The relationship between consultation length, process and outcomes in general practice: a systematic review

Wilson A, Childs S

Authors' objectives
To examine the association between the average consultation time of primary care physicians and consultation process and health outcome.

Searching
MEDLINE (from 1966 to November 1999), EMBASE (from 1981 to November 1999) and the National Research Register were searched in spring 2000. The reference lists in identified studies were examined and authors who had published articles in the previous five years were contacted for additional papers. The search terms were stated. Only articles published in the English language were included.

Study selection
Study designs of evaluations included in the review
Observational studies were eligible for inclusion. No quality restrictions were applied. Studies that examined relationships between individual consultation length and the type of problem or patient were excluded. The included studies were of two designs: comparisons of process or outcome in doctors with different consultation length; and studies that used average consultation length as one of the predictors of a specific process or outcome.

Specific interventions included in the review
Studies of the average length of consultation were eligible. The included studies measured the average consultation length by objective timing of the individual consultation, dividing the consultation session by the number of patients seen, or using the booking interval. Studies were conducted in the USA, Wales, UK, Scotland, the Netherlands and Sweden.

Participants included in the review
Studies of primary care physicians were eligible for inclusion. Primary care physicians were defined as first contact doctors and included specialist physicians such as primary care paediatricians. The included studies were of male and female doctors. The percentage of eligible doctors who participated ranged, where stated, from 14 to 100%.

Outcomes assessed in the review
Studies that assessed objective measures of process or outcome were eligible. The included studies assessed outcomes using prescribing volume, adherence to audit criteria, achievement of performance indicators, investigation/referral rate, health promotion activities, reconsultation/follow-up rates, recognition and management of patient problems, patient satisfaction, enablement and doctor stress. The validated tools used to assess outcome were the consultation satisfaction questionnaire and the patient enablement instrument. Information on outcomes was obtained from medical record review, doctor encounter forms, retrospective prescribing data, and patient and doctor questionnaires.

How were decisions on the relevance of primary studies made?
One author selected the studies for inclusion.

Assessment of study quality
The quality of the included studies was assessed by considering the methods used to select the doctors, the methods used to assess consultation length, the validity of outcome measures and the degree of identification and control for confounding factors. Two reviewers independently assessed validity and resolved any disagreements through discussion.
Data extraction
Two reviewers independently extracted data and resolved any disagreements through discussion. The tabulated information included the following: study aim; location; duration; the number of practices, doctors and consultations; the mean length of consultation; the method of measuring consultation length; study design; analysis; and the percentage of eligible doctors who participated.

Methods of synthesis
How were the studies combined?
The studies were grouped by the outcome assessed and a narrative synthesis was undertaken.

How were differences between studies investigated?
Differences between the studies were discussed in the text of the review.

Results of the review
Ten observational studies were included (at least 694 doctors).

Quality: some practices sought to recruit a representative sample for doctors, but some groups were underrepresented in the sample. Most studies used the 'gold' standard method of measuring average consultation time (objective timing of individual consultations). Only one study examined potential confounding factors. Only two studies used a validated instrument to measure the outcome.

Recognition and management of patient problems (2 studies with 3 papers): one study found that faster doctors (average consultation length less than 7 minutes) recognised and dealt with fewer long-term problems than slower doctors (average consultation time 9 minutes or more), (P<0.05); the other study found that patient centredness was associated with average consultation length.

Adherence to agreed criteria for specific conditions (3 studies): one study found that slower doctors met significantly more history and examining audit criteria for hypertension and dysuria, but not for diabetes or general examination. One study found that faster doctors recorded fewer details of history, while another found that female doctors had longer consultations and used more counselling.

Prescribing (5 studies): overall, slower doctors had a lower prescribing rate. One study found that the rate per consultation was 51.5% for slower doctors versus 62.6% for faster doctors (P<0.001). Another study found that the prescribing rates were 54 and 60% for slower and faster doctors, respectively (P<0.001). One study found a positive association between consultation time and prescribing volume. One study found that female doctors had longer consultations and prescribed less. One study found a positive association between a longer consultation time and higher quality of prescribing.

Investigation (3 studies): the studies found different results. One study found that doctors with medium consultation length (2.7 to 3.8 patients per hour) requested fewer blood counts than longer or shorter consultations. One studies found that female general practitioners used more investigations. One study found that faster doctors met more criteria for laboratory tests.

Referral (2 studies): the studies found different results. One study found no difference between faster and slower doctors, while the other found that faster doctors had increased referral rates.

Health promotion (4 studies): the studies suggested that longer consultations increased health promotion activity. One study found that slower doctors offered significantly more preventive care than faster doctors (P<0.001). One study found that slower doctors undertook more preventive procedures during the consultation, but that faster doctors used more preventive interventions that were delegated to a nurse. One study found that female doctors had longer consultations and offered more lifestyle advice. One study found no association between average consultation time and NHS targets for immunisation and cervical cytology.

Follow-up and consultation rates (2 studies): there was some evidence that longer consultations are negatively associated
with consultation rate. One study found that slower doctors arranged fewer follow-up consultations (28.5 versus 34.3%, \( P < 0.02 \)) and had fewer reconsultation rates (7.2 versus 12.9%, \( P < 0.001 \)). One study found that patients attending slower doctors consulted them less often.

Patient satisfaction, enablement and 'good consultations' (4 studies): average consultation length was positively associated with some, but not all, elements of patient satisfaction and with patient enablement.

External quality index (1 study): the study found no association between average consultation length and the NHS external quality index.

Doctor stress (1 study): the study found that doctors with a high patient-centred score had longer consultation times and reported increased stress compared with intermediate and low patient centredness doctors.

**Cost information**

None of the studies included a health economics analysis.

**Authors' conclusions**

Consultation length may reflect other attributes of the doctor, but the evidence suggests that doctors with longer consultation times are more likely to incorporate important elements of care.

**CRD commentary**

The review question was clear in terms of the study design, intervention, participants and outcomes. Several relevant sources were searched and the search terms were stated. Selection bias may have resulted from a single reviewer selecting the studies for inclusion. The lack of attempts to locate unpublished studies may, as the authors acknowledge, raise the possibility of publication bias. The validity assessment and data extraction were performed in duplicate and this reduces the potential for bias and errors. Validity was assessed using defined criteria and relevant data were extracted and tabulated. A narrative synthesis was appropriate in view of the differences among the studies. The evidence for most outcomes was adequately summarised in the 'Results' section, but evidence for a couple of outcomes were not adequately summarised. Methodological limitations of both the individual studies and the review were discussed in the text of the review. However, the evidence was not discussed in relation to study quality. The evidence presented appears to support the authors' conclusions.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors state that there is a need for intervention studies that include an economic assessment and weigh consultation length against quality markers such as accessibility and continuity. They also state there is a need to develop a valid generic outcome measure for general practice consultations, and to examine the relationship between average consultation length and clinical outcomes.

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**Bibliographic details**


**PubMedID**

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Other publications of related interest
This additional published commentary may also be of interest. Deveugele M, Derese A. Longer consultations may be associated with improved outcomes in primary care. Evidence-based Healthcare 2003;7:75-6.

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