cases seen and treated monthly *n(Mean ± SD)*	42.2 ± 56.2	28 ± 35.9
Request of counseling *(%)*	76.8 ± 24.2	45.9 ± 31.5
Voluntary counseling *n(%)*		
Always	47 (75.8)	28 (56)
Sometimes	14 (22.6)	22 (44)
Never	1 (1.6)	0 (0)

III. Results: Demographic data (*cont'd*)

Demographic Data	CPs	GPs
CP-GP comm. monthly *(n)*	16.3 ± 23.7	0.4 ± 1.7
GP-CP comm. monthly *(n)*	9.8 ± 17.5	1 ± 2
Clinical therapeutics *n(%)*	32 (51.6)	…..
Clinical practice *n(%)*	22 (35.5)	…..
Chain pharmacies *n(%)*	48 (77.4)	…..
Daily Rx *n(Mean ± SD)*	50.3 ± 47.4	…..
Daily OTC drugs *n(Mean ± SD)*	29.2 ± 27.2	…..

III. Results: Demographic data (*cont'd*)

Demographic Data	**CPs**	**GPs**
Customers consulting the CP *% (Mean ± SD)*	43.3 ± 24.6	…..
Customers asking the CP to recommend drugs *%*	37.3 ± 24.1	…..
CPs who prescribe for minor ailments *n(%)*	54 (87.1)	…..

III. Results: Attitudes toward the CP as a prescriber of OTC drugs

	CPs	GPs
Is CP able to prescribe OTC drugs? *n(%)*		
Yes	58 (93.5)	21 (42)
No	4 (6.5)	29 (58)
OTC drugs the CP is able to prescribe *out of 19 n(Mean ± SD)*	12.6 ± 4.7	5 ± 4.5

III. Results: Attitudes toward the CP as a prescriber of OTC drugs (*cont'd*)

	CPs	GPs
Evaluation of the CP *n(%)*		
Excellent	16 (25.8)	2 (4)
Very good	27 (43.5)	5 (10)
Good	15 (24.2)	10 (20)
Fair	4 (6.5)	18 (36)
Poor	0 (0)	15 (30)

III. Results: Scores

CPs vs. GPs

%	Job	Mean ± SD	Significance
Total score	CPs	47 ± 10.5	.007
	GPs	52.9 ± 12.1	
Types and causes	CPs	22.6 ± 14.1	.000
	GPs	36.3 ± 16.6	
History taking	CPs	31.5 ± 14.5	.010
	GPs	40 + 20	
Referral cases	CPs	61.8 ± 22.4	.804
	GPs	62.9 ± 24.7	
Treatment	CPs	56.1 ± 15	.919
	GPs	55.8 ± 15.9	
Counseling	CPs	52.1 ± 18.1	.102
	GPs	57.7 ± 17.8	

III. Results: Scores (*continued*)

Male vs. Female GPs

%	Sex	Mean ± SD	Significance
Total score	M F	49.8 ± 12.9 58.1 ± 8.7	.018
Types and causes	M F	35.9 ± 17.3 36.8 ± 16	.855
History taking	M F	34.1 ± 19.5 49.6 + 17.2	.007
Referral cases	M F	63.1 ± 25 62.4 ± 24.8	.921
Treatment	M F	51.6 ± 16.1 62.5 ± 13.2	.017
Counseling	M F	55.3 ± 18.7 61.7 ± 15.8	.224

III. Results: Scores (*continued*)

CPs vs. Male GPs

%	Job	Mean ± SD	Significance
Total score	CPs	47 ± 10.5	.271
	GPs	49.8 ± 12.9	
Types and causes	CPs	22.6 ± 14.1	.000
	GPs	35.9 ± 17.3	
History taking	CPs	31.5 ± 14.5	.456
	GPs	34.1 + 19.5	
Referral cases	CPs	61.8 ± 22.4	.788
	GPs	63.1 ± 25	
Treatment	CPs	56.1 ± 15	.192
	GPs	51.6 ± 16.1	
Counseling	CPs	52.1 ± 18.1	.426
	GPs	55.3 ± 18.7	

III. Results: Scores (*continued*)

CPs vs. Female GPs

%	Job	Mean ± SD	Significance
Total score	CPs	47 ± 10.5	.000
	GPs	58.1 ± 8.7	
Types and causes	CPs	22.6 ± 14.1	.000
	GPs	36.8 ± 16	
History taking	CPs	31.5 ± 14.5	.000
	GPs	49.6 + 17.2	
Referral cases	CPs	61.8 ± 22.4	.914
	GPs	62.4 ± 24.8	
Treatment	CPs	56.1 ± 15	.095
	GPs	62.5 ± 13.2	
Counseling	CPs	52.1 ± 18.1	.041
	GPs	61.7 ± 15.8	

III. Results: Scores (*continued*)

Other Comparisons

- There was *no significant* difference in total score between:
  - Arab and non-Arab GPs.
  - Arab and non-Arab male GPs.
  - Arab and non-Arab female GPs.
  - Arab and non-Arab CPs.
  - GPs in hospitals and GPs in PHCCs.
  - CPs and hospital GPs.

III. Results: (*continued*)

Effect of Demography on Total Score of CPs

- No correlation between total score and all continuous variables:
  - Age, experience, CE programs attended, number of customers, monthly diarrhea cases, daily prescriptions, and daily OTC drugs sold.

- No significant differences in total score between all groups of variables.

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IV. Discussion

- Limitations of the study
  - Lack of female CPs.
  - Significant difference between CPs and GPs concerning age and experience.
  - Lack of Saudi CPs or CPs graduated from KSU.

IV. Discussion (*continued*)

- GPs' contradictory objection to CP prescribing
  - Twenty-nine GPs objected to CP prescribing.
  - Eighteen (62.1%) of them checked 4.9 ± 4.2 drugs out of the 19 selected OTC drugs!
  - Eleven (37.9%) of them evaluated the CP as "poor" but checked 6.7 ± 5.2 drugs!

IV. Discussion (*continued*)

Differences between CPs and GPs

%	Job	GPs	GPs (M)	GPs (F)
Total score	CPs	⚑		⚑
Types and causes	CPs	⚑	⚑	⚑
History taking	CPs	⚑		⚑
Referral cases	CPs			
Treatment	CPs			
Counseling	CPs			⚑

IV. Discussion (*continued*)

- The female gender has the strongest impact on the total score.
  - Most children are preferably examined by a female physician.
  - The sense of maternity.
- Experience of GPs in this study is significantly better than CPs.

IV. Discussion (*continued*)

- Physicians are more familiar with etiology due to availability of lab analysis.
- Obtaining history is a routine function of the physician.

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V. Conclusions

- Formal training is essential for CPs to prescribe more efficiently.
- Effective communication must be established between CPs and GPs.
- Continuing education is necessary.
- Counseling skills must be more improved.

V. Conclusions (*continued*)

- Further studies are needed using:
  - Comparable age groups.
  - Other diseases.
  - Female pharmacists.
  - Hospital pharmacists.
  - Clinical pharmacists.