Irrational Use of Medicines:
An Assessment of Turkish Patients in Primary Care Settings

Merdiye Sendir, RN, MS, PhD
A. Serdar Atav, PhD
Funda Buyukyilmaz, RN, MS, PhD
Zuhal Celik, BSN

Florence Nightingale Faculty of Nursing, Istanbul University, Sisli - Istanbul, Turkey
Decker School of Nursing, Binghamton University, Binghamton, NY
Istanbul Faculty of Medicine Hospital, Istanbul University, Istanbul, Turkey

Presenter Disclosures
Dr. Merdiye Sendir
Dr. A. Serdar Atav
Dr. Funda Buyukyilmaz
Zuhal Celik
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Rational Use of Medicines: WHO Definition
Patients receive medications:
• appropriate to their clinical needs,
• in doses that meet their own individual requirements,
• for an adequate period of time, and
• at the lowest cost to them and their community.
Patients adhere to the treatment.

Irrational Use of Medicines
• Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately.
• 50% of patients fail to take them correctly.
• At the same time, about one-third of the world's population lacks access to essential medicines.

Problem
• Inappropriate doses result in serious morbidity and mortality, particularly for childhood infections and chronic diseases such as hypertension, diabetes, epilepsy and mental disorders
• Inappropriate use and over-use of medicines waste resources:
  • frequent out-of-pocket payments by patients
  • significant patient harm in terms of poor patient outcomes and adverse drug reactions

Purpose & Design
• The purpose of this study was to assess rational medicine use behaviors of individuals.
• Three hundred eighty-three individuals were randomly selected from five primary healthcare centers in Istanbul, Turkey.
• A non-experimental, correlational design was used.
Instrument

- The instrument was developed specifically for the Turkish context.
- It included 26 questions on rational use of prescription medicines and perceptions of subjects.
- There were additional questions on socio-demographic characteristics of participants.

The Turkish Context

- Bridge between Europe and Asia
- Slightly larger than Texas
- 17th largest economy in the world
- One of the fastest growing economies in the world
- Population of 75 million
- GDP per capita – about $14,700
- The only stable secular democracy in the world with a large Muslim majority

Turkish Health Care System

- Nearly all Turkish citizens are under a single insurance system
- Freedom to choose a family physician
- Freedom to choose any public hospital
- Freedom to choose participating private hospitals with higher co-pays
- Community health center in each city/town
- Completed National Health Information System

Accomplishments

- Infant mortality rates (under 1 year of age) down from 29 per 1000 in 2003 to 10 in 2010
- Life expectancy up from 70.9 to 73.7 (76.1 for women)
- Infant vaccination rates at 97%
- Higher satisfaction rates with health care services (39.5% to 73.1%)
- Burden of out-of-pocket expenditures declined
- Productivity in hospitals improved

Common Costs to Patients in the Turkish National Health System

- $100 per month per person premium
- Per visit charges ($2 to $10)
- 30% out-of-pocket private hospital costs
- Prescription charges ($2)
- 20% out-of-pocket medication costs
Demographic Characteristics

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>241</td>
<td>63.1</td>
</tr>
<tr>
<td>Male</td>
<td>141</td>
<td>36.9</td>
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<tr>
<td>Health Insurance</td>
<td>Yes</td>
<td>367</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>15</td>
</tr>
<tr>
<td>Income</td>
<td>More than adequate</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Adequate</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>Inadequate</td>
<td>145</td>
</tr>
</tbody>
</table>

Descriptive Findings

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keeps old meds</td>
<td>207</td>
<td>67.3</td>
</tr>
<tr>
<td>Inquires about directions on meds</td>
<td>206</td>
<td>67.8</td>
</tr>
<tr>
<td>Stops using meds without asking provider</td>
<td>206</td>
<td>67.8</td>
</tr>
<tr>
<td>Double dose after skipping a dose</td>
<td>26</td>
<td>6.8</td>
</tr>
<tr>
<td>Agrees to use generics</td>
<td>160</td>
<td>67.1</td>
</tr>
<tr>
<td>Receives details about diagnosis from provider</td>
<td>208</td>
<td>70.2</td>
</tr>
<tr>
<td>Receives medications without examination</td>
<td>128</td>
<td>33.5</td>
</tr>
<tr>
<td>Requests a specific medication from provider</td>
<td>222</td>
<td>61.9</td>
</tr>
<tr>
<td>Receives information about prescription</td>
<td>272</td>
<td>71.2</td>
</tr>
<tr>
<td>Receives information on alternative treatments</td>
<td>221</td>
<td>57.9</td>
</tr>
<tr>
<td>Goes back to the provider for re-evaluation</td>
<td>196</td>
<td>51.3</td>
</tr>
<tr>
<td>Provider asks questions on current medications</td>
<td>205</td>
<td>59.4</td>
</tr>
<tr>
<td>Provider asks questions on chronic conditions</td>
<td>268</td>
<td>70.2</td>
</tr>
</tbody>
</table>

Subjects over 35 years of age are significantly more likely to:
- Keep old meds
- Use medicines in the medicine cabinet when sick
- Stop using meds without asking provider
- Double dose after skipping a dose
- Object to use of generics
- Receive details about diagnosis from provider
- Receive medications without examination
- Receive information about prescription

Subjects with high school and more education are significantly more likely to:
- Not keep old medications
- Inquire about directions on meds
- Not stop using meds without asking provider
- Fully comprehend provider’s explanations of meds
Subjects with adequate or more income are more likely to:

- Request a specific medication from the provider
- Receive information about a prescription
- Have the provider ask questions on current medications
- Ask the provider to repeat explanations of meds
- Not ask the provider to prescribe cheaper meds

Summary

- Age, education level and income are significant predictors of irrational use of medicines in the Turkish Primary Health Care context.
- Overall, for a great majority of the questions, 30% to 50% of respondents indicated irrational use of medicines.

$418 BILLION wasted in the USA

- $55.8 billion was spent unnecessarily on higher-priced medications when more affordable, similar drugs could have been used.
- $93.1 billion could have been saved if patients had shopped around pharmacies or used mail order pharmacies.
- $269.4 billion was spent on avoidable medical expenses because patients did not stay on the medicines they were prescribed.
- 9 of the 10 poorest states rank among the most wasteful in medication related costs.

WHO: Tactics for Improving Rational Drug Use

- Improved pharmacotherapy training for physicians and other providers
- Essential drugs lists
- Prescribing & dispensing formularies and treatment guidelines
- Patient cost-sharing
- Promotion controls
- Advertising spending limits
- Prescribing controls
- Banning unsafe drugs and irrational combinations
- Dispensing controls
- Limit on number of drugs per patient

THANK YOU

Contact:
Dr. A. Serdar Atav
Binghamton University
Binghamton, NY 13902-6000
atatav@binghamton.edu