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Ethnic inequalities in doctor-patient communication regarding personal care plans: the mediating effects of positive mental wellbeing

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KEY WORDS

Ethnicity; doctor; patient; mental wellbeing; personal care plan

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Abstract

Objective: There is limited understanding of ethnic inequalities in doctor-patient communication regarding personal care plans (PCPs). This study investigated the mediating effects of positive mental wellbeing on differences in PCP-related doctor-patient communication amongst South Asian and Caucasian UK residents.

Design: Data from 10980 respondents to the 2013 Health Survey for England was analysed using bootstrapping methods. Constructs from the WEMWBS (*Warwick and Edinburgh Mental Wellbeing Scale*) (Stewart-Brown and Janmohamed 2008) were assessed as mediators of relations between ethnicity and several doctor-patient communication variables, including PCP-related interactions; (a) had a PCP-related discussion about a long-term condition with a doctor/nurse, and (b) had this conversation within the past year, (c) agreed to a PCP with a health professional; and (d) talked to a doctor in the past 2 weeks.

Results: Bootstrapped mediation analysis (Hayes 2013) showed that three positive mind-sets mediated associations between ethnicity and doctor-patient contact, including PCP-related communication. Being able to make up one's mind (ab = -0.05; BC_a CI [-0.14, 0.01]) mediated the effect of ethnicity on agreeing to a PCP, while having energy to spare (ab = 0.07; BC_a CI [-0.04, 0.12]), and feeling good about oneself (ab = 0.03; BC_a CI [0.01, 0.07]), mediated ethnic effects on talking to a doctor during the past fortnight. The mediating effect of reported energy persisted after controlling for medical history, perceived health, and other covariates.

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Conclusions: Ethnic disparities in doctor-patient interaction, including PCP-related communication, are partly explained by positive mental wellbeing. Gauging positive psychological moods in patients, particularly self-worth, self-perceived vigour and decisiveness, are relevant to addressing ethnic inequalities in doctor-patient communication. As PCPs may have direct implications for patient health it is important for health professionals to address deficits in psychological functioning that may precipitate ethnic inequalities in setting up PCPs.

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1. Introduction

The role of mental wellbeing in health outcomes is a rapidly growing research domain

(Salovey et al. 2000, Bahremand et al. 2016, Brummett et al. 2009, Casellas-Grau, Font, and

Vives 2014, Galante et al. 2014, Kulczycka, Sysa-Jedrzejowska, and Robak 2011, Santos et

al. 2013, Gallan et al. 2013, Ogrodniczuk, Piper, and Joyce 2008, Branstrom, Duncan, and

Moskowitz 2011, Dubois et al. 2012, Edwards and Cooper 1988). A positive state of mind

has been implicated in favourable health outcomes, such as healthy lifestyles, reduced risk of

psychological illness (Salovey et al. 2000), adaptive coping in stressful situations (Folkman

1997, Edwards and Cooper 1988), and improved cardiovascular functioning (Dubois et al.

2012). Given the widespread emphasis on patient-centered care, (Kane et al. 2015, Lawrence

and Kinn 2012, Tzelepis et al. 2014), there is some interest in identifying positive

psychological attributes that facilitate doctor-patient interactions (Gallan et al. 2013, Cegala,

Street, and Clinch 2007, Ogrodniczuk, Piper, and Joyce 2008, Visser, Deliens, and Houttekier

2014).

Doctor-patient consultations can be stressful for patients (Gallan et al. 2013, Cegala,

Street, and Clinch 2007). This can be particularly so when patients are required to set up a

personal care plan (PCP) in order, for example, to effectively manage a chronic health

condition (Jansen, Heijmans, and Rijken 2015), recover from an illness/injury (Tarkin, Sop,

and Pape 2008), or simply to cope with stress (Tvrdik et al. 2015). A PCP is a written

document that identifies specific treatment goals for a patient (e.g., 5% less blood sugar) and

activities to achieve them (e.g., taking medication). The plan is agreed to by the patient and

their doctor, or health care team (Coulter, Roberts, and Dixon 2013). Having a PCP has been

implicated in improved health outcomes for patients (Hird et al. 2015, Coulter et al. 2015).

Nevertheless, setting up a PCP can be challenging for patients because it may involve

prolonged (and periodic) doctor-patient consultations, during which potentially difficult

treatment decisions have to be made, and/or challenging goals need to be agreed to, subject to

review at a later date (Diabetes UK 2009). For patients, having a positive mood in this

context can facilitate adaptive coping processes (e.g., focusing on problem solving) that

enable a more productive dialogue with a health professional (Folkman 1997, Edwards and

Cooper 1988).

Positive mental wellbeing broadens an individual's range of thoughts and actions (e.g.,

making new friends), which in turn builds enduring physical, social, and intellectual

resources (e.g., being more polite) (Fredrickson 1998, 2001, 2004, Fredrickson et al. 2008).

This can have significant benefits for PCP-related liaisons (Ogrodniczuk, Piper, and Joyce

2008). For example, evidence suggests positive-minded patients interact more with health

professionals (Gallan et al. 2013). By contrast, less expression of positive emotion in patients

has been associated with more negative dispositions in doctors (Ogrodniczuk, Piper, and

Joyce 2008). Nevertheless, despite the potential value of good mental wellbeing for

satisfactory doctor-patient liaisons (Ogrodniczuk, Piper, and Joyce 2008, Paternotte et al.

2015), and health outcomes in general (Dubois et al. 2012, Edwards and Cooper 1988,

Casellas-Grau, Font, and Vives 2014), it is unclear how positive moods affect PCP-related

doctor-patient interactions.

Mental wellbeing may be particularly relevant in *intercultural* consultations to reach a

PCP agreement (Paternotte et al. 2015). Studies suggest ethnic inequalities in doctor-patient

interactions (Burt et al. 2016, Volz, Moore, and Belkora 2015, Ahmed et al. 2015, Croker et

al. 2013, Wong et al. 2014, Murray-Garcia et al. 2000, Lyratzopoulos et al. 2012). In the UK

people of South Asian descent generally report poorer doctor-patient experiences compared

with Caucasians (Ahmed et al. 2015, Burt et al. 2016). An analysis of data from the *English*

GP Patient Survey (including 190,582 patients across 1,068 practices) found that

Bangladeshi, Pakistani, and Indian patients reported worse doctor-patient communication,

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compared with White British patients. Another study (data from 1,599,801 respondents) found significant differences in doctor-patient interactions between White British responders, and those of Pakistani and Bangladeshi descent (Burt et al. 2016). South Asians reported more negative experiences (e.g., degree of involvement in decision making, having tests/treatments explained). This ethnic difference was magnified amongst older and female respondents, suggesting age and gender play an important role.

A recent systematic review of the literature in this area identified negative psychological factors (e.g., perceived prejudice) affecting intercultural doctor-patient interactions (Paternotte et al. 2015). While evidence suggests positive mental wellbeing can help improve the patients' experience (Folkman 1997, Edwards and Cooper 1988, Salovey et al. 2000, Fredrickson 1998), it is unclear to how this applies to PCP consultations, particularly in an intercultural context (Paternotte et al. 2015). A qualitative study of South Asian adults diagnosed with diabetes found that participants made limited contact with their doctor during fasting (Patel et al. 2015), suggesting any necessary PCP-related communication is unlikely to have taken place. Psychological dispositions were generally negative (e.g., anxiety), suggesting a more positive mind-set might play an important *mediating* role, for example, by motivating patients to contact their doctor (Fredrickson 1998, Edwards and Cooper 1988, Folkman 1997). However, to the best of my knowledge, no study has tested this proposition.

Existing literature is constrained by the fact that most studies examine the *direct* role of ethnicity (Ahmed et al. 2015, Burt et al. 2016), and/or mental wellbeing (Butalid, Bensing, and Verhaak 2014, Bahremand et al. 2016). It isn't possible to extrapolate mediation from current evidence, as the requisite analytical conditions aren't usually met (Hayes 2013, 2009). The picture is further compounded by the focus on *negative* mental wellbeing (e.g., dissatisfaction, perceived prejudice) (Paternotte et al. 2015), and narrowly defined 'patient' groups (e.g., people recently registered with and/or presenting for treatment at a clinic or

hospital) (Burt et al. 2016). Regarding the latter point, most British residents have consulted a

health professional fairly recently (87% have seen their doctor in the past year) (IPSOS

MORI 2015), and hence can be considered 'patients' depending on the criteria used (Wolf et

al. 2014). The majority (59%) have been involved in planning their treatment and care

(IPSOS MORI 2015). Although PCPs are formally offered to people with long-term medical

conditions (Diabetes UK 2009), PCPs may also be discussed with people experiencing stress

(Tvrdik et al. 2015), or struggling with substance abuse (Hassan et al. 2009). Thus, it is

important to understand intercultural PCP-related consultations in a *broad* context that

involves the wider *public*, rather than a specific narrowly defined 'patient' group (Wolf et al.

2014).

Evidence for mediation would suggest it is a person's positive state of mind, rather than

their cultural background per se, that *directly* accounts for ethnic disparities in PCP-related

communication. A positive mood may serve as a proxy variable, delineating psychological

interventions that help improve intercultural doctor-patient experiences. Thus, the present

study aimed to explore the notion that ethnicity predicts mental wellbeing, which in turn

predicts doctor-patient communication regarding PCPs. The study focused specifically on

South Asians and Caucasians, as these groups have shown reliable disparities in doctor-

patient interactions (Burt et al. 2016, Ahmed et al. 2015). Previous research suggests the

frequency of contact with health service providers may be a particular problem with South

Asian patients (Commander et al. 2004, Szczepura, Price, and Gumber 2008, Marlow,

Waller, and Wardle 2015). For example, South Asian patients of Muslim faith have been

found to make limited contact with their doctor during fasting (Patel et al. 2015). When South

Asian patients do make contact, they may be less involved in decisions about their care

(Ahmed et al. 2015, Burt et al. 2016). Thus, the frequency of doctor-patient contact, and also

their ability to agree to a care plan, are critical in understanding ethnic differences in this

context. Given evidence implicating mental wellbeing in doctor-patient consultations

(Paternotte et al. 2015), and the experiences of South Asians in this context (Patel et al.

2015), we hypothesised that positive psychological attributes mediate ethnic disparities in

PCP-related communication.

2. Methods

2.1 *Sample & procedure*

This study analysed archived cross-sectional data from the 2013 *Health Survey for England*

(HSE) national survey (Health Survey for England 2013). The HSE is an annual survey to

monitor the health of the general public in England UK. It is managed by the *Central Health*

Monitoring Unit, which is part of the UK *Department of Health*. The survey is conducted

annually and data is collected from a representative sample of peoples (aged 16 years and

over) living in private residential addresses. All eligible individuals in a household (a

maximum of 10) are invited to undergo an interview, and undertake height and weight

measurements. During each interview participants are asked structured questions about their

health, use of health services, and lifestyle. Adults filled in a self-completion questionnaire

booklet incorporating the WEMWBS (*Warwick-Edinburgh mental well-being scale*)

(Tennant et al. 2007, Stewart-Brown et al. 2009) and other measures. This interview is

followed shortly thereafter by a nurse visit, to conduct more measurements and collect more

(primarily biomedical) data. The study reported here analysed data from the 2013 survey,

with a sample size of 10980 participant records. The mean age was 41.35 years (SD 23.99).

There were 5955 (54.2%) females and 5025 (45.8%) males.

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2.2 *Doctor-patient communication*

The primary focus here was the frequency of doctor-patient communication specifically

relating to PCPs. The occurrence of such doctor-patient contact was depicted in a number of

questions on PCP's and use of health services (Health Survey for England 2013). The

interviewer read out the following statement, *'You mentioned earlier that you have a/some*

long term health condition(s). Doctors, nurses or other health workers sometimes have a

special discussion with people with a long term condition, to look at the way that their health

and care is managed. This is to make sure that people are given information and understand

the options for their condition, are happy with the care they are receiving overall for their

health, and know how they can be involved in decisions about their care'. The interviewer

then asked the following question: *'Have you had a conversation like this with your doctor,*

nurse or health worker about your long term condition(s)?' ('Yes ('1')/ 'No' ('0')/ 'Not

sure'). If respondents answered 'Yes', they were then asked *'Was this in the last 12 months or*

longer ago?' ('Longer ago' ('0')/'In last 12 months' ('1')). Next, the interviewer stated,

'Sometimes a doctor, nurse or other health worker will agree [to] a Personal Care Plan for

someone with a long term condition, where they write down how the condition will be

managed and who is involved in providing general health care or support'. This was

followed by the question, *'In the last 12 months, have you and a health professional agreed*

[to] a Personal Care Plan for your overall health and social care needs?' ('Yes, have agreed

[to] a personal care plan <=12 months ago' ('1')/'Yes, agreed [to] a personal care plan more

>12 months ago' or 'No, do not have a personal care plan' (both scored '0'). The interviewer

also asked about service use*, 'The next few questions are about your GP and how often you*

use certain health services. During the two weeks ending yesterday, apart from any visit to a

hospital, have you talked to a doctor on your own behalf, either in person or by telephone?'

('Yes ('1')/ 'No' ('0')). Consultations made on behalf of others were disregarded.

2.3 *Mental well being*

Respondents completed the WEMWBS (Stewart-Brown et al. 2009), which incorporates

fourteen statements assessing positive psychological dispositions. This instrument is

currently used in numerous surveys, and has generated good reliability and validity

parameters (Tennant et al. 2007). Respondents first read the statement *'Below are some*

statements about feelings and thoughts. Please tick the box that best describes your

experience of each over the last 2 weeks'. The statements comprise the following; *'been*

feeling optimistic about the future', *'been feeling useful'*, *'been feeling relaxed'*, *'been feeling*

interested in other people', *'had energy to spare'*, *'been dealing with problems well'*, *'been*

thinking clearly', *'been feeling good about myself'*, *'been feeling close to other people'*,

'been feeling confident', '*been able to make up my own mind about things'* , '*been feeling*

loved', *'been interested in new things'*, and '*been feeling cheerful'.* Responses to each

statement were indicated in a five-point Likert-style scale; 'None of the time' ('1'), 'Rarely'

('2'), 'Some of the time' ('3'), 'Often' ('4'), and 'All of the time' ('5'). Together, these

fourteen items generated high internal consistency ($\alpha = 0.91$). Nevertheless, it was decided to

treat the statements as single item measures, for several reasons: (a) weak effect sizes were

expected, (b) the items were highly homogeneous ($\alpha > 0.90$), (c) items were semantically

redundant (due to high internal consistency), which can negatively affect multiple item

measures, and (d) the population was diverse (Diamantopoulos et al. 2012, Fuchs and

Diamantopoulos 2009). Although multi-item measures can outperform single items when the

sample size is over a certain cut-off (e.g., $N > 50$) (Diamantopoulos et al. 2012), both

approaches may perform equally well with very large samples (Cheung and Lucas 2014).

2.4 *Health status*

General health status was gauged by various queries (Health Survey for England 2013),

starting with the *question 'How is your health in general? Would you say it was...'*, 'Very

good' ('1'), 'Good' ('2'), 'Fair' ('3'), and 'Bad' ('4'), or 'Very bad' ('5'). The interviewer

then read the following statement, '*This question asks you about any health conditions,*

illnesses or impairments you may have. Do you have any physical or mental health

conditions or illnesses lasting or expected to last 12 months or more?' ('Yes ('1')/ 'No'

('0')). The researcher then recorded up to six conditions or illnesses. This information was

organised into the following categories, 'No longstanding illness' ('0'), 'One longstanding

illness' ('1'), or 'Two or more longstanding illnesses' ('2').

2.5 *Ethnicity*

Ethnic status was derived from eighteen ethnic categories (Health Survey for England 2013):

Respondents who self-identified as 'White' (English/Welsh/Scottish/Northern Irish/British),

'White –Irish', 'White – Gypsy or Irish Traveller' or 'Any other White background' were

classified as '*Caucasian*' (scored '1'). Individuals who identified themselves as 'Indian',

'Pakistani', or 'Bangladeshi' were labelled as '*South Asian*' (scored '0').

3. Results

Data analysis was based on bootstrapping, using the PROCESS (version 2.15) SPSS add-on

for statistical mediation analysis (Hayes 2013). Ethnicity was entered as variable 'X' (i.e.,

Predictors), while the four doctor-patient variables were each treated as variable 'Y' (i.e.,

Outcomes), in separate models. The fourteen WEMWBS items were each entered as

variables 'M' (i.e., the *mediators*). These variables were analysed in two 'blocks'; the first

block containing the first ten items from the WEMWBS, and the second block comprising the

remaining four attributes (the PROCESS software can only analyse a maximum of 10

mediators at once). Mediation analysis evaluates three regression pathways; the effect of X

on M (*'path a'*); the effect of M on Y (*'path b'*), and the effect of X on Y (*'path c'*).

Mediation is inferred if paths 'a' and 'b' (i.e., the *'indirect effect'*, or *'a*b'*) are statistically

significant. Unlike the joint significance approach to mediation (Baron and Kenny 1986),

contemporary mediation analysis does not require *'path c'* (i.e., the *'direct effect'* of X on Y)

to be significant, in order to infer mediation (Hayes 2009). In all analyses the number of

bootstrap samples for bias-corrected bootstrap confidence intervals was 1000. Effect size

figures for indirect effects aren't generated for models using dichotomous outcome variables.

All analysis was performed using SPSS (version 23).

3.1 *Descriptive statistics*

Table 1 shows the frequency data for ethnicity, the four doctor-patient communication

variables, and covariates. About two-thirds of respondents had no physical or mental health

conditions or illness lasting (or expected to last) 12 months or greater. About one-fifth had

one chronic illness, while just over 17% had two or more long-standing illnesses. The vast

majority of respondents (almost 80%) perceived their health as 'very good' or 'good'. The

sample was predominantly Caucasian (over 94%), albeit the absolute number of South Asians

approached 600 respondents. Over one-half of respondents had spoken with a doctor or nurse

about a chronic condition, and more than two-thirds had a conversation within the past year.

Over 60% did not provide valid data on making a PCP agreement. Of those who did, only

about one in ten agreed to a PCP within the past year. The remainder either didn't agree to a

PCP, or reached an agreement over 12 months ago. Finally, nearly 20% provided no valid

data on speaking to a doctor within the past fortnight. Of those who did, over four-fifths had

talked to a doctor within the past fortnight. *Table* 2 shows the means and standard deviations

for mental wellbeing. The most strongly experienced dispositions were being able to make up

one's mind about things, feeling loved, and thinking clearly. Comparatively, the least

experienced attributes were having energy to spare, and feeling optimistic. On average all

psychological states were experienced at least 'sometimes'. The low standard errors are

consistent with the large sample size.

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3.2 *Tests for mediation*

Significant a*b pathways (i.e., 'indirect effects) only emerged in three configurations. In the

first configuration there was a significant indirect effect of ethnicity on agreeing to a PCP

with a health professional, through feeling able to make up one's mind about things, ab = -

0.05, BC_a CI [-0.14, -0.01]. To determine the size of the indirect effect, I followed guidelines

in the literature, whereby Cohen's r effect size labels of 0.1 ('small'), 0.3 ('medium'), 0.5

('large') (Cohen 1988) are first squared, since the indirect effect is a product of two pathways

(a*b) (Kenny 2015). Furthermore, since X (ethnicity) is dichotomous, Cohen's d is used for

path a (thus, effect size is d x r), so 0.02 is 'small', 0.15 is 'medium', and 0.40 denotes 'large'

(Kenny 2015). Thus, it can be seen that the 'completely standardised indirect effect' (Hayes

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2013) was 'small' to 'medium'. Examination of the mediator pathway reveals the nature of

the indirect effect (see *Figure* 1). Caucasians were less likely than South Asians to feel able

to make up their own minds about things *('path a')*. However, respondents who often felt

able to make up their minds were less likely to have agreed to a PCP with a health

professional (*'path b'*). There was no direct effect of ethnicity on the outcome variable (*'path*

c'). The total model (i.e., the indirect effect + direct effect) was not significant. The normal

theory (i.e., Sobel) tests for specific indirect effects did not demonstrate mediation. However,

the Sobel test is highly conservative with high *Type II* error rates (Hayes 2013).

The second and third indirect effects involved the same outcome variable – talked to a

doctor within the past two weeks. In the second a*b configuration, there was a significant

indirect effect of ethnicity on feeling one 'had energy to spare', $ab = 0.07$, BC_a CI [0.04,

0.12]. Observation of the mediated pathway (*Figure* 2) showed that Caucasians were less

likely to feel energetic compared with South Asians (*'path a'*). However, individuals who

often had spare energy were less likely to have spoken with a doctor in the past fortnight

(*'path b'*). In the third a*b configuration ethnicity had a significant indirect effect on the

doctor-patient outcome, through the positive disposition 'feeling good about myself', $ab =$

0.03, BC_a CI [0.01, 0.07]. This mediator effect is illustrated in *Figure* 3. Caucasians were less

likely to feel good about themselves compared with South Asians (*'path a'*). However,

respondents who often felt good about themselves were less likely to have communicated

with a doctor recently (*'path b'*). For both mediator effects the completely standardised

indirect effect size ranged from 'small to medium'. Ethnicity had no *direct* effect on the

outcome variable in either mediator effect (*'path c'*). Furthermore, the total effect of ethnicity

on the outcome (i.e., indirect effect + direct effect) was not significant. Interestingly, the

normal theory (i.e., Sobel) tests for specific indirect effects confirmed the bootstrapped

mediator effects of having energy to spare ($z = 3.88$, $p<0.001$), and feeling good about

myself' ($z = 2.40$, $p<0.05$), despite the Sobel tests high *Type II* error rates.

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3.3 *Controlling for covariates*

To ascertain the robustness of the observed mediator effects, it was decided to rerun the

analysis controlling for existing chronic illness, self-perceived health, age and gender. A

history of chronic illness has been associated with greater healthcare utilisation, in both

primary and secondary settings (Palladino et al. 2016). Self-perceived health has also been

implicated in this context (Thomas and Borrayo 2007). Furthermore, doctor visits become

more frequent with age, and women are generally more likely to visit a health professional

(Din, Zugman, and Khashper 2014). After accounting for these covariates the indirect effect

of ethnicity on reaching a PCP agreement (through making up one's mind about things) was

no longer significant. Controlling for covariates also negated the indirect effect of ethnicity

on the likelihood of speaking to a doctor in the past two weeks (through feeling good about

oneself). However, the mediating effect of feeling energetic stayed significant, with the lower

bootstrapped confidence interval remaining slightly above zero, $ab = 0.02$, BC_a CI [0.00,

0.05]. This was confirmed by the conservative Sobel test for indirect effects, which also

showed a significant mediator effect for this psychological state, ($z = 2.04$, $p<0.05$).

4. Discussion

As hypothesised several aspects of mental wellbeing mediated associations between ethnicity

and doctor-patient interactions, including the frequency of PCP-related communication. The

findings extend previous work on *intercultural* doctor-patient liaisons, which hitherto largely

focused on negative mindsets, and did not specifically examine PCP-related contact

(Paternotte et al. 2015). Ethnicity wasn't directly related to doctor-patient communication.

The discrepancy may be attributable to methodological differences. Previous studies focused

on narrowly defined 'patient' groups (Burt et al. 2016), whereas the present study involved

the general public. Since the public don't engage as frequently with health professionals,

compared to hospitalised 'patients' for example (Ahmed et al. 2015), ethnicity may play a

more distal (i.e., indirect) role in PCP-related communication. By contrast, cultural

frustrations may surface once 'patients' begin to engage health professionals with higher

regularity and/or for longer duration (Paternotte et al. 2015). Ethnic based vexations (e.g.,

language barriers) then impede PCP-related decisions, for example regarding treatment or

goal-setting (Paternotte et al. 2015). In this context ethnicity may *directly* predict doctor-

patient relations. However, as most British residents (almost 90%) have seen their doctor

within the past year (IPSOS MORI 2015), the exact point at which ethnicity becomes salient

is arguable, and requires further research.

South Asians were more likely to feel energetic. This disposition may partially explain

the poorer doctor-patient communication amongst South Asians reported in the literature

(Patel et al. 2015, Ahmed et al. 2015). If one feels lively, there is less motivation to contact a

doctor to discuss a PCP (even if it is necessary to do so, due to an underlying medical

condition, or substance abuse problem for example), notwithstanding various other cultural

and religious disincentives (Patel et al. 2015). This seems to contradict the notion that

positive-minded patients interact more readily with health professionals (Gallan et al. 2013).

However, perceived energy levels may transcend individual mental wellbeing, perhaps

echoing the nuclear versus extended family structures dominant in Caucasian and South

Asian communities, respectively (Owen 2006). Extended family members often live in close

proximity (Goodley, Runswick-Cole, and Mahmoud 2013). Thus, they can support one

another, both emotionally and financially, such that individual members generally feel less

fatigued (e.g., Cousins or grandparents assisting with child care). However, these conditions

may be confounded by other cultural or religious factors. For example, many UK South

Asians are of Muslim faith, and hence partake in fasting (abstention from food and fluid

intake for one month during daylight hours) (Maughan, Fallah, and Coyle 2010). Dietary

intake shifts from daytime to the hours of darkness, disrupting normal sleep patterns, and

potentially creating a sense of fatigue (Maughan, Fallah, and Coyle 2010). Thus, South

Asians may experience more fatigue at certain times of the year (Ramadan), albeit with

negligible impact on service use (Patel et al. 2015).

People who feel positive build better psychological resilience, and cope better with life's

challenges (Fredrickson 1998, 2001). They are less likely to fall sick and hence visit a doctor

(Salovey et al. 2000). Indeed, the present data revealed inverse associations between a

positive mindset and doctor-patient contact. However, this can be problematic for ethnic

communities experiencing a surplus risk for chronic diseases or substance abuse problems

that require PCPs and close monitoring. For example, South Asians felt more energetic, and

respondents who felt this way were less likely to have contacted a doctor recently. Given the

surplus diabetes risk in the South Asian community (Tillin et al. 2013) and the importance of

PCPs in diabetes management (Diabetes UK 2009), any mindset that discourages interaction

with health professionals is undesirable (Patel et al. 2015).

The most significant (and curious) finding of this report is that feeling energetic

continued to mediate the effect of ethnicity on doctor-patient contact, despite controlling for

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health status. General fatigue has been a common patient complaint in clinical consultations, and may reflect psychological and/or physiological processes (Berrios 1990). Feeling energetic (i.e., absence of fatigue) now appears to denote important ethnic undertones that transcend illness considerations and, more importantly, have rarely been highlighted in the literature on intercultural doctor-patient liaisons (Paternotte et al. 2015). It is possible South Asians may contact health professionals *less* often than Caucasians partly due to greater perceived vigour, irrespective of medical status. If so, this can be dangerous for individuals suffering medical or behavioural problems (including undiagnosed conditions) that require close monitoring via PCPs (Diabetes UK 2009). Further research is needed to understand the underlying cultural factors.

4.1 *Limitations*

This study has several limitations. Firstly, the outcome measures emphasised *frequency* of contact between doctor and patient (e.g., whether respondents had spoken with a doctor with the past fortnight/year), rather than the *quality* of experience (e.g., how satisfied patients felt about their most recent PCP consultation) (Wolf et al. 2014). While agreeing to a PCP may denote a productive doctor-patient liaison, there is no way to know from the present data how satisfied patients felt about their experiences with the health service (e.g., equal involved in the decision making process). Secondly, other key intercultural dimensions from the doctor-patient literature weren't captured (e.g., communication with a patient's relatives, or language barriers) (Paternotte et al. 2015). Additionally, while some demographic factors (age and gender) were treated covariates, the analysis made no adjustments for socio-economic status. However, socio-economic standing hasn't emerged as a particularly salient theme in previous research on intercultural doctor-patient communication (Paternotte et al. 2015), or care planning (Coulter et al. 2015). Fourthly, the absence of a direct effect of ethnicity on doctor-

patient outcomes (i.e., *path c*) seems to violate the 'Joint Significance' approach to mediation (Baron and Kenny 1986). However, as mentioned before, contemporary ('bootstrapping') interpretations don't require a direct association between X and Y, in order to demonstrate mediation (Hayes 2009, 2013). Finally, the use of single-item measures may generate concern (Diamantopoulos et al. 2012), albeit evidence suggests they work similarly to multi-item measures with very large samples (Cheung and Lucas 2014).

4.2 *Conclusions*

The present findings extend existing literature in several ways. Firstly, the results show that, amongst the general public, ethnic differences in doctor-patient interactions, including the frequency of PCP-related communication, are partly elucidated by positive mental wellbeing. Secondly, these mediator effects may attenuate after controlling for health status and other covariates. However, the state of feeling energetic transcends differentials in medical condition, denoting robust cultural underpinnings that need further exploration. South Asians felt more energetic than Caucasians, a disposition that may partly explain poorer doctor-patient communication in the former community, and may have dangerous implications for patients suffering conditions (diagnosed or otherwise) that require PCPs.

Hitherto primary responsibility for improving intercultural doctor-patient liaisons, by projecting a positive psychological demeanour (e.g., showing empathy), has been assigned to doctors/nurses (Paternotte et al. 2015). This has been particularly so regarding South Asian patients, who may be reluctant to engage with health professionals (Patel et al. 2015), and hence have fewer opportunities to set up and/or review a PCP. The present study shifts the focus back to the patients. Given the surplus diabetes risk in South Asians, it is essential that websites, organisations, and professionals that provide this community with health information highlight the importance of PCPS, and recommend engaging regularly with

health providers, despite perceived vigour that may suggest good health. It is also important for health providers to consider how mental wellbeing in patients can be used to improve doctor-patient contact, and their capacity to discuss and agree to a care plan. As mental wellbeing seems relatively deficient in Caucasians, this ethnic group may benefit the most from any educational or training initiatives designed to augment favourable psychological dispositions.

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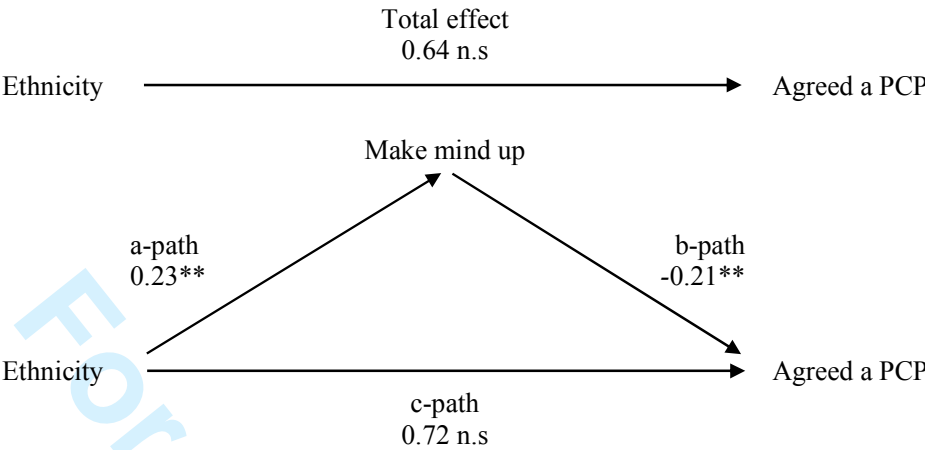or language?" *BMJ Open* 4 (2):e003884. doi: 10.1136/bmjopen-2013-003884.

Figure 1. Mediating effects of being able to make up one's mind on relationships between ethnicity and agreeing a PCP with a health professional (*p <0.05, **p<0.01, ***p<0.001)
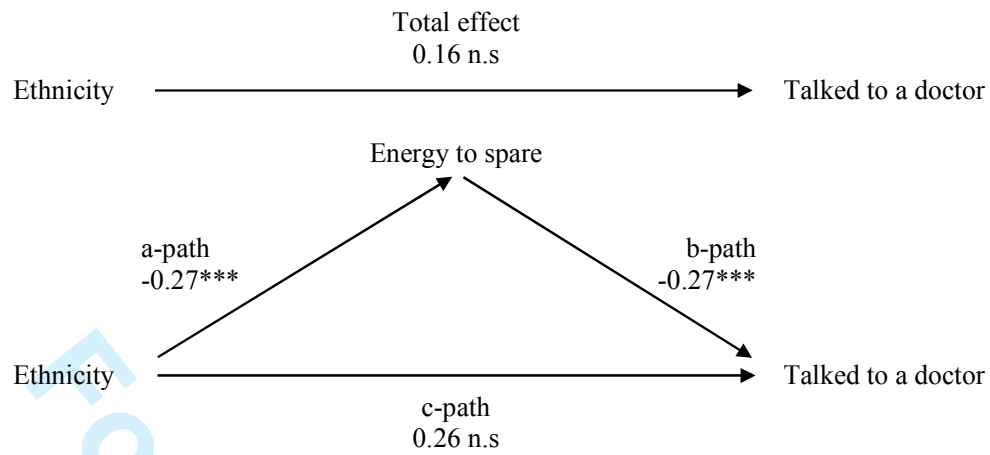
Figure 2. Mediating effects of having energy to spare on relationships between ethnicity and talking to a doctor within the past two weeks (*p <0.05, **p<0.01, ***p<0.001)
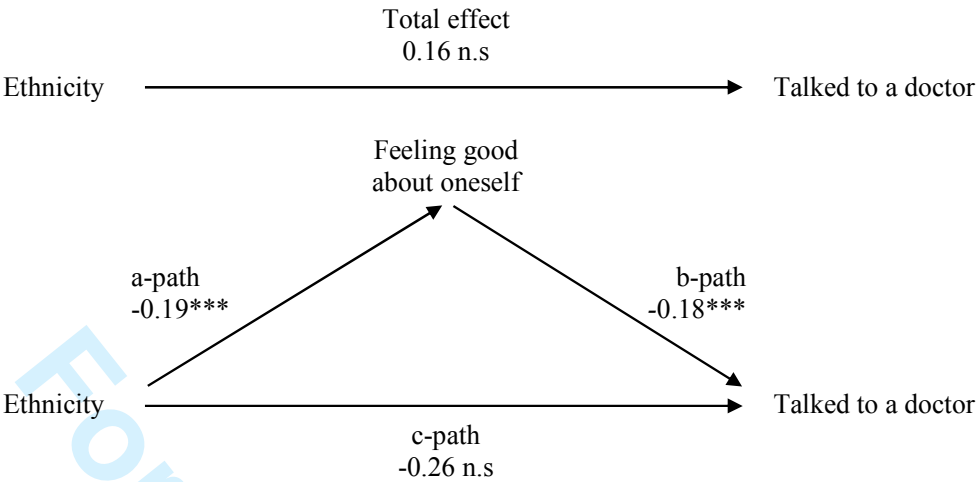
Figure 3. Mediating effects of feeling good about oneself on relationships between ethnicity and talking to a doctor within the past two weeks (*p <0.05, **p<0.01, ***p<0.001)

Table I Sample characteristics

	N (valid %)
Chronic illness (whether have any physical or mental health conditions or illnesses lasting or expected to last a year or more)	
No	6924 (63.1%)
Yes	4046 (36.9%)
Chronic illness (number of longstanding illnesses)	
None	6925 (63.1%)
One longstanding illness	2144 (19.5%)
Two or more longstanding illnesses	1901 (17.3%)
Self-perceived health	
Fair, bad or very bad	2366 (21.6%)
Good or very good	8610 (78.4%)
Ethnicity	
South Asian	569 (5.6%)
Caucasian	9504 (94.4%)
Conversed with a doctor or nurse about long-term condition	
No	1563 (43%)
Yes	2073 (57%)
Conversed within last 12 months or longer	
Longer ago	579 (27.9%)
Yes, within last 12 months	1493 (72.1%)
Agreed a PCP within the past 12 months	
No, agreed PCP > 12 months ago, or no PCP	3347 (89.9%)
Yes, agreed PCP < 12 months ago	378 (10.1%)
Talk to a doctor within the past 2 weeks	
No	7236 (82.3%)
Yes	1558 (17.7%)

Note: Only valid percentages quoted here, rather than actual percentages including ineligible respondents, or those with missing data

Table II Means and SD's for mental wellbeing

	Mean	SD	SE
Been feeling optimistic	3.52	0.97	0.11
Been feeling useful	3.72	0.89	0.01
Been feeling relaxed	3.36	0.87	0.01
Been feeling interested	3.72	0.90	0.01
Had energy to spare	3.02	0.96	0.01
Been dealing with problems well	3.68	0.83	0.00
Been thinking clearly	3.92	0.82	0.00
Been feeling good about myself	3.55	0.88	0.01
Been feeling close to others	3.74	0.88	0.01
Been feeling confident	3.60	0.89	0.01
Been able to make up my mind	4.10	0.82	0.00
Been feeling loved	4.09	0.92	0.01
Been interested in new things	3.70	0.94	0.01
Been feeling cheerful	3.70	0.80	0.00