Which patient and doctor behaviors make a medical consultation more effective from a patient point of view.

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GULiVer's Travels…

**GULiVer I:**
Focus group discussions of lay people’s preferences on doctor-patient communication in 4 European countries (e.g., Bensing et al., 2011; Mazzi et al., 2013)

**GULiVer II:**
Development of a patient-generated questionnaire to assess patients’ preferences about doctor-patient communication in 31 European countries (Mazzi et al., 2016)

PhD Thesis of Maria Angela Mazzi:
“Making doctor-patient communication more effective from a patient’s perspective. A European mixed-method study in general medicine settings.”
Partial overlap of doctors’ and patients’ consultation agendas
(e.g., Cox et al., 2007)

Agreement between doctors and patients on the effectiveness of the medical consultation cannot be taken for granted
(e.g., Coran et al., 2013)

Doctor-patient relationship as key element fostering the quality of care
(e.g., Fong Ha et al., 2010)

Background – Different perspectives of doctors and patients
Background — Patients as experts

**Doctors**

Increasingly involved in studies exploring their communication style as well as in trainings improving their communication skills (e.g., Duffy et al., 2004)

**Patients**

More and more interviewed about their satisfaction and involved in trainings promoting their active role in the consultation (e.g., Brooks et al., 2015, Robinson & Heritage, 2006)

Less frequently, patients are invited to take part in studies as experts in the field
Background – Cross national generalizability of guidelines

International guidelines on doctor-patient communication are often based on assumptions of cross-cultural generalizability of what to consider an appropriate doctor-patient communication.
Background – Hofstede’s cultural dimensions

- Power distance (PDI)
- Uncertainty avoidance (UAI)
- Long-term vs. short-term orientation (L.towvs)
- Indulgence vs. restraint (IVR)
- Individualism vs. collectivism (IDV)
- Masculinity vs. femininity (MAS)

(Hofstede, Hofstede, & Minkov 2010)
Aims of the study

1. Identify doctors’ and patients’ behaviors indicated by patients as most important

2. Assess different patients’ preferences according to their specific socio-demographic profiles

1. Investigate if cultural and environmental dimensions - at country level - explain cross-national differences in patients’ preferences
Methods – Participating countries and subjects

Data were collected within the QUALICOPC Project

- international network of partner institutes
- coordinated by NIVEL (Netherlands Institute for Health Services Research)

General practitioners and patients from:
31 European countries
Australia, Canada, New Zealand

Data collection October 2011-
December 2013

Hereby presented study

Data of patients (n = 6049) from 31 European countries
Methods – Patient Consultation Value questionnaires (PCVq)

Patient generated questionnaire evaluating patients’ preferences regarding doctors’ and patients’ behaviors before, during and after the medical encounter

GULiVer I:
Patients’ suggestions about effective medical consultation

GULiVer II:
suggestions transformed into 33 items

33 items pooled into 7 factors by exploratory and confirmative factor analyses

- Investigation of each factors’ reliability by using ordinal alpha
- 21 items about doctors’ and 12 about patients’ behaviors
- 4-point Likert scale (1 ”not important” – 4 ”very important”)

(Bensing et al. 2011, Mazzi et al. 2016)
Confirmatory Factor Analysis: Indices of Goodness of fit

*Structural Equation Model with Satorra-Bentler adjustments*

- RMSEA-SB = 0.059 (< 0.06 good)
- SRMR-SB = 0.054 (< 0.08 good)
- CD = 0.998 (near 1 good)

- CFI-SB = 0.831 (≥ 0.95 good)
- TLI-SB = 0.812 (≥ 0.95 good)
### Methods – Doctor Factors and respective PCVq items

<table>
<thead>
<tr>
<th>Patient as a partner (ordinal alpha=0.89)</th>
<th>Patient as a person (ordinal alpha=0.87)</th>
<th>Continuity of care (ordinal alpha=0.66)</th>
<th>Additional information (ordinal alpha=0.68)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2 The doctor has prepared for the consultation by reading my medical notes</td>
<td>7.1 The doctor makes me feel welcome by making eye contact</td>
<td>9.1 The doctor gives me all test results, even if they show no abnormalities</td>
<td>6.1 The receptionist or nurse acts as a filter before seeing doctor</td>
</tr>
<tr>
<td>7.8 The doctor takes me seriously</td>
<td>7.2 The doctor listens attentively</td>
<td>9.2 The doctor offers to have telephone or email contact with me if I have further questions</td>
<td>8.1 The doctor avoids disturbances of the consultation by telephone calls etc.</td>
</tr>
<tr>
<td>7.9 The doctor understands me</td>
<td>7.3 The doctor does not give me the feeling of being under time pressure</td>
<td>9.3 The doctor gives me clear instructions on what to do when things go wrong</td>
<td>8.2 The doctor gives me additional information about my health problem e.g. leaflets</td>
</tr>
<tr>
<td>7.10 The doctor asks me if I have any questions</td>
<td>7.4 The doctor is aware of my personal, social and cultural background</td>
<td>7. The doctor is respectful during physical examination</td>
<td>8.3 The doctor informs me about reliable sources of information e.g. websites</td>
</tr>
<tr>
<td>7.11 The doctor asks if I have understood everything</td>
<td>7.5 The doctor is not prejudiced because of my age, gender, religion or cultural background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.12 The doctor knows when to refer me to a medical specialist</td>
<td>7.6 The doctor treats me as a person and not just as a medical problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.13 The doctor asks how I prefer to be treated</td>
<td>7.7 The doctor is respectful during physical examination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Methods – Patient Factors and respective PCVq items

<table>
<thead>
<tr>
<th>Open and honest patient behaviors  (ordinal alpha=0.82)</th>
<th>Active participation of patient  (ordinal alpha=0.71)</th>
<th>Thoughtful planning of patient  (ordinal alpha=0.65)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.6 I am honest and not feel embarrassed to talk about my health problem</td>
<td>6.3 I have prepared for the consultation by keeping a symptom diary or preparing questions</td>
<td>6.4 I can bring a family member/friend to the consultation if I think this is useful</td>
</tr>
<tr>
<td>8.7 I am open about my use of other treatments (self-medication or alternative medicine)</td>
<td>8.4 I tell the doctor what I want to discuss in this consultation</td>
<td>6.5 I know which doctor I will see</td>
</tr>
<tr>
<td>8.8 Psychosocial issues (for example personal worries) can be discussed if needed</td>
<td>8.5 I am prepared to ask questions and take notes</td>
<td>6.6 I keep my appointment</td>
</tr>
<tr>
<td>9.4 I adhere to the agreed treatment plan</td>
<td></td>
<td>9.6 I can see another doctor if I think it is necessary</td>
</tr>
<tr>
<td>9.5 I inform the doctor how the treatment works out</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Statistical analyses

**Exploratory** factor analysis followed by **confirmatory** factor analysis of the 33 items (i.e., separated for doctors’ and patients’ items)

The reliability properties for each factor were investigated using **ordinal alpha**

**Descriptive analysis** of sample characteristics, PCVq items and factors
Statistical analyses

Two-level hierarchical structure of dataset

Level 1 - Individual variables: questionnaire scores and socio-demographic variables

- Age
- Gender
- Education
- Chronic conditions
- Perceived health
- Household income

Level 2 - Contextual variables: cultural and environmental conditions

- Hofstede dimensions: power distance (PDI), uncertainty avoidance (UAI), individualism vs. collectivism (IDV), masculinity vs. femininity (MAS), long-term vs. short-term orientation (LtoWvs) and indulgence versus restraint (IVR)
- Health expenditure per capita
- Public expenditure on total health expenditure (%)
- Numbers of physicians, nurses and midwives per 1000 people
Statistical analyses

Intra-class correlation coefficients
to estimate the heterogeneity among countries

Two-level hierarchical structure of dataset

Level 1 - Individual variables:
questionnaire scores and socio-
demographic variables

Two-way ANOVAs to select the predictors at
individual level for the final multilevel analysis

Level 2 - Contextual variables:
cultural and environmental conditions

Pearson’s correlation matrix to select the predictors
at contextual level for the final multilevel analysis

Multilevel model to estimate the combined effects of
patient and country characteristics on each PCVq factor

Thematic maps representing the geographical distribution
of each PCVq factor among the European countries

All statistical analyses were performed using STATA 14.2.
Results – Sample Characteristics

6049 participating patients

- 62% female
  38% male
- mean age 49±17 years old
- 34% higher educational level
- 55% employed
- 7% immigrants
range by country: Malta 68 - Spain 431
IB; 24/06/2017
Results

Doctors’ behaviors (PCVq items) indicated by patients as most important

- The doctor listens attentively: 98%
- The doctor takes me seriously: 96%
- The doctor gives me clear instructions on what to do when things go wrong: 94%
- The doctor knows when to refer me to a medical specialist: 93%
- The doctor understands me: 92%

GULiVer
Gent – Utrecht – Liverpool – Verona
Results

Patients’ behaviors (PCVq items) indicated by patients as most important

- I adhere to the agreed treatment plan
- I am honest and not feel embarrassed to talk about my health problem
- I keep to my appointment
- I inform the doctor how the treatment works out
- I know which doctor I will see
Results

Doctor Factors: roles and responsibilities

- Patient as a partner: mean=3.3, SD=0.5
- Patient as a person: mean=3.2, SD=0.5
- Continuity of care: mean=3.3, SD=0.6
- Additional information: mean=2.7, SD=0.6
Results

Patient Factors: roles and responsibilities

- Open & honest: mean=3.2, SD=0.5
- Active participation: mean=3.0, SD=0.6
- Thoughtful planning: mean=2.8, SD=0.7
## Results – Patient as a partner (Doctor factor)

<table>
<thead>
<tr>
<th>Fixed part</th>
<th>Coeff. (s.e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.31 (.02)**</td>
</tr>
<tr>
<td>Gender (female vs male)</td>
<td>0.09 (.01)**</td>
</tr>
</tbody>
</table>

**Micro-level**

- Age (centred; mean=49)
- Education: medium vs lower
- Higher vs lower
- Chronic condition (yes vs no)
- Hofstede’s IDV
- Hofstede’s IVR

**Macro**

<table>
<thead>
<tr>
<th>Random part</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance of intercept (country)</td>
<td>0.008 (.002)</td>
</tr>
<tr>
<td>Residual variance (patients)</td>
<td>0.206 (.004)</td>
</tr>
<tr>
<td>ICC %</td>
<td>3.7 (1.1)</td>
</tr>
</tbody>
</table>

**Goodness of fit**

- AIC: 7536.25
- BIC: 7583.06
- Pseudo R² level-one (patients): 0.01
- Pseudo R² level-two (country): 0.55

Swedish 3.42 (SD = 0.4) vs Latvia 3.06 (SD = 0.5)

Map created by E. van der Zee
A collectivistic cultural background was associated with higher values for all doctor factors and for the patient factor Openness

IB; 26/06/2017
## Results – Be open and honest (Patient factor)

<table>
<thead>
<tr>
<th>Fixed part</th>
<th>Open and honest Coeff. (s.e)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Micro-level</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.20 (.02)**</td>
</tr>
<tr>
<td>Gender (female vs male)</td>
<td>0.12 (.01)**</td>
</tr>
<tr>
<td>Age (centred; mean=49)</td>
<td></td>
</tr>
<tr>
<td>Education: medium vs lower</td>
<td></td>
</tr>
<tr>
<td>higher vs lower</td>
<td></td>
</tr>
<tr>
<td>Chronic condition (yes vs no)</td>
<td></td>
</tr>
<tr>
<td><strong>Macro</strong></td>
<td></td>
</tr>
<tr>
<td>Hofstede’s IDV</td>
<td>-0.004 (.001)**</td>
</tr>
<tr>
<td>Hofstede’s IVR</td>
<td>0.007 (.001)**</td>
</tr>
<tr>
<td><strong>Random part</strong></td>
<td></td>
</tr>
<tr>
<td>variance of intercept (country)</td>
<td>0.01 (&lt;.01)</td>
</tr>
<tr>
<td>residual variance (patients)</td>
<td>0.25 (&lt;.01)</td>
</tr>
<tr>
<td>ICC %</td>
<td>4.8 (1.3)</td>
</tr>
<tr>
<td><strong>Goodness of fit</strong></td>
<td></td>
</tr>
<tr>
<td>AIC</td>
<td>8827.99</td>
</tr>
<tr>
<td>BIC</td>
<td>8868.22</td>
</tr>
<tr>
<td>Pseudo R² level-one (patients)</td>
<td>0.02</td>
</tr>
<tr>
<td>Pseudo R² level-two (country)</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Sweden 3.24 (SD =0.5) vs Latvia 2.75 (SD = 0.5)

Map created by E. van der Zee
**Strenghts**

Patients involved as partners in the research process

Sample size including almost all European countries

**Limitations**

Some of the items refer to general and not to concrete behaviors

Contextual variables targeted the country level and did not explore rural and urban environments
Conclusions – Universality of doctors’ and patients’ roles

All participants across Europe recognized the importance of doctors’ and patients’ contributions for an effective medical consultation.

Only few roles received a lower rating, as “additional information” suggesting that this set of behaviors, even if important, are not among the priorities of doctors’ behaviors.

The explored roles and responsibilities might represent the basis for adapted and new patient-generated clinical guidelines and healthcare training programs in European countries.
Conclusions – Reciprocal engagement and commitment

Patient factors got slightly lower values compared to doctor factors.

Patients want to be recognized as partners but, at the same time, attribute less importance to their own active participation.

Patients highlighted the important role of doctors during the consultation, attributing them the greater responsibility for the effectiveness of the encounter.
References


References


Vision is the art of seeing what is invisible to others.

Jonathan Swift

Thank you for your attention!