



Oral health and khat chewing: reviewing and addressing the gaps

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Objectives

- to note the current evidence base for the determinants of oral problems
- to identify and assess the literature reporting the relationship of oral problems with khat chewing
- to report the results of a study of oral problems and khat chewing

Common risk factors determine oral problems



1. Smoked and chewed tobacco (oral cancer, periodontal [gum] disease)
2. Alcohol (oral cancer)
3. Sugar (dental caries)
4. Dirt (periodontal [gum] disease)

Is there a role for khat?

Assessing the literature

Aim:

To assess bias or susceptibility to bias in *observational epidemiological studies* (cohort, case-control and cross-sectional) that report on the oral health effects of khat chewing.

PICO question for study inclusion:

P In people (all ages) that

I chew khat

C compared with people who do not chew khat (or other comparisons)

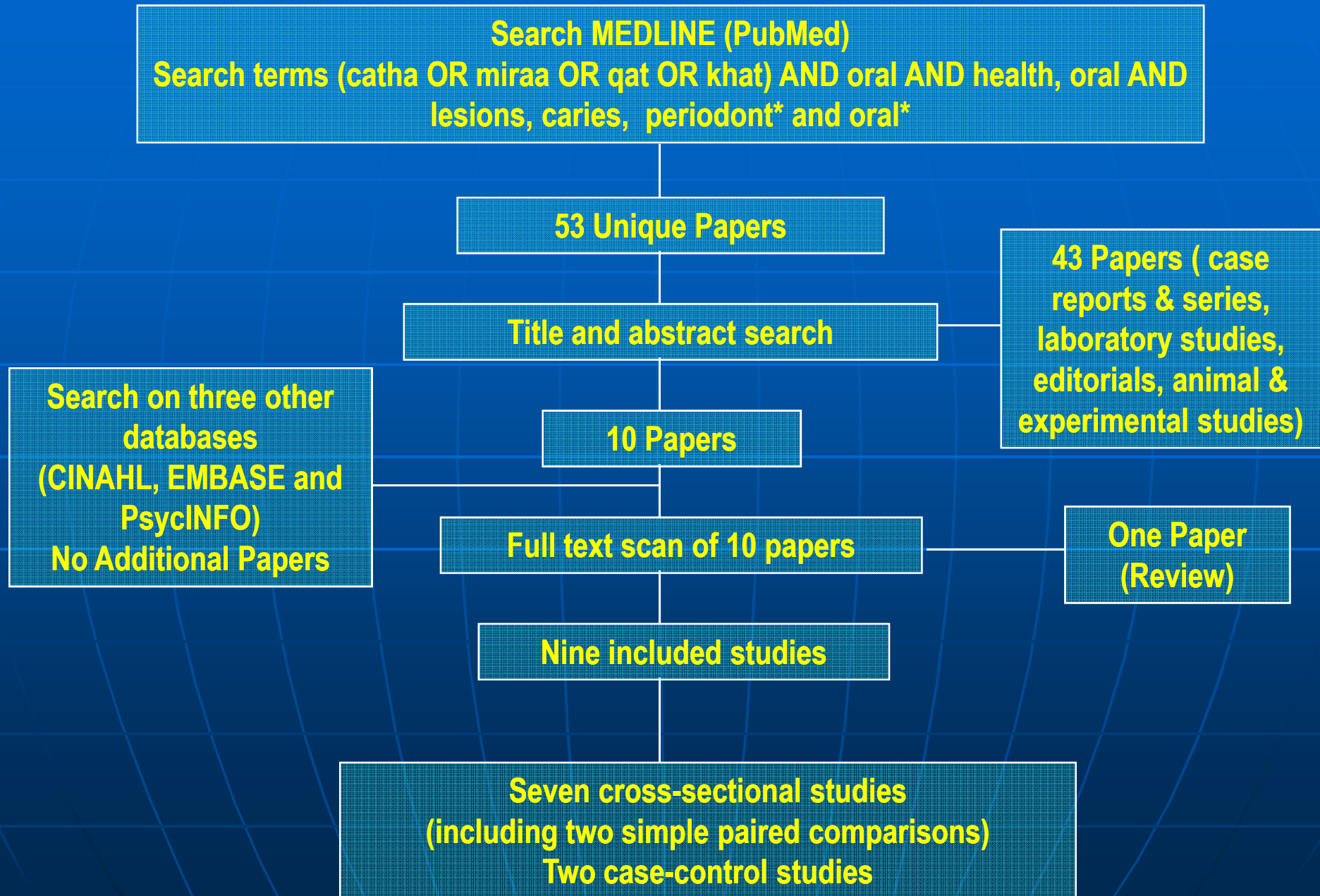
O what are the oral health effects? Including (but not limited to):

Periodontal diseases (periodontitis, gingivitis), oral mucosal lesions, pre-malignant lesions, oral cancer

Assessing the literature: included studies

	Study ID (author/year of publication)	Method (Design /Sample selection/allocation)	Participants	Exposure	Outcome	Other Criteria
I n c l u s i o n	All relevant studies, no limits on year of publication	Primary Observational Studies: Cross sectional studies, Cohort, Case control	All age groups, Both male and female participants, any study location.	Catha, Miraa, Qat or Khat	Oral Problems : Periodontal (gum) disease (pre- malignant lesions, oral cancer Pre-cancerous conditions Other problems	Studies in English language
E x c l u s i o n		Case reports, case series, reviews, animal or laboratory based studies		Other smokeless tobacco products as main exposure of interest		Non-English language studies

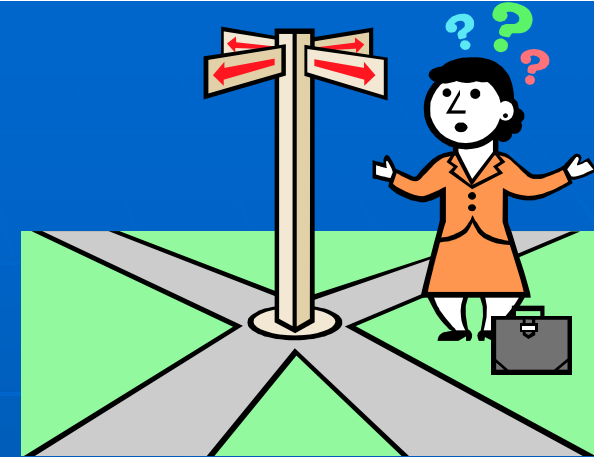
Search strategy and outcomes



Altman (1991) criteria of literature evaluation

1. Was the source of the subjects clearly described?
2. Was the method of selection of subjects clearly described?
3. Was the sample size based on pre-study consideration of statistical power?
4. Was the sample of subjects appropriate with regard to generalisability of the findings?
5. Was the data instrument valid and reliable?
6. Was the design of the study acceptable?
7. Was satisfactorily high response rate achieved?
8. Was there a statement adequately describing all statistics procedures?

Review results



- Study focus: oral cancer (4), periodontal disease (5), others (2)
- Methodologically limited: 22% of included studies met 4 criteria, 45% met 3 criteria, 33% met 2 criteria (out of a possible 8)
- Positives: study design, source of subjects, description of statistical procedures
- Negatives: sample size calculation, response rate, source of study instruments, clinical criteria
- Lack of control of confounding associations with health outcomes e.g. tobacco use, social inequality

Conclusion: the association of khat with oral problems awaits identification

Scanning the literature

- Limited number of studies
- Contradictory outcomes
- Particular disease focus
- Particular community
- Individualistic focus



Khat's association with oral problems: the Sheffield study

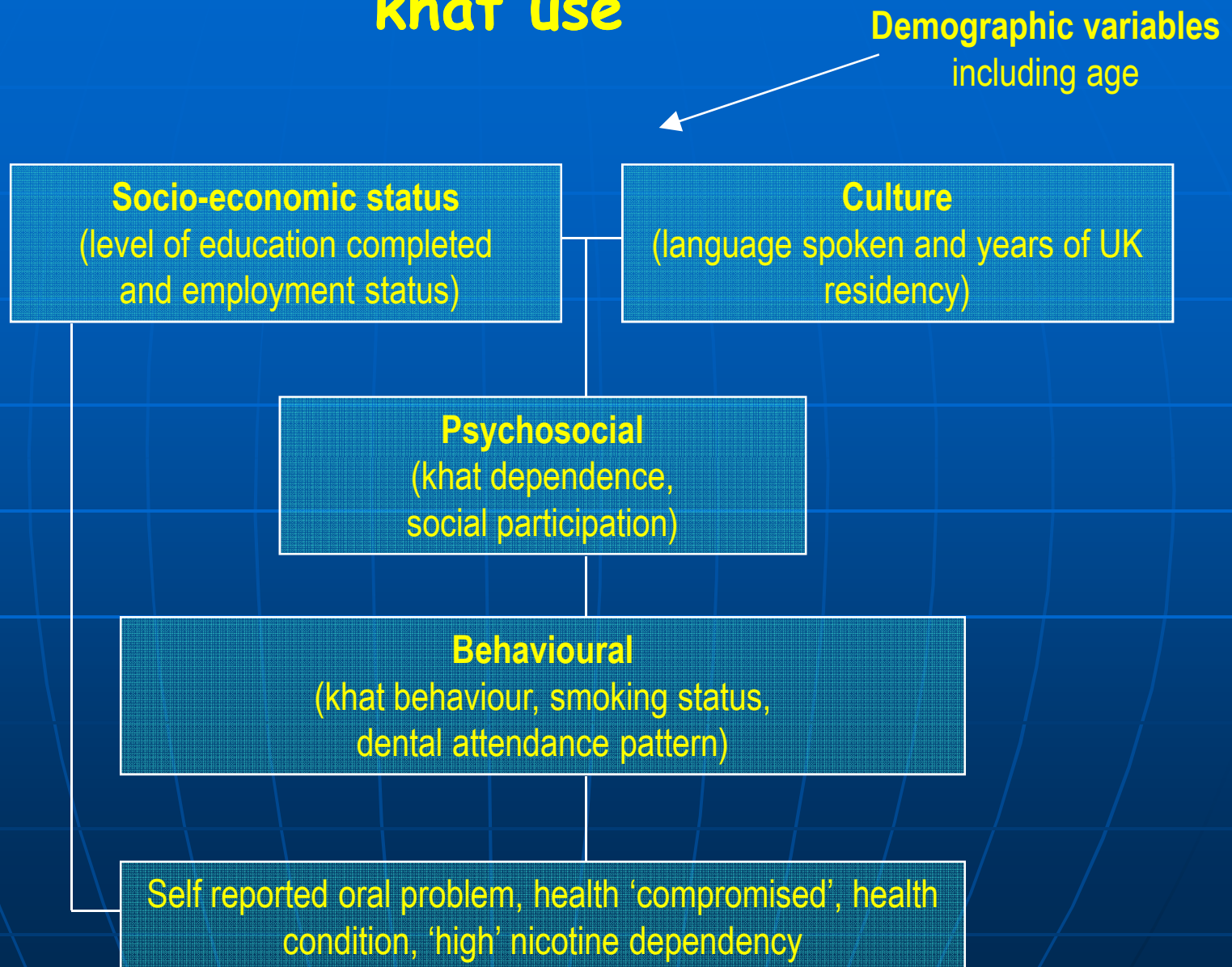
- Well established Yemeni community
- Estimated community size: 4224
- Estimated adult males: 851



Study aims

- To identify factors that influence the practice of khat chewing in a sample of Yemeni khat chewers in Sheffield.
- To establish how these factors related to khat chewing are associated with self reported oral problems

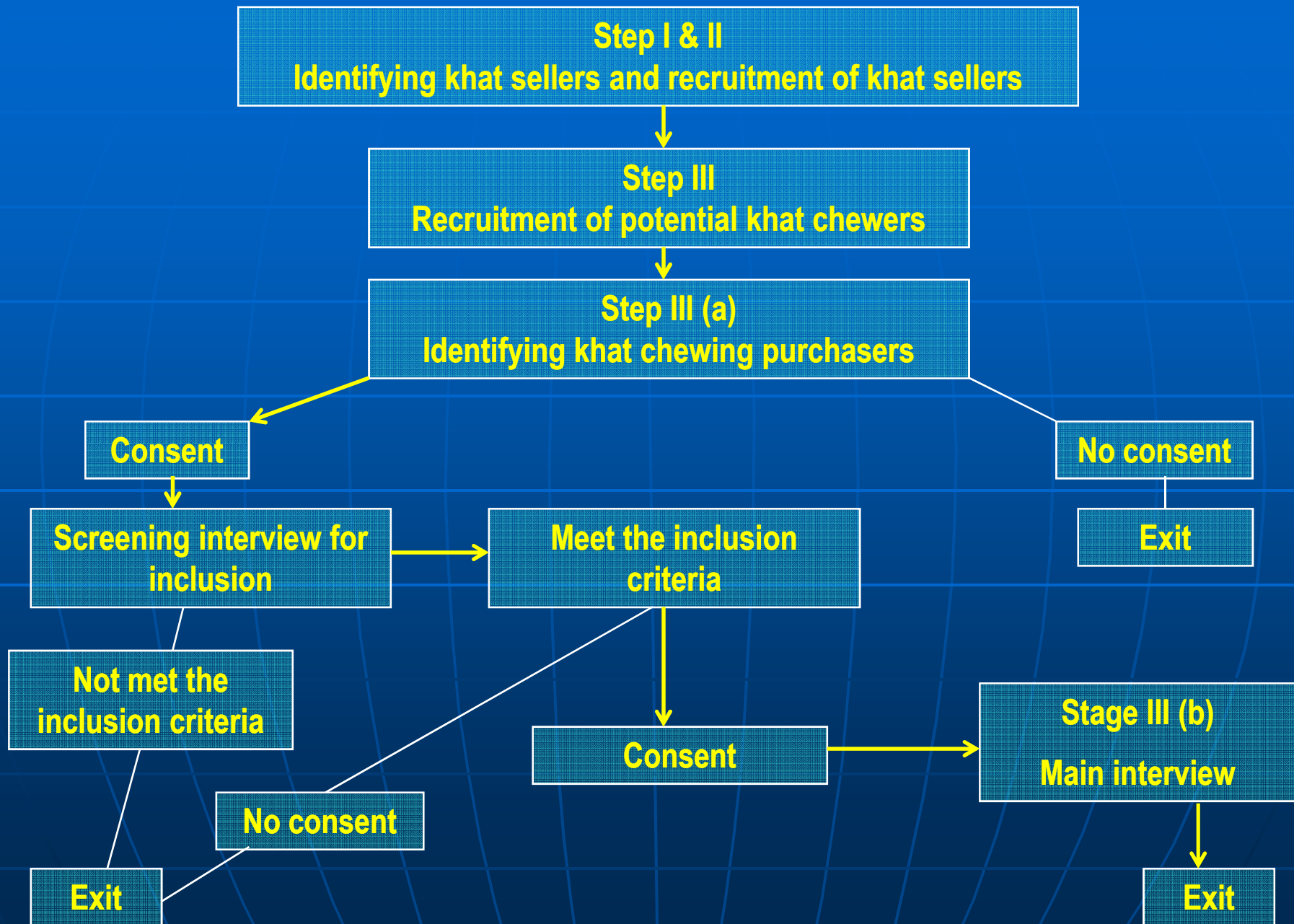
An holistic theoretical framework: outcomes of khat use



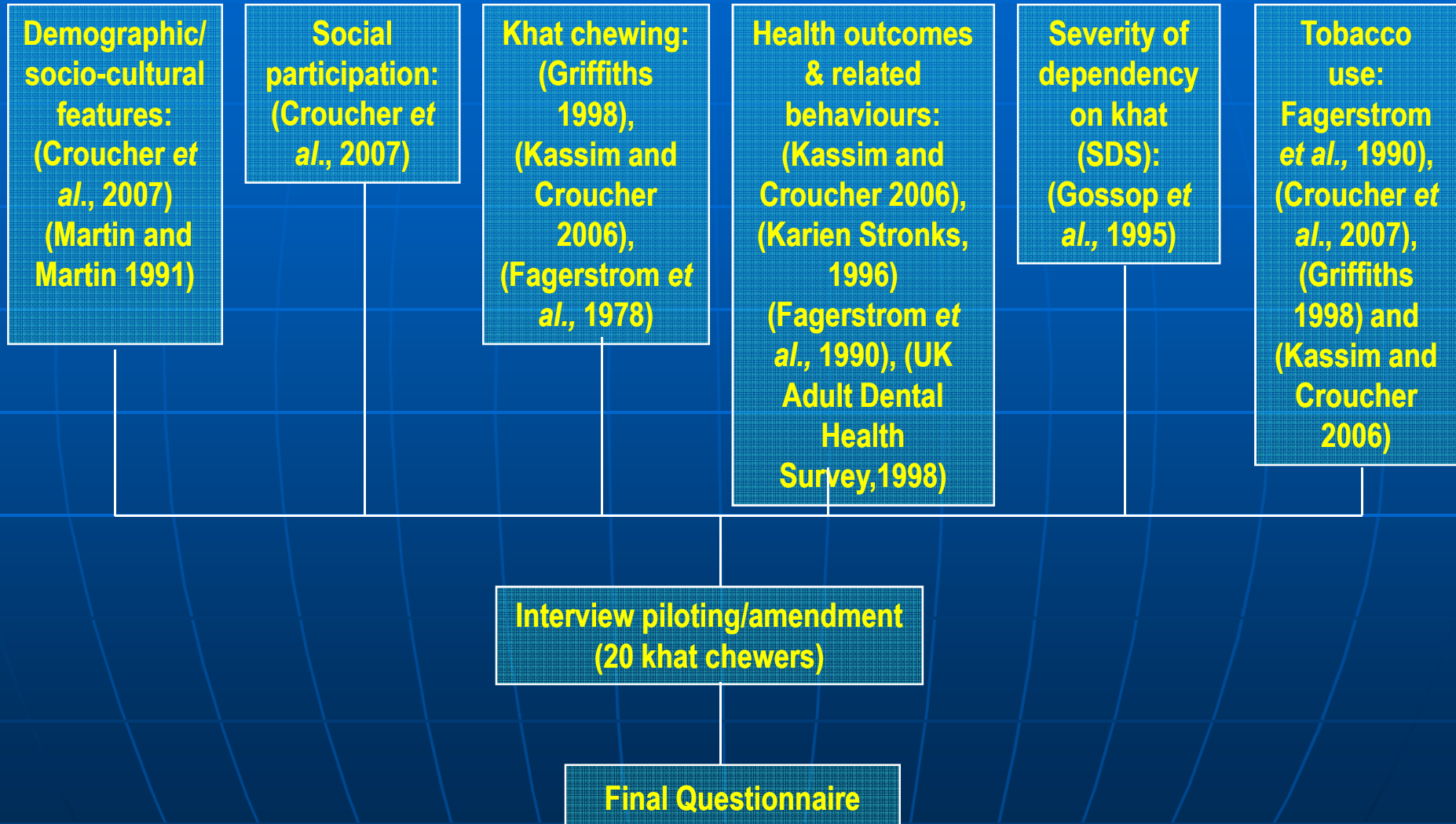
Study methods

1. cross sectional study
2. a purposive sample of 204 male regular khat chewers aged 18 years and older, living in Sheffield
3. selected during random visits to khat sellers
4. face to face structured interviews
5. validated with voluntarily saliva and expired carbon monoxide samples.
6. data analysis: simple descriptive, univariate and hierarchical multiple logistic regression analyses

Recruitment into study

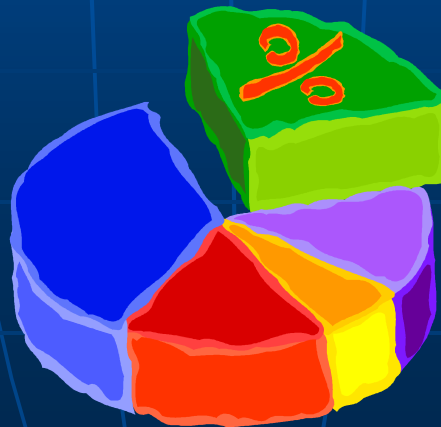


Interview schedule: content and development



Sample overview

- 219 participants recruited (204 analysed)
- Mean age = 44.8 years (range 18-87)
- 29% reported a current oral problem (of whom 62% reported two oral problems)
- 40% rated their health as 'compromised'
- 38% reported having health conditions



General sample characteristics (n=204)

Variables	n (%)
Employed	72 (35.3)
Unemployed	132 (64.7)
Higher level of completed education	70 (34.3)
Lower level of completed education	134 (65.7)
Low social participation	87 (42.6)
High social participation	117 (57.4)
Preferred reading language = Arabic and English	86 (42.2)
Preferred reading language = Arabic and Other	118 (57.8)
Born outside Yemen	34 (16.7)
Born in Yemen	170 (83.3)
Dental attendance = Check-up	78 (38)
Dental attendance = Pain or problem	90 (44.1)
Never been to dentist	36 (17.6)
Not Khat dependent	100 (49)
Dependent	39 (19)
High dependence	65 (32)
Current regular tobacco smoker	91 (44.6)
Smoke tobacco with khat chewing	42 (20.6)
Not current tobacco smoker	71 (34.8)
Regular tobacco smokers nicotine dependence (n=91)	
Low (≤ 5 scores)	51 (56)
High (≥ 6 scores)	40 (44)

Aspects of khat chewing



- Originated in Yemen
- Mean age of starting: 18.5 years
- Importance of social support
- Mean units (Harri) chewed per session: 1.48 (range 0.25-3.5)
- 2 sessions per week
- 48% had made quit attempts (mean: 3.77)

Associations with self-reported oral problem: results of multiple logistic regression

After controlling for a range of factors in a multivariate analysis, a low level of completed education was found to be significantly associated with self reported oral problems ($P \leq 0.045$; OR, 2.27; 95%CI=1.02 -5.04).

Discussion (1)

- The presumed association of khat behaviours (individual or composite) with oral problems is not sustained
- Low level of completed education reflects socio-economic disparities within the participants

Discussion (2)

- Low level of completed education is reported to predict self-perceived oral health
- Low level of completed education has predicted tooth loss, periodontal disease and untreated dental decay
- Self reported oral problem is a valid measure of clinical condition

Future developments

- Replication studies
- Clinical examination
- Representative samples from khat chewing populations

Thank you for listening!



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