

1 **Additional file 1 – Direct Acyclic Graph (DAC) of determinants of** 2 **attendance to health checks**

3 Dryden et al performed a systematic review of what we know about who does and does not
4 attend general health checks from the patients point of view (1). According to Dryden et al,
5 attendance is higher with older age, female gender, being married and of higher socio-
6 demographic, white ethnic background and frequent attendance to general practice. Contrary,
7 people with health risk behaviour such as smokers, obese, people with unhealthy diet, heavy
8 drinkers, and people with raised biomarkers such as high blood pressure, cholesterol and
9 blood sugar, are less likely to attend. The higher attendance among married was explained by
10 the fact that many, especially men, are encouraged by the partner to attend the health check.
11 Socio-demographic factors include income, educational attainment and occupation and should
12 be viewed as independent factors. Frequent attenders to general practice are more likely to
13 attend general health checks. However, Dryden et al describe the association as being
14 complex, that is, people use the same reasons for attendance and non-attendance. This is
15 supported by a review of frequent attendance to general practice care where increasing age,
16 being female, lack of social support, physiological disease and psychological distress are shown
17 to predict frequent attendance (2).

18 Dryden et al also describe an association between social cognitive factors and attendance,
19 though the relation is described as not being straightforward. As for frequent attendance,

20 people seem to use the same reasons for both attendance and non-attendance. Despite the
21 complex relation, non-attenders show low self-efficacy, low control of health, and are less
22 likely to believe in the effects of health checks. In a systematic review of qualitative studies on
23 the perceptions and experiences of chronic disease programmes, Shaw et al provide a deeper
24 look into the cognitive determinants that triggers uptake and effect (3). They present a
25 conceptual model demonstrating that the cues to action, or inaction, to take up or respond to
26 an intervention is determined by a combination of the patient's knowledge, beliefs, role and
27 identity, followed by support to the prevention programmes. This includes the wider societal
28 influences of the understanding of the role of, and trust in the state, and in more contextual
29 influences made up of the health care professionals and health care sector support to
30 preventive programmes.

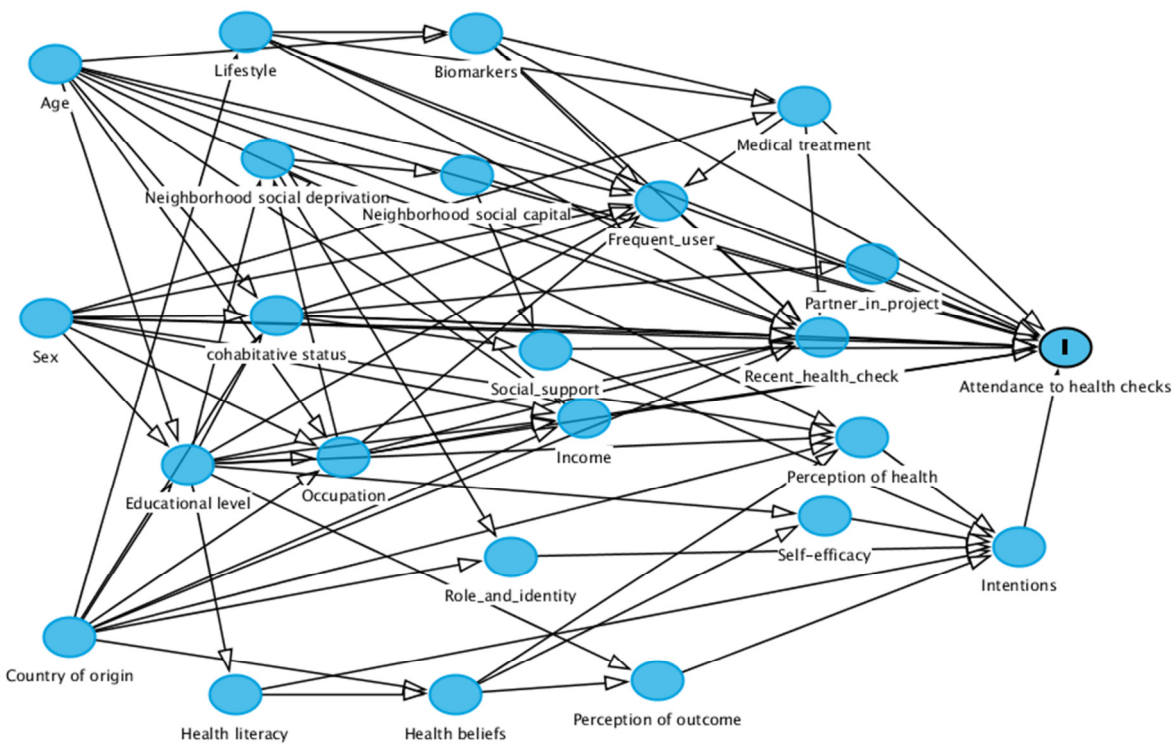
31 Environmental factors such as neighbourhood deprivation seems to be associated with uptake
32 while urban/rural residential area on the other hand seems unrelated to uptake (4). A number
33 of papers report an increased uptake among people living in more deprived areas in the NHS
34 Health Check (5,6). Other papers reporting from the NHS Health Check report higher uptake in
35 less deprived areas (7–9). In a Danish setting, Bender et al show that low social capital and low
36 social neighbourhood deprivation are associated with non-attendance to health checks, and
37 that social capital is a likely mediator of the association between local neighbourhood
38 deprivation and attendance to health checks (10,11).

39 When it comes to health care characteristics, several papers describe large differences in
40 attendance between general practitioners (GPs), but the underlying causes of the association

41 is not described further (5,7,8,12). Distance to the GP does not seem to be associated with
 42 attendance to health checks (7). Practice size seems to matter, though the results point to
 43 higher attendance in both small and larger practices suggesting that practise size could be a
 44 mediator of some other underlying factor (6,13). According to Shaw, information on the role of
 45 health care professionals and uptake of preventive health checks is lacking (3).
 46 Based on the aforementioned evidence a DAG was developed (figure 1).

47

48 Figure 1 - DAG depicting the determinants of attendance to health checks.



49 Can also be found at www.dagitty.net/mtRW08f

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